



College News

winterprecautions > WCC11 > Farrier2011 > bioapp6100

Building skills and bonds – new course facilitates transition to graduate school



Marcus Wilkes was excited when he learned of his acceptance to Cornell's Biological and Biomedical Sciences (BBS) graduate program at the College of Veterinary Medicine. In the very next breath, though, the reality that he'd be starting over – new professors, new classmates, new culture, new campus, new expectations – began to sink in. It could have been overwhelming, but thanks to a new course, developed and presented by three professors at the College, he and his peers have easily settled into their new lives and are making the most of every opportunity.

The new course, “By Scientific Design: Skill-building for a Career in Life Sciences,” positions students to network, write, and constructively critique, all practical skills that when taught early in a graduate student's career help them to become superior investigators who conduct quality research and communicate it maturely.

“The premise for the course is that these students are experiencing and will continue to experience similar levels of stresses and successes in this program and throughout their lives,” said Dr. Mark Roberson, chair of the BBS graduate program and professor of physiology. “One of our goals is to foster an environment and structure opportunities for these students to establish support systems that will serve them personally and scientifically for the rest of their lives.”

In the team-taught course, students are expected to write grants, offer public presentations, design experiments, interpret data, and analyze literature. Students are also gaining practical experience with common approaches used in virology, protein biochemistry, and bioinformatics.

“While reflecting on the outcomes of these practical exercises, we encourage the students to think critically about scientific integrity, responsible conduct in research, as well as some of the more technical aspects of lab work,” said Dr. David Lin, an associate professor of neurobiology. Lin developed and teaches the course with Drs. Holger Sondermann and Jim Casey, associate professors of molecular medicine and virology, respectively. “The course is a tool to help students make the transition from undergraduate life to a world where they are expected to see the big picture, to become a scientist, and to think between disciplines and across biology. It is also designed to demonstrate that science is about being honest. We spend a great deal of time working on the art of giving and taking constructive feedback. I've seen tremendous growth in

just the first few weeks. The same students who were initially nervous about sharing thoughtful insights have now started asking important questions and analyzing ideas and concepts as well as those on any panel I've seen."

After only two weeks, the students were required to write a grant proposal requesting funding from the National Science Foundation. David Gludish, also a student in the course, was familiar with the grant-writing process, but this time, he said, was different.

"We talked about successful theories and strategies for writing grant applications," said Gludish, indicating that these are skills most graduate students don't bring to the task. "We discussed the review process and the fact that successful applications must both emphasize the science and target the specific audience when presenting the proposed experiments or past data. It's the process of bringing your specific expertise to the panel and selling the data or system to the panel based on specific grant criteria or published missions of the foundation that prevails in successful applications."

This new course complements a variety of other programs available to students in the BBS program, including a robust orientation week-long session upon arrival, an annual **Symposium event** that is organized and coordinated by students for students, a newly established mentoring program that connects senior students with those in their first year and a newly launched partnership with Cornell's Center for Teaching Excellence to establish the **Biological and Biomedical Sciences Graduate Research and Teaching Fellowship Program**, the first subject-specific teacher training offered at Cornell.

As Roberson said, "The BBS Oversight Committee is committed to supporting our graduate students and will continue to find other programmatic ways to enhance the graduate education experience."

For more information on the BBS Program's Graduate Program, please visit: www.vet.cornell.edu/OGE/