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Karl E. Case • Ray C. Fair • Sharon E. Oster

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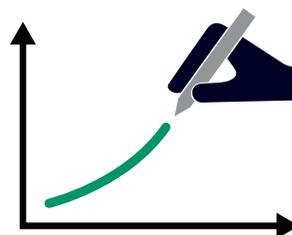
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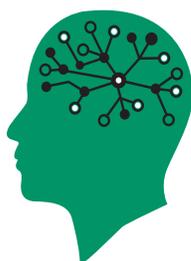
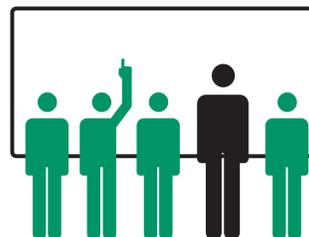
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# Principles of **Microeconomics**

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# Principles of **Microeconomics**

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**Ray C. Fair**

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**Sharon M. Oster** is the Frederic Wolfe Professor of Economics and Management and former Dean of the Yale School of Management. Professor Oster joined Case and Fair as a coauthor in the ninth edition of this book. Professor Oster has a B.A. in Economics from Hofstra University and a Ph.D. in Economics from Harvard University.

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# Preface

Our goal in the 12<sup>th</sup> edition, as it was in the first edition, is to instill in students a fascination with both the functioning of the economy and the power and breadth of economics. The first line of every edition of our book has been “The study of economics should begin with a sense of wonder.” We hope that readers come away from our book with a basic understanding of how market economies function, an appreciation for the things they do well, and a sense of the things they do poorly. We also hope that readers begin to learn the art and science of economic thinking and begin to look at some policy and even personal decisions in a different way.

## What’s New in This Edition?

- The 12<sup>th</sup> edition, Global Edition, has continued the changes in the *Economics in Practice* boxes that we began several editions ago. In these boxes, we try to bring economic thinking to the concerns of the typical student. In many cases, we do this by spotlighting recent research, much of it by young scholars. Some of the many new boxes include:
  - Chapter 3 uses behavioral economics to ask whether having unusually sunny weather increases consumer purchases of convertible cars.
  - Chapter 6 looks at data from Indian reservations to trace out the incidence of excise taxes.
  - In Chapter 7 we describe recent work on how Uber drivers differ from regular cab drivers.
  - Many people currently buy clothes and shoes on line. Chapter 15 describes a recent paper that asks how much value does increased variety in shoe selection produce for consumers?
  - In Chapter 21 we describe work that uses children’s height in India to examine hunger and gender inequality.
  - Chapter 22, our new chapter, contains three boxes, examining the Moving to Opportunity program, birth weight and infant mortality, and the effects of the minimum wage.

In other cases we use recent events or common situations to show the power and breadth of economic models:

- In Chapter 8 we use the example of a Taylor Swift concert to explain fixed versus variable costs.
- In Chapter 9 we explore economies to scale with the example of Google’s advantages in the search market.
- In Chapter 13 we describe “net neutrality” and use it to explore the structure of the telecommunications market.
- In Chapter 16 we look at how firms use carbon prices to motivate managers to be more conscious in the investment decisions about the environment.

It is our hope that students will come to see both how broad the tools of economics are and how exciting is much of the new research in the field. For each box, we have also added questions to take students back from the box to the analytics of the textbook to reinforce the underlying economic principles of the illustrations.

- As in the previous edition, we have reworked some of the chapters to streamline them and to improve readability. In this edition, Chapter 16 has been considerably reworked to include a more comprehensive and up-to-date analysis of environmental issues. This chapter now focuses on externalities, public goods, and common resources. Social choice has been moved to the chapter covering public finance. Chapter 18 has also been substantially reworked to reflect the increased worldwide concern with issues of inequality. Finally, Chapter 21 has been revised to include more of the modern approach to economic development, including discussion of the millennium challenge.

- We have added a new chapter, Chapter 22, “Critical Thinking About Research,” which we are quite excited about. It may be the first time a chapter like this has been included in an introductory economics text. This chapter covers the research methodology of economics. We highlight some of the key concerns of empirical economics: selection issues, causality, statistical significance, and regression analysis. Methodology is a key part of economics these days, and we have tried to give the introductory student a sense of what this methodology is.
- Many new questions and problems at the end of the chapters have been added.

## The Foundation

The themes of *Principles of Microeconomics*, 12<sup>th</sup> edition, are the same themes of the first eleven editions. The purposes of this book are to introduce the discipline of economics and to provide a basic understanding of how economies function. This requires a blend of economic theory, institutional material, and real-world applications. We have maintained a balance between these ingredients in every chapter. The hallmark features of our book are as follows:

1. Three-tiered explanations of key concepts (*stories-graphs-equations*)
2. Intuitive and accessible structure
3. International coverage

### Three-Tiered Explanations: Stories-Graphs-Equations

Professors who teach principles of economics are faced with a classroom of students with different abilities, backgrounds, and learning styles. For some students, analytical material is difficult no matter how it is presented; for others, graphs and equations seem to come naturally. The problem facing instructors and textbook authors is how to convey the core principles of the discipline to as many students as possible without selling the better students short. Our approach to this problem is to present most core concepts in the following three ways.

