

1014-O1-1540      **Barbara Edwards\*** ([edwards@math.oregonstate.edu](mailto:edwards@math.oregonstate.edu)), Department of Mathematics, Oregon State Univ., Kidder Hall 368, Corvallis, OR 97331, and **Corinne Manogue, Gulden Karakok** and **Tevian Dray**. *College Physics Majors' Mathematical Reasoning*.

The difficulty of transferring mathematical knowledge from the mathematics course setting to a science course setting is well known. The authors of this paper represent the mathematics and the physics sides of this issue. Using the frame of Krutetskii's work in students' problem-solving ability, we outline a research project designed to discover students' tendencies toward analytic, geometric or harmonic reasoning and the links of those tendencies to the depths of their understandings of mathematical and physical concepts. Our data consists of the results of two semi-structured, task-based interviews with twelve junior-level physics majors. In this talk we will outline our research design and present some examples of geometric, symbolic and harmonic reasoning from our data. (Received September 28, 2005)