CORE FACULTY:
Robert A. Connor, Professor Emeritus, UM and CEO, Aneuclose, (612) 501-6482, robert.connor@aneuclose.com

GUEST FACULTY:
* Madeline Carpinelli, Founding Director, Rx|X Consulting
* Susan Cooper, Sr. Dir., Pharmacy Srvc.s, HealthPartners
* Eric Geurkink, Associate Chief, Dept. of Pharmacy, VA Medical Center
* Ken Majkowski, Managing Partner, KEM Consulting
* Bob Beacher, President, Fairview Pharmacy Services
* Mike Copa, Assoc. Dir. Finance, E&I, UnitedHealthcare
* Eric Cox, Medical Liaison, Novo Nordisk
* Andrew Mellin, Vice President, McKesson
* Leslie Helou, Sr. Dir., Portfolio & Project Mgt, Upsher-Smith
* Alana Nistler, Dir., Prod. Innov., Prime Therapeutics; Pres., Nistler Consulting
* Ann Quinlan-Smith, Div. Pres., NAMSA Clinical & Consulting
* Patrick Stroh, Principal, Mercury Business Advisors
* John Bullion, CEO, Boundary Medical; Pharma CEO Emeritus
* Cam Olig, Senior Vice President, Prime Therapeutics
* Stephen Schondelmeyer, Professor, College of Pharmacy, UM
* Ian Troup, Principal, Troup & Assc; COO Emeritus, Upsher-Smith
* Michael Haider, CEO, CytoMedical Design Group
* Chris McClain, Exec. Dir., Business Affairs, Nora Therapeutics
* Jon Schommer, Professor, College of Pharmacy, UM

COURSE INTRODUCTION AND LEARNING OBJECTIVES:

The development, manufacturing, distribution, economic evaluation, purchasing, utilization management, and ordering of pharmaceuticals is a large and growing portion of the health sector with unique market characteristics, complex regulatory processes, rapid technological change, high expense growth, and vigorously-debated public policy issues. The pharmaceutical industry in Minnesota is growing and dynamic. Boundaries between pharmaceuticals, medical devices and biotechnology are blurring. This course is a joint venture of the Carlson School of Management and the College of Pharmacy at the University of Minnesota. In addition to academic faculty from these schools, the course also engages the participation of key leaders in the pharmaceutical industry and the health sector in general. The panel format, followed by receptions during which students can meet executives, facilitates opportunities for interaction among guest faculty and students.

This course is designed to engage full-time and working professional students in the fields of management and pharmacy though interdisciplinary exposure to key business and policy aspects of the pharmaceutical industry. For general management students, it provides exposure to the technical, clinical and policy issues of the pharmaceutical industry. For pharmacy students, it provides additional exposure to the business, financial, and entrepreneurial aspects of the pharmaceutical industry. For all, it provides an excellent opportunity for interdisciplinary learning and networking.

Students successfully completing this course should: (1) have a thorough understanding of key policy, management, and regulatory issues affecting the pharmaceutical industry — including understanding the perspectives of manufacturers, health plans, consumers, and policy makers — and be able to make a case for either side of these issues; (2) understand the factors driving valuation in the pharmaceutical industry and be able to assess market valuation of for-profit firms and mergers among firms; and (3) and be able to critically assess growth projections for new and established drugs. The overall objective of this course is to help prepare future leaders across the spectrum of pharmaceutical development, investment, manufacturing, distribution, utilization management, and ordering.

COURSE STRUCTURE:

Overall, the course structure is based on three components: (1) lectures, executive roundtables, and topic panels covering topics including -- local firms and other organizations engaged in pharmaceutical manufacturing, marketing, management, and/or research; business, legal, regulatory, political, public policy, organizational and clinical trends in the pharmaceutical industry; (2) two written
assignments -- one in which all students in the class each individually evaluate the same pharmaceutical company (including making the case that its stock is underpriced and also making the case that its stock is overpriced) and one in which all students in the class each individually evaluate the same drug (including a low sales projection for the next five years, with rationale, and a high sales projection for the next five years, with rationale); and (3) a group presentation -- wherein each group selects their own pharmaceutical company or drug to evaluate (using some of the methods learned from the written assignments) and makes a presentation to the class on the last day of class. (for students in Duluth -- students will present virtually).

GRADING:

Written Company Valuation Assignment (30%): For the company selected for valuation (Pfizer for 2015), students will research evidence and make (1) arguments that the company is underpriced and also (2) arguments that the company is overpriced. Metrics and issues to consider may include: past and projected growth in revenues, expenses, earnings, and cash flows; Price to Earnings (PE) ratio and Price to Earnings to Growth (PEG) ratio; current products, patents, and product cycles; new products and FDA applications; competitive developments; merger or acquisition activity; litigation; and effects of new legislation and changes in public policy. For the company, each student will: prepare a 2-5 page report on their own with arguments that the company is underpriced and overpriced; and actively participate in related class discussion. Format will be discussed in first class handout.

