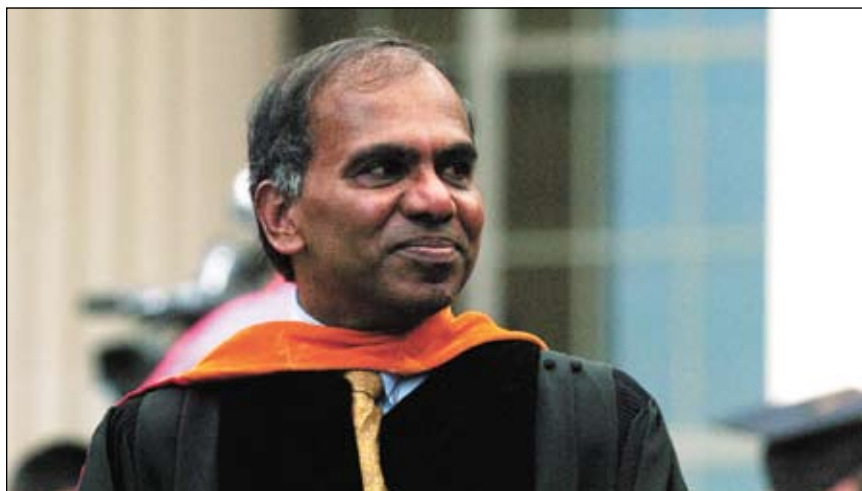


## Nominated to lead NSF *Suresh awaits Senate approval*



ELIJAH MENA—THE TECH

**President Barack Obama formally nominated Subra Suresh ScD '81, Dean of MIT's School of Engineering, to be the next director of the National Science Foundation last Wednesday.** If confirmed by the Senate, Dean Suresh will serve as director of the NSF for the next six years.

By **Ana Lyons**  
NEWS EDITOR

On June 8, President Barack Obama formally nominated MIT School of Engineering dean, Subra Suresh ScD '81, to act as the next director of the National Science Foundation.

Assuming the nomination is confirmed by the U.S. Senate, Suresh will serve a six-year term. He will replace the current director, Arden Berment, who was scheduled to leave the foundation on June 1.

Nomination to the U.S. Senate for con-

firmation on Tuesday, June 8.

With an annual budget of roughly seven billion dollars, the National Science Foundation is a federal government agency which serves to promote "opportunities for research and education funding in all areas of science and engineering," according to their website.

Obama first announced his intent to nominate Suresh in a June 3, as he also appointed the Department of State's Ambassador to the Republic of Lebanon and the

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## Unraveling tenure at MIT

*Revealing one of the most subtle and misunderstood processes at MIT, and explaining how one professor, despite his popular teaching, lost because of it*

By **Jessica Lin**  
STAFF REPORTER

Usually students miss more lectures than their professors, but in week five of the spring 2010 term, Eric Hudson, popular instructor of 8.02: Electricity & Magnetism, would have given chronic class-skippers competition. "I think I've been gone five of the last seven weeks or something," he said with a light chuckle, seeming awed at that fraction himself. "It's really been terrible," he said.

Hudson found out this past December that he did not receive tenure. In those weeks away from MIT, he had been in England, Sweden, and the country of Georgia interviewing for a new post as professor, since he is required to leave the Department of Physics this July.

Not receiving tenure at MIT isn't uncommon; it's a fact of life. According to The Report on the Initiative for Faculty Race and Diversity,

which was released this January, from 1991-2004, about 53 percent of all assistant professors were not awarded tenure. Granted, obscured in these statistics are some professors who leave before being promoted in order to take opportunities elsewhere.

The statistic might lead one to wonder what distinguishes the tenured 47 percent. How do you get tenure at MIT? And what's it like to not?

### Getting tenure: the mechanics

Students are probably most familiar with the college admissions process. But a tenure review at MIT is quite different—much more drawn-out and thorough—though it similarly requires an application, recommendation letters, and a hierarchy of reviewers.

Here's the nitty-gritty: new professors are first hired as As-

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### Who doesn't get tenure?

- From 1991-2004, about 53 percent of all MIT assistant professors were not awarded tenure.

- Eric Hudson, an assistant professor in Physics was not awarded tenure this year. He received the Everett Moore Baker Memorial Award for Excellence in Undergraduate Teaching in 2008 for instructing 8.02.

# Research trumps teaching in awarding tenure

Tenure, from Page 1

sistant Professors. After about five years, they are reviewed and must be promoted to Associate Professor Without Tenure (AWOT) in order to stay on. About 75 percent of candidates make it past that hurdle, according to the Race and Diversity report. Then two years later, AWOT professors “go up for tenure”; they

**“Somehow you have to sway the community to think that what you’re doing is important—and there’s not a prescription for that.”**

are either promoted to Associate Professor With Tenure, or are given a year’s notice to leave MIT (Atypically, Hudson was given only six months because of space complications due to lab construction when he first arrived).

