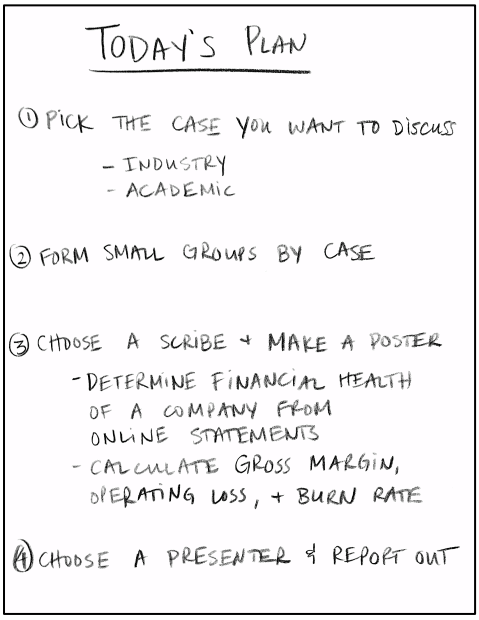
Workshop set up and schedule

Before the workshop:
Determine where each small group will be set up around the room. Distribute a Post-it, self-stick easel poster (suggested 25 x 30.5, Item 559) and markers for each of the groups. Label the top of post-it with Small Company, Large Company or Academia.

Write instructions on the board, per the following pictures:



Notes:
Step 1
Inform the participants that there are # areas to choose from
Step 2
Break into groups of 5 to 7 people; adjust for your group size
Step 3
Give approximately 30 minutes for the discussion; adjust according to 60 or 90 min session
Step 4
Give each group 5 minutes to report out. We found that this is enough time to present their poster and discuss a few questions from the group.

Facilitator's tasks in the small group:

1. Introduce yourself
2. Ask participants for brief introductions
3. Ask participants about their career goals (take this into account as you facilitate discussion).
4. **Briefly review the questions for the discussion**
5. Pose the questions, one at a time, and ask for their thoughts
6. Sit back and let the group discuss
   - Refer to the rubric to see if your group is mastering the concepts covered in the lecture
   - If needed, prompt the discussion with the questions provided below
7. Summarize the conversation and start to make the poster
8. Making the poster – ask for a scribe and a presenter. For the presenter, consider encouraging an individual who wants to work on their presenting or a non-native English speaker.
9. If there is time, pose provocative questions (ex: What if the company doesn't like the deal you propose, what's your next step? Would you proceed with the collaboration or find a new company to work with?)

SCHEDULE:
Notes for Course Moderator – the individual introducing the workshop, wrapping up and keeping time
Notes for Course Facilitator – the individuals leading the small group discussions

Workshop set up and schedule

****This is a suggested 60 minute schedule. For a 90 minute session, consider lengthening the group discussion or adding an optional facilitator-led, large group discussion after the presentations.**

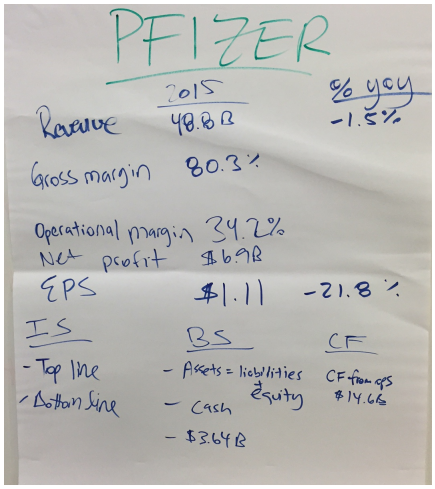
5 minutes	***Get settled, explanations before groups break out*** Class moderator - "This is a chance for you to apply some of the abstract concepts that JeShaune and Christine introduced in the videos. For the industry cases, you will look through a company website and determine the financial health. **You will learn to navigate the financial statements** by calculating their gross margin, operating loss, and burn rate. In the academic case, you will envision yourself as a new PI and discuss how to develop a financial plan and how you calculate burn rate. Please take 5-7 minutes to review the case and start browsing the sites (for the industry cases). Please collect your thoughts on how to answer the questions. The facilitators will be available for questions. Each group will make a poster to share their company's strategy and we will discuss it. Remember to choose a scribe and presenter for each group." Now let's break into groups. Please go to the area of interest – Industry or Academia
20 minutes	***Group discussion*** Facilitator introduction: "My name is x, and I work at X. My background/PhD is in Y. I'm here to facilitate the discussion, keep things moving along. We will be using a online financial statements to determine a company's financial health. Feel free to use the slides." Participants look over the websites and discuss amongst themselves. Facilitators may need to prompt conversation if there is a lull. Remember to repeat questions to the group if an individual raises a question. If they say they are all done, get them thinking about a dimension they haven't addressed yet. Class moderator – give a 5 minute warning to wind down discussion and tell them to start writing up the posters if they haven't already begun.
30 minutes	***Report out, group presentations*** Class moderator - "Great, now we will share what your groups identified as the company's gross margin, operating loss, burn rate, and solvency. You will have approximately 5 minutes to present. I'll give you a 2 minute warning by holding up two fingers." Share posters, see examples below [Optional] Facilitators ask follow-up, next step questions about the presentations to get the participants to think more deeply about the subject.
5 minutes	***Wrap up*** Class moderator – Thanks for attending. We will be sending out post-class surveys. Please take 10 minutes to give us feedback. We are developing this workshop to be shared nationwide and any comments, suggestions, or kudos that you give will be helpful.

