• GRADUATE STUDY = TRANSITION

from

physics student

with basic physics knowledge
some exposure to physics research

to

research physicist

creative, critically thinking,
independent professional
• Set goals and minimum standards:

Which skills and what level of knowledge and accomplishment do we expect from a fresh physics PhD?

• Structure the graduate program:

such that students, with the right talent and skills, will be able to meet these goals within ~ 5 years.
A little bit of statistics (of incoming classes since 1992):

- 280 entering students, 263 passed generals, attrition $< 15\%$
- 34 female students, 33 passed generals, attrition $< 10\%$
To bring a graduate study to successful end, one needs...

... motivation, determination, communication skills, adaptability, initiative, confidence, critical mind, analytical skills, knowledge ...
• Admissions:
  GRE scores, grades, letters, personal statement!

• Prelim exam:  Class Mech, Quantum, Stat Mech, E & M

• Friday Beer:  Christmas caroling

• Experimental project:  around the end of 1st year

• 3 Core Courses:  GR, HEP | QM2, QFT | Bio, CM, Atom

• Mentoring:  pre-generals advisor, DGS, fellow students
Generals Requirements must be passed in 2 years

- Pre-Thesis Project: beginning of 3rd year
  start of thesis research;
  sets up thesis committee:
  advisor + 2 faculty

- Re-Enrollment Interview: end of every year
  hurdles
  - EX: exams, equipment, project time-scale, changing advisors
  - TH: finding an advisor, confidence, motivation, exp. project
- 1st Year Fellowships: time to study, keeps them out of labs
- Core Courses: minimal grade B, hard for some EXP students
- Mentoring: DGS, pre-thesis committee, faculty meetings
- Interdisciplinary Advisors: Biophysics, Astro, Chemistry, ...
- Theory students: some peer pressure to finish in 5 years
- Degree Completion Enrollment: 6th and 7th year
- Group morale: ... Friday beer, Recruiting, Recital, Picnic, ...