# What Can You Do With a Math Degree?

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A math degree provides the foundation
for many different types of careers

- immediate employment
- financial math masters programs
- other professional programs
- PhD study in a math-intensive field
- PhD study in mathematics

## Immediate Employment

- teaching (credentials via Math for America or Steinhardt)
- data-mining or software (recommended: comp sci)
- finance world (recommended: economics, statistics)
- actuarial science (need: prob/stat and actuarial exams)
- positions demanding analytical skills (e.g. paralegal)

## Financial Math Masters Programs

- new but very successful: “financial mathematics” or “financial engineering” masters programs
- concept: different from MBA or PhD
- program lengths and costs vary (typically 3 semesters)
- financial aid is rare (most students take loans)
- typical placements: risk management, asset management, algorithmic trading, pricing & hedging of options

## Other Professional Programs

- Law schools like math majors (no news here).
- Good and bad reasons to continue for a “regular” math MS:

  bad You don’t know what you want to do.

  good You know what you want to do, and it requires more math.

- Some MS degrees are very employable (e.g. statistics, computer science).

## PhD in a Math-Intensive Field

- Options include: Operations Research, Statistics, Economics, Computer Science.
- PhD's in these areas have a wealth of career options (non-academic as well as academic).
- To be a credible applicant you must have taken (and done well in) relevant courses.

## PhD in Mathematics

- Most math PhD's become college or university teachers.
- Other careers are also possible, e.g. finance and software.
- Programs vary; Applied Math can be separate from Math.
- Some schools offer additional options such as Computational Science or Computational Biology.

## Selecting and Applying to PhD Programs

- Keep an open mind. (Notice what you like, but don't limit yourself to that. Think about why you like it.)
- Different schools have different strengths, both in the areas they cover and in the environment they maintain. Seek advice from faculty who know you well.
- Expect to get financial support. The list of schools where you could thrive is long.
- Apply for Graduate Fellowships through NSF, Hertz, etc if you qualify.

# Maximizing Your Chance of Success

- Take advanced classes (like Analysis I,II) as soon as you're ready (but not earlier)
- Get to know your teachers.
- Do a research project at NYU, e.g. through SURE: you'll enjoy it, and your advisor will have a lot to say about you.
- Consider participating in an REU program somewhere else (NSF maintains a list).
- When you get around to applying: use the "statement of purpose" well. Also: choose your recommenders well.
- Some departments hold recruitment events.
- Departments or groups with recent RTG awards will be hungry for American students.

# Conclusions

- It's OK to be unsure what you want to do.
- Today's choices influence tomorrow's possibilities.
  But change is possible.
- Every person is different. Make a choice that works for you.
- Many society websites have useful information, including

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| SIAM | (applied math) www.siam.org |
| AMS | (mathematics) www.ams.org |
| ASA | (statistics) www.amstat.org |
| IAFE | (financial engineering) www.iafe.org |
| INFORMS | (operations research) www.informs.org |