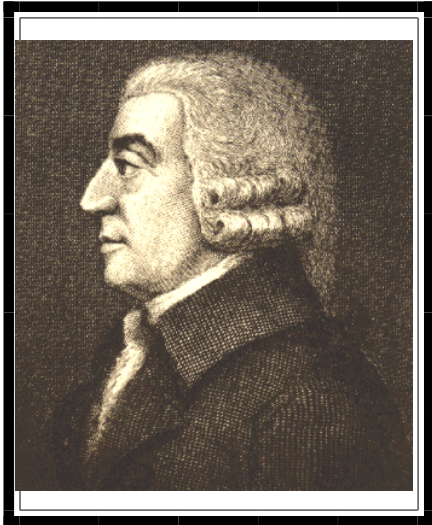

◆ Economics *at Grinnell* ◆

Fall 1999



Some are led to the Economics major as if by an invisible hand

An Introduction to the Major

We have designed this handout for students considering a major in Economics. It will describe the curricular requirements and show how an economics major might fit into a broader academic program. The handout is not a substitute for serious discussion with an academic advisor; you should consult with a member of the department before declaring the major. Still, we hope that these few pages will help organize your thinking about whether a major in Economics will help you meet your educational goals.

The portraits of economists are from the Warren J. Samuels Collection at Duke University, available online at www.econ.duke.edu/Economists/

What is Economics Used For?

Unlike many areas in the sciences and humanities, students often come to college with only minimal exposure to the primary social science disciplines: anthropology, sociology, political science, economics. Many have studied them only as an amalgam called "Social Studies." Often the introductory economics course is their first real exposure to the discipline, and even that provides a limited understanding of how economics can be useful to them. Economics helps prepare you for many types of graduate or professional school, is useful in an eventual career, and complements a wide variety of other undergraduate majors.

New students sometimes think economics is about how to run a business, or how to play the stock market, or how to finance a corporate merger. It isn't. Anyone engaged in those activities needs to know some economics—which they often don't—but they are not the focus of our analysis. Economics is a social science. It studies how economic agents—people, firms, whole societies—allocate their resources to satisfy their needs and wants. Often (though not always) the analysis focuses on economic *policy*: how governments can alter behavior in order to promote economic growth or reduce unemployment or protect the environment, etc. Professional economists are found in a wide variety of jobs besides teaching

and research. All of the departments of the federal cabinet employ research economists, as does Congress, the Federal Reserve, and many other government agencies. Even state governments employ economists. Government economists do such work as analyze the impact of policy decisions, gather data useful for policy makers, or help write

Economics is not about how to run a business or how to play the stock market.

regulations and legislation.

In addition to having economists on staff, many federal and state agencies hire consulting firms to do economic analysis for them. Innovative studies like the giant New Jersey Income Maintenance Experiment were designed and implemented mainly by economists.

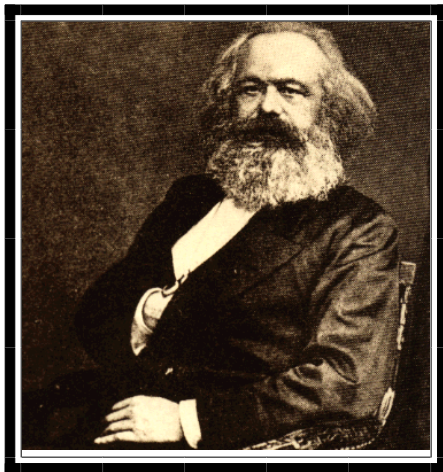
Private companies also hire economists, often for such tasks as econometric forecasting. There are, in fact, large firms whose primary activity is producing forecasts for private-sector clients. Finally, economists can be found in a broad range of private, non-profit organizations such as labor unions, research foundations and lobbying groups.

The majority of economics majors at Grinnell do not become professional economists. For most, economics complements some area

Continued on back page

The Structure of the Major

As indicated in the Grinnell College Catalog, a major in Economics consists of at least 9 courses, involving 34 credits in the field. Students are required to take *Introduction to Economics* (111)¹, as well as two courses in intermediate theory: *Micro-Economic Analysis* (280), *Macro-Economic Analysis* (282). Upper division courses must include two seminars and at least one of the following four: *History of Economic Thought I: The Main Tradition* (284), *History of Economic Thought II: Recovering the Keyne-*



Some see their Economics major as historically inevitable

sian Tradition (285), *Financial and Managerial Accounting* (286), or *Econometrics* (288). We also require *Introduction to Statistics*, (Math 115)², which we follow with our own two-credit *Introduction to Statistics for Economics* (211), which focuses on economic applications of the tools from Math 115. Note that Math 115 does not count toward the required 34 credits in Economics.

