

# Mentor Perceptions and Motivations in a 10-Week Summer Undergraduate Research Fellowship in Toxicology

Debra L. Laskin and Lauren M. Aleksunes

Department of Pharmacology and Toxicology and Environmental and Occupational Health Sciences Institute, Rutgers University, Piscataway, NJ

## Abstract

Intensive laboratory training during the summer provides undergraduate students with great opportunity to gain research skills, explore post-graduate training options, and develop interpersonal skills. Most assessments of summer fellowships focus largely on student perceptions and outcomes. The purpose of the present study was to assess the motivations, satisfaction, and perceptions of mentors who supervised undergraduate students in a 10-week summer research fellowship at Rutgers University. Students spent 40 h per week in individual laboratories or clinical sites and 2 h per week in career development activities such as toxicology research seminars, field trip, and LinkedIn profile development. The fellowship culminated in student research presentations. Each student submitted a scientific abstract and presented their major research findings during symposiums held in the last two weeks of the fellowship. All co-authors on the abstracts (N=25) were emailed an 11 question online survey upon completion of the program. Responses were received from 32 individuals (24 faculty members and 8 graduate students/postdocs/technicians). All respondents had previously mentored summer interns with 68% of mentors having supervised between 1 and 5 students in the past 5 summers. The remaining 32% of respondents reported mentoring between 6 and 10 students in the past 5 summers. Respondents spent an average of 13.3 h ( $\pm$  11.0 h SD, 1.5-37 h range) with their student each week. Using a 5-point Likert system, the student fellows received the highest ratings for their work ethic and scientific curiosity followed by the quality of their presentation and technical skills. The majority of mentors would recommend (score of 5) the summer fellowship program to a student (85%) and another mentor (72%) as well as serve as a mentor in a subsequent summer (77%). Motivations for serving as a mentor included graduate student recruitment, advancement of research projects, and personal enjoyment of teaching students. Periodic assessment of mentor perceptions and motivations is important for the continual evaluation and improvement of a summer undergraduate research program.

## Approach

10-Week Summer Undergraduate Research Fellowship (SURF) conducted at Rutgers University



Participants submitted scientific abstracts (n=25) prior to the Research Symposium



During week 10, co-authors on the scientific abstracts were emailed a 11 question survey to be completed online

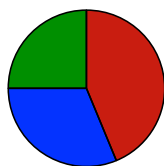


Collated responses (n=32)

## Results

### Survey Respondents

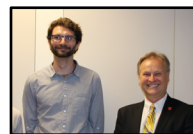
■ Faculty (Tenure)  
■ Faculty (Research)  
■ Trainees/Technicians



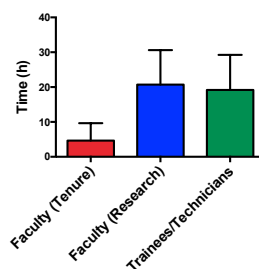
Total = 32



SURF Mentors and Trainees



### Weekly Face-to-Face Interactions



### Assessment of SURF Program

	Poor	Fair	Good	Very Good	Excellent	% Excellent
Preparedness of SURF Student for the Research Project	0	0	6	15	11	34
Work Ethic of SURF Student	0	0	1	6	25	78
Scientific Curiosity of SURF Student	0	0	3	4	25	78
Technical Skills of SURF Student (at the end of the program)	0	0	4	13	15	47
Communication Skills of SURF Student	0	0	3	13	16	50
Amount of Time your SURF Students Spends in the Lab	0	0	2	9	21	66
Quality of Your SURF Student's Presentation	0	0	1	12	19	59
Quality of Research Presentation Days	0	0	0	9	23	72
Communication with SURF Program Directors	0	1	2	6	23	72

### Future Participation in the SURF Program

	Not At All Likely	Slightly Likely	Moderately Likely	Very Likely	Definitely	% Definitely
How likely would you recommend the SURF program to an eligible student?	0	0	2	3	27	84
How likely would you recommend the SURF program to a potential mentor?	0	0	2	6	24	75
How likely would you participate in the SURF program as a mentor in the future?	0	0	2	5	23	77

### Value of the SURF Program

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	% Agree or Strongly Agree
SURF is an important educational program at Rutgers University	0	0	0	12	20	100
SURF is an important mechanism to recruit potential graduate students to enroll at Rutgers University	0	1	2	12	17	91
SURF effectively introduces the principles of pharmacology and toxicology to undergraduate students	0	0	4	14	13	84

## Discussion

- All respondents had previously mentored summer interns with 68% of mentors having supervised between 1 and 5 students in the past 5 summers. The remaining 32% of respondents reported mentoring between 6 and 10 students in the past 5 summers.
- Respondents spent an average of 13.3 h ( $\pm$  11.0 h SD, 1.5-37 h range) with their student each week.
- Using a 5-point system, the student fellows received the highest ratings for their work ethic and scientific curiosity followed by the quality of their presentation and technical skills.
- The majority of mentors would definitely recommend (score of 5) the summer fellowship program to a student (85%) and to another mentor (72%) and would serve as a mentor in a subsequent summer (77%).
- Motivations for serving as a mentor included graduate student recruitment, advancement of research projects, and personal enjoyment of teaching students.

*Periodic assessment of mentor perceptions and motivations is important for the continual evaluation and improvement of a summer undergraduate research program.*

## Acknowledgments



Intern Program



R25ES020721, P30ES005022



SURF Program



<https://surf.rutgers.edu>