Written Drug Sales Projection Assignment (30%): For the drug selected (BeneFIX for 2015), each student will collect information on current and potential market utilization and revenue for the drug and use this information on their own to calculate low and high utilization and revenue scenarios and quantitative projections for the next five years. If there are utilization and/or revenue projections by the company or industry analysts, then students will compare and contrast their projections to these projections. Issues to consider may include: the geographic target population (US? global?); epidemiologic and demographic trends among this population; the prevalence severity of medical conditions treated by the drug; competing drugs and non-drug treatments for these medical conditions; market share of treatment for these conditions; product/patent life cycle; and current and future pricing and insurance coverage issues. For the drug, each student will: prepare a 2-5 page report with quantitative projections and supporting arguments for each scenario; and actively participate in related class discussion. Format will be discussed in first class handout.

Group Presentation (30%): Groups of (2-4) students will be formed, each pick either a pharmaceutical company to evaluate or a drug to evaluate (their choice), and then give a presentation to the class on the last class day. The presentation/slides are the end product for this assignment; no formal written report is required. Methods learned in the two written assignments can be helpful. Format will be discussed in first class handout.

Attendance and Participation (10%): Based on attendance and engagement in class discussion.

Letter Grade: The following is the expected relationship between score and letter grade. Ranges may be lowered, but not raised: A 95-100; A- 90-94; B+ 85-89; B 80-84; B- 75-79; C 70-74; C- 65-69; F <65

PREREQUISITE: MBA Core, Phar 6100, or instructor's permission.

ONLINE LEARNING RESOURCES:

I do not expect you to read all the only sources listed herein. I encourage you to review the titles, click on links to many, and engage in those which are useful for course assignments, useful for your career, peak your interest or (by some miracle) do all three. These sources span business, clinical/pharmacy/medical fields, and public policy. All are relevant to the pharmaceutical industry. Management students should learn key medical/pharmaceutical resources. Pharmacy students should learn key business/financial resources.

To facilitate your learning, each source has a clickable link. Links have been tested and currently work. If any change/fail, let me know. A couple sources (e.g. links to Modern Healthcare) only provide the full article if you navigate to the article by searching for the title in Google. A couple sources only provide public access to the abstract, but you may be able to access the full article (not required) via the UM library website if you wish.

Although there are some disadvantages to using a selected list of publically-available online sources, there are advantages over a text book and/or academic course pack. The most important advantage is that these materials are very current. Most are from 2013-2015, especially those relating to recent financial performance. This is important for up-to-date insights into current issues. The pharmaceutical industry of 2015 is facing very different challenges and opportunities than it did in 2005. Another advantage is that this allows a wide variety of perspectives -- business, financial, professional, clinical, epidemiological, legal, and public policy. In 2015, there is so much good material that is publically available online that this works well for courses in rapidly changing fields such as this one.
To reinforce the opening line, I do not expect you to read them all. However, some are very short and, at a minimum, you should read enough to provide a half-dozen references to support key points in each of your assignments and to help you to engage actively in class discussion. Hopefully, for the sake of learning about the field from multiple perspectives, you will engage in more than that, but that is up to you as an adult learner and professional. My hope is that the titles and content will be sufficiently enticing and engaging that you will find yourself reading (and perhaps even enjoying reading) many of the sources. Which ones -- are up to you.