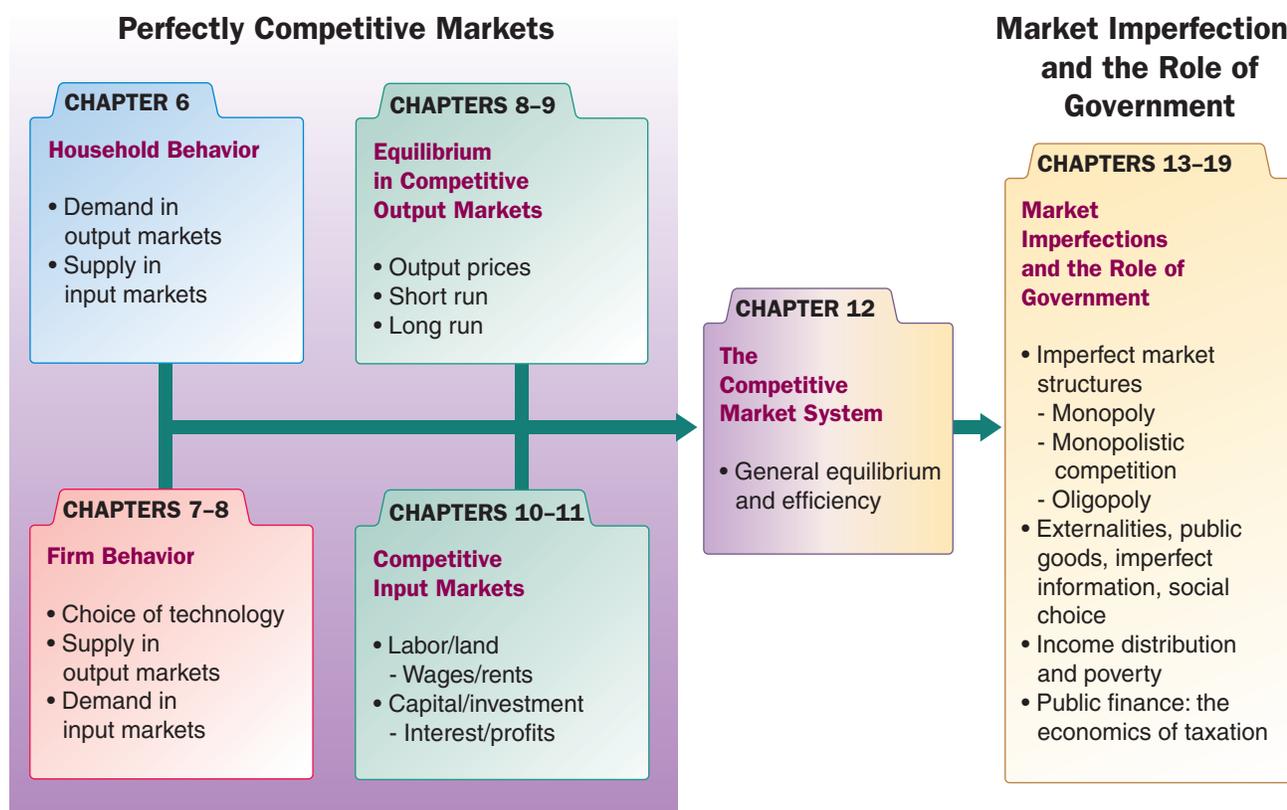
First, we present each concept in the context of a simple intuitive **story** or example in words often followed by a table. Second, we use a **graph** in most cases to illustrate the story or example. And finally, in many cases where appropriate, we use an **equation** to present the concept with a mathematical formula.

## Microeconomic Structure

The organization of the microeconomic chapters continues to reflect our belief that the best way to understand how market economies operate—and the best way to understand basic economic theory—is to work through the perfectly competitive model first, including discussions of output markets (goods and services) and input markets (land, labor, and capital), and the connections between them before turning to noncompetitive market structures such as monopoly and oligopoly. When students understand how a simple, perfectly competitive system works, they can start thinking about how the pieces of the economy “fit together.” We think this is a better approach to teaching economics than some of the more traditional approaches, which encourage students to think of economics as a series of disconnected alternative market models.

Learning perfect competition first also enables students to see the power of the market system. It is impossible for students to discuss the efficiency of markets as well as the problems that arise from markets until they have seen how a simple, perfectly competitive market system produces and distributes goods and services. This is our purpose in Chapters 6 through 11.

Chapter 12, “General Equilibrium and the Efficiency of Perfect Competition,” is a pivotal chapter that links simple, perfectly competitive markets with a discussion of market



▲ **FIGURE II.2** Understanding the Microeconomy and the Role of Government

imperfections and the role of government. Chapters 13 through 15 cover three noncompetitive market structures—monopoly, monopolistic competition, and oligopoly. Chapter 16 covers externalities, public goods, and social choice. Chapter 17, which is new to this edition, covers uncertainty and asymmetric information. Chapters 18 and 19 cover income distribution as well as taxation and government finance. The visual at the top of this page (Figure II.2 from page 144), gives you an overview of our structure.

## International Coverage

As in previous editions, we continue to integrate international examples and applications throughout the text. This probably goes without saying: The days in which an introductory economics text could be written with a closed economy in mind have long since gone.

## Tools for Learning

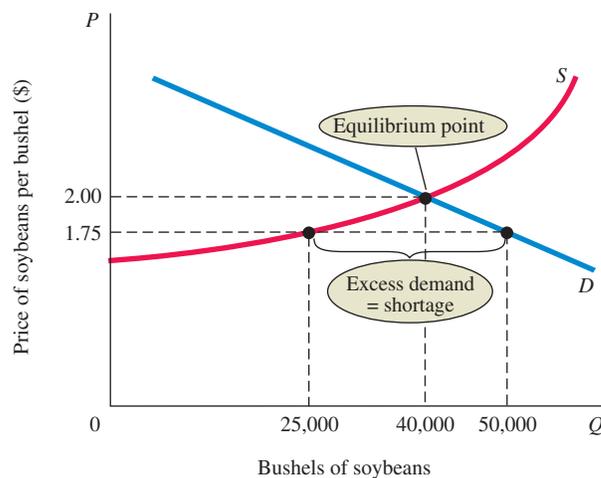
As authors and teachers, we understand the challenges of the principles of economics course. Our pedagogical features are designed to illustrate and reinforce key economic concepts through real-world examples and applications.

### *Economics in Practice*

As described earlier, the *Economics in Practice* feature focuses on recent research or events that support a key concept in the chapter and help students think about the broad and exciting applications of economics to their lives and the world around them. Some of these boxes contains a question or two to further connect the material they are learning with their lives.

