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Mathematical Analysis of Diabetes in America. Preliminary report.

An estimated 7% of the United States population, about 20.8 million children and adults have diabetes. While an estimated 14.6 million have been diagnosed, 6.2 million people (or nearly one-third) are unaware that they have the disease. The economic impact is staggering, and the topic rich in interdisciplinary discussion. This discussion uses diabetes as the motivator to integrate problem solving, mathematical modeling, linear algebra and recursive relationships into a cohesive semester long project at the undergraduate level. The scope of the discussion will include project development, implementation, findings and results after completion by over 1000 students. (Received September 20, 2007)