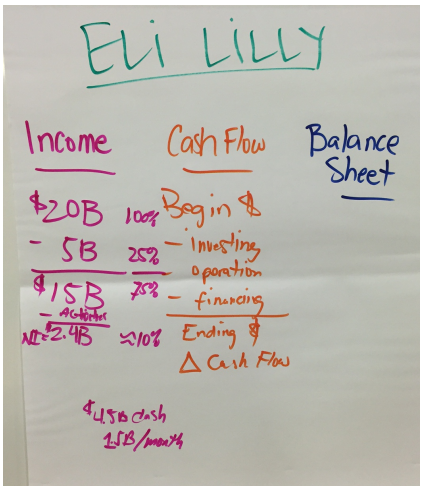
Workshop set up and schedule

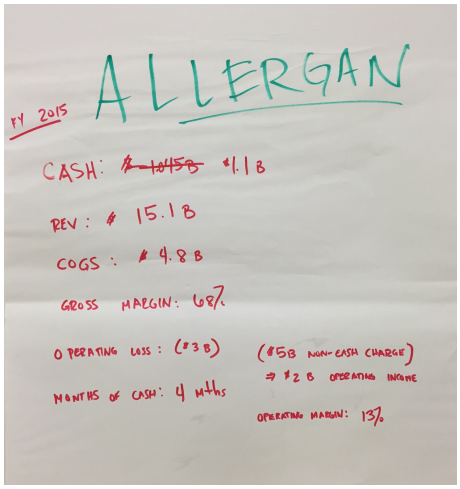
Sample posters from the UCSF session in June 2016

Industry activity:

1. Review the financial statements from company's website. You can also use dashboards for example – Google or Yahoo Finance. Press releases will provide information about previous funding.
2. In your group, learn to navigate the financial statements and determine the company's financial health by answering the following:
   - What information does each type of statement provide?
   - How many months of cash do they have?
   - What is their cash flow?
   - What is their gross margin?
   - What can you tell about their operating activities?

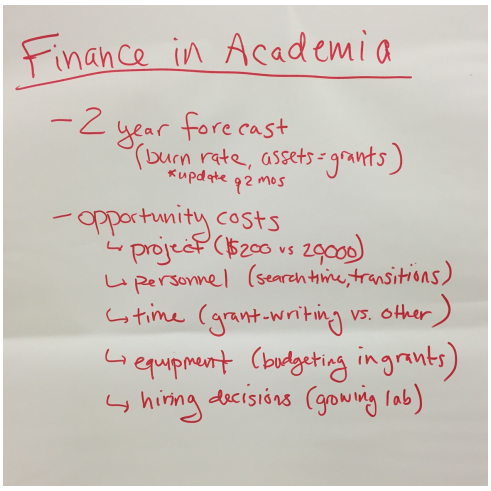






Academic activity:

1. Imagine starting up your lab as a new junior faculty member.
2. Consider how you will develop a financial plan. Start by answering these questions:
   - What do you include in a forecast of your budget?
   - How often do you forecast?
   - How do you calculate the burn rate for your lab?
   - What opportunity costs will you consider?
   - How does your overall strategy impact your financial decisions?



Rubric for finance concepts

This table provides criteria to evaluate if the group is progressing on the case. Facilitators might find this table useful for determining whether participants demonstrate mastery of basic and advanced concepts, providing focused direction, and clarifying expectations for the group activity.