### ▶ FIGURE 3.9 Excess Demand, or Shortage

At a price of \$1.75 per bushel, quantity demanded exceeds quantity supplied. When excess demand exists, there is a tendency for price to rise. When quantity demanded equals quantity supplied, excess demand is eliminated and the market is in equilibrium. Here the equilibrium price is \$2.00 and the equilibrium quantity is 40,000 bushels.



## Graphs

Reading and interpreting graphs is a key part of understanding economic concepts. The Chapter 1 Appendix, “How to Read and Understand Graphs,” shows readers how to interpret the 200-plus graphs featured in this book. We use red curves to illustrate the behavior of firms and blue curves to show the behavior of households. We use a different shade of red and blue to signify a shift in a curve.

## Problems and Solutions

Each chapter and appendix ends with a problem set that asks students to think about and apply what they’ve learned in the chapter. These problems are not simple memorization questions. Rather, they ask students to perform graphical analysis or to apply economics to a real-world situation or policy decision. More challenging problems are indicated by an asterisk. Many problems have been updated. The solutions to all of the problems are available in the *Instructor’s Manuals*. Instructors can provide the solutions to their students so they can check their understanding and progress.

## Digital features located in MyEconLab

MyEconLab is a unique online course management, testing, and tutorial resource. It is included with the eText version of the book or as a supplement to the print book. Students and instructors will find the following online resources to accompany the twelfth edition:

- **Concept Checks:** Each section of each learning objective concludes with an online Concept Check that contains one or two multiple choice, true/false, or fill-in questions. These checks act as “speed bumps” that encourage students to stop and check their understanding of fundamental terms and concepts before moving on to the next section. The goal of this digital resource is to help students assess their progress on a section-by-section basis, so they can be better prepared for homework, quizzes, and exams.
- **Animations:** Graphs are the backbone of introductory economics, but many students struggle to understand and work with them. Select numbered figures in the text have a supporting animated version online. The goal of this digital resource is to help students understand shifts in curves, movements along curves, and changes in equilibrium values. Having an animated version of a graph helps students who have difficulty interpreting the static version in the printed text. Graded practice exercises are included with the animations. Our experience is that many students benefit from this type of online learning.

- **Learning Catalytics:** Learning Catalytics is a “bring your own device” Web-based student engagement, assessment, and classroom intelligence system. This system generates classroom discussion, guides lectures, and promotes peer-to-peer learning with real-time analytics. Students can use any device to interact in the classroom, engage with content, and even draw and share graphs.

To learn more, ask your local Pearson representative or visit [www.learningcatalytics.com](http://www.learningcatalytics.com).

- **Digital Interactives:** Focused on a single core topic and organized in progressive levels, each interactive immerses students in an assignable and auto-graded activity. Digital Interactives are also engaging lecture tools for traditional, online, and hybrid courses, many incorporating real-time data, data displays, and analysis tools for rich classroom discussions.
- **Dynamic Study Modules:** With a focus on key topics, these modules work by continuously assessing student performance and activity in real time and using data and analytics, provide personalized content to reinforce concepts that target each student’s particular strengths and weaknesses.
- **NEW: Math Review Exercises:** MyEconLab now offers a rich array of assignable and auto-graded exercises covering fundamental math concepts geared specifically to principles and intermediate economics students. Aimed at increasing student confidence and success, our new math skills review Chapter R is accessible from the assignment manager and contains over 150 graphing, algebra, and calculus exercises for homework, quiz, and test use. Offering economics students warm-up math assignments, math remediation, or math exercises as part of any content assignment has never been easier!
- **Graphs Updated with Real-Time Data from FRED:** Approximately 25 graphs are continuously updated online with the latest available data from FRED (Federal Reserve Economic Data), which is a comprehensive, up-to-date data set maintained by the Federal Reserve Bank of St. Louis. Students can display a pop-up graph that shows new data plotted in the graph. The goal of this digital feature is to help students understand how to work with data and understand how including new data affects graphs.
- **Interactive Problems and Exercises Updated with Real-Time Data from FRED:** The end-of-chapter problems in select chapters include real-time data exercises that use the latest data from FRED.

## MyEconLab for the Instructor

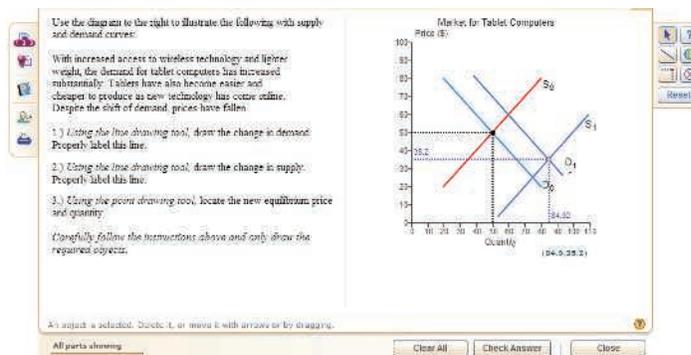
Instructors can choose how much or how little time to spend setting up and using MyEconLab. Here is a snapshot of what instructors are saying about MyEconLab:

MyEconLab offers [students] a way to practice every week. They receive immediate feedback and a feeling of personal attention. As a result, my teaching has become more targeted and efficient.—Kelly Blanchard, Purdue University

Students tell me that offering them MyEconLab is almost like offering them individual tutors.—Jefferson Edwards, Cypress Fairbanks College

MyEconLab’s eText is great—particularly in that it helps offset the skyrocketing cost of textbooks. Naturally, students love that.—Doug Gehrke, Moraine Valley Community College

Each chapter contains two preloaded homework exercise sets that can be used to build an individualized study plan for each student. These study plan exercises contain tutorial resources, including instant feedback, links to the appropriate learning objective in the eText,



pop-up definitions from the text, and step-by-step guided solutions, where appropriate. After the initial setup of the course by the instructor, student use of these materials requires no further instructor setup. The online grade book records each student's performance and time spent on the tests and study plan and generates reports by student or chapter.

