Meeting: 1003, Atlanta, Georgia, MAA IPS Z3, MAA Invited Paper Session on Worlds of Interactive Mathematics, Part II: The Legacy of James E. White

1003-Z3-470   **Margie Hale*** (`mhale@member.ams.org`), Dept. of Mathematics, Stetson University, DeLand, FL 32723. *Interactive Investigation of Geometry through Light Rays.*

The reflection and refraction of light rays demonstrate a wide variety of mathematical concepts. The Mathwright workbook 'Light' offers many different environments for the exploration of geometry, calculus, and differential equations. The ideas of symmetry, similar triangles, conic sections, trigonometry, derivatives, optimization, and direction fields are treated at several different levels, from advanced middle school through college. The talk will offer a demonstration of the workbook, which includes pages for guided discovery, experimentation and conjecture, and quizzes. (Received September 15, 2004)