Recently the department added one final requirement. Because historical context is so important to economic analysis, we now require each major to take at least one mod-

ern history course. The list of acceptable courses is on the departmental web site (see below).

If your program is typical, you will take the introductory course and one or two 200-level electives in the freshman and sophomore years. Ordinarily you would then take the main theory sequence (282 and 280), statistics (Math 115), and Statistics for Economics (211) in the sophomore and/or junior years. Because the theory courses are prerequisites for seminars, we expect these to be completed by the end of the junior year. Likewise the statistics courses, which provide the background for the empirical work which is frequently discussed in seminars. Both statistics courses are also prerequisites for *Econometrics*. Be aware, however, that once you take the theory courses, you may be ineligible for certain 200-level offerings which are reserved for students

without intermediate theory. Check with your advisor before postponing a 200-level course until after the theory sequence.

Satisfying the above requirements can be complicated by a semester or two off campus junior year. For example, students are not permitted to take either the theory sequence (280 and 282) or their seminars at another institution. If you expect to be away your entire junior year, complete all theory and statistics courses by the end of the sophomore year.³ If planning a semester away, make sure you can complete them *on campus* by the end of your junior year. Discuss off-campus study plans with your advisor before committing to a particular program.

¹ Entering students sometimes satisfy this requirement through advanced placement.

² Math 209 or Math 335 may be substituted for Mathematics 115. Math 336 may be substituted for ECN 211.

³ Statistics may be taken at another institution with departmental approval in advance.

Economics and Mathematics

The Economics Department currently has only one formal mathematics requirement: Math 115. We recommend, however, that economics majors take *Functions and Differential Calculus* (Math 123) and *Functions and Integral Calculus* (Math 124), or *Calculus I and II* (Math 131 and 133). You will find these courses helpful. Much of modern economics has to do with optimization – making the best choices – and optimization theory has its intellectual roots in the differential calculus. Moreover, the spring section of our Microeconomics course (ECN 280) is calculus based. (The fall section requires no calculus. Either course satisfies the 280 requirement.)

Anyone planning to take *Econometrics* and/or *Mathematical Economics*, you will probably find *Linear Algebra* (Math 215) useful. But it is not a prerequisite for either course.

As a general rule, quantitative training is encouraged because it helps develop the type of reasoning economists tend to employ. And graduate study in Economics requires substantial preparation in mathematics as discussed below. Nevertheless, students with only minimal quantitative preparation certainly can, and do, major in economics. If you are anxious about your quantitative background, discuss your concerns with a member of the department.

Economics and Graduate Study

Most economics majors at Grinnell eventually go to graduate school whether in an academic, managerial or professional field. There is no pre-set curriculum for graduate study, not even for those going on in Economics. But we have some suggestions for how the prospective graduate student can get the most out of undergraduate Economics major.

Graduate Study in Economics

Only a minority of Economics majors continue on in this discipline, but recent graduates have attended such prestigious schools as Yale, Stanford, the University of Michigan, Duke, and others. Becoming a professional economist typically means getting a Ph.D. Virtually all well-reputed Ph.D. programs have a first year theory sequence that is heavily mathematical. There is a simple rule of thumb about that first year in graduate school: the more math you have had, the easier it will be. A year of calculus and a semester of linear algebra should be

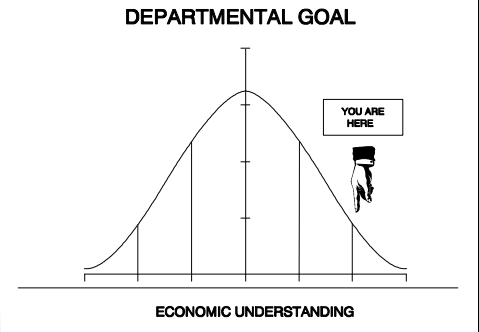
regarded as a *bare minimum*. Most Ph.D. programs strongly recommend work in real analysis (as covered in Math 315, *Foundations of Analysis*). Also, any student considering graduate study in economics should take both *Econometrics* (288) and *Mathematical Economics* (395). It would also make sense to include Math 335 and 336 in your program. These could substitute for Math 115 and ECN 211.

A number of distinguished graduate schools offer specialized degrees in subdisciplines of economics such as agricultural economics, labor economics, or international economics. Degrees in such fields often require less quantitative preparation than does work in standard economics. (Though they usually offer fewer career options.) Students considering such specialized programs should take *Econometrics* and a course or more in the appropriate subfield. (e.g. *International Economics*, *Labor Economics*, etc.).