Alternatively, instructors can fully customize MyEconLab to match their course exactly, including reading assignments, homework assignments, video assignments, current news assignments, and quizzes and tests. Assignable resources include:

- Preloaded exercise assignments sets for each chapter that include the student tutorial resources mentioned earlier
- Preloaded quizzes for each chapter that are unique to the text and not repeated in the study plan or homework exercise sets
- Study plan problems that are similar to the end-of-chapter problems and numbered exactly like the book to make assigning homework easier
- *Real-Time-Data Analysis Exercises*, marked with , allow students and instructors to use the very latest data from FRED. By completing the exercises, students become familiar with a key data source, learn how to locate data, and develop skills in interpreting data.
- In the eText available in MyEconLab, select figures labeled MyEconLab Real-time data  allow students to display a pop-up graph updated with real-time data from FRED.
- *Current News Exercises*, provide a turnkey way to assign gradable news-based exercises in MyEconLab. Each week, Pearson scours the news, finds a current microeconomics and macroeconomics article, creates exercises around these news articles, and then automatically adds them to MyEconLab. Assigning and grading current news-based exercises that deal with the latest micro and macro events and policy issues has never been more convenient.
- *Experiments in MyEconLab* are a fun and engaging way to promote active learning and mastery of important economic concepts. Pearson's Experiments program is flexible, easy-to-assign, auto-graded, and available in single- and multiplayer versions.
  - Single-player experiments allow your students to play against virtual players from anywhere at any time so long as they have an Internet connection.
  - Multiplayer experiments allow you to assign and manage a real-time experiment with your class.
  - Pre- and post-questions for each experiment are available for assignment in MyEconLab.
  - For a complete list of available experiments, visit [www.myeconlab.com](http://www.myeconlab.com).
- Test Item File questions that allow you to assign quizzes or homework that will look just like your exams
- Econ Exercise Builder, which allows you to build customized exercises

Exercises include multiple-choice, graph drawing, and free-response items, many of which are generated algorithmically so that each time a student works them, a different variation is presented.

MyEconLab grades every problem type except essays, even problems with graphs. When working homework exercises, students receive immediate feedback, with links to additional learning tools.

**Customization and Communication** MyEconLab in MyLab/Mastering provides additional optional customization and communication tools. Instructors who teach distance-learning courses or very large lecture sections find the MyLab/Mastering format useful because they can upload course documents and assignments, customize the order of chapters, and use communication features such as Document Sharing, Chat, ClassLive, and Discussion Board.

## MyEconLab for the Student

MyEconLab puts students in control of their learning through a collection of testing, practice, and study tools tied to the online, interactive version of the textbook and other media resources. Here is a snapshot of what students are saying about MyEconLab:

- It was very useful because it had EVERYTHING, from practice exams to exercises to reading. Very helpful.—student, Northern Illinois University
- I would recommend taking the quizzes on MyEconLab because it gives you a true account of whether or not you understand the material.—student, Montana Tech
- It made me look through the book to find answers, so I did more reading.—student, Northern Illinois University

Students can study on their own or can complete assignments created by their instructor. In MyEconLab's structured environment, students practice what they learn, test their understanding, and pursue a personalized study plan generated from their performance on sample tests and from quizzes created by their instructors. In Homework or Study Plan mode, students have access to a wealth of tutorial features, including:

- Instant feedback on exercises that helps students understand and apply the concepts
- Links to the eText to promote reading of the text just when the student needs to revisit a concept or an explanation
- Step-by-step guided solutions that force students to break down a problem in much the same way an instructor would do during office hours
- Pop-up key term definitions from the eText to help students master the vocabulary of economics
- A graphing tool that is integrated into the various exercises to enable students to build and manipulate graphs to better understand how concepts, numbers, and graphs connect

The screenshot displays the MyEconLab interface. On the left is a navigation menu with options like 'My Courses', 'Manage Course', 'Course Home', 'News', 'Assignments', 'Study Plan', 'Results', 'Pearson eText', 'Document Sharing', 'Multimedia Library', 'OnStar Resources', and 'Dynamic Study Modules'. The main area shows a 'Study Plan' for 'Case/Fair/Oster: Principles of Economics, 10th MyEconLab'. It indicates 'You have earned 0 of 3.51 mastery points (MP)' and lists sections to work on next, such as '0.1 Tutorial: Examples for Students' and '1.1 Why Study Economics?'. Below this is a graphing tool window titled 'Market for Cigarettes'. The graph plots Price (\$) on the vertical axis and Quantity (Cigarettes) on the horizontal axis. It shows a downward-sloping demand curve and an upward-sloping supply curve. A vertical line represents a quantity restriction, and a horizontal line represents a price support. A 'Well done!' pop-up window is overlaid on the graph, indicating successful completion of the exercise.

**Additional MyEconLab Tools** MyEconLab includes the following additional features:

- **Pearson eText**—Students actively read and learn with more engagement than ever before.
- **Glossary flashcards**—Every key term is available as a flashcard, allowing students to quiz themselves on vocabulary from one or more chapters at a time.

MyEconLab content has been created through the efforts of Chris Annala, State University of New York–Geneseo; Charles Baum, Middle Tennessee State University; Peggy Dalton, Frostburg State University; Carol Dole, Jacksonville University; David Foti, Lone Star College; Sarah Ghosh, University of Scranton; Satyajit Ghosh, University of Scranton; Woo Jung, University of Colorado; Chris Kauffman, University of Tennessee–Knoxville; Russell Kellogg, University of Colorado–Denver; Katherine McCann, University of Delaware; Daniel Mizak, Frostburg State University; Christine Polek, University of Massachusetts–Boston; Mark Scanlan, Stephen F. Austin State University; Leonie L. Stone, State University of New York–Geneseo; and Bert G. Wheeler, Cedarville University.

