Preliminary report on Core reform provokes opinions from students, faculty

Town hall meeting indicates agreement on philosophies but concerns about implementation

By Tina Ding

On Thursday, December 11th, students filed into Beckman Auditorium to voice their opinions on the new Core reform proposal. The debate at the town hall meeting demonstrated the need to continue working on the implementation since the calendrical community overall agrees with the philosophies of the new core, yet is divided in its implementation.

According to Mike Brown, Chair of Core Curriculum Task Force (CCTF), the purpose of presenting this proposal was to gauge the level of consent on the philosophy. "If no one agreed with the philosophies, we were going to stop our efforts," said Brown.

The new core preliminary report introduces drastic core course changes in every science, based on six philosophies: introducing multiple paths through Core to accommodate for varied backgrounds and inclinations of incoming students; decreasing lecture size; renormalizing science requirements, so that students are trained more equally across their interests; addressing the philosophy of controversial topics, however, were not the philosophies. CCTF's preliminary report also laid down a "strawman core implementation," an explicit algorithm class, programming class, and design lab were mostly featured in the report.

Many opinions voiced at the town hall surprised the CCTF. Faculty not in the math department strongly supported the elimination of Mal1a, for example, but students at the town hall were largely against the elimination of the proof-based math course. Philosophy

The current core provides all students with a general introduction of freshman seminar, physics (5 terms), and not as common academic foundation, but students at the town hall were largely against the elimination of the proof-based math course. Philosophy

The current core provides all students with a general introduction of freshman seminar, physics (5 terms), and practical physics and math, and yet would be superficial to the Core pretends to be in-depth but is very much superficial exposure to many things," said Brown.

"Right now, students coming out of the new core are so diverse in their backgrounds whereas it was not true fifty years ago, when the students were monolithic," said Brown. Furthermore, according to Niles Pierce, another member of the committee, Core also needs to represent modern science and address cutting edge knowledge. This is the reason for the addition of algorithm and build/design labs.

While the only paths offered in the current core are analytical and practical physics and math, the new core introduces paths (more than two) for every science including math. "The current implementation based on general opinions and re-evaluation. The voting process will separate the central broad changes, such as the multiple paths and seminar classes, from specific controversial topics such as elimination of second term pass/fail.

"What we don't want is faculty voting 'No' on the proposal because of one element they highly dislike," said Brown. The changes are expected to be finalized by the end of this school year, and to be implemented in fall 2011.

The CCTF was formed by the Faculty Board under Chair Judy Campbell in July 2008, as a result of the Caltech Student Experience and Student Affairs Report which underlined high discontent in student life and learning. The Student Experience Report also addressed the Caltech Syndrome, the condition of unhappiness and dissatisfaction with Caltech that students experience here. Caltech students rate Caltech much lower in exit polls than do graduates from other universities, e.g. MIT and Stanford. The formation of the CCTF served to re-evaluate the Core and propose changes that will improve the condition.

The last CCTF's main tweak to Core was implemented 10 years ago, with the introduction of Bi1. Implementation details will be discussed in detail in a future issue.

BY MARGARET TSE

Early Monday morning, an elaborate attempt to revive the time-honored tradition of pranks (or 'hacks' for those who prefer the MIT term) failed to completely take flight. The attempt, meant to rechristen MIT as the Caltech East School of the Humanities, Caltech's investment in education for the artsy, was stopped by the MIT police.

Planning for this prank began during the summer, when our beloved Assistant Vice President for Campus Life, Tom Mannion, called a meeting of all present Caltech students interested in reestablishing Caltech's reputation for pranking. Among the myriad plans cooked up by the thirty-odd students who attended, one idea in particular stood out: the transformation of MIT into a separate Caltech campus dedicated to the humanities. From those thirty-some students, a smaller number decided to follow through with the scheme.

