

Teaching OR in an
Undergraduate College:
**It's not for everyone,
but it might be for *you!***

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"Ugh! Why would you *want* to teach
undergraduates?"

Harvey Mudd College

- Premier undergraduate liberal arts college of “STEM”
 - 740 students, all of whom major in a technical field
 - 90+% of freshmen were ranked in top 10% of H.S. class
- Math Majors:
 - Roughly 40 graduate each year – 60% pursue PhD’s
 - Since 2000: Over 50 student co-authored research publications
- NSF Fellowships/Honorable mentions: 55 from 1999-2006
- Recent Watson, Rhodes, Hertz, and Churchill scholars.

There are 266 undergraduate liberal arts colleges in the US, many of which are known to accept only the best and brightest students in the country.

It's a *joy* to teach these students, especially in a close-knit environment!

Why I Applied to Small Colleges

- I love to teach and want good teaching to be rewarded
- I love exposing talented mathematicians to OR early on!
- I value a more flexible definition of scholarship
- I love being able to shape an institution
- I value personal interactions with students, faculty

“So what’s the teaching load like?”

“4-5 classes per year...”

“<gulp>!”

Tenure Expectations: #1 is Teaching

- Innovation in your courses
- Student evaluations
- Growth in teaching (participating in workshops, reading groups, etc).

“What are you doing at INFORMS?”

YOU don't do research!”

Tenure Expectations: #2 is Scholarship

- Scholarship is sometimes a *close* second
- Still may need outside letters of reference
- Broader definition of scholarship:
 - High teaching load, no grad students → *Quality*, not quantity, of papers
 - Workshops, presenting at conferences and colloquia, ...
 - Research = *teaching* students how to do research
 - Advising student theses, summer REU's, independent study projects
 - Less emphasis on grants

Tenure Expectations: #3 is Service

- Small colleges are more “grassroots” → more service
- BUT, this can be really exciting too!
 - Faculty united around a common goal
 - Influence curriculum
 - Influence institutional culture
- Act as an ambassador for your school

Tenure Timeline at Harvey Mudd College

- Hired with expectation of tenure
- “Second Year” review: Department gives early feedback, mostly about teaching and involvement in department
- “Fourth Year Review”:
 - Submit a full portfolio
 - External letters are solicited from
 - former students to comment on teaching
 - research colleagues to comment on research
 - Review letter gives indication of how well you’re doing
- Tenure Review during 6th year

Teaching at a Small College Has Its Cons

- Can feel academically isolated
 - Typically math departments
 - Not well-understood by OR community
- High teaching load → research relegated to school breaks
- No grad students → rely on undergrads or do it yourself
- It's not for everyone, but it might be for *you!*

How To Apply to Undergraduate Colleges: Strategies

- Mostly mathematics departments.
 - Operations researchers are in demand!
 - SELL YOURSELF!
- Cover letter is *really* important
 - TAILOR YOUR APPLICATION – How will you fit in?
 - What courses do/don't they offer that you could teach?
 - What special programs could you get involved with?
 - Articulate any special interest you have in the school
- Think deeply about teaching
 - Teaching statement is *critical!* Not *what* you teach but *how*

Curious? Teaching and Research Post-Doctoral Fellowship at Harvey Mudd College

- 1- or 2-year Fellowship
- Paired with research mentor
- One course per semester
- Advise undergraduate research or clinic
- Must receive Ph.D. between 1/1/2009 and 7/1/2010
- Open to U.S. citizens, nationals or permanent residents
- Applications received by November 15th given priority.
- Apply on mathjobs.org