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Candice M. Quinn* (cmq2b@mtmail.mtsu.edu). *Connecting Calculus to the Real World through a FAST, Fun, and Furious Problem.*

The Formula One Racing Strategy project has numerous solutions and covers a range of concepts learned in algebra, precalculus, and calculus. It was developed to help students make connections between a real-world competitive application of calculus and content in class such as constructing equations, averages, limits, rate of change, summation, and integration. A guided workbook containing the driving question, metacognitive questions, and questions linking the calculus in class to the project was created to help students reason through the project. Parameters about the current Formula One Grand Prix race are provided and students are asked to calculate the optimal refueling strategy for one of the drivers. First, they are asked to brainstorm ideas for solving the problem before learning any calculus. Next, students worked in groups for at least one hour a week for six weeks on aspects of the project leading toward a final solution. Last, a class wide race simulation brings the students solutions to life. The goal of the simulation is to beat the instructor, who has the optimal solution, and win the race. This presentation will include a description of the project, solutions, student work, and feedback from three years of implementation in an accelerated summer Calculus I course. (Received September 23, 2018)