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**Gail Kaplan\*** (gkaplan@towson.edu), Towson University, Department of Mathematics, 8000 York Road, Towson, MD 21403. *The Aha! Experience in AP Calculus: Projects Designed for a Stimulating Journey on a Road of Discovery*. Preliminary report.

“All genuine learning comes about through experience.” says John Dewey. Learning mathematics is not a spectator sport. The primary objective of my quest for an alternative approach to teaching advanced placement calculus in the high school classroom focused on vigorous student participation in the learning process. The basic philosophy is for students to examine examples, make conjectures, consider further examples, modify conjectures, and hopefully, have an “Aha!” experience. The majority of class time is spent with students working in groups on projects which lead the students to “discover” the next calculus concept to be covered. After a project is completed, we discuss the ideas and justify them. The students already believe and understand the major concepts because they have created them during the project. Thus, when we prove a theorem the student is able to concentrate on the justification, rather than what the theorem means. The words of one student provide a perfect summary, “You really understand the concept well by the time you finish. In order to finish, . . . you need to come up with the concept yourself and this makes it easier for you to use it in the future, . . .The element of discovery involved gives you self confidence . . .” August 27, 2008