- **STAT 388R**
- **Harvard College/Graduate School of Arts and Sciences:** 204453
- **Term:** Spring 2016-2017

- **Course Instructor:** Edoardo Airoldi
- **Meeting Time:** Monday 2:00am - 4:00pm
- **Meeting Location:** Science Center, room 706

- **Course Description:** Description. Graduate seminar on strategies for designing, executing and analyzing experiments on large populations, as well as large collections of experiments. We will consider settings where units of analysis may be assigned treatment in multiple experiments, running concurrently. The course is largely based on critical reading of recent articles and technical reports, and on the instructorâ€™s own experience in designing complex field experiments, and in working with experimentation platforms at large IT companies.

News.

1. In order to maintain the spirit of seminar style discussions, and because of the expected large interest in the material, the enrollment of this course is limited. If you wish to enroll, please send your CV, a list of the 200-level statistics courses you have taken at Harvard, and a short statement that describes how this course is going to support your career / learning goals to Prof. Airoldi. Email this information to airoldi@fas.harvard.edu with subject "Stat 388".

Papers of interest include.

- Bertsimas et al (2015) "The Power of Optimization Over Randomization in Designing Experiments Involving Small Samples". (Bertsimas.pdf)

- Shalizi and Thomas (2011) "Homophily and contagion are generically confounded in observational social network studies"

- Shalizi and McFowland III (2016) "Controlling for homophily in social networks through inferring latent locations" (shalizi.pdf)

- Aral, Muchnik, Sundararajan (2009) "Distinguishing influence-based contagion from homophily-driven diffusion in dynamic networks" (aral.pdf)

- Kang and Shafer (2007) "Demystifying double-robustness"

- Chernozukov et al (2016) "Double Machine Learning for Causal and Treatment Effects"

- Basse and Airoldi (2017+) "Optimal model-assisted design of experiment for network-correlated outcomes"

- Li et al (2016) "Asymptotic Theory of rerandomization" (li.pdf)

- Toulis and Parkes (2016) "Long-term causal effects via behavioral game-theory" (toulis.pdf)

- Hohnhold et al (2015) "Focusing on the long term" (hohnhold.pdf)

- Centola (2010) "The Spread of Behavior in an Online Social Network Experiment" (centola.pdf)

- Benson, Gleich and Leskovec (2016) "Higher-order organization of complex networks" (leskovec.pdf)

- Mobius et al (2015) "Treasure hunt: social learning in the field" (mobius.pdf)