

Friends of the
School of Mathematics
April 15, 2010

**Georgia
Tech**



Agenda

- Introductions
- Short presentations:



Overview of SoM (Doug Ulmer)



Outreach (Maria Westdickenberg)



Undergraduate Research (Matt Baker)



Interdisciplinary Programs (Prasad Tetali)



Grad student experiences (Mitch Keller)

- Discussion

The School in Numbers

People: 53 research faculty, 6 instructors/professionals, ~12 visitors; 11 staff members; 110 graduate students, 140 undergraduate majors.

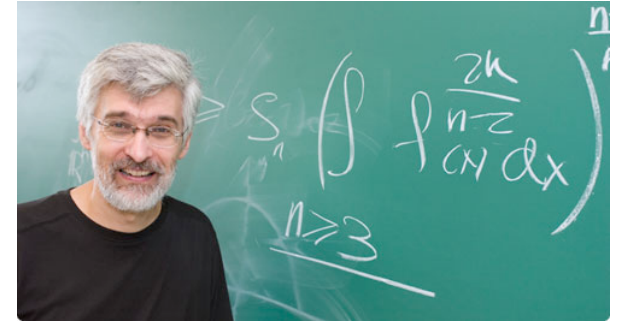
Space: 40K sq ft assignable space, 120 offices, 24 class rooms, lecture halls, labs.

Budget: \$9.1M in state funding, \$25K / yr in GT Foundation funds.

Research: Currently \$13.5M in research awards, \$3.8M per year research expenditures.

Education: 10 degree programs, 126 courses, >47K student credit hours / yr.

Academics



Our courses are the backbone of a GT education: every GT student takes lots of Math (e.g., at least 16 units for each engineer).

Courses range from Intro Calculus to advanced research topics. Even the advanced graduate courses attract significant enrollment from other majors.

Mostly traditional lecture format, supplemented by GTAs, UTAs.

Many, many awards for quality teaching, mentoring.

Challenges: Make effective use of technology, support distance learning, and branch campuses.

Undergraduate Programs



We offer BS degrees in Applied Mathematics and Discrete Mathematics.

There are currently about 140 majors, 3/4 Applied, 1/4 Discrete. Increasing significantly in last 5 years.

We grant about 30 degrees per year.

About 2/3 of graduates go to industry: companies (finance, insurance, logistics, ...), labs/agencies (Oak Ridge, EPA, NSA, Lincoln, ...), teaching, ...

About 1/3 go to grad school (Princeton, Berkeley, Harvard, Stanford, MIT, ...) in various fields (Math, Physics, CS, EE, OR, BioEng, Stats, QCF, ...).

Undergraduate Programs

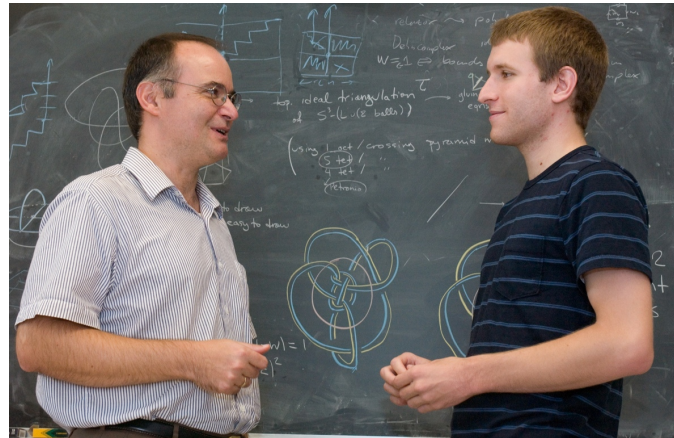


Lots of awards to our students (e.g., NSF graduate fellowship). The Putnam team came in 15th of 439 this year, up from 21st last year.

MCTP training grant (\$730K) supports bringing more students into the field.

Challenges: Supporting undergrad research, problem solving seminars, labs, and other faculty-intensive aspects of our programs.

Graduate Programs



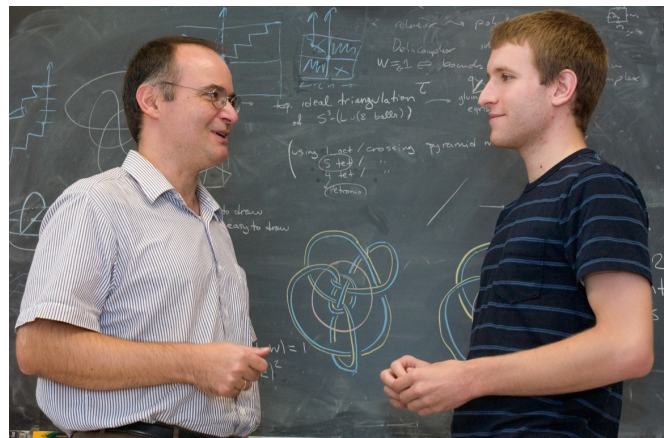
We offer MS and PhD programs in mathematics.

Also several interdisciplinary degrees: ACO, Bioinformatics (PhD), CSE (PhD, MS), QCF, Stats (MS).

Our TA training programs (teaching, language) and professional development are award-winning models.