Area of knowledge	BASIC mastery of concepts	ADVANCED mastery of concepts
Identify the different financial statements and how companies use them	List the 3 types of statements	
	List places to find the financial statements online (e.g., company websites, dashboards, and SEC.gov or Edgar)	
	Describe use of the income statement (aka P&L statement) and timeline for use (year end)	Can find current revenue and net income on the statement
	Describe use of the balance sheet and timeline for use (snapshot in time)	Give calculation to determine assets (assets = liability + equity)
	Describe use of the cash flow statement and timeline for use	Can find current cash balance on the statement
Explain concepts such as opportunity cost, cost of capital and net present value	Define opportunity cost and who uses this concept (all individuals)	Give examples of opportunity cost related to the company
	Define cost of capital (perceived risk of investment) and who uses this concept (all organizations)	Explain the relationship between COC and perceived risk (less risky investments, lower COC)
	Describe the practical use of net present value and who uses this calculation (mainly companies in valuing assets to acquire or attractiveness of a project)	Explain how NPV is calculated
	Describe the practical use of internal rate of return (to evaluate the attractiveness of a project/investment)	Describe how NPV is used to determine internal rate of return (IRR)
	Describe benefits of forecasting	Describe how to build a 5 year simulated forecast for a company
Determining the financial health of a company	Give the calculation for gross margin and explain why it's useful for comparing companies	Determine the gross margin for a company (Gross Profit = revenue – expenses); gross margin = GP/revenue
	Give the simple calculation for net income = revenue-expenses-taxes	Calculate the net income for a company using the P&L statement
	Define cash burn	Describe why this calculation is only useful for companies that operate at a loss
	Define solvency (financial health of a company); cash in bank/monthly expenses = number of months left	Describe why it's useful for a small company or start-up, but not for a fully integrated company

Notes for facilitating the group discussion

Thank you for your interest and participation in the Finance workshop.

The goal of the group discussion is to give the participants a chance to apply the principles they learned from the lecture. The task they will perform is determining the financial health of a company from browsing the company's online financial statements, and calculating gross margin, operating loss, and burn rate (if applicable).

Questions to answer:

- What information does each type of statement provide?
- How many months of cash do they have?
- What is their cash flow?
- What is their gross margin?
- What can you tell about their operating activities?

As a reminder of what they are looking for, we have defined the concepts below –

Financial statements discussed

- Income Statement – revenue and costs
- Balance Sheet – assets, liabilities, equity
- Cash Flow Statement – operating, investing, and financial activities

Calculations:

- Gross margin = (revenue – COGS)/revenue
- Burn rate = (current cash/annual operating loss) *12
- Operating loss = Revenue – (cost of revenue + R&D + SGA + non-recurring costs + depreciation & amortization). For a simpler calculation, don't include depreciation and amortization
- Cash flow = current cash/operating loss * 12

Review of financial concepts

- Opportunity cost – the cost of the next best alternative that must be foregone in order to choose a desired plan
- Cost of capital – the rate of return (profits) that is required to persuade an investor to make a given investment
- Net present value – the present value of an investment's expected cash inflows minus the costs of the investment; an indicator of how valuable a project could be and whether it is worth investing in (NPV > 0 means it could add value to the firm). For example: Cost to purchase and construct a lemonade stand today is $100. Present value of cash flows from your kid's stand for the next 3 months could be $20, $40, $50. NPV = ($20+$40+$50)-$100. NPV equals $10. The NPV is positive so you could say yes to the investment.
- Internal rate of return – the interest rate at which the NPV of all the cash flows from a project equals zero; can be used to evaluate the attractiveness of a project or investment

Resources
Securities Exchange and Commission (SEC) website – company filings
Yahoo and Google Finance – dashboards and summaries of company info
Company website – investor section

What if conversation stalls?
Below, you will find a list of questions to prompt the participants. Review the Rubric for Finance to help

guide the discussion, and to determine if participants in your group are thinking through the basic concepts.

After asking a question, steel yourself to wait through the silence—responses will come. If you notice the same 2-3 people speaking, and want broader participation you might say: "Let's hear from someone we haven't heard from yet" or "How about someone from this side of the group?" etc. Move around the group— you will boost participation by facing different directions in the group.