## Other Resources for the Instructor

The following supplements are designed to make teaching and testing flexible and easy and are available for *Micro*, *Macro*, and *Economics* volumes.

### *Instructor's Manuals*

Two *Instructor's Manuals*, one for *Principles of Microeconomics* and one for *Principles of Macroeconomics*, were prepared by Tony Lima of California State University, East Bay (Hayward, California). The *Instructor's Manuals* are designed to provide the utmost teaching support for instructors. They include the following content:

- Detailed *Chapter Outlines* include key terminology, teaching notes, and lecture suggestions.
- *Topics for Class Discussion* provide topics and real-world situations that help ensure that economic concepts resonate with students.
- Unique *Economics in Practice* features that are not in the main text provide extra real-world examples to present and discuss in class.
- *Teaching Tips* provide tips for alternative ways to cover the material and brief reminders on additional help to provide students. These tips include suggestions for exercises and experiments to complete in class.
- *Extended Applications* include exercises, activities, and experiments to help make economics relevant to students.
- *Excel Workbooks*, available for many chapters, make it easy to customize numerical examples and produce graphs.
- *Solutions* are provided for all problems in the book.

### **Four Test Item Files**

We have tailored the Test Item Files to help instructors easily and efficiently assess student understanding of economic concepts and analyses. Test questions are annotated with the following information:

- **Difficulty:** 1 for straight recall, 2 for some analysis, 3 for complex analysis
- **Type:** Multiple-choice, true/false, short-answer, essay
- **Topic:** The term or concept the question supports
- **Skill:** Fact, definition, analytical, conceptual
- **AACSB:** See description in the next section.

The Test Item Files include questions with tables that students must analyze to solve for numerical answers. The Test Item Files also contain questions based on the graphs that appear in the book. The questions ask students to interpret the information presented in the graph. Many questions require students to sketch a graph on their own and interpret curve movements.

**Microeconomics Test Item File**, by Randy Methenitis of Richland College: The Microeconomics Test Item File includes over 2,700 questions. All questions are machine gradable and are either multiple-choice or true/false. This Test Item File is for use with the 12<sup>th</sup> edition of *Principles of Microeconomics* in the first year of publication. It is available in a computerized format using TestGen EQ test-generating software and is included in MyEconLab.

**Microeconomics Test Item File Discussion and Short Answer**, by Richard Gosselin of Houston Community College: This second Test Item File includes 1,000 conceptual problems, essay questions, and short-answer questions. Application-type problems ask students to draw graphs and analyze tables. The Word files are available on the Instructor's Resource Center ([www.pearsonglobaleditions.com/Case](http://www.pearsonglobaleditions.com/Case)).

**Macroeconomics Test Item File** by Randy Methenitis of Richland College: The Macroeconomics Test Item File includes over 2,900 questions. All questions are machine gradable and are either multiple-choice or true/false. This Test Item File is for use with the 12<sup>th</sup> edition of *Principles of Macroeconomics* in the first year of publication. This Test Item File is available in a computerized format using TestGen EQ test-generating software and included in MyEconLab.

**Macroeconomics Test Item File: Discussion and Short Answer**, by Richard Gosselin of Houston Community College: This second Test Item File includes 1,000 conceptual problems, essay questions, and short-answer questions. Application-type problems ask students to draw graphs and analyze tables. The Word files are available on the Instructor's Resource Center ([www.pearsonglobaleditions.com/Case](http://www.pearsonglobaleditions.com/Case)).

The Test Item Files were checked for accuracy by the following professors:

Leon J. Battista, Bronx Community College; Margaret Brooks, Bridgewater State College; Mike Casey, University of Central Arkansas; Mike Cohick, Collin County Community College; Dennis Debrecht, Carroll College; Amrik Dua, California State Polytechnic University, Pomona; Mitchell Dudley, The College of William & Mary; Ann Eike, University of Kentucky; Connel Fullencamp, Duke University; Craig Gallet, California State University, Sacramento; Michael Goode, Central Piedmont Community College; Steve Hamilton, California State Polytechnic University; James R. Irwin, Central Michigan University; Aaron Jackson, Bentley College; Rus Janis, University of Massachusetts, Amherst; Jonatan Jelen, The City College of New York; Kathy A. Kelly, University of Texas, Arlington; Kate Krause, University of New Mexico; Gary F. Langer, Roosevelt University; Leonard Lardaro, University of Rhode Island; Ross LaRoe, Denison University; Melissa Lind, University of Texas, Arlington; Solina Lindahl, California State Polytechnic University; Pete Mavrokordatos, Tarrant County College; Roberto Mazzoleni, Hofstra University; Kimberly Mencken, Baylor University; Ida Mirzaie, Ohio State University; Shahruz Mohtadi, Suffolk University; Mary Pranzo, California State University, Fresno; Ed Price, Oklahoma State University; Robert Shoffner, Central Piedmont Community College; James Swofford, University of South Alabama; Helen Tauchen, University of North Carolina, Chapel Hill; Eric Taylor, Central Piedmont Community College; Henry Terrell, University of Maryland; John Tommasi, Bentley College; Mukti Upadhyay, Eastern Illinois University; Robert Whaples, Wake Forest University; and Timothy Wunder, University of Texas, Arlington.

**The Association to Advance Collegiate Schools of Business (AACSB)** The authors of the Test Item File have connected select Test Item File questions to the general knowledge and skill guidelines found in the AACSB assurance of learning standards.

**What Is the AACSB?** AACSB is a not-for-profit corporation of educational institutions, corporations, and other organizations devoted to the promotion and improvement of higher education in business administration and accounting. A collegiate institution offering degrees in business administration or accounting may volunteer for AACSB accreditation review. The AACSB makes initial accreditation decisions and conducts periodic reviews to promote continuous quality improvement in management education. Pearson Education is a proud member of the AACSB and is pleased to provide advice to help you apply AACSB Assurance of Learning Standards.

