Harvey Mudd College
Faculty Meeting
11:00 AM, October 26, 2017
Green Room, Platt Campus Center

Faculty Chair P. Little called the meeting to order noting that it was one of the meetings called to facilitate Core review planning. The faculty thanked the members of the Core Review Planning Team (CRPT) for their work with a round of applause. He then introduced Core Curriculum Director Tom Donnelly.

Tom Donnelly thanked everyone for coming and explained that today, the CRPT would be sharing data that it had gathered on student workload. He explained that most of it came from the August survey of current students. He then introduced Ran Libeskind-Hadas who also thanked everyone for coming. He explained that the CRPT was trying to be mindful of faculty and community feedback. He noted that the CRPT is getting a lot of different responses and it is doing its best to be mindful of everything that they are hearing. At last week's session on student struggles in the core, some people said that they would like to see a lot more data and offered ideas for different kinds of studies and types of analyses. Others said that the data and analyses may have some utility, but that much of the student experience can't be quantified and we'll need to accept that and rely on other inputs, including our own experiences and intuition.

He explained that the CRPT's goal for this semester is to try to get us as a faculty to identify a set of guiding principles for the Core. The CRPT believes that data can be useful and they are endeavoring to collect and analyze the data that we can access. They are sharing representative data with the faculty and community and are posting those data and more on the CRPT website. But, they also concur that these data are one of many inputs in this process. It can inform us, but it can't be the driver in the process of developing a set of guiding principles for the Core. He then noted that if and when we move to the next phase of implementation of those principles - whatever they turn out to be - we can explore more data to help support those efforts.

He recalled that the last meeting ended with the CRPT asking faculty:
Do these data [sex, race, and high-school prep] impact your view of what the goals of our Core should be? If so, in what way?

He then summarized what was heard back:

(i) Some people thought that the rate of struggling (as defined) was low and/or normal whereas others were alarmed by it and felt that the threshold for struggling was actually very low and that

many more students are probably struggling than is indicated by these data.

(ii) Some people wanted more data and different analyses, but some also noted more data might be helpful in specific courses but not in formulating the objectives or design of the core.

(iii) The struggles that students confront at Harvey Mudd College may not be measurable or quantifiable.

(iv) A number of respondents indicated that the Core should provide a common set of foundations, but that the path to achieving that should be more flexible.

It was observed that there was nothing new on the CRPT website since the 14th of September. Director of Institutional Research and Effectiveness, Laura Palucki Blake explained that there were issues with making the graphic intensive files ADA compliant.

Ran Libeskind-Hadas then introduced ABOG President David Sonner '80 to talk about the alumni view of the workload. He observed that he had three slides of quotes from those who loved workload, three slides from those who did not like it, and one slide of suggestions for making it better. He said that the alumni perspective is nuanced, and that of the 154 in his cohort, 91 graduated. He said that while no one wants to go back to that, most agree that rigor is needed and learning to deal with workload prepares students for the big jobs they will have after Mudd. He then cited the example of a student member of the CRPT who has a high workload and serves on CRPT and ASHMC but who has learned to manage her time.

He then read his six slides of quotes:
"I went to Mudd for the firehose; I loved the firehose; I think something important would be lost if Mudd weren't fantastically challenging; I would do it all over again in a heartbeat."

"I got exactly what I wanted out of Mudd's core. I was pushed to my limit … Mudd's core was the first time I found myself presented with a problem I couldn't solve. I was struggling to keep up in some classes. I hardly did anything but work. It was exhausting. It was exactly what I wanted when I was looking for a college … I wouldn't change it. I would much rather have the things I learned during Core than any extracurricular activity."

"Passion makes time for itself. Ask anyone with a girl/boyfriend. No matter how much time is given, it will always seem like there is never enough. The frosh always feels like they have no time for any extra-curricular activity. Yet the seniors' workload is usually greater, but by that time, they have learned how to manage that work better. I remember how crushing that workload was. But I also remember how much time I had to 'fritter away'. It took time to learn how to

better manage it, and to develop confidence in my own abilities."

