

# APPLIED MECHANISM DESIGN FOR SOCIAL GOOD

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Lecture #29 – 5/10/2018

**CMSC828M**  
**Tuesdays & Thursdays**  
**9:30am – 10:45am**



**COMPUTER SCIENCE**  
UNIVERSITY OF MARYLAND

# REMINDERS

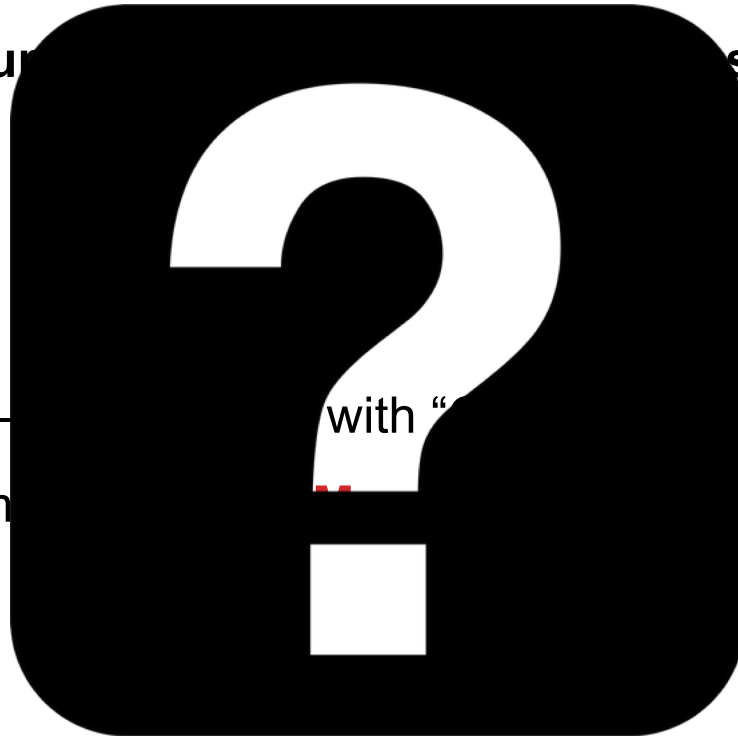
This is the last lecture of the course!

## Final exam:

- (Piazza post)
- Just like midterm – with “” in subject
- Submit your exam

## Final project:

- (Piazza post)
- Submit your project writeups by **5pm on Wednesday, May 16<sup>th</sup>!**



# COURSE EVALUATIONS

Please please please please fill them out!

This is only the second time CMSC828M has been offered

- Want to make it better!

Completely anonymous

No impact on your grade

Response Rate			
	Responded	Invited	% Rate
Students	18	34	52.94%



This is all I see until after I've submitted your final grades!



**APPLYING “APPLIED”  
MECHANISM DESIGN**

# INFORMED CONSENT

**“Respect for persons” – cornerstone value for any conception of research ethics**

**Informed consent de facto way to “operationalize” that principle**

- Integral component of medical research for many decades
- Applicable for any research where “personal information” is divulged or human experimentation performed
- Institutional Review Boards (IRBs) in charge of implementing

**How it translates into the “big data” world?**

- Largely ignored by most researchers

# HISTORY

**Systematic scientific experimentation on human subjects rare and isolated prior to the late 19th century**

**Some early directives in late 19<sup>th</sup> century and early 20<sup>th</sup> century**

- Prussian directive in 1900: any medical intervention for any purpose other than diagnosis, healing, and immunisation must obtain “unambiguous consent” from patients after “proper explanation of the possible negative consequences” of the intervention

**Nuremberg Code, drafted after conclusion of Nazi Doctors’ trials:**

- established a universal ethical framework for clinical research
- “the voluntary consent of the human subject is absolutely essential” to ethical research
- Detailed specific guidelines on what to present to subjects (nature/duration/purpose, how conducted, effects on health, etc)

# HISTORY

***Salgo v Leland Stanford etc. Board of Trustees (1957)* ... cited as establishing the legal doctrine of **informed consent** for medical practice and biomedical research in the United States**

- Plaintiff was awarded damages for not receiving full disclosure of facts

**In 1953: NIH put the first IRB in place in its own hospital**

- ... voluntary agreement based on informed understanding shall be obtained from the patient
- ... will be given an oral explanation in terms suited for his comprehension
- Only required a voluntary signed statement if the procedure involved “unusual hazard.”