What followed involved nearly six months of careful planning, several weeks of practice in the dead of night, and a good tree and a half of paper. Throughout the term, more members were added to the Caltech prank team to include representatives from six of the houses. The help of members from every class along with a couple of Caltech alums were required to bring the prank into completion. Unfortunately, when the prank was aborted, many aspects of the plan were left unrevealed.

From its very infancy, the prank demanded several huge banners spread throughout MIT's campus. A company was contacted to create two enormous banners to be hung normally throughout Lobby 7. Unfortunately, despite several weeks of practice on Caltech buildings, Killian Court, having been designed 'by 8-year-olds' with Legos and crayons' (quoted from esteemed Professor Wettey Prittle by the faux MIT Tech), resisted attempts to raise the 'sold' banner and so was left as was before the team was forced to stop.

In case the banners weren't enough to catch the eye of the average MIT student, plans were

MIT: The New Caltech East School of the Humanities

By Margaret Tse

VOLUME CXI, NUMBER 9 PASADENA, CALIFORNIA DECEMBER 7, 2009

In This Issue

Comics Ask the Frosh page 4 page 4

Core Reform Opinions page 3
An Open Letter to the Core Curriculum Task Force

By Daniel Rowlands

My name is Daniel Rowlands. I am a recent alum, having graduated this spring with a major in math and physics and minor in history. During my time at Tech, I thought about Core a lot because I felt it was one of the most important parts of the Caltech experience. I also served as a student representative on the Core Curriculum Steering Committee during my junior year. Since a copy the Core Curriculum Task Force’s preliminary report was sent to me on Monday, I’ve been thinking about it and discussing it with a number of alums and current students, and I’ve concluded that I have some things I would like to say in reply.

Since I’m now a grad student at MIT, I can’t make it to the official presentation on Thursday to comment in person, so I’m addressing this letter to the Task Force and to the student body in general, in case anyone thinks they have points I make in it to add to the discussion.

As the report notes, there are a number of criticisms of the system of Core. One view, the one I personally hold, is that Core exists to provide a common—and personally hold, is that Core exists to provide a common—and philosophically the concept of philosophy is not correct. The new core “breadth” purpose of core. While the a textbook. Furthermore, was the only course that I could take the same “hard” version in a new way as opposed to just reading theorems. In essence, it was the only course that I could not have learned by myself, from the textbook. The only way of thinking that Ma1a introduces - precise and abstract about abstract concepts and understanding abstract concepts in other courses, possibly in completely unrelated disciplines. It is absolutely essential that students needing to take rigorous proofs and analysis, hopefully in combination with a course in their major. I believe that by designing the curriculum of the class to be oneway that will not essentially be “easy” and “hard” versions of the same class, the introductory level of core.

Students are more useful for a student many more useful for a student probably not willing to put any effort into the next level of the course. Students from a “traditional Core” background will have to do more background reading before tackling a project in their major. It is not clear whether this will be useful to mathematicians and scientists. Engineering majors. If we abandon it, no one will do better using the “traditional core” approach.

The second part of the proposal introduces - precise and abstract and reputation. The core curriculum can only lead to we are contributing less, since we’re doing the same thing as someone else, and probably not doing it as well. I am not advocating refusing to change Core at all. There are a few other schools, especially MIT, that do use a different approach to the core. Students from a “traditional Core” background will have to do more background reading before tackling a project in their major. It is not clear whether this will be useful to mathematicians and scientists. Not only because physics and math are important-- though they are--but because this provides for a particular type of scientific education that no other school to use the “traditional core” approach. I do not really think that some students come to Caltech not ever having done a single rigorous proof and, while Ma1a was very difficult at first, it was definitely the only core class that taught me how to think in a new way as opposed to just understanding theorems. In essence, it was the only course that I could not have learned by myself, from the textbook. The only way of thinking that Ma1a introduces - precise and abstract about abstract concepts and understanding abstract concepts in other courses, possibly in completely unrelated disciplines. It is absolutely essential that students needing to take rigorous proofs and analysis, hopefully in combination with a course in their major. I believe that by designing the curriculum of the class to be oneway that will not essentially be “easy” and “hard” versions of the same class, the introductory level of core.