**COURSE SESSION SCHEDULE:**

<table>
<thead>
<tr>
<th>Session:</th>
<th>3/25 Weds</th>
<th>5:45-7:00, 7:10-9:00: Course Overview and Introductions. Methodology and Intro to Material for Assignments #1 (Pfizer Company Valuation) and #2 (BeneFIX Sales Projections) (Connor)</th>
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<tbody>
<tr>
<td>4/1 Weds</td>
<td>5:45-7:00, 7:10-8:00: Exec Panel/Roundtable #1: Carpinelli, Cooper, Geurkink, Majkowski</td>
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<tr>
<td>4/8 Weds</td>
<td>5:45-7:00, 7:10-8:00: Exec Panel/Roundtable #2: Beacher, Copa, Cox, Mellin</td>
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<tr>
<td>4/15 Weds</td>
<td>5:45-7:00, 7:10-8:00: Exec Panel/Roundtable #3: Helou, Nistler, Quinlan-Smith, Stroh</td>
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<tr>
<td>4/22 Weds</td>
<td>5:45-7:00, 7:10-8:00: Exec Panel/Roundtable #4: Bullion, Olig, Schondelmeyer, Troup</td>
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<tr>
<td>4/29 Weds</td>
<td>5:45-7:00, 7:10-8:00: Exec Panel/Roundtable #5: Haider, McClain, Schommer</td>
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<tr>
<td>5/6 Weds</td>
<td>5:45-7:00, 7:10-8:40: Student group presentations evaluating companies and drugs. 8:40-9:00: Course Evaluations</td>
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<tr>
<td>5/6 Weds</td>
<td>♦ Readings (select from 77 through 80 on the following list)</td>
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<td>5/7 Weds</td>
<td>♦ Readings (select from 43 through 53 on the following list)</td>
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<tr>
<td>5/8 Weds</td>
<td>♦ Readings (select from 15 through 27 on the following list)</td>
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<tr>
<td>5/15 Weds</td>
<td>♦ Readings (select from 1 through 14 on the following list)</td>
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<td>5/16 Weds</td>
<td>♦ Readings (select from 28 through 42 on the following list)</td>
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<tr>
<td>5/22 Weds</td>
<td>♦ Readings (select from 53 through 62 on the following list)</td>
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<tr>
<td>5/29 Weds</td>
<td>♦ Readings (select from 63 through 76 on the following list)</td>
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<tr>
<td>5/30 Weds</td>
<td>♦ Readings (select from 77 through 80 on the following list)</td>
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**EXECUTIVE PANEL/ROUNDTABLE DETAILS:**

Panel #1: Weds., April 1, 5:45-8:00 pm
* Madeline Carpinelli, Founding Director, Rx|X Consulting
* Susan Cooper, Sr. Dir., Pharmacy Srvcs, HealthPartners
* Eric Geurkink, Associate Chief, Dept. of Pharmacy, VA Medical Center
* Ken Majkowski, Managing Partner, KEM Consulting

Format: Individual talks by each panel member (around 10-12 minutes each, slides welcome but optional), followed by open discussion with students and panel. Proposed Topics: + Organization and Background (executives can provide an introduction to their company and optional discussion of professional background and career path) + Biologics and Specialty Pharma (scientific, regulatory, biosimilars, pricing, corporate financial, and merger and acquisition issues with respect to large-molecule biologics vs. small-molecule drugs) + Pharma Benefits (major trends and issues in prescription benefit plans, tiered copay structures, doughnut holes, role of PBMs, and information technology) + Information Technology (new developments in the intersection of information technology and pharmaceuticals including electronic medical records, electronic ordering, centralized claims administration, outcomes measurement, event reporting, and care management) + Care Management (case management and pharmaceuticals, formulary decision making and trends, the role of pharmaceuticals in Accountable Care Organizations and evolving health plans, trends and issues facing pharmacies and pharmacists) + Health Reform (effects of the PPACA “Obamacare” on the pharmaceutical industry and the financing and delivery of pharmaceuticals) + 340B Drug Pricing Program + Career Advice (possible career advice for pharmacy students and/or management students).
Panel #2: Weds., April 8, 5:45-8:00 pm  
* Bob Beacher, President, Fairview Pharmacy Services  
* Mike Copa, Assoc. Dir. Finance, E&I, UnitedHealthcare  
* Eric Cox, Medical Liaison, Novo Nordisk  
* Andrew Mellin, Vice President, McKesson  

Format: Individual talks by each panel member (10-12 minutes each, slides welcome but optional), followed by open discussion with students and panel. Proposed Topics: + Organization and Background (executives can provide an introduction to their company and optional discussion of professional background and career path) + Generics (trends in brand name vs. generic pharmaceuticals, patent issues, PBMs, relationships between big pharma and generic companies and corporate divisions, regulatory pathway for biosimilars) + Biologics and Specialty Pharma (scientific, regulatory, biosimilars, pricing, corporate financial, and merger and acquisition issues with respect to large-molecule biologics vs. small-molecule drugs) + Pharma Benefits (major trends and issues in prescription benefit plans, tiered copay structures, doughnut holes, role of PBMs, and information technology) + Information Technology (new developments in the intersection of information technology and pharmaceuticals including electronic medical records, electronic ordering, centralized claims administration, outcomes measurement, event reporting, and care management) + Care Management (case management and pharmaceuticals, formulary decision making and trends, the role of pharmaceuticals in Accountable Care Organizations and evolving health plans, trends and issues facing pharmacies and pharmacists) + Health Reform (effects of the PPACA "Obamacare" on the pharmaceutical industry and the financing and delivery of pharmaceuticals) + Pricing (trends in pharmaceutical pricing over time) + Career Advice (possible career advice for pharmacy students and/or management students).

