This paper examines the nature of the core problems in research in education and analyzes the unique contributions that mathematicians can bring to the posing, framing, analysis, and solutions to those problems. Using perspectives drawn from Andy Magid’s work together with what we have learned from our own efforts to bridge different disciplinary training and professional experience, we propose five fundamental contributions that mathematics – and mathematicians – can make to research in education. We also consider the challenges posed for mathematicians who aspire to engage with the world of education research and discuss implications for their preparation and engagement in ways that make possible the unique contributions that they can make to solving important problems in education. (Received September 22, 2009)