What Math departments look for in applications for Assistant Professor

1. Strong letters of recommendation on research

2. Published papers – especially in top journals

3. Invitations to speak at conferences

4. A coherent, mature research plan

5. Hot research area

6. Breadth of interests

7. Evidence of good teaching

What you should be doing

1. Publish! (your thesis)

2. Develop your thesis work deeper

3. Broaden your research

4. Participate in research seminars, workshops, summer schools

5. Demand (!) help from your mentors

6. Participate in workshops on teaching

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

Government Research Labs:

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

Industrial Research & Development:

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

Preparation for Industrial Research

EE/CS PhD's 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