"People should go to Mudd not because it will be easy, but because it will be hard. You will have to work the hardest you ever have. And as a result, you will get the best STEM education possible. You will learn more than you had imagined you could."

"[HMC is] like Navy SEAL boot camp – I've never worked harder than I did at Mudd (including graduate school, getting tenure, etc). I was miserable (at times) while at Mudd – but I also learned a lot about myself in the process … Mudd was hard, extremely challenging, and stressful, but if I had to do it again, I definitely would."

David Sonner '80 noted that many alumni stated that the Core workload did not allow enough time for deep understanding and read some quotes illustrating this position:

"I think what I disliked most about Core was the sense that if you ever fell behind, you were almost doomed in some sense because it was impossible to catch back up … And because Core was always going at this breakneck pace, with so much content crammed in, I felt like I never really deeply understood or retained a lot of the concepts – I was putting everything I had into just scraping by."

"Even in my own major, CS 60 was really beyond me due to time constraints (I got a B but felt very unsure about my understanding). Now I'm a full professor of computer science and direct a research center, so it's not like I wasn't a smart and capable person. There was just too much going on that second semester. I began to feel that STEM was about pain and struggle, not exciting ideas or achieving mastery with different skills. So some reduction in the workload seems appropriate to me."

Some alumni thought that there was too much work in certain courses:

"The core in my time (I graduated in '06) was a fire hose, in every class, as if each professor was afraid that this was the last moment I'd ever learn anything about Biology, or Chemistry, or whatever. (To be fair: they may have been right.) More time to breathe intellectually would have helped."

"I am in the graduating class of 2016 … as it has been discussed lately, there is a battle between professors to make their courses seem the most important, and so there is simply too much work … The breadth was right, but the depth went too far."

"It's important that the workload be relatively balanced across the core so that there isn't a time

arms race among the faculty."

David Sonner then offered a couple of alumni observations about the workload in the Core:

"[O]ne of the most valuable lessons from HMC was how to prioritize and manage time. If the Core is set so that the majority of students have overhead for a number of extracurriculars, the outstanding students will be far less likely to learn about time management."

"If even the top students don't have time for extracurriculars, then the workload is too high. Obviously that hasn't happened yet, because ASHMC still exists, dorm sports still exist, parties are still thrown, etc."

David Sonner then displayed a chart comparing the HMC Core to cores at Caltech and MIT:

	Math	Phys	Chem	Bio	Eng	CS	Labs	H.S.A.	Writing	Tech Elective	Total
Caltech (1 yr)	1.00	1.00	0.67	0.33	--	--	0.67	0.67	0.22	0.33	4.9
MIT (2 yrs)	1.00	1.00	0.50	0.50	--	--	0.50	1.00	--	1.00	5.5
HMC (1.5 yrs)	1.50	1.25	0.75	0.50	0.50	0.50	1.50	0.50	0.25	--	7.3

He recalled a 2016 graduate who recognized the value of breadth and reiterated the theme of his presentation at the previous meeting: that the wide breadth of Mudders' expertise allows them to rise more quickly in the organizations which employ them.

It was observed that since diversity is a goal of the College, it would be interesting to see the demographics of the people making each comment.

It was noted that both Caltech and MIT have non-STEM majors which might make the core for STEM students bigger.