# HISTORY

## **A more detailed list of requirements emerged later**

- 1) A fair explanation of the procedures to be followed, including an identification of those which are experimental;
- 2) A description of the attendant discomforts and risks;
- 3) A description of the benefits to be expected;
- 4) A disclosure of appropriate alternative procedures that would be advantageous for the subject;
- 5) An offer to answer any inquiries concerning the procedures;
- 6) An instruction that the subject is free to withdraw his consent and to discontinue participation in the project or activity at any time

## **“Common Rule” – codification of “respect for persons, beneficence, and justice”**

- Regulates use of human subjects in US today
- More elaborate treatment of all of these aspects



# **NON-MEDICAL RESEARCH**

**Unclear how the rules translate to other types of research**

**Identifying harm or potential risks difficult**

**Requirements and experiments change over the course of the study**

**The list of subjects itself evolving**

**CS has rarely had to deal with IRBs**

- Although changing ...

# **INDUSTRY RESEARCH**

**Less distinction between conventional or academic social scientific research and industry- or market-oriented research**

**Data fusion can lead to new insights and uses of data**

**Hard to translate the “informed consent” requirements to these settings**

# **CASE STUDY: FACEBOOK EMOTIONAL EXPERIMENT**

**Facebook routinely does A/B testing to test out new features (e.g., layouts, features, fonts, etc)**

**In 2014: intentionally manipulated news feeds of 700k users**

- Changed the number of positive and negative stories the users saw
- Measured how the users themselves posted after that

**Hypothesis: Emotions spread over the social media**

**Huge outcry**

**Facebook claims it gets the “consent” from the user agreement**

# OKCUPID EXPERIMENTS

## Experiment 1: Love is Blind

- Turned off photos for a day
- Activity went way down, but deeper conversations, better responses
- Deeper analysis at the link below

## Experiment 2:

- Turned off text or not – kept picture
- Strong support for the hypothesis that the words don't matter

## Experiment 3: Power of Suggestion

- Told people opposite of what the algorithm suggested

<https://theblog.okcupid.com/we-experiment-on-human-beings-5dd9fe280cd5>

# GDPR AND CONSENT

**General Data Protection Regulation – new law in EU to take effect next year**

**Requires unambiguous consent**

- data subjects are provided with a clear explanation of the processing to which they are consenting
- the consent mechanism is genuinely of a voluntary and "opt-in" nature
- data subjects are permitted to withdraw their consent easily
- the organisation does not rely on silence or inactivity to collect consent (e.g., pre-ticked boxes do not constitute valid consent);



Presenting PSD for download - Resolution 2500x1666 px - www.psdgraphics.com



**WRAPPING UP**



# PEOPLE YOU SHOULD TALK TO

## **MohammadTaghi HajiAghayi**

- Fair division, security games, auction theory

## **Me!**

- Ethics & diversity in matching markets, barter exchange, FATML

## **Larry Ausubel (Economics)**

- Incentive auctions (he ran the FCC auction)

## **Peter Cramton (Economics)**

## **Dana Nau + Tom Goldstein**

- Game theory & behavioral stuff

## **Hal Daume + Jordan Boyd-Graber**

- FATML, intention behind action



# GROUPS YOU SHOULD TALK TO

## Google NYC

- Auctions

## Microsoft Research

- Prediction markets
- Auctions
- Market design & society

## Facebook

- Auctions
- Behavioral Econ

**Lots, lots, lots more ...**





# UPCOMING PLACES TO SUBMIT YOUR PROJECTS

## **AAAI** (September)

- game theory, AI/ML, ethics & AI

## **CHI** (September)

- human-computer interaction, AI impact on humans

## **FAT\*** (October)

- fairness in machine learning

## **WWW** (October/November)

- Internet stuff, big networks, auctions

## **NIPS Workshops** (October/November)

- various ML topics — <https://nips.cc/Conferences/2017/Schedule?type=Workshop>

## **AAMAS** (November)

- multi-agent systems, game theory

**THANKS!**

***[HTTPS://WWW.COURSEEVALUM.UMD.EDU/](https://www.courseevalum.umd.edu/)***