



BEM

Business Economics & Management
at the California Institute of Technology



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DEPT. OF TRANSPORTATION

STOP
DEPT. OF TRANSPORTATION

ONE WAY
DEPT. OF TRANSPORTATION

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AT&T SONY PANASONIC
NEW ELECTRONICS BAZAR
PHONE STORE

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Developing Analytical Tools for Business

The Business Economics & Management program provides the formal framework for analyzing and operating in complex strategic environments.

Because modern markets are volatile, complicated places, we focus on theory. We study the fundamentals of business strategy—finance, pricing, bargaining, cooperation and conflict, product differentiation, and industry analysis.

Once the theory is in place, we use it to characterize real-world problems and evaluate solutions.



Chelsea Chang, BEM/EE '05: *I think Caltech's BEM curriculum uniquely suits its student body. I'm an electrical engineer, and when I first started thinking about also doing BEM, I didn't know much about business at all. The mathematical nature of the courses makes them more inviting to our science-oriented minds and helps us grasp the fundamental theories of economics and business.*

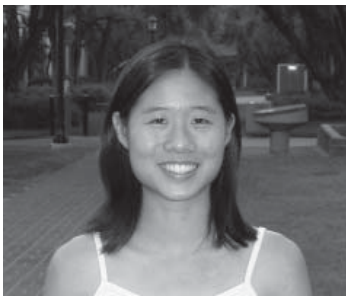


Business Process Optimization

Organizational design. Market design. Risk management.

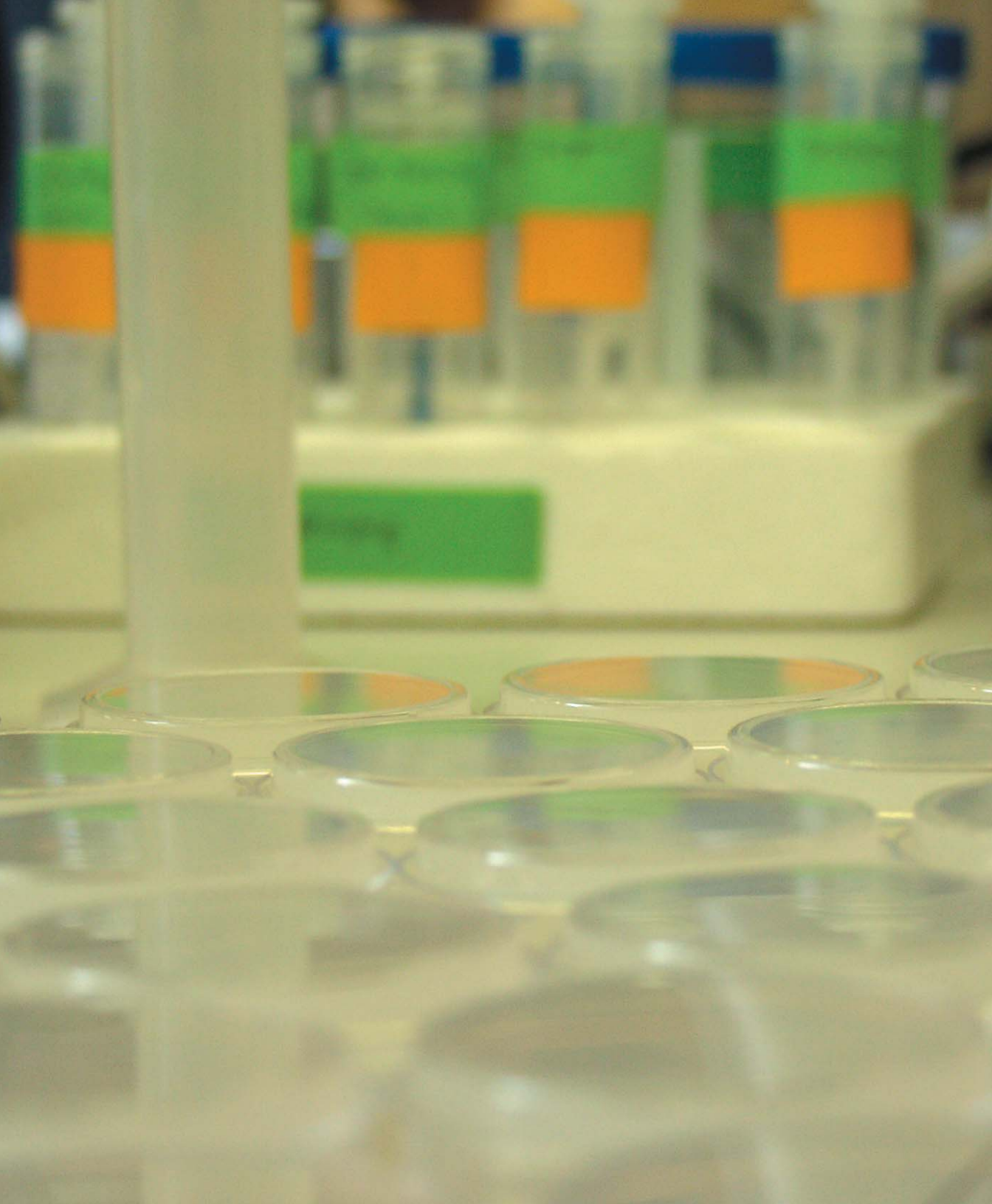
These are the techniques that allow us to investigate and understand how competitors behave in the marketplace.