We graduate about 10 PhDs per year. About 1/3 go to industry, 2/3 to academia. We graduate about 25 MS students per year, essentially all of whom go to industry.

Graduate Programs

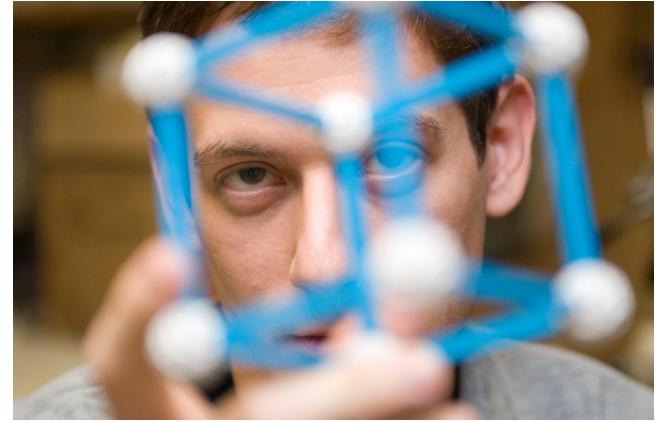


Our PhD students get excellent jobs and awards. E.g., Mitch Keller (Price, Marshall Sherfield, LSE), Alex Grigo (Sigma Xi, Toronto), Adam Marcus (Sigma Xi, Konig, NSF Postdoc, Yale).

We had a 5-year VIGRE training grant (\$2.2M) to support the PhD program. Bob Price fellowships have also helped top students do more.

Challenges: We need more RAs and fellowships to compete for and support top students.

Research



We have roughly 10 broad areas of specialization, most quite strong. Discrete Mathematics is rated #7 by USNews, Applied Math is #13.

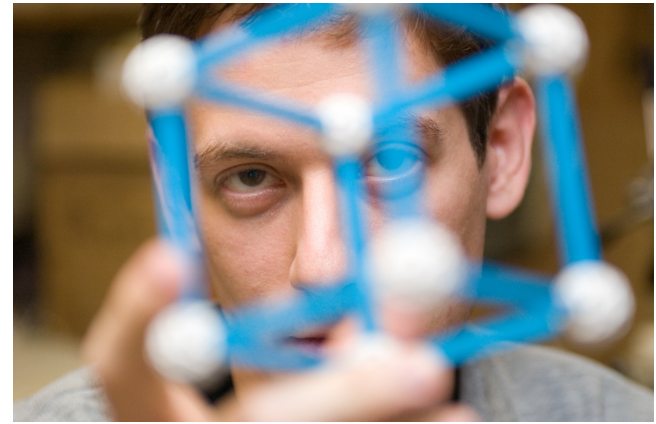
A strategic hiring plan is in place to strengthen key areas, build synergies.

The junior faculty is especially strong: almost universal NSF funding, 4 active CAREER awards, 2 Sloan Foundation Fellowships. The senior faculty have won major awards (Guggenheim, Salem, Fulkerson) and large grants (FRG, “high impact” NSF grants).

Challenges: Only one Regents’ professor, no endowed chairs.

Research

NRC ratings



	Scholarly quality	Educational effectiveness	Ranking
1982	2.19	2.23	71 of 108
1995	3.19	3.07	44 of 140 (21 among public)

According to an analysis by the AMS, GT Math was #1 most improved in 1988-1993.
2010: ???

Staff and support



We have a small but extraordinary staff. They have won numerous awards and are a model throughout the college. Our computing infrastructure is also an award-winning model.



Challenges: One position had to be eliminated due to budget cuts. The remaining staff are overstretched. Other units may try to poach our top performers.

Outreach



High School Math Competition (generously supported by several of you!)

Distance Calculus (Tom “Dr. Calculus” Morley)

REU program, SIAM student conference, Club Math

Stelson and other public lectures

Advisory board on public education (Loss, Morley)

Diversity



Tom Trotter won the Gretzinger “Moving Forward” award for improving the climate for junior faculty.

The grad committee is working on several initiatives, including networking with Morehouse and Spelman.

We participated in an AIM workshop on recruiting and retaining diverse graduate students.

Our S-STEM proposal targets underrepresented students.

ADVANCE Professorship---Hiring and P&T workshops.

AWM groups at Tech, Emory, Agnes Scott.

Postdoc+minority outreach initiative (Lacey).

New Directions



Strategic hiring plan.

New space: ~6000 sq ft of new space in the ground floor of Skiles, 9 offices, 2 seminar rooms, 1 lounge, public areas.

Alumni participation and this meeting.

Wish list



A new building! (Skiles: 1959 classroom building. Could be beautifully renovated ... or demolished.)

Endowed chairs (permanent, temporary), other faculty incentives.

Named post-doc program (“Hale Instructorship”, etc.)

Graduate fellowships

Undergraduate scholarships (via HSMC or directly)

Questions for discussion

Communications:

- E-mail vs hard copy?
- Frequency?
- Subjects?

Questions for discussion

Two possible models for activities:

Homecoming or other social events.

Working board meetings.

Questions for discussion

Possible activities for a working board:

Advising or mentoring student in non-academic careers

Developing funding sources

Designing/creating outreach programs

Advocating for the School (in GT and beyond)

Questions for discussion

Other ways you might like to be “on the inside”?

Other topics for discussion?