Essential Features of an RET Program: Teachers as Scientists, Scientists as Teachers

PATRICIA DIXON, National High Magnetic Field Lab.

Research Experiences for Teachers (RET) programs provide the ultimate professional development opportunity for K-12 educators. Unlike typical workshops or summer institutes, however, they are long term, require a great deal of support from scientists acting as mentors, and are administratively demanding. Designed to provide authentic research experiences, science teachers work with a scientist on a research project that typically ends at the completion of the 6-8 week program. Translating this experience into changes in teacher practice or into classroom materials and experiences is the teacher's responsibility. There are several things to consider when discussing a successful RET program and each of these will be addressed in this talk – teachers as scientists, scientists as teachers, support for teachers, and support for scientists. Our expectations as mentors and/or program managers are that there will be a measurable difference in how teachers understand the enterprise of science, how students become engaged in science, and how science is taught. The realities of classroom instruction and recent research in how RET programs affect teachers point to a much more subtle result. The challenge, then, is how to move from knowing that RET programs are "effective" or "meaningful experiences" supported by anecdotal data to showing through empirical evidence that it makes a difference in how teachers approach and teach science. This requires purposeful planning and inclusion of program features that address essential elements of science teaching. This talk focuses on structured activities conducted at the Magnet Lab in Tallahassee, Florida, that help teachers make sense of their experiences while working in diverse laboratories and that help teachers translate that into changes in classroom instruction.