Public Administration

Economics majors are sometimes attracted to public policy and public administration programs. Graduates in these areas – usually with masters degrees – typically work in federal, state or local government. They are usually managers or administrators, but sometimes work in research. Academic careers are also possible, though there are fewer opportunities than with a Ph.D. in a primary discipline like economics, political science or sociology.

Graduate study in public policy or public administration normally requires less quantitative training than economics, though *Economet-*



rics would likely prove useful. Also, courses related to operation of the government in the economy (e.g. *Public Finance*, *Current State of the U.S. Economy*) might be of special interest.

Business and Law School

Probably the most common areas of graduate study among Economics majors are business and law. Many students are surprised to learn that neither business nor law schools have undergraduate course requirements. They accept students with all kinds of diverse backgrounds. Nevertheless, some courses in the Economic curriculum are especially useful in those disciplines. All business students must eventually take microeconomic theory (our ECN 280), in graduate school if not as an undergraduate. Microeconomics also comes up in law courses. Similarly, *Financial and Managerial Accounting* (286) and *Corporate Finance* (287) are useful to both law and business students. Note, however, that an Economics major is not necessarily better preparation for an MBA or JD than are other majors at the college.



Some think their Economics major gives them a comparative advantage



WANT MORE?

Further information about our program is available at our departmental web site:

www.grinnell.edu/economics/



Some choose not to major in Economics and later regret it

What is Economics Used For?

Continued from page 1

of educational or career interest. Economic thinking is useful in all kinds of social activity. Obviously, business people need to know some economics, as do politicians, policy makers, even ordinary voters. Lawyers use a surprising amount of economics. The views of economists have had enormous impacts on court decisions in such diverse areas as antitrust, wage discrimination, and suits over wrongful death.

Finally, scholars in disciplines like sociology, political science or history gain much from a background in economics. Few social or political problems are completely divorced from economic influence.



SEND US
A MESSAGE

QUESTIONS? You can contact Department Chair Janet Seiz at seiz@grinnell.edu or call her at 515 269-4868

The Economics Faculty

Bradley Bateman, professor, has a B.A. from Alma College, and M.A. and Ph.D. degrees from the University of Kentucky. Bateman teaches courses on the U.S. financial system, the history of economic thought, and monetary policy. His research involves the life of John Maynard Keynes.

William Ferguson '75, associate professor, earned a B.A. from Grinnell. He also holds M.A. and Ph.D. degrees from the University of Massachusetts. He teaches labor economics and macroeconomic analysis courses, and does research on international productivity.

Mark Montgomery, associate professor, received a B.A. from Montclair State College, and M.S. and Ph.D. degrees from the University of Wisconsin. His course offerings include resource and environmental economics, microeconomics and mathematical economics. He is conducting research on valuation of environmental amenities.

Paul Munyon, associate professor, earned his B.A. at

Westmar College and his M.A. and Ph.D. degrees at Harvard. He teaches accounting, statistics and industrial organization. His current research is to develop and evaluate an alternative method of teaching introductory economics.

John Mutti, Sidney Meyer Professor of International Economics, has a B.A. from Earlham College, and M.A. and Ph.D. degrees from the University of Wisconsin. He teaches and does research on international economics and public finance.

Irene Powell, associate professor, has a B.A. from the University of Delaware, and M.A. and Ph.D. degrees from the University of Wisconsin. She teaches courses in econometrics, health economics, and women at work. Her research interests are health economics and industrial organization.

Janet Seiz, associate professor, has a B.A. and a Ph.D. from Duke University. She teaches economic development and income distribution courses, and is researching feminist economics and economic methodology.

Recent Faculty Publications

Bradley Bateman, *Keynes' Uncertain Revolution* (University of Michigan Press, 1996)

William D. Ferguson, "Explaining the Rising Wage-Productivity Gap in the 1980's: Effects of Declining Unionization," *Review of Radical Political Economics*, June 1996.

Mark Montgomery (with Michael Needelman), "The Welfare Effects of Toxic Contamination in Freshwater Fish," *Land Economics*, May 1997.

Paul G. Munyon (with L. Bloom), "The Modern Corporation and Society — Enterprise Teaching at a Liberal Arts Col-

lege," *The Journal of Private Enterprise*, Fall 1988.

John H. Mutti (with Bernard Yeung) "Section 337 and the Protection of Intellectual Property in the United States: the Complaints and the Impact," *Review of Economics and Statistics*, August 1996.

Irene Powell, "The Infant Formula Industry," *The Handbook of American Business*, Vol. II, (Greenwood Press, 1997)

Janet Seiz, "Game Theory and Bargaining Models," *The Elgar Companion to Feminist Economics*, (Edwar Elgar Publishing, 1999).