Coordinated Approach to Increase Participation of PharmD Students in Basic and Clinical Research Projects

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PharmD Honors Research Program

Objectives: The objective of this project was to increase participation of PharmD students in basic and clinical research studies. Method: A three-fold approach was developed to improve the access and quality of research opportunities for PharmD students including 1) development of two new research electives, 2) improvement of the Honors Research program and 3) expansion of the summer fellowship program. Results: Two didactic electives focused on hypothalASY generation, literature review, and proposal writing were created. The Honors Research Program was improved by allowing a more flexible timeline, an internal website, customized plans of study, presentation opportunities (Pharmacy Research Day), and two directors (clinical and basic research). These changes increased student participation by 38% over 4 semesters. The summer fellowship program was also expanded to include additional career workshops and a field trip to a pharmaceutical company. Funding for the summer program was initially provided by the school’s administration. This investment was used to solicit for grant funding from NIH (R25ES07271) and foundations (ASPET and SOT). This action increased the number of fellowship positions from 11 to 19-20 over a 2-year period. Additional outcomes include the acceptance of 4 students from the summer fellowship and Honors programs into the dual degree PharmD/PhD program as well as travel awards for students to attend national meetings. Implications: Collectively, these data demonstrate a remarkable increase in student participation in research as well as the development of a PharmD/PhD program using a coordinated strategy aimed at coursework, fellowships, and advanced research experiences.

Methods

- A focused approach to increase the number and quality of research experiences for PharmD students was undertaken.
- Once a year, current and former PharmD students sit on a research panel and describe their experiences with the various research programs in the School of Pharmacy. This session is moderated by one faculty member; however, the discussions are primarily among students. This approach has been more effective than informational sessions by faculty directors.
- Pharmacy Research Day was initiated in 2011. Its purpose is to celebrate the research accomplishments of PharmD, PhD, and postdoctoral fellows. This poster session, which runs for 2 hours in the spring semester, is financially supported by the Dean’s Office.
- Two new research courses, Introduction to Research and Bench Pharmacy Research were developed to introduce students to hypothesis generation, proposal development, IRB and IACUC protocols, literature review, current technologies, and statistical analysis. These courses are run by Dr. Andrew Gow with the assistance of teaching assistants and postdoctoral fellows.
- The summer research fellowship has been in place for over 5 years. The initial program was supported by funding from the Dean of the School of Pharmacy and the department chairs as well as the NIEHS Center for Environmental Exposure and Disease and the Graduate School of Biomedical Sciences. In 2011, additional funding was received from NIEHS and the American Society for Pharmacology and Experimental Therapeutics (ASPET). In 2013, funding was also received from the Society of Toxicology.
- In 2011, the PharmD Honors Research Program was re-vamped to provide a more flexible program that includes didactic courses, thesis drafts each semester, a peer review process for approval of theses, and an internal university website for communication between the students and program directors.
- A public-private partnership with Bristol-Myers Squibb has been fostered at Rutgers University to provide summer research internships for PharmD students and a field trip for Rutgers summer fellows.
- Collectively, all of these initiatives have supported the development of two PharmD/PhD programs in Pharmaceutical Sciences and Toxicology. Four P3 students began the PharmD/PhD curriculum in Fall 2012 and one P3 student is beginning the PharmD/PhD curriculum in Fall 2013. One PharmD/PhD student was awarded a F31 fellowship from NIH in

Pharmacy Research Day

- Research posters were presented by PharmD students, PhD students, residents and postgraduate fellows.
- Abstract books were distributed to attendees, including alumni, students, faculty, industry contacts, and administrators.

Research Posters Presented

Program Demographics University

Non- Rutgers

Senior (P2)

Academic Year

Graduate School

Supervisor (P3)

Ethnic Background

Senior (P2)

Fellowship Participation

Program Description

- 10 week full-time summer fellowship in research laboratories and clinical sites
- The goal is to promote careers in pharmaceutical, toxicological, environmental health and clinical research.
- Students are recruited from Rutgers and nationwide using professional societies and the Rutgers RISE program.
- Students meet weekly with Program Directors and participate in career development, networking, seminar and ethics training.
- In 2012, students visited the New Brunswick site of Bristol-Myers Squibb, toured laboratories, and had lunch with scientists.
- Students presented their research findings as podium talks during the last two weeks.

Program Outcomes from 2010-2013

- The Survey Monkey website was used to evaluate student satisfaction.
- All 19 students were invited to participate – 17 students completed the survey.
- Rating-based questions were as follows: 1. Pain 2. Fair 3. Good 4. Very Good 5. Excellent
- Student satisfaction data are any shown.
- 94% of students reported that they would recommend the summer program to their friends.
- 93% of students reported that the weekly seminars enhanced the summer research experience.

Funding & Administrative Support for the Summer Research Fellowship

- ASSET & NIH Funding
- Bristol-Myers Squibb Field Trip 2012
- Average Ratings
- Field Trip / BMS
- Summer Program Satisfaction
- Summer Program Satisfaction
- Summer Program Satisfaction
- Summer Program Satisfaction
- Summer Program Satisfaction
- Summer Program Satisfaction
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- Summer Program Satisfaction