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**Hwa Young Lee\***, hylee00@uga.edu, and **Hamilton Lee Hardison**. *Foregrounding the Background: Two Uses of Coordinate Systems*.

Coordinate systems, such as the conventional Cartesian coordinate plane, are used as representational tools in various domains of mathematics such as algebra, geometry, and statistics. Perhaps because of their prevalence in the presentation, learning, and teaching of mathematics, often times coordinate systems are taken for granted. In this report we will present a distinction between two uses of coordinate systems—spatial coordination and quantitative coordination—and discuss the educational implications that follow from this distinction. We will illustrate this distinction with examples from an analysis of algebra, geometry, and statistics textbooks. By foregrounding differences in the ways coordinate systems are used in mathematics, we provide a tool for examining students' difficulties in understanding representations of quantitative relationships or geometrical objects in coordinate systems. Additionally, we encourage mathematics educators to attend to these different uses of coordinate systems in order to support students' balanced understanding of both uses. (Received September 20, 2016)