It was suggested that Olin might be a useful comparison as a STEM school with a four course per
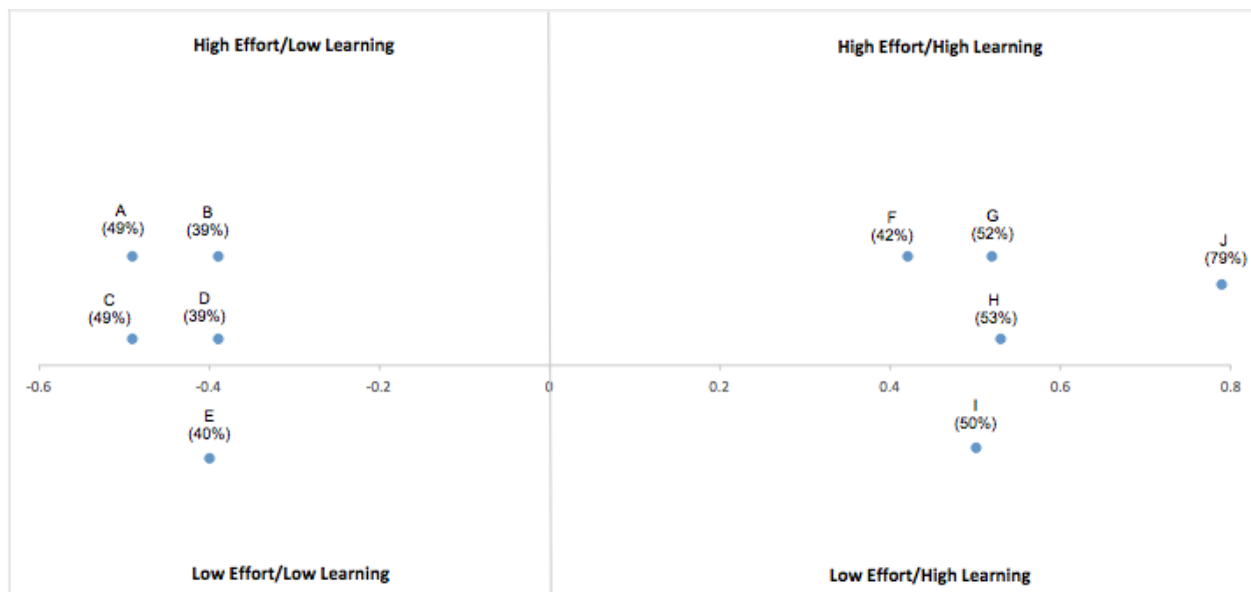
semester load.

It was observed that MIT tech majors have a second year of math but the tech-elective may be in a student's major so should not be counted as part of their core.

CRPT member Nancy Lape then turned to the relationship between effort and learning noting that data for this section came from the survey of students who were asked "how they would characterize their experience overall in the their first semester of course." They were asked to answer by dragging the name of each course they took into 1 of 4 boxes:

- High Effort/Learned a lot
- High Effort/Learned a little
- Low Effort/learned a lot
- Low Effort/Learned a little

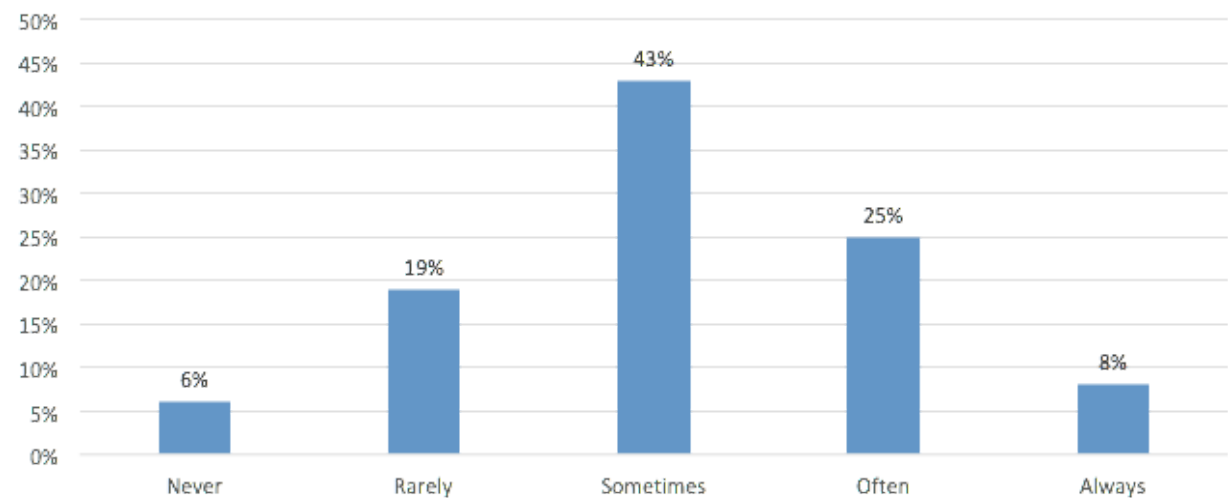She then displayed a graph showing where students put first semester courses:

