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Ashley L Suominen* (suominen@uga.edu). *Connecting Abstract Algebra to Secondary School Mathematics: How Mathematicians and Mathematics Educators Discuss Mathematical Connections.*

Many stakeholders concur that secondary teacher preparation programs should include study of abstract algebraic structures, and most certification programs require an abstract algebra course for prospective mathematics teachers. However, research has shown that undergraduate students struggle to understand fundamental concepts and, upon completion of the course, were unable to articulate connections between abstract algebra and secondary school mathematics. This two-part study involved a textbook analysis and a series of expert interviews. In the textbook analysis, I identified potential connections, categorizing them according to four types: alternate or equivalent representations, comparison through common features, generalization, and hierarchical or inclusion. I then interviewed 12 mathematicians and mathematics educators involved in abstract algebra research to understand how they describe connections between abstract algebra and secondary mathematics. Participants' descriptions of connections reflected their experiences with the secondary curriculum and differed according to their individual conceptualizations of abstract algebra. That is, participants with views of abstract algebra based on axioms, solving equations, or geometry prioritized different sets of connections. (Received September 12, 2014)