**What Are AACSB Assurance of Learning Standards?** One of the criteria for AACSB accreditation is quality of the curricula. Although no specific courses are required, the AACSB expects a curriculum to include learning experiences in areas such as the following:

- Written and Oral Communication
- Ethical Understanding and Reasoning
- Analytic Thinking Skills
- Information Technology
- Diverse and Multicultural Work
- Reflective Thinking
- Application of Knowledge

Questions that test skills relevant to these guidelines are tagged with the appropriate standard. For example, a question testing the moral questions associated with externalities would receive the Ethical Understanding and Reasoning tag.

**How Can Instructors Use the AACSB Tags?** Tagged questions help you measure whether students are grasping the course content that aligns with the AACSB guidelines noted earlier. This in turn may suggest enrichment activities or other educational experiences to help students achieve these skills.

### TestGen

The computerized TestGen package allows instructors to customize, save, and generate classroom tests. The test program permits instructors to edit, add, or delete questions from the Test Item Files; analyze test results; and organize a database of tests and student results. This software allows for extensive flexibility and ease of use. It provides many options for organizing and displaying tests, along with search and sort features. The software and the Test Item Files can be downloaded from the Instructor's Resource Center ([www.pearsonglobaleditions.com/Case](http://www.pearsonglobaleditions.com/Case)).

### PowerPoint® Lecture Presentations

PowerPoint slides for *Principles of Microeconomics* and *Principles of Macroeconomics*, prepared by Jim Lee of Dickinson State University, are available:

- A comprehensive set of PowerPoint slides can be used by instructors for class presentations or by students for lecture preview or review. These slides include all the figures, photos, tables, key terms, and equations in the textbook. Instructors may download these PowerPoint presentations from the Instructor's Resource Center ([www.pearsonglobaleditions.com/Case](http://www.pearsonglobaleditions.com/Case)).
- A student version of the PowerPoint slides are available as .pdf files. This version allows students to print the slides and bring them to class for note taking. Instructors can download these PowerPoint presentations from the Instructor's Resource Center. ([www.pearsonglobaleditions.com/Case](http://www.pearsonglobaleditions.com/Case)).

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We also owe a debt of gratitude to those who reviewed and checked the 12<sup>th</sup> edition for accuracy. They provided us with valuable insight as we prepared this edition and its supplement package.

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## Reviewers of Previous Editions

The following individuals were of immense help in reviewing all or part of previous editions of this book and the teaching/learning package in various stages of development:

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 Emil Berendt, Siena Heights University  
 Daniel Berkowitz, University of Pittsburgh  
 Kurt Beron, University of Texas, Dallas  
 Derek Berry, Calhoun Community College

Tibor Besedes, Georgia Institute of Technology  
 Thomas Beveridge, Durham Technical Community College  
 Anoop Bhargava, Finger Lakes CC  
 Eugenie Bietry, Pace University  
 Kelly Blanchard, Purdue University  
 Mannie Bloemen, Houston Community College  
 Mark Bock, Loyola College in Maryland  
 Howard Bodenhorn, Lafayette College  
 Bruce Bolnick, Northeastern University  
 Frank Bonello, University of Notre Dame  
 Jeffrey Bookwalter, University of Montana  
 Antonio Bos, Tusculum College  
 Maristella Botticini, Boston University  
 George Bowling, St. Charles Community College  
 G. E. Breger, University of South Carolina  
 Charles Callahan, III, State University of New York at Brockport  
 Dennis Brennan, William Rainey Harper Junior College  
 Anne E. Bresnock, California State Polytechnic University, Pomona, and the University of California, Los Angeles  
 Barry Brown, Murray State University  
 Bruce Brown, California State Polytechnic University, Pomona  
 Jennifer Brown, Eastern Connecticut State University  
 David Brownstone, University of California, Irvine  
 Don Brunner, Spokane Falls Community College  
 Jeff Bruns, Bacone College  
 David Bunting, Eastern Washington University  
 Barbara Burnell, College of Wooster  
 Alison Butler, Willamette University  
 Fred Campano, Fordham University  
 Douglas Campbell, University of Memphis  
 Beth Cantrell, Central Baptist College  
 Kevin Carlson, University of Massachusetts, Boston  
 Leonard Carlson, Emory University  
 Arthur Schiller Casimir, Western New England College  
 Lindsay Caulkins, John Carroll University  
 Atreya Chakraborty, Boston College  
 Suparna Chakraborty, Baruch College of the City University of New York  
 Winston W. Chang, University at Buffalo, The State University of New York