She explained that the results here were recreated with a premium on meaningfulness, not methodological perfection. What you see is the four quadrants, and each course is placed in the quadrant for which it was located by the highest percentage of respondents. The letters here do not correspond to same letters in earlier graphs. She explained that this shows us how many courses fall into each quadrant, and what percent of students put each course there. The takeaway is that there are lots of courses in high effort with either high or low learning in the first semester.
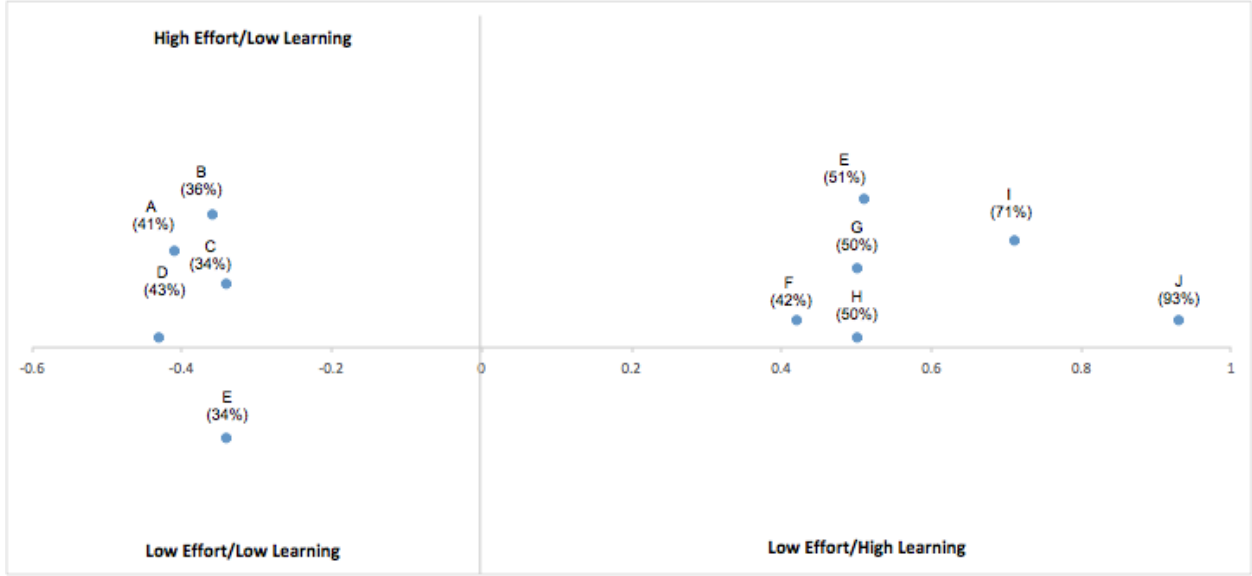
Laura Palucki Blake noted that the data are publically available in the original format in the Student Quantitative Report.