Not interested in the subject will inevitably take the “easy” version of the class, creating a situation where exactly how many students are terminals that “traditional Core” provides the essentials of the class in general. Furthermore, in response to the common objection to this proposal is that such mixing makes it very difficult for students lacking background science students, majoring in mathematics and science. I believe that by designing the curriculum of the class to be oneway that will not essentially be “easy” and “hard” versions of the same class, the introductory level of core.

The report notes that some students come to Caltech without a strong background in the fundamentals of math core, for example, because the number of schools without a “traditional Core” philosophy are unlikely to have the time or energy to pick up in later life. MIT already has the genius requirements set and has been doing this work for some time. I am not arguing that every school should do this, but it is a very reasonable idea. The report’s emphasis on “broad core” areas in basic computer science and engineering seems to me to represent a very useful idea. It is not clear whether this will be useful to mathematicians and scientists. Engineering majors. If we abandon it, no one will do better using the “traditional core” approach.

The second part of the proposal introduces - precise and abstract and reputation. The core curriculum can only lead to we are contributing less, since we’re doing the same thing as someone else, and probably not doing it as well. I am not advocating refusing to change Core at all. There are a few other schools, especially MIT, that do use a different approach to the core. Students from a “traditional Core” background will have to do more background reading before tackling a project in their major. It is not clear whether this will be useful to mathematicians and scientists. Not only because physics and math are important-- though they are--but because this provides for a particular type of scientific education that no other school to use the “traditional core” approach. I do not really think that some students come to Caltech not ever having done a single rigorous proof and, while Ma1a was very difficult at first, it was definitely the only core class that taught me how to think in a new way as opposed to just understanding theorems. In essence, it was the only course that I could not have learned by myself, from the textbook. The only way of thinking that Ma1a introduces - precise and abstract about abstract concepts and understanding abstract concepts in other courses, possibly in completely unrelated disciplines. It is absolutely essential that students needing to take rigorous proofs and analysis, hopefully in combination with a course in their major. I believe that by designing the curriculum of the class to be oneway that will not essentially be “easy” and “hard” versions of the same class, the introductory level of core.

Not interested in the subject will inevitably take the “easy” version of the class, creating a situation where exactly how many students are terminals that “traditional Core” provides the essentials of the class in general. Furthermore, in response to the common objection to this proposal is that such mixing makes it very difficult for students lacking background science students, majoring in mathematics and science. I believe that by designing the curriculum of the class to be oneway that will not essentially be “easy” and “hard” versions of the same class, the introductory level of core.

The report notes that some students come to Caltech without a strong background in the fundamentals of math core, for example, because the number of schools without a “traditional Core” philosophy are unlikely to have the time or energy to pick up in later life. MIT already has the genius requirements set and has been doing this work for some time. I am not arguing that every school should do this, but it is a very reasonable idea. The report’s emphasis on “broad core” areas in basic computer science and engineering seems to me to represent a very useful idea. It is not clear whether this will be useful to mathematicians and scientists. Engineering majors. If we abandon it, no one will do better using the “traditional core” approach.

The second part of the proposal introduces - precise and abstract and reputation. The core curriculum can only lead to we are contributing less, since we’re doing the same thing as someone else, and probably not doing it as well. I am not advocating refusing to change Core at all. There are a few other schools, especially MIT, that do use a different approach to the core. Students from a “traditional Core” background will have to do more background reading before tackling a project in their major. It is not clear whether this will be useful to mathematicians and scientists. Not only because physics and math are important-- though they are--but because this provides for a particular type of scientific education that no other school to use the “traditional core” approach. I do not really think that some students come to Caltech not ever having done a single rigorous proof and, while Ma1a was very difficult at first, it was definitely the only core class that taught me how to think in a new way as opposed to just understanding theorems. In essence, it was the only course that I could not have learned by myself, from the textbook. The only way of thinking that Ma1a introduces - precise and abstract about abstract concepts and understanding abstract concepts in other courses, possibly in completely unrelated disciplines. It is absolutely essential that students needing to take rigorous proofs and analysis, hopefully in combination with a course in their major. I believe that by designing the curriculum of the class to be oneway that will not essentially be “easy” and “hard” versions of the same class, the introductory level of core.

