Extension and Instruction

306P  The VT-PREP: A training program for closing the gap between biomedical and agricultural sciences. E. J. Smith* and E. A. Wong, Virginia Tech, Blacksburg, VA.

Graduate education in the animal sciences continue to have several challenges including the underrepresentation of minorities in programs at Land Grant Institutions, lack of funding compared with NIH-related research, and interest from undergraduates. Since 2003, using competitive funding from the NIH, we have developed and implemented a Postbaccalaureate Research and Education Program (PREP) for students underrepresented in the biomedical sciences that could be a model for the animal and other agricultural sciences. Now in its third cycle, following the first competitive renewal, almost 80 students have participated in the program. The students originated from different areas of the country plus Puerto Rico and the US Islands. Their areas of research have varied from biomedical engineering to behavioral sciences to molecular biology. Faculty mentors, exceeding 50, have included scientists in diverse departments and colleges including agriculture, engineering and humanities. The program has succeeded in placing almost 80% of scholars in PhD programs at research-intensive institutions including land-grant and Ivy League institutions. Nine scholars have received PhDs and one MD. The training program provides an opportunity for non-minority faculty to work with URMs and vice versa helping to overcome fears and stereotypes. The university should provide matching funds to help with recruitment and community building activities that lead to a critical mass that attracts others and keep the applications coming. For the 5 to 7 slots we normally have each year, our applicant pool exceeds 70 students. This number is almost 3-fold that received by any large animal science department including ours. If our departments and grad programs are to grow, PREP offers an opportunity and an innovative approach.

Key Words: training grant, underrepresented minorities, postbaccalaureate, graduate education


A rapid response team comprised of participants from the college of agriculture (including cooperative extension), department of agriculture, state conservation districts and industry stakeholders was formed. The team deals with issues concerning farms and their neighbors. The majority of the issues the team responded to dealt either with environmental or pest effects on farms and their neighbors. Response includes a rapid assessment of the issues, site visits and recommendations for mitigation of issues. In complex or larger geographic impacts, targeted extension programs for mitigation are employed to assist in suppression of pests and other issues in the community. The use of integrated pest controls, mapping, and cloud-computing technologies help the team in coordination and control. Since 2005, the team has responded to over 50 calls requiring team involvement. With the exception of 2 cases, the issues have been resolved within 3 wk of the first call. The remaining cases have taken more than a month to clear but have been cleared. Farmers have reported an improvement in knowledge surrounding IPM and over 80% have adopted one or more methods of IPM for vector control in poultry housing.

Key Words: extension programs, vector control, IPM, response teams, environmental impacts

308P  The diversity of scientific journeys: Getting into and succeeding in science. E. Smith*, A. Diaz, S. Culver, D. Bevan, E. Wong, and A. McNabb, Virginia Tech, Blacksburg, VA.

It turns out that the path for getting into science is as varied as science itself. Succeeding, however, requires a path that cuts across disciplines and is less diverse. Since 2003, as part of a NIH training program, we asked 100+ scientists about their scientific journeys and the reasons and factors that help sustain their interests and retention in the chosen discipline. The scientists, from industry, the federal government, and primarily research institutions, ranged in rank from research associates to distinguished professors and included 3 members of the US National Academy of Sciences. About 20% of the participants were local or associated with Virginia Tech and were primarily women and minority scientists. For some, a path into science started early in middle school, though for most it began in the undergraduate years. Challenges faced included juggling children in graduate school to divorce and other family issues. Almost all the scientists identified mentors outside of family and graduate program as having affected their pursuit of a career in science. High motivation and commitment were also identified by over 50% as having a significant impact on tackling the difficulties that arise in the conduct of a dissertation research. While money to invite speakers was instrumental in this project, partnerships with departments and programs also contributed. This provides a model for other institutions in maximizing the visit of scientists to not only open up avenues for research collaboration, but for students to acquire additional skills in surviving graduate school. What emerged from these retrospectives by successful scientists include the observations that minority graduate students face challenges common to all graduate students and that those that are unique can be solved and do not have to be fatal.

Key Words: scientists, seminar, scientific journey, graduate education

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