

1014-G1-1430 **Geoffrey D Kuhlmann*** (ag7895@usma.edu), Department of Mathematical Sciences, West Point, NY 10996, and **Frank Wattenberg, Joseph Lindquist** and **John Jackson**. *Assessing Student Problem Solving Abilities Using Complex Projects*.

Under a grant from the NSF, the USMA math curriculum has been changing to better meet the future needs of its students. A common thread in all of the math courses is an emphasis on problem-solving. The courses have begun to emphasize the use of effective problem solving strategies to solve complex and often ill-defined problems. They nurture creativity, critical thinking, and exploit technological tools that enhance an understanding of data analysis. In order to allow students to effectively navigate through a complex problem, they must be given time to work through and wrestle with the complexities of a problem. The best way to afford the students this opportunity is to give them a project with a week or more to complete the work. In addition to requiring them to conduct a thorough analysis of the problem, a project also requires them to effectively communicate their solution with a technical paper and or a presentation. This presentation will discuss the use of course-wide projects to assess the student's ability to effectively solve complex problems. The presentation will conclude with three example projects which have been used in both the first semester introductory math course as well as in Calculus I to assess the student's problem solving abilities. (Received September 28, 2005)