Not interested in the subject will inevitably take the “easy” version of the class, creating a situation where exactly how many students are terminals that “traditional Core” provides the essentials of the class in general. Furthermore, in response to the common objection to this proposal is that such mixing makes it very difficult for students lacking background science students, majoring in mathematics and science. I believe that by designing the curriculum of the class to be oneway that will not essentially be “easy” and “hard” versions of the same class, the introductory level of core.

The report notes that some students come to Caltech without a strong background in the fundamentals of math core, for example, because the number of schools without a “traditional Core” philosophy are unlikely to have the time or energy to pick up in later life. MIT already has the genius requirements set and has been doing this work for some time. I am not arguing that every school should do this, but it is a very reasonable idea. The report’s emphasis on “broad core” areas in basic computer science and engineering seems to me to represent a very useful idea. It is not clear whether this will be useful to mathematicians and scientists. Engineering majors. If we abandon it, no one will do better using the “traditional core” approach.

The second part of the proposal introduces - precise and abstract and reputation. The core curriculum can only lead to we are contributing less, since we’re doing the same thing as someone else, and probably not doing it as well. I am not advocating refusing to change Core at all. There are a few other schools, especially MIT, that do use a different approach to the core. Students from a “traditional Core” background will have to do more background reading before tackling a project in their major. It is not clear whether this will be useful to mathematicians and scientists. Not only because physics and math are important-- though they are--but because this provides for a particular type of scientific education that no other school to use the “traditional core” approach. I do not really think that some students come to Caltech not ever having done a single rigorous proof and, while Ma1a was very difficult at first, it was definitely the only core class that taught me how to think in a new way as opposed to just understanding theorems. In essence, it was the only course that I could not have learned by myself, from the textbook. The only way of thinking that Ma1a introduces - precise and abstract about abstract concepts and understanding abstract concepts in other courses, possibly in completely unrelated disciplines. It is absolutely essential that students needing to take rigorous proofs and analysis, hopefully in combination with a course in their major. I believe that by designing the curriculum of the class to be oneway that will not essentially be “easy” and “hard” versions of the same class, the introductory level of core.

Not interested in the subject will inevitably take the “easy” version of the class, creating a situation where exactly how many students are terminals that “traditional Core” provides the essentials of the class in general. Furthermore, in response to the common objection to this proposal is that such mixing makes it very difficult for students lacking background science students, majoring in mathematics and science. I believe that by designing the curriculum of the class to be oneway that will not essentially be “easy” and “hard” versions of the same class, the introductory level of core.

The report notes that some students come to Caltech without a strong background in the fundamentals of math core, for example, because the number of schools without a “traditional Core” philosophy are unlikely to have the time or energy to pick up in later life. MIT already has the genius requirements set and has been doing this work for some time. I am not arguing that every school should do this, but it is a very reasonable idea. The report’s emphasis on “broad core” areas in basic computer science and engineering seems to me to represent a very useful idea. It is not clear whether this will be useful to mathematicians and scientists. Engineering majors. If we abandon it, no one will do better using the “traditional core” approach.
made to completely redecorate the Infinite Corridor. A CaltechEast logo was designed that nestled the figures in the MIT seal within the Caltech flame. Members covered offices in the Infinite Corridor with a sampling of labels such as “Steven ‘Chuck’ Frantichi’s Office of Shoe Design”, “Defense Against the Dark Arts, Kip S. Thorne”, and “Department of Literary Fiction, Tom Apostol.” Flyers reminding MIT students of the CaltechEast’s Surf Club next meeting and the opening of the ‘Science is Hard’ Science Help center remain undistributed.

