

Business College Support of Mathematics for Business Decisions Motivates Students

By Richard Thompson

This has been an active and successful year for the MAA's new electronic texts, *Mathematics for Business Decisions*. We have showcased the program in nineteen workshops at national and section meetings and have finalized arrangements for translation of the e-texts into Spanish. Additionally, automated data and solution generators have been prepared to help instructors create interesting data sets for student projects.

Support From The Business College

In the midst of all this activity, one of the most significant aspects of the program has been an increase in student motivation arising from a continuing interdisciplinary relationship with our Business College at the University of Arizona. We have enjoyed some truly beneficial support from the Eller College of Business and Public Administration.

- While the program was under development, my co-author and head of the Finance Department, Christopher Lamoureux, walked across campus three times a week for an entire year to team-teach with me.
- A one-hour report on the program from four of our students was featured by the Business College at a presentation before their national board of business leaders.
- Members of the Mathematics Department are regularly invited to undergraduate Business College faculty meetings.
- We have been asked to set examination questions over *Mathematics for Business Decisions* that are used to screen business student candidates for upper division standing in their college.

- The Business College has made major, systemic changes in their statistics program and their upper division courses to use and build upon what students have

learned in *Mathematics for Business Decisions*.

- Each semester the Business College organizes and runs a two-hour evening "kick-off" program for all *Mathematics for Business Decisions* students.

The last item merits some additional discussion. Last fall Pamela Perry, the As-

Your math, analytical, and problem solving skills are the most significant take-away you'll get from our college.



Pamela Perry

sociate Dean of the Business College, welcomed our students.

Her theme was reinforced by comments from an upper division business student,



Marisa Lucas

I interned for Proctor and Gamble... Math for Business Decisions was very, very relevant.

Marisa Lucas, who had just completed a summer internship.

Mathematical analysis is something we use literally every day.



Robert Lehner

The general meeting closed with comments from a Business College graduate and community leader, Robert Lehner. After the general kick-off program, students met with representatives from the Business College and their own instructors in the mathematics classrooms. The Business College leaders discussed the importance of working in teams and then conducted a training session on teamwork, using the students' own class teams.

Motivated Students

Given the high level of Business College support and the positive feedback that they receive from upperclassmen, most students are ready to "buy into" *Mathematics for Business Decisions*. The e-texts and the basic structure of the program provide the final steps in getting students to link mathematics and business.

Work is centered around two major business decision projects per semester. Mathematical and computer topics are presented as tools allowing student teams to formulate quantitative results that lead to sound business decisions. Knowing that the mathematics behind two of the four projects won Nobel prizes in Economics during the last ten years, students recognize that they are doing real world business. At the end of each project, teams present their conclusions in both oral and written reports to the class.

What do we see that indicates a high level of student involvement and belief in the value of the program?

- A tradition of dressing in suitable business attire for oral reports has evolved spontaneously from the students in our classes.

- While studying our *Loan Work Out Project*, students from several teams visited local banks and interviewed loan officers to see how our course work cor-

responds to the real world. (Happily, they found out that their project actually does represent what happens in the banking business.) This was done without any faculty suggestions or directions.

- Written comments on student evaluations are much more positive than was the case with our former traditional courses.

"Finally a math class has been created that has useful applications towards the future."

A student in Part 1

- Instructors often comment that, "No one in *Mathematics for Business Decisions* has ever asked, 'How will this be used in business?'"

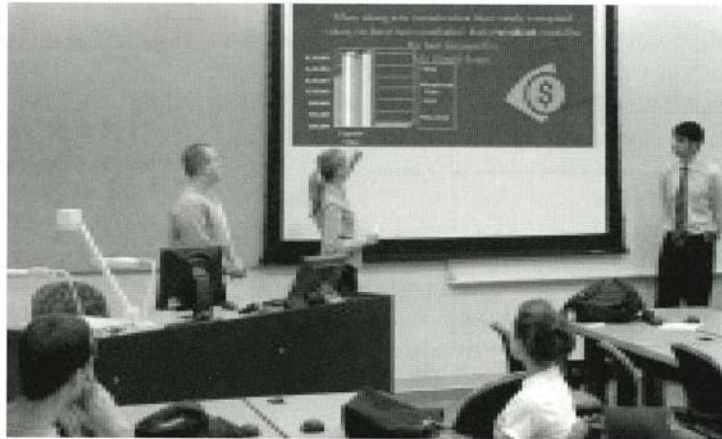
- A team of former *Mathematics For Business Decisions* students from the University of Arizona's nationally top ranked McGuire Entrepreneurship Program has selected our e-texts as the basis for a start-up business project. They plan to attract local venture capital to market our material for on-line corporate and executive training.

How Can You Make This Happen At Your School?

Support for your service courses from client departments or colleges, and the resulting energized and motivated students, lead to successful and rewarding teaching. Experience at the University

of Arizona and at other institutions that are using *Mathematics for Business Decisions* has identified several key components of this achievement.

- **Find a few interested faculty members in the client unit and go to see them in their offices.** To make contacts, ask for



Students report in a *Mathematics Decisions* Class, in a scene from a video on the MBD program.

recommendations from the unit's administrator, contact an undergraduate associate dean or head, or visit the chair of an undergraduate curriculum committee.

- **Ask about the mathematics that the majority of undergraduate students in the client area will actually need for their upper division work and in their future careers.** Do not tell your contacts what mathematics or technology they **should** be using. Ask them for real examples from their fields and show them

that mathematics can add value for their students.

- **Use instructional materials and technology that model what students are seeing in their own field.** Do not rely on what mathematicians have traditionally believed are applied problems in the given area. Find out what problems they actually work on and what tools they use.

- **Learn and use the language and terminology of the client discipline with your students.** Using traditional mathematical topics, terminology, and methods that students do not encounter in their major departments will not make students into mathematicians. It will only cause them to disconnect from, and ignore mathematics.

The *Mathematics for Business Decisions* project is proof that interdisciplinary contacts can be established and that students can be motivated. The main stumbling block in achieving this goal is our own reluctance to venture into new territory and think in novel ways. Break this barrier and reach out to your client departments and colleges. The rewards will be huge.