Panel #3: Weds., April 15, 5:45-8:00 pm  
* Leslie Helou, Sr. Dir., Portfolio & Project Mgt, Upsher-Smith  
* Alana Nistler, Dir., Prod. Innov., Prime Therapeutics; Pres., Nistler Consulting  
* Ann Quinlan-Smith, Div. Pres., NAMSA Clinical & Consulting  
* Patrick Stroh, Principal, Mercury Business Advisors  

Format: Individual talks by each panel member (around 10-12 minutes each, slides welcome but optional), followed by open discussion with students and panel. Proposed Topics: + Organization and Background (executives can provide an introduction to their company and optional discussion of professional background and career path) + Product Life Cycle (major issues concerning product life cycles for big pharma, including patent cliffs, promising new categories in the pipeline, FDA clinical trial costs, future of the blockbuster model, internal R&D vs. product acquisition through mergers and acquisition, acquisition premiums paid, corporate diversification, individualized medicine, and product margin trends) + Intellectual Property (specialized intellectual property issues for the pharmaceutical industry, patent life variations and extensions, transition from branded to generic upon patent expiration, international issues in intellectual property) + Financial Trends (financial trends for pharmaceutical companies, including earnings growth or lack thereof, macro changes in balance sheets, patent cliffs, product pipelines, major product recalls, lawsuits, government penalties, clinical trial costs, biologics, mergers and acquisitions, diversification, med devices and combination products, PBMs, and the challenges and opportunities of global markets) + Generics (trends in brand name vs. generic pharmaceuticals, patent issues, PBMs, relationships between big pharma and generic companies and corporate divisions, regulatory pathway for biosimilars) + Globalization (globalization of the pharmaceutical industry including manufacturing, R&D, markets, sales, patents, regulation, transnational subsidies, and importation) + Sales Projections (potential positive and negative factors to consider when making optimistic and pessimistic scenario projections for future sales of a particular drug). + Career Advice (possible career advice for pharmacy students and/or management students).

Panel #4: Weds., April 22, 5:45-8:00: pm  
* John Bullion, CEO, Boundary Medical; Pharma CEO Emeritus  
* Cam Olig, Senior Vice President, Prime Therapeutics  
* Stephen Schondelmeyer, Professor, College of Pharmacy, UM  
* Ian Troup, Principal, Troup & Assc; COO Emeritus, Upsher-Smith  

Format: Individual talks by each panel member (around 10-12 minutes each, slides welcome but optional), followed by open discussion with students and panel. Proposed Topics: + Organization and Background (executives can provide an introduction to their company and optional discussion of professional background and career path) + Product Life Cycle (major issues concerning product life cycles for big pharma, including patent cliffs, promising new categories in the pipeline, FDA clinical trial costs, future of the blockbuster model, internal R&D vs. product acquisition through mergers and acquisition, acquisition premiums paid, corporate diversification, individualized medicine, and product margin trends) + Generics (trends in brand name vs. generic pharmaceuticals, patent issues, PBMs, relationships between big pharma and generic companies and corporate divisions, regulatory pathway for biosimilars) + Biologics and Specialty Pharma (scientific, regulatory, biosimilars, pricing, corporate financial, and merger and acquisition issues with respect to large-molecule biologics vs. small-molecule drugs) + Pharma Benefits (major trends and issues in prescription benefit plans, tiered copay structures, doughnut holes, role of PBMs, and information technology) + Information Technology (new developments in the intersection of information technology and pharmaceuticals including electronic medical records, electronic ordering, centralized claims administration, outcomes measurement, event reporting, and care management) + Health Reform (effects of the PPACA "Obamacare" on the pharmaceutical industry and the financing and delivery of pharmaceuticals) + Pricing (trends in pharmaceutical pricing over time) + Career Advice (possible career advice for pharmacy students and/or management students).
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Panel #5: Weds., April 29, 5:45-8:00 pm
* Michael Haider, CEO, CytoMedical Design Group
* Chris McClain, Exec. Dir., Business Affairs, Nora Therapeutics
* Jon Schommer, Professor, College of Pharmacy, UM

Format: Individual talks by each panel member (around 15 minutes each, slides welcome but optional), followed by open discussion with students and panel. Proposed Topics: + Organization and Background (executives can provide an introduction to their company and optional discussion of professional background and career path) + Product Life Cycle (major issues concerning product life cycles for big pharma, including patent cliffs, promising new categories in the pipeline, FDA clinical trial costs, future of the blockbuster model, internal R&D vs. product acquisition through mergers and acquisition, acquisition premiums paid, corporate diversification, individualized medicine, and product margin trends) + Generics (trends in brand name vs. generic pharmaceuticals, patent issues, PBMs, relationships between big pharma and generic companies and corporate divisions, regulatory pathway for biosimilars) + Biologics and Specialty Pharma (scientific, regulatory, biosimilars, pricing, corporate financial, and merger and acquisition issues with respect to large-molecule biologics vs. small-molecule drugs) + Career Advice (possible career advice for pharmacy students and/or management students).

ONLINE LEARNING RESOURCES (LIST AND LINKS)