Questions to prompt conversation:

- What's found on the income statement? Revenue and costs. Can be summarized as the revenue (top line) and net income (bottom line)
- What financial statement do you use to calculate gross margin? The income statement or P&L (profit & loss). Top line is revenue for 2015. Then find the cost of goods. Lilly 20B and 5B, respectively. Gross margin for Lilly is 75%.
- Why do we calculate gross margin? Gross margin gives a percentage to compare companies more easily. For example, a small company might have revenue of 25M where a large pharma might start at 20B. Difficult to compare this, so gross margin is a percentage or ratio that lets you compare apples with apples
- What financial statement do you use to calculate operating loss? The income statement or P&L (profit & loss). Revenue – (Cost of revenue + R&D + SGA + non-recurring costs + Depreciation & Amortization). For Lilly, 17B annually or 1.5B monthly in expenses.
- What's on the balance sheet? Assets and liabilities – what you have and your debts. It's a snapshot and changes next month or even next business day. The most important part is cash. How much cash do they have on hand? Pfizer 3.64B
- How do you calculate the cash burn rate or run rate for a company? The calculation is months of cash divided by operating loss multiplied by 12. **Remember this calculation is useful only if the company is selling less than they are expensing.** If the company is making a profit, they are not burning cash. Pfizer 8.6B is the cash.

***What types of questions might the participants ask me during the discussion*?**
When we previously administered this course, we recorded the most common questions. Below you will find this list along with possible responses in the gray text, following the question.

Facilitator's tip – The facilitator's role is to prompt the group discussion. When a student or postdoc asks a question, consider giving a broad answer to get them started, but then point them in the direction of the website where they can find it themselves. You may also ask the question back to the group to see if anyone else has a response.

Questions participants may ask

FINDING AND INTERPRETING THE STATEMENTS

- Where do I find the 10K on the company website? The investor section, look for the table with teal and white lines
- What's the advantage of using a dashboard (Yahoo or Google Finance) versus the company website? The dashboards help to interpret the data without all the numbers, can make more

sense to some. Keep in mind, someone is pulling the data for these dashboards and they may not be accurate or updated, so to be sure, use the statements on the company website.

- What is a 10K? Technically, it's an annual report required by the U.S. Securities and Exchange Commission (SEC), that gives a comprehensive summary of a company's financial performance; publicly traded companies. Note: a 10K ends at year end or December 31.
- What is a 10Q? The quarterly reports
- Where can you read the financial reports for private companies? Possible answer – you have to knock on doors.
- What is a deal? a development deal or collaboration that could eventually lead to revenue.
- Where is the 10K listed on Yahoo Finance? Finance.yahoo.com. Enter company name or trading ticker (for example: Pfizer or PFE) on search bar located on top of webpage. Then click on 'Financials' tab to find simple financial statements. For the full statements, click on 'Profile' above chart
- What numbers in parenthesis or brackets? In accounting, expenses are in parenthesis and a negative sign precedes purchases. It indicates negative values like expenses or losses. For example: Operating expenses, Net Profit in case of Loss.

GROSS MARGIN

- What does a gross margin of 25% mean? For every dollar the company gets as revenue, they earn 25 cents in profit and they use another 75 cents to produce the goods. For example: To manufacture a cellphone, if you spend $75 and sell it for $100, then $25 is your gross profit. 25% is your gross margin [(revenue-cost of goods)/revenue]
- Do we calculate the other expenses like SGA when determining gross margin? No, only use cost of goods sold (COGS). Revenue minus COGS divided by revenue
- How do we calculate operational profit? Revenue minus cost of goods sold minus expenses. Expenses are mainly R&D and SG&A
- What does SG&A stand for? Selling, general and administrative expenses. Anything to keep the lights on. Could include marketing costs, salaries paid to employees, transportation, rent paid for building, security and maintenance of office premises.

BURN RATE & CASH FLOW

- If you want to look at how many months of cash they have which statement do you use? Cash flow. Total cash is determined from operating activities
- Why is the company's cash flow negative? [May be the case if the example is a start-up] Well-funded or well-established companies do hold sufficient cash to operate for a certain period, unlike some start-ups. Start-ups may be incurring operational losses. They may not be generating profits initially; they may get minimum support money from grants, investors and other sources.
- What does a negative cash flow mean? Doesn't mean the company is done for, but the company may not have money at the end of the year. Negative cash flow means that company is spending more money than it is generating income from its business. For start-ups it may indicate that company is investing more on R&D, new infrastructure, marketing & promotional activities before it can generate enough revenue to cover expenses. What can a company do - take out a

loan, draw more from investors or shareholders to cover the cash flow gap to get out of the negative.

- If the company has a negative cash flow, can we work out months of cash? Yes, look at the balance sheet, go to current assets and use the change in cash flow from the income statement as the burn rate. For Eli Lilly – cash equivalents is 3.6 B and add in short term investments to round out at 4 B in cash. Our change in cash from last year (annual operating loss from the cash flow sheet) was negative 200M. Use the current cash we have 4B divide that by annual operating loss and multiply by 12 (260 months)– so you can see why it's trivial. It's a long time.
- In academia are you operating in the negative? Yes, you consider it operating loss.
- Can you calculate burn rate if the company is operating in the positive/making money? You can, but because the company is making a profit, they aren't burning cash. If a company were selling more than they are making or expensing, then that company would be burning cash. Profit making companies pile up cash. For example: Apple, as of June 2016 had more than $61 billion in cash and short-term investments. Cash burn means, even if Apple stops earning money from today (not selling their iPhones & iPads), how many more months it can sustain with available cash.
- What is the difference between expenses and cash burn? Expenses are money spent on keeping the business operational. Whereas cash burn is utilizing available cash to pay for expenses.