To top it all off, members placed floor mats emblazoned with the CaltechEast logo throughout the Infinite Corridor.

To accentuate the cosmetic remodeling, reworked copies of MIT’s “The Tech” were distributed to newspaper stands throughout the campus. In true Caltech fashion, the newspapers were created in one 21 hour sitting the night before they were sent to the press. This seven page caricature details the purchase of MIT and the changes that new CaltechEast students would expect as members of a school for humanities. The paper also includes the address for a website http://east.caltech.edu dedicated to informing former MIT students of Caltech’s newest acquisition.

In addition to the webpage, the Tech also posted a phone number that would redirect any queries to several waiting Caltech students. As a finishing touch, the team used Google AdWords to create a sponsored link whenever anyone searched for certain phrases pertaining to CaltechEast.

With all the deliberation put into the prank, it seems a small wonder that the execution did not go as planned. However, let it not be said that the team did not do its best to avoid detection. Before the night of the prank, attempts were made to catalogue the movement of MIT staff and students. Unfortunately, since MIT is indeed an institute of technology, there are students up at all hours and their messes are taken care of by cleaning staff that patrol the infinite corridor at all times of the day. Considering that there is a body of MIT students dedicated to cleaning up other students’ pranks, the team only had a small window of time to set everything up. Unfortunately, while the team did consider and successfully evade militant MIT students (the only students present simply ignored the signs), they did not consider that the MIT cleaning crew would be the polar opposite of Caltech’s.

According to the team, MIT’s cleaning staff was suspicious from the start, even though the team made sure to put up posters and signs that did not have anything to do with Caltech. The instant one of the smaller banners fell, the staff fell upon the team like hawks. Despite attempts to reason with them, MIT’s cleaning crew called the MIT police, who arrived just as the welcome banner over Massachusetts Avenue was almost set up (the sold sign in Killian Court was left abandoned as there were architectural difficulties to overcome). Thanks to some quick negotiation, the team managed to convince the police not to arrest all the present Caltech students, but the team was still forced to remove everything that they had set up.

While this particular undertaking did not reach its full manifestation, it will hopefully be the first of many pranks to come. For those of you now inspired and interested in the venerable art of pranking, it is now up to you to pick up the torch (the newly instigated Prank Club might enjoy your help). Though we fell short of relegating MIT to its proper humanities-pranking place, we have still sent MIT a reminder of pranking days of yore. We may have rekindled our pranking spirit, but it all falls short if our favorite adversary has forgotten its role. Its up to you to keep the raft afloat, MIT.

Many thanks to the CaltechEast Prank Team: Peggy Allen, Anthony Chong, Perrin Considine, John Forbes, Raymond Jimenez, Megan Larisch, Rebecca Lawler, Sebastian Mata, Julian Panetta, Eugenia Plamadelaide, Alex Rasmussen, Nicholas Rosa, Isaac Sheff, Stefan Skoog, Will Steinhardt, Jordan Theriot, Ryan Thorngren, and Heather Wulgeen.

Core Reform is Commendable
By Priyam Patel

When Mike Brown presented the philosophy behind the core restructuring, I felt that he did a good job showing concern for the students. While we students will not directly influence the final verdict, it is important that the faculty take into consideration our comments and opinions, and Mike Brown knows this. There’s still a lot of dissent milling about, but is there really any basis for it? Particularly I am thinking about reactions to some of the latter comments and questions following the presentation. A lot of questions were too specific to be relevant at this stage of the process. As he pointed out, there will be a long implementation process, and that’s when the kinks will need to be worked out. Granted, it’s important to point out any major implementation issues for the faculty to carefully consider. But there’s no need to harp on some of the more minor changes and lose sight of the big picture. And, of course, not everyone will agree with the proposal, especially this early on in the process. But there is no reason to be so ready to shoot down an idea. It’s far too early to say with confidence whether it’s a good idea or not. And even if this plan gets axed, open and constructive discussion will lead to a better alternative. Brown cares enough to hear us out. We should, at the very least, keep an open mind to his ideas and offer succinct and constructive criticism. We should do our part in improving education at Caltech.

