Group Case-Study Assignment Weeks 1 & 2:

Your first assignment for a Group Case-Study will cover the first two weeks of the course. Therefore, this assignment is collectively worth 15% of your grade: The deliverables for this assignment is:

- **1 written test spec:** This test spec should contain the following sections:
    - Summary, Context, Hypotheses, Decision Framework, Scope, Measurement and Cell Design.
    - It does not require any calculations or math (no need to estimate a sample size for example)
- **A group presentation in Week 3 of the class.** Your presentation should be approximately 10 minutes. Then we will have 5 minutes of Questions and Answers. You do not need to cover all the sections of your test spec. You should begin with Context and Hypotheses, but after that you should highlight what you believe is most interesting to the class.

You should organize into groups of 4 or 5 for this project. You will be graded as a team.

For this assignment, I am asking you and your team to choose a company, non-profit, school, or other organization and design an experiment that they could theoretically run.

What types of organizations: Any type of organization is fine, this doesn't need to a be

- Think of an app you use a lot, a website you visit frequently, or your favorite store
- Think about a charity that you care about: maybe the Red Cross, a Food Bank, or a hospital
- Think about a government department like the Internal Revenue Service that collects Taxes or the Department of the Interior that manages national parks
- You can even think about USF!

What types of experiments:

- At the highest level, I am asking you to think broadly and creatively about your experiment, and do not want to impose many restrictions. You have a lot of latitude here to think about unique experiments.
- With that in mind, this is an economics program! I am asking that you think of experiments that in some way relate to what you know about utility theory, micro-economics, and human decisions or markets. That is to say, your hypotheses should likely be grounded in some model of human behavior (you don't need to formally and mathematically specify a model), but should explain your thinking in the context section. If you think that utility theory is about people's preferences and responses to incentives, this covers a broad range of ideas.
- It should be a "field experiment" that gets people in a natural setting to see how they respond to things. This is in contrast to a "lab experiment" where people come specifically to participate in an experiment.

- **For example:** “Trees grow taller if you water them more” is not an appropriate hypothesis for this class. “Users purchase more when offered a discount” is appropriate.

What you will be graded on:

- *Uniqueness and Relevance of Hypothesis*: You should be able to justify the importance of the experiment to the organization you choose. It doesn’t need to be a world-changing research question, but it should be something that would likely be material, important, or relevant to the organization you focus on. I have given a number of simple examples in class. It’s ok to apply them to new situations. But you will be scored higher for more unique, innovative, or different types of experiments.
- *Completeness:* Working through all the sections and parts of an experiment described above will be important. Don’t skip any sections!
- *Thoughtful Consideration of Tradeoffs:* For many parts of an experiment, there will not be a single correct answer. Highlight in the test-spec some of the tradeoffs you faced and why you landed where you did
- *Clarity of communication:* Remember, a document like this might be shared broadly in an organization. Better organized it is, cleaner to read, and clarity of ideas the higher your gade will be.
    - We don't necessarily require beautiful prose to do this, clarity and succicinty is better. Make use of bullet points and tables as you see necessary. Feel free to make a dia

What you (mostly) won’t be graded on:

There are some things it will be hard for you to know for sure. Make some reasonable guesses and go from there. We won't penalize you for them being wrong, so long as they are reasonable.

- *Correctness of Information:* Obviously, you don’t work for these organizations. You can make some educated guesses about what might be important or new. You make some assumptions about data they have or don’t have. So long as they are reasonable, you are fine to make these assumptions. You don’t need to spend a lot of time doing a literature review to learn background in the space.
- *Technical Feasibility:* It would be hard to know how an experiment might actually need to be built.

The reason this says “mostly” is because if you make very outlandish and unreasonable assumptions in order to justify what you are experimenting on, it may harm your ability to have a relevant hypotheses or thoughtfully consider tradeoffs.

Some checkpoints:

We will only be graded on the final written document and presentation. That said, this is a lot to get done in two weeks.

- We will spend about 30 minutes in the first class session for break-out groups as a team. Having 2-3 general ideas about organizations, decisions to inform and experiments by

the end of this time would be good. I will be joining the breakout rooms, and you can get some feedback on your ideas

- By Week 2 of Class. It would be good to have nailed down your organization, the decision you are trying to inform some of the precise hypotheses you wish to test. This would mean you can use class time to focus on decision framework and cell design. Again, we will have in class time to work as a team, and I will circulate to hear what you are working on and give feedback.

Make use of my office hours or email also to get feedback! I would be happy to hear about your ideas and give you some advice or feedback before I grade your project. I would be disappointed if I need to downgrade anyone because I don't think they had an experiment that would be relevant, when you should have had plenty of time for me to see what you were thinking in advance. You won't be downgraded for an incomplete or incorrect idea before the project is turned in, but will be after.

As a suggestion: Work on this in a Google Doc. After you agree on the organization and the decision you are trying to inform, have different people in the team take on different sections. Use the comments to help each other improve their sections.