They show us how changes in the marketplace itself are reflected in the actions of firms, how firms themselves can alter the structure of the marketplace, and how the structure of firms determines their optimal behavior.



Alice Lin, BEM/Biology '05: *I decided to double major in BEM because I didn't want to be stuck behind a lab bench for the rest of my life. Having a BEM major is a practical way to apply my knowledge to the real world. Plus, BEM classes are a lot of fun. The examples used in BEM courses are real current events that come from today's news, not the movements of tiny organisms that can only be seen with a microscope.*





Commercializing and Managing Science

We emphasize businesses with a research focus, especially those involving science, technology, engineering and mathematics. Traditional businesses are not neglected, however, because business tools are universal.

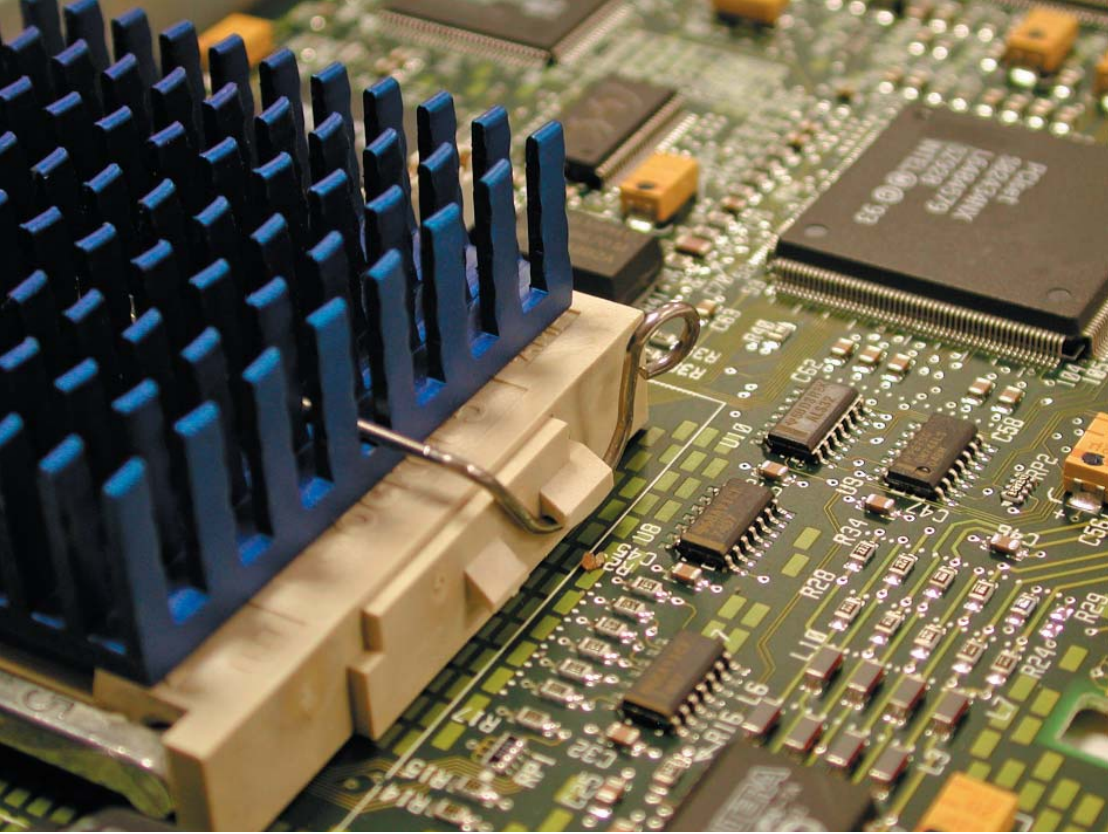


Andrey Evtimov, BEM '06: *Learning from the best is a remarkable experience and the BEM professors at Caltech are truly among the best in their field. Whether it is accounting, finance, investment analysis, or competitive strategy, the BEM classes are both challenging and exciting. Moreover, they are very substance-rich and practical, enabling you to apply classroom knowledge to the real world.*



Charlotte Guo, BEM/Biology '05: *BEM trains a scientist to think "outside the box" and allows us to go beyond pure scientific research. Being a double major has opened many doors for me. After graduation, I plan to go into a MD/MBA program and eventually work in the management side of a pharmaceutical company's R&D department.*





Curriculum and Program of Study

BEM provides practical business theory and tools. It is often used as a double major with a science major, preparing a student to take a managerial role in a technically-oriented firm. However, it is increasingly popular as a stand-alone major for students interested in Wall Street or consulting employment.

Finance (BEM 103, 104 & 105)

The first in this sequence of courses develops basic finance tools, including CAPM and financial econometrics. The second delves more deeply into the theory and practice of asset pricing. The sequence culminates with the theory of option pricing, focused on derivatives analysis. It is built around the main model for pricing and risk management of derivatives, namely the dynamic arbitrage model. The course will focus on implementation of this model in a continuous-time setting. This means that students will be introduced to stochastic integration theory of the Itô type. Various financial problems will be studied, including portfolio insurance and fixed-income portfolio management.

Competitive Strategy (BEM 106)