- Janie Chermak, University of New Mexico  
 David Ching, University of Hawaii  
 – Honolulu  
 Harold Christensen, Centenary College  
 Daniel Christiansen, Albion College  
 Susan Christoffersen, Philadelphia  
 University  
 Samuel Kim-Liang Chuah, Walla Walla  
 College  
 Dmitriy Chulkov, Indiana University,  
 Kokomo  
 David Colander, Middlebury College  
 Daniel Condon, University of Illinois at  
 Chicago; Moraine Valley Community  
 College  
 Karen Conway, University of New  
 Hampshire  
 Cesar Corredor, Texas A&M University  
 David Cowen, University of Texas,  
 Austin  
 Tyler Cowen, George Mason University  
 Amy Cramer, Pima Community College,  
 West Campus  
 Peggy Crane, Southwestern College  
 Barbara Craig, Oberlin College  
 Jerry Crawford, Arkansas State  
 University  
 James Cunningham, Chapman  
 University  
 Scott Cunningham, Baylor University  
 Elisabeth Curtis, Dartmouth  
 James D'Angelo, University of Cincinnati  
 David Dahl, University of St. Thomas  
 Sheryll Dahlke, Lees-McRae College  
 Joseph Dahms, Hood College  
 Sonia Dalmia, Grand Valley State  
 University  
 Rosa Lea Danielson, College of DuPage  
 David Danning, University of  
 Massachusetts, Boston  
 Minh Quang Dao, Eastern Illinois  
 University  
 Amlan Datta, Cisco Junior College  
 David Davenport, McLennan  
 Community College  
 Stephen Davis, Southwest Minnesota  
 State University  
 Dale DeBoer, Colorado University,  
 Colorado Springs  
 Dennis Debrecht, Carroll College  
 Juan J. Delacruz, Fashion Institute of  
 Technology and Lehman College  
 Greg Delemeester, Marietta College  
 Yanan Di, State University of New York,  
 Stony Brook  
 Amy Diduch, Mary Baldwin College  
 Timothy Diette, Washington and Lee  
 University  
 Vernon J. Dixon, Haverford College  
 Alan Dobrowolksi, Manchester  
 Community College
- Eric Dodge, Hanover College  
 Carol Dole, Jacksonville University  
 Michael Donihue, Colby College  
 Leslie Doss, University of Texas San  
 Antonio  
 Shahpour Dowlatshahi, Fayetteville  
 Technical Community College  
 Joanne M. Doyle, James Madison  
 University  
 Robert Driskill, Ohio State University  
 James Dulgeroff, San Bernardino Valley  
 College  
 Kevin Duncan, Colorado State University  
 Yvonne Durham, Western Washington  
 University  
 Debra Sabatini Dwyer, State University of  
 New York, Stony Brook  
 Gary Dymski, University of Southern  
 California  
 David Eaton, Murray State University  
 Jay Egger, Towson State University  
 Erwin Ehrhardt, University  
 of Cincinnati  
 Ann Eike, University of Kentucky  
 Eugene Elander, Plymouth State  
 University  
 Ronald D. Elkins, Central Washington  
 University  
 Tisha Emerson, Baylor University  
 Michael Enz, Western New England  
 College  
 Erwin Erhardt III, University of  
 Cincinnati  
 William Even, Miami University  
 Ali Faegh, Houston Community College  
 Noel J. J. Farley, Bryn Mawr College  
 Mosin Farminesh, Temple University  
 Dan Feaster, Miami University of Ohio  
 Susan Feiner, Virginia Commonwealth  
 University  
 Getachew Felleke, Albright College  
 Lois Fenske, South Puget Sound  
 Community College  
 William Field, DePauw University  
 Deborah Figart, Richard Stockton  
 College  
 Barbara Fischer, Cardinal Stritch  
 University  
 Mary Flannery, Santa Clara University  
 Bill Foeller, State University of New York,  
 Fredonia  
 Fred Foldvary, Santa Clara University  
 Roger Nils Folsom, San Jose State  
 University  
 Mathew Forstater, University of  
 Missouri-Kansas City  
 Kevin Foster, The City College of New  
 York  
 Richard Fowles, University of Utah  
 Sean Fraley, College of Mount Saint  
 Joseph
- Johanna Francis, Fordham University  
 Roger Frantz, San Diego State  
 University  
 Mark Frascatore, Clarkson University  
 Amanda Freeman, Kansas State  
 University  
 Morris Frommer, Owens Community  
 College  
 Brandon Fuller, University of Montana  
 David Fuller, University of Iowa  
 Mark Funk, University of Arkansas,  
 Little Rock  
 Alejandro Gallegos, Winona State  
 University  
 Craig Gallet, California State University,  
 Sacramento  
 N. Galloro, Chabot College  
 Bill Galose, Drake University  
 William Ganley, Buffalo State, SUNY  
 Martin A. Garrett, Jr., College of William  
 and Mary  
 Tom Gausman, Northern Illinois  
 University  
 Shirley J. Gedeon, University of Vermont  
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 School of Business  
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 Amy Glass, Texas A&M University  
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 Bill Godair, Landmark College  
 Bill Goffe, University of Mississippi  
 Devra Golbe, Hunter College  
 Roger Goldberg, Ohio Northern  
 University  
 Joshua Goodman, New York University  
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 Francisco  
 David Gordon, Illinois Valley College  
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 Daryl Gruver, Mount Vernon Nazarene  
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 University  
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- A. R. Gutowsky, California State University, Sacramento
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- Bradley Hansen, University of Mary Washington
- Stephen Happel, Arizona State University
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- David Harris, Benedictine College
- David Harris, San Diego State University
- James Hartley, Mount Holyoke College
- Bruce Hartman, California Maritime Academy of California State University
- Mitchell Harwitz, University at Buffalo, The State University of New York
- Dewey Heinsma, Mt. San Jacinto College
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- Harry Holzer, Michigan State University
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- Daniel Horton, Cleveland State University
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- Creed Hyatt, Lehigh Carbon Community College
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- Donn Johnson, Quinnipiac University
- Paul Johnson, University of Alaska, Anchorage
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- Bruce Kaufman, Georgia State University
- Dennis Kaufman, University of Wisconsin, Parkside
- Pavel Kapinos, Carleton College
- Russell Kashian, University of Wisconsin, Whitewater
- Amoz Kats, Virginia Technical University
- David Kaun, University of California, Santa Cruz
- Brett Katzman, Kennesaw State University
- Fred Keast, Portland State University
- Stephanie Kelton, University of Missouri, Kansas City
- Deborah Kelly, Palomar College
- Erasmus Kersting, Texas A&M University
