

Notes by Mike Ward from a panel discussion on non-academic (non-college) careers in mathematics.  
MathFest 2014

Panelists represented Daniel H. Wagner Associates (a small mathematical consulting firm), Boeing (a 50 member math specialty team serving 35K engineers), and the National Security Agency (the country's largest employer of mathematicians).

- When job hunting, look for the keyword “analytics.” It's a term in current usage that means a lot of things, but certainly includes mathematics.
- Degrees in applied mathematics do not give one an automatic advantage.
- Software skills (a programming language, Matlab, computer algebra system, spreadsheets, etc.) can give an advantage. “Almost every customer wants at least a prototype [of an implementation of the solution to their problem].”
- Communication skills, presentations and writing, are important.
- Know how to collaborate with people who know less than you do.
- Interviewing suggestions
  - Prepare mini-speeches in advance that tell stories about your strengths. Use them even when they are not a perfect fit. (E.g. an anecdote about helping other students could be used in response to “Give an example of when you have provided excellent customer service.”)
  - Be yourself. Be truthful.
  - It is OK to be nervous.
  - Make sure you understand the interview questions. Make sure your answers are understood.
  - Prepare some researched questions about the company. Start by studying their website.
  - Dress professionally.
- NSA was the only employer on the panel that hired mathematicians with just a BS or BA. NSA employees sometimes complete advanced degrees while at the NSA (presumably at NSA expense).
- NSA offers paid 12 week summer internships for undergraduate and graduate students. Applications are due in the fall (October?).
- New mathematicians at the NSA enter a 3 year development program where they rotate through various offices to find the best fit.
- The Boeing group works on approximately 150 projects per year. Some are finished in a few hours and others have continued for decades.
- Boeing estimates that about 50% of its math & engineering team are or will be eligible for retirement in the next few years.
- Daniel H. Wagner Associates does much of its consulting for the Defense Department.