N. Lape noted that the same survey asked students how often in that semester they had time enough to pursue interests outside of class and homework. A quarter responded "never" or "rarely."
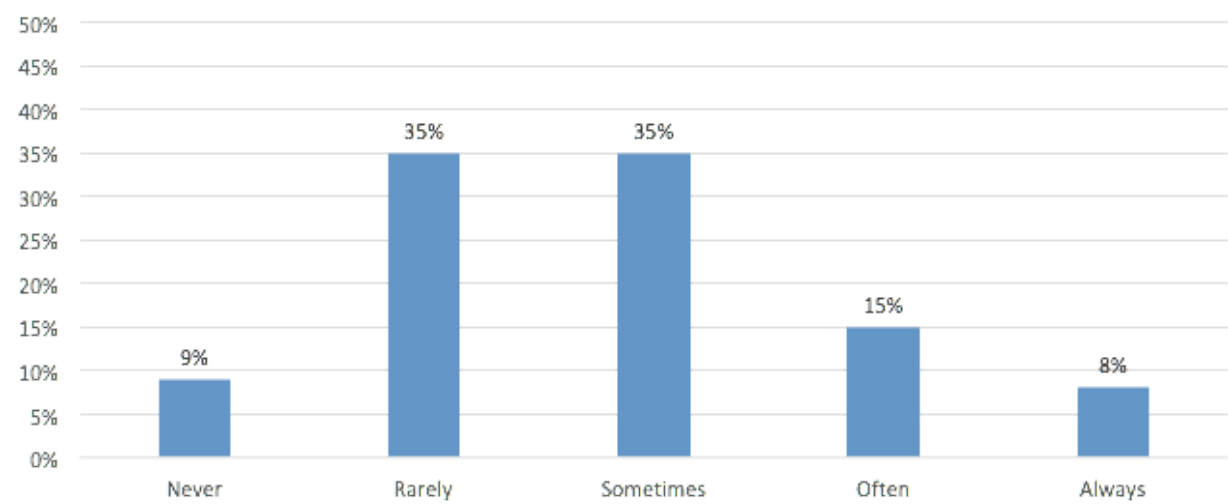
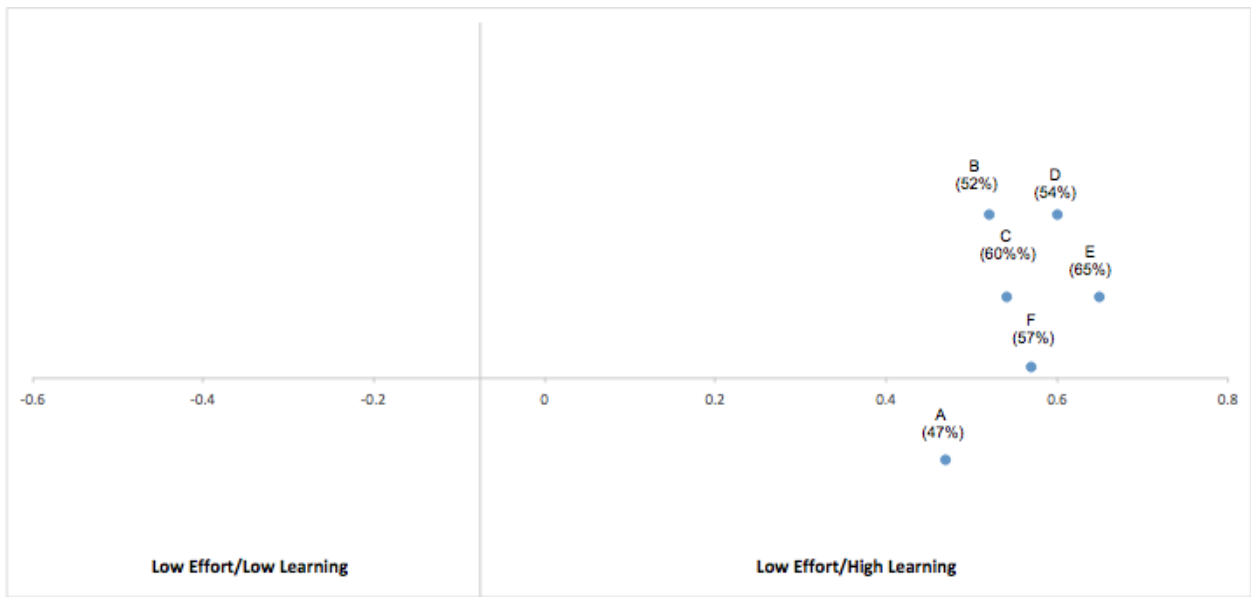That chart is reproduced here:

