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**Bruce Pollack-Johnson\*** ([bruce.pollack-johnson@villanova.edu](mailto:bruce.pollack-johnson@villanova.edu)), Department of Mathematical Sciences, Villanova University, 800 Lancaster Avenue, Villanova, PA 19085. *A Project-Based Re-Engineering of Business Calculus Focusing on Solving Real Problems Using Models and Technology: Change "Will I Ever Use This?" to "Wow! Math Can Really Help Me!"*. Preliminary report.

We present an integrated, project-based approach to business calculus. The first semester focuses on single-variable problem solving; the second semester focuses on multivariable problem solving. Both semesters emphasize real-world problem solving using math models, calculus, and technology. Students work on semester-long projects based on problems from their own lives that unify the major math topics of each semester. Working on them, students learn the 5 major stages of real world problem solving: defining the problem, formulating a model, solving a math version of the problem using the model, checking the model and solution (including verification, validation, and sensitivity analysis), and synthesizing conclusions and implementing solutions (including estimating margins of error and biases). We will show students' transparencies of their projects, and will demonstrate original Excel templates. With this approach, student evaluation comments have changed from "When am I ever going to use this stuff?" to "Gee! I never knew math could really be useful to me!". The teaching effort required is worth it because of the impressive effort that students put into these projects, and students report that working on them is an effective and enjoyable way to learn the course content. (Received September 22, 2006)