Write for The Tech!
Email tech@caltech.edu for more information.

Intellectual Ventures - CALTECH
INVENTION COMPETITION

Today's young inventors are tomorrow's technological and entrepreneurial leaders.

The $50,000 Intellectual Ventures-Caltech Invention Competition seeks to recognize and inspire these burgeoning innovators and inventors.

Deadline Extended!
Applications due January 15, 2010

www.invention-competition.caltech.edu
Ask the Frosh

Has anyone ever noticed that the Lewis dot structure of AsO looks like a giraffe?

There was disagreement among The Frosh as to whether or not it looked like a giraffe, and not being the experts on chemistry ourselves, we decided to contact someone with more knowledgeable than us. According to Professor Nathan S. Lewis, “Using VSEPR theory, and taking the stomach of a giraffe as the central atom I conclude that the steric number of a giraffe is 5 (if one doesn’t include the tail). Therefore giraffes should be in the trigonal bipyramidal geometry. So the answer to your insightful question is clearly no, AsO does not look like a giraffe!” While we can see why you may have been confused, we were persuaded by Professor Lewis’s response, and must agree with him. Nice try!

Frosh Note: Oooh! A Shakespearean sonnet!

I talked to some of the frosh the other day. They really made me feel way past my prime, for everything that I to them would say they did not recognize as from their time. They didn’t know of Frisky and the Brain or Animaniacs and Duck Tales too, and Tiny Toons, they wanted it explained. The whole ordeal, it made me feel so blue. Of Captain Planet they had only heard, and Mortal Kombat they had never played. The conversation got to be absurd. I felt like my whole past had been betrayed. My question now, my frosh, you can review: Please won’t you watch the games and shows I knew?

The frosh regret to inform our dear Shakespeare-loving reader, that while she may feel misunderstood, she is, in fact, old. Our TV days were better spent:

“Dora the Explorer,” “Blues Clues,” and “Ferb’s Lawnmower” graced our screens. Our computer games were worthwhile fun, educational. “Where in the World is Carmen Sandiego?” was apparently a TV show in your time.

If you truly want to understand the frosh, or want them to understand you, perhaps you should consider watching those shows of a younger generation, or just not be so old.

But, not just sit around and watch TV did we, but learn the meaning true of being a child! Advantage took us of the serene subtleties that simplistic life offered us and regrets? We have none. When we were young, we went exploring among the meadows and the backwoods and the flowers and the trees of springtime!

We built model airplanes and did arts and crafts. We threaded thousands upon thousands of lanyards and folded origami crane after origami crane. We learned to sew and to cook and to frolic through playgrounds even when school wasn’t in session.

Letter after letter after letter we wrote to Santa. Waiting. And waiting. For the magical pony in our minds to become a reality.

“Ask the Frosh” is a weekly advice column for all members of the Caltech community. Email all your problems to askthefrosh@gmail.com.

Ph.D Comics by Jorge Cham

XKCD by Randall Monroe

Earn your degree in education in 12–18 months.

With more than 36 credential and master’s degree opportunities, we’re confident we have a program for you.

APU offers:

- Convenient classes at 8 Southern California locations and online.
- NCATE-accredited programs recognized by all 50 states and internationally.
- A degree-completion program in human development (HDS) designed for future teachers.

Classes start year-round.

Contact us today!

Call
(800) 825-5278

Click
www.apu.edu/explore/education

Email
graduatecenter@apu.edu

The California Tech
Caltech 40-58
Pasadena, CA 91125

AZUSA | HIGH DESERT | INLAND EMPIRE | LOS ANGELES | MURRIETA
ORANGE COUNTY | SAN DIEGO | VENTURA | ONLINE

THE CALIFORNIA TECH HUMOR DECEMBER 7, 2009