- Randall Kesselring, Arkansas State University
- Alan Kessler, Providence College
- Dominique Khactu, The University of North Dakota
- Gary Kikuchi, University of Hawaii, Manoa
- Hwagyun Kim, State University of New York, Buffalo
- Keon-Ho Kim, University of Utah
- Kil-Joong Kim, Austin Peay State University
- Sang W. Kim, Hood College
- Phillip King, San Francisco State University
- Barbara Kneeshaw, Wayne County Community College
- Inderjit Kohli, Santa Clara University
- Heather Kohls, Marquette University
- Janet Koscianski, Shippensburg University
- Vani Kotcherlakota, University of Nebraska, Kearney
- Barry Kotlove, Edmonds Community College
- Kate Krause, University of New Mexico
- David Kraybill, University of Georgia
- David Kroeker, Tabor College
- Stephan Kroll, California State University, Sacramento
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- Jacob Kurien, Helzberg School of Management
- Rosung Kwak, University of Texas at Austin
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- Charles R. Link, University of Delaware
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- Samuel Liu, West Valley College
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- Adrienne Lucas, Wellesley College
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 Anchorage  
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 University of Pennsylvania  
 Tim Mason, Eastern Illinois University  
 Don Mathews, Coastal Georgia  
 Community College  
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 Nan Maxwell, California State University  
 at Hayward  
 Roberto Mazzoleni, Hofstra University  
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 University  
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 University  
 Patrick McEwan, Wellesley College  
 Ronnie McGinness, University of  
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 Rick McIntyre, University of Rhode  
 Island  
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 Orleans  
 Dawn McLaren, Mesa Community College  
 B. Starr McMullen, Oregon State  
 University  
 K. Mehtaboin, College of St. Rose  
 Martin Melkonian, Hofstra University  
 Alice Melkumian, Western Illinois  
 University  
 William Mertens, University of Colorado,  
 Boulder  
 Randy Methenitis, Richland College  
 Art Meyer, Lincoln Land Community  
 College  
 Carrie Meyer, George Mason University  
 Meghan Millea, Mississippi State  
 University  
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 Ida Mirzaie, The Ohio State University  
 David Mitchell, Missouri State  
 University  
 Bijan Moeinian, Osceola Campus  
 Robert Mohr, University of New  
 Hampshire  
 Shahrzad Mohtadi, Suffolk University  
 Amyaz Moledina, College of Wooster  
 Gary Mongiovi, St. John's University  
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 Technological University  
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 Florida  
 Joe L. Moore, Arkansas Technical  
 University  
 Myra Moore, University of Georgia  
 Robert Moore, Occidental College  
 Norma C. Morgan, Curry College  
 W. Douglas Morgan, University of  
 California, Santa Barbara  
 David Murphy, Boston College  
 John Murphy, North Shore Community  
 College, Massachusetts  
 Ellen Mutari, Richard Stockton College of  
 New Jersey  
 Steven C. Myers, University of Akron  
 Veena Nayak, University at Buffalo, The  
 State University of New York  
 Ron Necoechea, Robert Wesleyan  
 College  
 Doug Nelson, Spokane Community  
 College  
 Randy Nelson, Colby College  
 David Nickerson, University of British  
 Columbia  
 Sung No, Southern University and A&M  
 College  
 Rachel Nugent, Pacific Lutheran  
 University  
 Akorlie A. Nyatepe-Coo, University of  
 Wisconsin LaCrosse  
 Norman P. Obst, Michigan State  
 University  
 William C. O'Connor, Western Montana  
 College  
 Constantin Ogloblin, Georgia Southern  
 University  
 David O'Hara, Metropolitan State  
 University  
 Albert Okunade, University of Memphis  
 Ronald Olive, University of  
 Massachusetts, Lowell  
 Martha L. Olney, University of California,  
 Berkeley  
 Kent Olson, Oklahoma State  
 University  
 Jaime Ortiz, Florida Atlantic  
 University  
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 Donald J. Oswald, California State  
 University, Bakersfield  
 Mete Ozcan, Brooklyn College  
 Alexandre Padilla, Metropolitan State  
 College of Denver  
 Aaron Pankratz, Fresno City College  
 Niki Papadopoulou, University  
 of Cyprus  
 Walter Park, American University  
 Carl Parker, Fort Hays State University  
 Spiro Patton, Rasmussen College  
 Andrew Pearlman, Bard College  
 Charlie Pearson, Southern Maine  
 Community College  
 Richard Peck, University of Illinois at  
 Chicago  
 Don Peppard, Connecticut College  
 Elizabeth Perry, Randolph College  
 Nathan Perry, University of Utah  
 Joe Petry, University of  
 Illinois-Urbana-Champaign  
 Joseph A. Petry, University  
 of Illinois  
 Mary Ann Pevas, Winona State  
 University  
 Chris Phillips, Somerset Community  
 College  
 Jeff Phillips, Morrisville Community  
 College  
 Frankie Pircher, University of Missouri,  
 Kansas City  
 Tony Pizelo, Spokane Community  
 College  
 Dennis Placone, Clemson University  
 Mike Pogodzinski, San Jose State  
 University  
 Linnea Polgreen, University of Iowa  
 Elizabeth Porter, University of North  
 Florida  
 Bob Potter, University of Central  
 Florida  
 Ed Price, Oklahoma State University  
 Abe Qastin, Lakeland College  
 Kevin Quinn, St. Norbert College  
 Ramkishen S. Rajan, George Mason  
 University  
 James Rakowski, University of Notre  
 Dame  
 Amy Ramirez-Gay, Eastern Michigan  
 University  
 Paul Rappoport, Temple University  
 Artatrana Ratha, St. Cloud State  
 University  
 Michael Rendich, Westchester  
 Community College  
 Lynn Rittenouere, University of Tulsa  
 Travis Roach, Texas Tech University  
 Brian Roberson, Miami University  
 Michael Robinson, Mount Holyoke  
 College  
 Juliette Roddy, University of Michigan,  
 Dearborn  
 Michael Rolleigh, University of  
 Minnesota  
 Belinda Roman, Palo Alto College  
 S. Scanlon Romer, Delta College  
 Brian Rosario, University of California,  
 Davis  
 Paul Roscelli, Canada College  
 David C. Rose, University of Missouri-  
 St. Louis  
 Greg Rose, Sacramento City College  
 Richard Rosenberg, Pennsylvania State  
 University  
 Robert Rosenman, Washington State  
 University  
 Robert Rosenthal, Stonehill College  
 Howard Ross, Baruch College  
 Paul Rothstein, Washington  
 University  
 Charles Roussel, Louisiana State  
 University  
 Jeff Rubin, Rutgers University