



Student Schedule

For locations, please refer to the Campus Map included in the registration packet.

Time	Location	Event
07:30–09:00	Jadwin A09	Registration; power round due.
08:30–09:30	McDonnell A02	Proctor Matching, Teams T101 – T153
08:30–09:30	McDonnell A01	Proctor Matching, Teams T154 – T178
09:45–10:45	Team Rooms	Individual Test 1 (Testing may begin earlier.)
10:50–11:50	Team Rooms	Individual Test 2
12:00–12:35	Team Rooms	Team Test
12:30–13:30	Frist MPR	Lunch will be served in the Frist MPR. To reach the MPR, enter Frist from the southwest and take the stairs down to the basement. Please leave the MPR once you have your lunch.
13:10	McDonnell, online	Individual finals posted
13:15	McDonnell, outside A01/A02	Sign-ups for the math bowl mini-event at the PUMaC info desk. Math bowl is limited to the first sixteen teams of four students from the same school/organization. Each school/organization may field only one team for the math bowl.
12:30–14:00	McDonnell, outside A01/A02	PUMaC info desk, t-shirt sales, and sponsor tables. Sponsors will be giving out free stuff.
13:15–14:15	McCosh 50	Talk by Prof. Matt Weinberg on prophet inequalities and secretary problems (see description on reverse side).
14:00–15:15	McDonnell A02	Individual finals
14:00–16:00	East Pyne	Math bowl (mini-event); room assignments will be posted in East Pyne. Sign-up required; see above.
14:00–16:00	Fine 317	Board games and chess (mini-event)
14:30–16:00	Frist 309	Puzzle hunt (mini-event). The first clue will be given out at 14:30 in Frist 307. Answers to puzzles will be locations on campus, where subsequent puzzles will be given out.
14:30–16:00	Fine 214	Rubik's cube event (mini-event)
14:30–16:00	Lewis 138	SIG Estimation contest (mini-event). Compete for prizes by estimating various quantities with your team at an estimation contest, run by SIG.
14:30–15:15	McDonnell A01	A Q&A about majoring in math at Princeton with Prof. Mark McConnell and some Princeton math majors.
16:05–17:30	McDonnell A01/A02	Live round — A division. Once you get to McDonnell you will be told whether to go to A01 or A02.
16:05–17:30	McCosh 50	Live round — B division
17:45–18:45	McDonnell A02	Awards — A division
17:45–18:45	McCosh 50	Awards — B division



Talk by Matt Weinberg: Prophet Inequalities and Secretary Problems (*The talk will be in McCosh 50 from 13:15 to 14:15.*)

Abstract: Imagine that you're trying to hire a secretary. You interview candidates one at a time and learn their quality, but must immediately decide at the end of the interview whether to hire them or not. Prophet Inequalities and Secretary Problems pose two ways to look at this problem through a mathematical lens.

In Prophet Inequalities, each candidate's quality is drawn independently from a known distribution. Your goal is to design a hiring policy that maximizes the expected value of the hired candidate, where the expectation is taken over the randomness in draws from these distributions.

In Secretary Problems, each candidate's quality is fixed (but unknown to you), but the candidates are permuted to interview in a uniformly random order. Your goal is again to design a hiring policy that maximizes the expected value of the hired candidate, but this time the expectation is taken over the randomness in the interview order.

In this talk, I'll present seminal results of Samuel-Cahn (1986) for Prophet Inequalities and Dynkin (1961) for the secretary problem. I'll also discuss more recent developments when the designer is looking to hire several secretaries.

Orange Key Tours: Take a tour of Princeton's campus! You'll learn about the facilities on campus, get a sense of the 250-plus years of history and traditions that only Princeton can claim, and hear some fun facts and anecdotes. Your student tour guide will describe the campus beyond the stimulating classes, renowned faculty, and world-class resources at Princeton. (*Tours leave from the Welcome Desk on the Frist 100 Level at 11:15, 13:00, and 15:30. PUMaC participants should not go to the 15:30 tour because they would be late for the live round.*)

Puzzle Hunt: Teams will solve a series of puzzles that will lead them across campus. Each puzzle will reveal the location of the next puzzle. The first team to the final location will win a prize! Teams may be of unlimited size, but must consist only of students and coaches from the same school/organization. (*Get the first clue in Frist 309 at 14:30.*)

Board Games and Chess: There will be lots of board games and chess in the Fine Hall Common Room! (*Fine Hall 317, 14:00–16:00.*)

Cubing Events: The Princeton Cube Club will be hosting a 3x3 cube competition (average of 5 solves, with the best and worst solves thrown out). Bring your cube; there will be prizes! (*Fine 214, 14:30*)

Math Bowl is a trivia competition in which two teams of four will go head-to-head and show their speed and skill in various aspects of mathematics. Questions range from mental math to identification of famous mathematicians to questions about science and technology. **This event is space-limited and requires a sign-up.** (*Sign up at the PUMaC Info Desk, outside McDonnell A01/A02, at 13:15. The competition will take place in East Pyne beginning at 14:00.*)

The **SIG Estimation Contest** is an estimation competition run by Susquehanna International Group (SIG), one of PUMaC's sponsors. Compete in teams of six to eight to try to get estimates for eight numerical problems faster than the other teams. Prize money will be awarded! (*The estimation contest will take place in Lewis 138 from 14:30 to 16:00.*)