OPERATING LOSS

- [Eli Lilly] They lost a lot of money with financing. Companies tend to lose money with financing. Financing is negative. Investing is also negative unless the company sells a big part of the company to make money. Usually operations is the make or break side of cash flow. If you're operating efficiently then you can try to do more on the I/F side and generate money for the company. If Lilly is not operating efficiently, it might be better to invest or spend that money on operating more efficiently. It's typically a good strategy to invest in stocks after the company has its own finances together.
- How can a company generate money through investing and finance? It takes time. Eli Lilly – in this example, say Lilly wanted to take a new experimental drug in phase II, they will invest in that drug at a rate that they know they can make money back. The potential is to sell for billions, but it takes 100 M to invest today.
- [Eli Lilly] The net income is about 10% or 2.4B. If the cash flow is negative, why invest the 10% rather than work towards the positive? Cash flow is how a company manages cash, and negative doesn't mean the company is doing a terrible job. For example, if it's positive the company could to be more efficient with cash. For example: Apple has too much cash – they're not doing anything with it. They could make more units or re-invest that net income; could do more acquisitions or investing. Also most of the Apple shareholders prefer dividend payouts regularly than reinvesting, which is a source of income for them. Whereas, Eli Lilly shareholders prefer internal growth and expect more benefits in the future.
- If a company has 10% to invest, should they invest in their own operations or invest externally? It's money that gets moved around within the company. The company could give dividends, pay off debt, invest, and so much more. That 10% could go into cost of capital, another ratio to compare to other companies.
- What is solvency? The ability of a company to reach its long-term goals or financial

commitments. Ability to meet short-term goals or pay short-term obligations, or sell assets to raise cash is often referred to as liquidity. It mostly refers to total assets on company's balance sheet.

- [Eli Lilly] They are spending 1.5B monthly. How do you determine solvency? Determine how much cash they have on hand. For Lilly, they have 4.5B, so they only have a couple months. So if this company stops making money and didn't make another dime, they could cover their financial commitments/expenses and they would have 3 months to come up with a solution.
- What is the difference between the annual operating loss and year over year loss? Annual Operating Loss is for a specific year, for example $100M in 2014 and $120M in 2015. Year over Year loss is the comparison between specific periods; in this case it's $20M (20%) more in 2015. The year over year loss tells you about the company's growth and how the company is managing capital. How much money you make is important, but on Wall Street it's important how much you're growing sales and EPS. How is the company taking the money and re-investing it and growing sales?
- What is earnings per share (EPS)? Earnings are the bottom line, like net income. Per share is dividing that net income by how many shares the company has. Ex: If the company made 1M that year and has 1M shares, the EPS is $1. It's an indication of how profitable a company is. That growth, year over year is used to see if a company over the years is growing or shrinking.

CASH FLOW

- Where do you find the cash flow statement? The CF statement is listed after the balance sheet. For Pfizer 2015: page 70.
- What are the parts of the CF statement? CF from operations, CF from financing and CF from investing. CF from operating activities is basically how much cash is flowing into the company. In the income statement, this is the net profit. How much is sold minus how much was expensed, net income. But with CF, need to consider depreciation. In the income statement the company sold 100M, but spent 20M in R&D and 40M in SG&A, so it's 40M in profit, but in those expenses, need to include depreciation and stock based compensation that was given to employees. This isn't cash that was taken out of pocket, but it's a cost, and it's taken out so the company pays less taxes. Cash will take net profit from the P&L and add back the non-cash items, to add back depreciation and stock based compensation, because that money didn't flow out. And CF from operations is how much flows in or out of the company. For Pfizer, 2015 - 14.5 B.

POSTER SESSIONS

- How do you compare gross margins? The higher the GM the better the company performance.
- Gross margins can be compared in different ways:
    - Gross Margins for the same company (2015 vs 2016) is a YoY comparison
    - Gross Margins for Company A vs Company B in specific period. For example: 2015 GM of Eli Lilly vs 2015 GM of GILD. This enables investors to analyze which company is doing better in the market. Usually comparison happens within peers in the same industry.