This course introduces major concepts of business strategy. The main focus is on the interaction of firms and strategies aimed at sustainable profits. Topics include industry analysis, differentiation, bargaining, competitive advantage, product life cycle, organizational design, cooperation, and antitrust. The course is run using class discussion of case studies intermingled with theory.

Organizational Design (BEM 146)

How are employees motivated and trained? How is responsibility and decision-making authority determined in corporations? What is corporate culture and how can it be developed and improved? How is executive compensation determined? What are a manager's ethical responsibilities? These are the main questions of organizational design, which are addressed with a variety of theoretical and empirical approaches.





After Graduation...

The superior intellect of the Caltech student, combined with state of the art business education, is an attractive package for employers. The following companies have employed BEM-trained students:

- * Bain
- * Barclays
- * D.E. Shaw
- * First Quadrant
- * Goldman Sachs
- * Hull Trading
- * Lehman Brothers
- * L.E.K.
- * McKinsey
- * Morgan Stanley
- * PIMCO
- * Susquehanna
- * JP Morgan



Libin Zhang, BEM/Biology '05: *Being a double major in BEM was instrumental in my admittance to Harvard Law School. The BEM major, with only 13 required classes, is an easy and flexible way to demonstrate interest outside science. My extensive expertise in economics, combined with my other line of study, geobiology, should prove invaluable in my pursuit of environmental or international trade law.*



About Caltech

Caltech students are highly motivated and highly accomplished. They work more per unit of education than students at any other school. The institute, located in Pasadena, Calif., was ranked fourth of the world's top ten universities in *The Times Higher Education Supplement* in 2004, and the best national university in *U.S. News and World Report* in 2000.

Caltech students are ambitious and energetic and would make excellent additions to any corporate environment.

Caltech encourages innovators and entrepreneurs. According to the Caltech Annual Report, Caltech registered more U.S patents than any other single university in 2003-04. Since 1995 Caltech has supported the launch of 60 high-technology startups, and undergraduates have been involved in many of them.

Evidence of the highly accomplished and responsible character of Caltech students are their placements at university, corporate and government research facilities all over the world, and at highly successful companies including top consulting firms such as McKinsey, Bain, and BCG, and top Wall Street firms such as Goldman Sachs and Morgan Stanley.

