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By Cathy Kessel
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During her term as president from 1987 to 1989, Rhonda Hughes established the AWM-NSF travel grants program to enable women mathematicians to attend research conferences in their fields. The travel grants program has continued, and expanded to include mentoring grants. These are intended to help junior women to develop a long-term working and mentoring relationship with a senior mathematician. They provide funding for an untenured woman mathematician to travel to an institute or a department to do research with a specified individual for one month.

Over the years, a number of AWM members, myself among them, have been interested in using the travel grants in order to attend conferences on mathematics education research or educational research. In North America, conferences for mathematics education researchers include the National Council of Teachers Mathematics Research Presession and the annual meetings of the American Educational Research Association, the North American Chapter of the International Group for the Psychology of Mathematics Education, and MAA’s Special Interest Group on Research in Undergraduate Mathematics Education. World-wide, there are the International Congress on Mathematical Education (ICME, held every four years), annual conferences of the International Group for the Psychology of Mathematics Education, and various “one-off” meetings.

As someone who has tried to find financial support for mathematicians to attend these meetings or learn about educational research in other ways, I am well aware that such support was and is rare. (Note, however, that mathematicians are now eligible for ICME travel grants.) Similarly, mathematics education researchers are not frequently seen at meetings of mathematicians—even meetings addressed to general mathematical audiences such as the Joint Mathematics Meetings or MathFest. In 2003, this issue arose in an AWM Education Committee discussion. This conversation generated the idea of expanding the AWM travel grants to include women with interest or involvement in mathematics education research.

The travel grants program was expanded to do just that when its funding was renewed in 2005. In addition to supporting women mathematicians, the travel grants now support women in two other categories: mathematicians attending a research conference in mathematics education or related field and researchers in mathematics education or related field attending a mathematics conference. The mentoring grants still support junior researchers in mathematics, but they may now also be used by women mathematicians who wish to collaborate with an educational researcher or to learn about educational research.

Those interested in taking advantage of these grants might want to be aware of a few
Unlike learning about results in one’s own discipline, learning about research in an area quite different from one’s own is not always a matter of picking up a book or article. Technical terms in educational research are easy to misinterpret—all the more so because definitions aren’t explicitly given as they often are in mathematics. And, second-hand accounts of research in education can be misleading. Just like media accounts of mathematics, media accounts and even guides for educators who are not researchers may describe findings of educational or psychological research inaccurately or draw unwarranted implications.

Moreover, there may be major epistemological differences between mathematics and mathematics education research. Gerald Goldin, who, remarkably, conducts research in mathematical physics and in mathematics education (and is the father of Michler prize winner Rebecca Goldin) has written about the “cultural divide” between researchers in mathematics education and researchers in mathematics.\(^1\) His article includes a striking anecdote: “An acquaintance who moved several years ago from a physics department to a graduate school of education in the United States described the resulting ‘culture shock’ to me quite seriously as greater than what she had experienced in emigrating to America from Russia.” Such differences in knowledge and assumptions sometimes result in outbreaks of the “Math Wars”—disagreements among mathematicians, mathematics educators who are not researchers, mathematics education researchers, and others. Some of these clashes have been mentioned in the Education Column, most recently by Ginger Warfield in May.

Efforts have been made to achieve “common ground” in the Math Wars and, as a part of that, for mathematicians to participate in reports on school mathematics. For example, MAA’s Common Ground project involved “focused discussions on flash point issues in K–12 mathematics education.” Female mathematicians have participated in some of these efforts, but not often in high-profile projects. For example, in national reports on mathematics education such as the National Mathematics Advisory Panel Report, the National Research Council Report Adding It Up, and the RAND report on mathematics education Mathematical Proficiency for All Students: Toward a Strategic Research and Development Program in Mathematics Education, all those with a background in research mathematics listed as panel or committee members are male. A happy exception (or a new trend?) is Sybilla Beckmann’s presence on the National Research Council committee for Mathematics Learning in Early Childhood: Paths Toward Excellence and Equity.

Another area of concern is claims about the nature of mathematics or mathematicians by psychologists or mathematics education researchers. Such claims are especially relevant to the AWM when they are made in the context of research on mathematics and gender. Some of these, based on misunderstandings of mathematics, were pointed out in the

1990s by Jean Bricmont and Alan Sokal in their critiques of post-modernism. More recent examples include the assertion that mathematics is not “people-oriented,” therefore women are less likely to be interested in it. (Somehow, the interaction with students and colleagues that is a part of many academic careers does not qualify mathematics as “people-oriented.”)

The nature of mathematics is but one aspect of mathematics education. *Critical Variables in Mathematics Education*, a survey of empirical findings in mathematics education research before 1975, begins with this topic, but considers a wide range of empirical factors. Its author, Ed Begle, was a mathematician who became an education researcher. A saying attributed to Begle may be a useful heuristic for mathematicians: “Mathematics education is much more complicated than you expected, even though you expected it to be more complicated than you expected.” Rather than describe the nature of research in this subject, I will instead refer you to two articles written with mathematicians in mind. Michèle Artigue’s article “The Teaching and Learning of Mathematics at the University Level: Crucial Questions for Contemporary Research in Education” appeared in the *Notices of the American Mathematical Society* in 1999. This was followed by Alan Schoenfeld’s “Purposes and Methods of Research in Mathematics Education” in 2000. Both of these give an overview of research in mathematics education—with caveats. As Artigue notes, “Diverse approaches coexist, making generalizations difficult. . . . This diversity is doubtless tied to the relative youth of the field, but it results also from the complexity of the studied phenomena; a single point of view seems insufficient to encompass this complexity.”