In this talk, we describe the 24-hour Mathematical Modeling Challenge (24MMC), an extracurricular mathematical modeling event that exposes undergraduate students to mathematics as it can be applied to real-world problem solving. We give an outline of the rules, structure, and outcomes from the contest, with particular focus on how this contest has been effectively used by students as a gateway into undergraduate research. Our experiences have shown that participation in a 24MMC or similar event helps to identify potential undergraduate research students, provide ideas for undergraduate projects in applied mathematics, and promote resourcefulness and independent research among students. (Received September 16, 2014)