

Integrative Physiology and Pharmacology Graduate Program

Annual Report June, 2014

The Integrative Physiology and Pharmacology program trains Ph.D. and M.S. in Biomedical Sciences students in a broad range of research areas and methodologies, ranging from molecular to human studies. The 2013-14 academic year census of students comprises 23 Ph.D. and 2 M.S. students, and we graduated 6 Ph.D. and 2 M.S. students. The IPP students submitted or published 45 manuscripts or papers in high-quality peer-reviewed journals in this academic year. IPP students co-authored 54 abstracts presented as oral or poster presentations at professional society meetings. Our students were supported from NIH grants (R01 or program projects), with one from the Army, one governmental, two T32 training grants, and one National Research Service Award. Among the prestigious awards received this year by IPP students are: Council for High Blood Pressure Research: Onsite Poster Competition Award, Finalist, *Nature* Careers Columnist Competition, WFU Research Day 1st place poster, WFU Research Day 3-min Thesis Finalist, WFU Sundberg Award, Avon Foundation, WFU Surgical Sci Silver Award, and Best Poster ASGTC.

Professional development is an important aspect of the IPP program. Nine of our students participated in organized teacher-training activities in preparation for academic careers. Three students who plan to progress to jobs in industry included in their training an Wake Innovations internship, and one entered the Ph.D./MBA program. Extramural training included attendance in the Venture Capital Workshop, the Annu Triangle Statistical Genetics Conf, and the NIGMS Short Course on Stat Genetics & Genomics, and ACS Certification in Prof Chem Education. Our students have participated in several prestigious programs in this academic year, including team leader in the National Biotech Case Competition, and Organizer of the National Biotech Case Competition.

Outreach and service are hallmarks of the IPP program. Our students have also been active in professional organizations including Alpha Sigma Phi, Amer Soc. Pharmacol. & Experimental Therapeutics (Student Rep), and the American Physiology Society. IPP students served as volunteers for graduate school activities including recruitment, orientation, the Honor Council and the Graduate Student Association (Current President). Extramural volunteer activities in public service have included the Susan B Komen Walk for the Cure, Special Olympics, and Red Cross. Students also volunteered time for educational and public information activities including Kernersville Cares for Kids, SciTech summer program, science fair mentoring and judging, Brain Awareness Council, Health and Effectiveness Council.

The strengths of the Integrative Physiology and Pharmacology program include the comprehensive training program in both physiology and pharmacology and commitment to training students for diverse career paths in industry, academia, and beyond. The curriculum is tailor-made to the individual student with limited course requirements but numerous

opportunities for individualized curriculum development. Quality control is assured because our comprehensive examination prior to Advancement to Candidacy evaluates the strengths and weaknesses of students to better prepare them for subsequent careers. We have a breadth of potential mentors/topics of research, and our faculty have strong teaching and mentoring experience and enthusiasm for graduate education in research. Our students receive individualized attention (no “factory” laboratories) in research areas relevant to national health needs of the future. Because of our diverse and clinically relevant research, we are well-positioned to grow in many of the research initiatives of the institution. The increasing demand from pharmaceutical/biotech companies for scientists well trained in the fundamentals of systems physiology and pharmacology is an opportunity, as more development is occurring in smaller companies. Thus, our cross-disciplinary collaborations can lead to workforce development opportunities.