Responses to the question asking students to bin courses by effort and learning continue to show lots of effort in the second semester of Core:
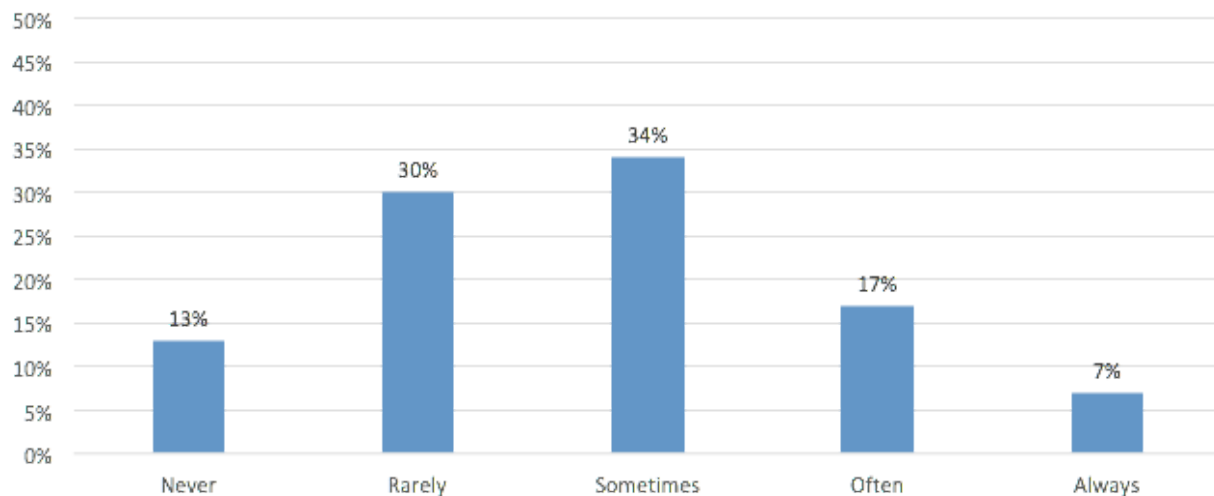
With even less time for outside interests:

In the third semester, students thought they learned a lot in all of their courses:

But few reported having time for non-academic activities:

It was asked if students had responded after each semester or after all three. Nancy Lape reminded her that all responses were from the survey that was conducted at the beginning of the fall of 2017.

It was recalled that the first semester does not have grades and hypothesized that that might impact student responses.

Someone wanted to know the exact question asked in the survey noting the charts did not address the difference between playing a varsity sport and hanging out for an hour with your friends.

David Sonner '80 clarified that he did not intend to conflate "rigor" with "workload."

Tom Donnelly then posed a question for the small groups to answer:

Should workload be a design principle for the core? If so, how do we regulate it across courses?

He asked each group to report out the one thing that they hold to be the most important.

The first group said "if a particular demographic were impacted we would feel differently than if all were impacted equally."

The second group suggested defining an ideal amount of time outside of class--say two hours out for every credit--and ask, on each week's assignment, how much time was spent on it. Faculty would then report the responses to the next semester's teaching team who would use them to titrate the amount of work.

The third group suggested closely regulating mean time per credit hour but thought it would be hard to monitor and require good contemporaneous data.

The fourth group suggested setting levels for both basic performance and mastery and letting students select which level they wanted to work towards.

The fifth group said that we needed to be careful of using student perception of learning as a guide and suggested that time spent be measured anonymously and contemporaneously.

The sixth group said that they were in favor of regulating the workload and thought that it was reasonable to regulate is because the Core belongs to the whole College and all faculty have a stake in what it does to all students.

The seventh group said that we would first need to decide if we are designing for the mean or the tails. They thought that maybe fewer preparations with the same total amount of content would be better. They proposed control for mean total time spent and allowing each instructor to state how it is allocated.

The eight group thought that workload was not a valid design objective for the Core and that it should be seen as a constraint and not an objective. There were many mutterings of agreement around the room.

Tom Donnelly noted that the next set of CRPT meetings would be November 9th (faculty) and 10th (community). He said that the CRPT hopes to have a series of straw proposals for statements of Core goals. These will be considered again at the end of November to prepare for the December 7th Faculty Meeting where it is hoped that the Faculty will formally adopt a set of design objectives for the Core.

Core Curriculum Director Tom Donnelly turned the floor back over to Faculty Chair Patrick Little who asked if there were any announcements. Rachel Levy announced that there would be a Nelson Lecture on *Citizen Science* tonight. She asked her colleagues to please encourage their students to attend.

The meeting was then adjourned.