What Research University Math departments look for in applications for Assistant Professor

- (*) Strong letters of recommendation on research
- (*) Published papers – especially in top journals
- Invitations to speak at conferences
- A coherent, mature research plan
- Hot research area
- Breadth of interests
- Evidence of good teaching

What you should be doing

- (*) Publish!
- (*) Develop your thesis work deeper
- Broaden your research
- Participate in research seminars, workshops, summer schools
- Demand help from your mentors
- Participate in workshops on teaching

What smaller College Math departments look for in applications for Assistant Professor

The same things, but will of course look more at teaching record and potential.

Industrial Opportunities

Industrial Scientific Research labs:

- Good Ole' days: lots of large research organizations e.g., IBM Research, Bell Labs
- Today: mostly small groups imbedded in company development labs, e.g., HP Labs, Microsoft

Government Research Labs:

- US: NSA, Los Alamos, NASA, NIST
- Canada: NRC

Industrial Research & Development:

- Computers
- Telecommunications
- Finance
- Biotech
- Biomedical
- Aerospace
- Power
- Environmental
- Defense

What Industrial and Governmental Organizations look for

– In (the few) research labs, they look for many of the same things as research level university math departments, but they may also want to see evidence of programming and team-working skills.

Preparation for Industrial Research

– EE/CS PhD's often have an advantage.

– But a mathematician who demonstrates interest in applications can be competitive. In order to even the playing field:

- Audit applied courses (e.g., programming, statistics, algorithms, numerical analysis, modelling, coding).

- Participate in workshops, summer schools, summer intern programs

- Make connections with mathematicians in industry

- Write a paper motivated by a more practical problem.

Information Sources

- Society publications (SIAM Newsletter, IEEE Spectrum, ACM Communications, AMS Notices)

- Websites such as:

  http://www.ams.org/careers/

Academia -vs- Industry/Government

- Interest level of problems
- Physical working conditions
- Resources
- Collaboration-vs-Independent Work
- Freedom
- Teaching/Communication
- Value of Mathematics
- Bureaucracy

- Salary and Benefits
- Stability
- Opportunity to impact the world