

Science Chair's Council
Summary of the 5th Meeting - Jan 12, 2010

Attending:

Chairs: Mikhail Kapranov, Jeff Kenney, Scott Miller, Tom Pollard, Avi Silberschatz, Mitch Smooke, Doug Stone, Mark Hochstrasser (MBB Vice-chair)

Divisional Directors: Bill Sessa

Provosts: Peter Salovey, Tim O'Connor, Stephanie Spangler

Guests: Jon Butler, Jeff Brenzel, Michael Donoghue, Kyle Vanderlick

1. Graduate Student Support (Salovey, Butler)

Provost Peter Salovey and Dean of the Graduate School Jon Butler joined the chairs for a discussion on graduate student support.

Peter outlined the financial difficulties facing the university, and said that because of this the university could not enact any of the improvements in the support of science graduate student which were proposed last year by the SCC and BBS. He suggested we further develop prioritized plans for improvements that could be made once the university's financial situation improves. He also suggested we identify the most disadvantageous current practices, so that some more rapid changes could be considered. If the endowment recovers more rapidly than anticipated (0% growth this year; 9% next year is assumed in planning), it may be possible to fund some improvements sooner.

Jon reminded/informed the chairs that a 15% cut in next year's graduate student admissions is planned. The cuts would not be uniform across the board, and would be considered on a case-by-case basis. Many science chairs expressed great concern that such a significant cut would harm their programs, especially since faculty research is closely tied to graduate students. Since this is not true outside the sciences, sharp cuts in enrollment adversely affect the sciences more than the non-sciences. Kenney agreed to write a letter (with help) on behalf of the science chairs outlining the negative impacts of sharp cuts.

On reducing tuition:

Peter said he "would love to see us reduce tuition"; Jon suggested we develop a staged set of recommendations; and Mitch expressed the science chairs' goal that tuition would gradually disappear over time.

On a funding "buffer":

Peter said there was a need for some kind of "buffer" to support grad students working with advisors between grants or without grants appropriate to the student's PhD thesis. Other universities offer full TAs in such situations, but Yale doesn't want to do this because it views TAing as part of graduate student education, and not as a "job". Thus we need some other kind of buffer, but one which doesn't destabilize programs by automatically reducing the number of new students admitted.

Jon suggested that the US may be returning to a "pre-WWII" model of funding for university science, with more of the funding coming from universities rather than the federal government.

Several people noted (again!) that Yale is at a competitive disadvantage relative to peers because of graduate student funding issues, and that we cannot realistically hope to have science departments in the top 5-10 without improvements in graduate student funding, as well as increased ratios of graduate students-to-faculty. (Michael Donoghue reported that he can't support grad students at Yale as well as he could at UArizona or Harvard.)

The chairs adopted the recommendation of Michael Donoghue that we urge the President and Provost to appoint a "blue ribbon panel" to come up with strategies for graduate student funding. It may be best to appoint the panel once the new Dean of the Graduate School is named, since that Dean should participate. Kenney will write such a letter on behalf of the science chairs.

Action Items:

- Write letter urging appointment of panel on graduate student funding (Kenney)
- Write letter outlining negative impacts of sharp cuts to graduate admissions (Kenney)

2. Recruitment of Science Undergrads & Science Hill tours (Brenzel)

Dean of Admissions Jeff Brenzel joined us for a helpful and illuminating discussion on ways to improve Yale's recruitment and admissions of science undergraduates. He also handed out new booklets intended for prospective students "Science & Engineering at Yale."

Dean Brenzel explained that only ~50% of the Yale students who say they want to major in science actually do. Admissions people try to identify students who seem "directed", as opposed to those who merely say they want to major in science. Mitch mentioned a particular SAT test claimed to have predictive power, although Dean Brenzel wasn't aware of anything that worked.

This lack of "persistence" affects other programs. Most "science defectors" end up in Economics or Political Science rather than other departments, thus the number of "science admissions" indirectly but strongly impacts the enrollments in some non-science departments. Work should be done department-by-department to understand why students "defect", and to increase the ratio of students who persist. The Physics Department has recently increased their "persistence", and their experience may provide lessons for other depts. Kyle reported that Princeton Engineering has NO persistence problems, although that could be due to their excellent reputation.

The university currently want to increase the number of admits in 2 groups: 1. Low income/access students, and 2. Science & engineering students. These 2 groups overlap since many students in group 1 are interested in becoming doctors or engineers, although they lack the necessary educational background.

Yale has the lowest percentage of science majors of all the Ivy League schools. Harvard has ~50% science majors, whereas Yale has ~33%. 33% has been the target given to admissions by the Yale Corporation, and this number has not changed in many years, although the corporation

has encouraged Admissions to "increase the number of science students without compromising quality". Dean Brenzel said there has not been careful, deliberative, thinking about the "right" science fraction for Yale's undergraduate body, and the Dean and the chairs agreed this should be done.

To a large degree, the only schools that Yale loses students to are Harvard, Princeton, Stanford, and MIT (except for ~100 students). In the sciences and engineering, all 4 of these schools beat Yale in reputation and scale of scientific enterprise. There is much more to impress visiting prospective students at the other 4 schools. While the visible physical facilities are more relevant for graduate than undergraduate education, it is hard for the prospective undergraduate to understand this. Yale has been trying to emphasize that it focuses on undergraduate education to a degree highly unusual for science departments at the world's best research universities. This message cannot fully overcome the visible impression and reputation of the other 4 schools.

Scott Miller expressed concern that increasing the number of science undergraduates would stress the facilities and teaching loads for some departments, especially for lab courses. Night sections and changing expectations were suggested as 2 possible ways to deal with such increases.

Avi S. asked about a summer program to bring prospective science undergraduates to Yale. Dean Brenzel created such a program, but it has not yet been offered. Its funding (\$150K/yr) was cut due to the university's financial difficulties.

We very briefly discussed Yale tours. There have also been reports of Yale tours in which the tour leader has said unhelpful, negative, or ill-informed things (or virtually nothing) about Yale sciences. Dean Brenzel said most of the reports stemmed from 1 problem guide. He and Bruce Carmichael developed a list of tour improvements over the summer, with an 85-item punch list, but these improvements have not been funded.

No specific actions were taken, but these should be:

- Explore "right" science fraction for Yale's undergraduate body, especially given the new residential colleges and upcoming expansion in the undergraduate body
- Urge administration to fund summer program for prospective science undergraduates
- Urge administration to fund improvements in science tours
- Invite Dean Brenzel back to talk about tours

Next Meeting: Tuesday, February 9, 12 – 1:30 pm -KBT 1202