A tenure candidate’s application passes through a hierarchy of review committees, each of which must approve the application. It begins within the candidate’s department, where a small committee of tenured professors gathers information about the candidate.

“You end up with a dossier which is a quarter to three-eighths of an inch thick,” says Professor Emeritus Paul E. Gray, a former MIT President, holding up two fingers to show the thickness. The dossier includes a full biography, a list of all the candidate’s publications, and a collection of recommendation letters.

The collection of recommendation letters is critically important according to Professor Patrick H. Winston ’65, who has helped administer tenure reviews in this department. At least in the Department of Electrical Engineering and Computer Science, roughly twice as many are written by experts from outside MIT who are in the candidate’s field than by professors within MIT. So how are the recommenders chosen? According to Winston, the candidate and his or her mentor make a list of people whom the candidate would like as recommenders, as well as a list of people the candidate would not like. But it is up to the committee appointed to research the candidate to choose who to request a recommendation from, and the committee may choose people from both lists. The candidate never finds out who the committee chooses.

According to Professor Hazel L. Sive, who serves as the Associate Dean of Science, after the smaller committee assembles the candidate’s information, it passes a recommendation to a larger group within the department, which could be all the tenured faculty. Within a single department, there are two to four levels of review.

Ultimately a decision is reached, and the department head defends the department’s decision to his school’s council. (For instance, the head of EECS department would take a case to the Engineering Council.) The school council reviews the application, and if approved, takes the case to the Academic Council, which is made up of top-level administrative figures including President Susan J. Hockfield, Provost L. Rafael Reif, and Chancellor Phillip L. Clay PhD ’88. On approval of the Academic Council, the application is finally passed to the MIT Corporation for a final review.

According to Winston, most unsuccessful cases stop at the department or school level. The department heads want to be especially sure about a candidate’s success, since approving a candidate that the

school council rejects “makes the whole department look weak.” According to both Gray and Winston, it’s rare to have cases overturned by the Academic Council, and the Corporation basically provides a “rubber stamp.”

Gray says the whole process typically begins in the winter and ends in the spring. Professors find out their decisions in May or June.

## What does it take?

Sure, the tenure process is established and constant, but what does a professor really have to do to get tenure?

Dive sums up MIT’s tenure criteria in two words: excellence and visibility. Part of excellence, she says, “is that you are either the top investigator in your field, or one of the very tiny handful of top investigators in your field, in the world.”

Winston offers a slightly different angle. It’s crucial “that a person will improve the reputation of the institution,” he says. This places heavy emphasis during a tenure review on outside recommendation letters written by international experts in the candidate’s field, since positive letters indicate that a candidate will boost MIT’s standing. Letters from within the Institute, on the other hand, are assumed to be somewhat biased by personal contact with the candidate, and while still considered, they are “not an indication of outside reputation.”

## Hudson received the Everett Moore Baker Memorial Award for Excellence in Undergraduate Teaching, an award based solely on student nominations.

How to build an international reputation is the tricky part. Winston acknowledges that tenure decisions are based on “short-term reputations,” and he recommends junior professors to tackle “the sorts of things that can end up producing results in a small number of years,” rather than large problems that require “ten years” before a paper can be produced.

“Tenure is never about promise,” he stated. “It’s about accomplishment.”

Because worldwide reputation is hard to gauge, professors’ peers at MIT may not always be able to provide the most accurate feedback. “It’s a little tricky because the [recommendation] letters are coming from outside people, partially from people who are in your specific field, and there’s no one else here who does exactly what I do,” explained Hudson. “I think that often you don’t really have a good feeling [about your tenure case], or your feelings can be mistaken.”

For Hudson, there remains a certain tipping point of fame, an elusiveness of renown. “Part of it is, you write great papers that everyone reads and then references and so you get famous, you go to conferences and give great talks,” said Hudson. “But I think it’s more than that. Somehow you have to sway the community to think that what you’re doing is important—and there’s not a prescription for that.”

## Research emphasized, but teaching award not ‘kiss of death’

There’s one place where Hudson is definitely a known star: the classroom. Sixty-two students rated him an average of 6.6 out of 7 in the Spring 2010 course evaluations for 8.02, the second-highest among the term’s eight instructors. His dedication to teaching was noted by former student of his, Chris C. Mills

’12, who was a UROP and teaching assistant for Hudson this spring.

“I got emails from him [with answers to questions] last year at 2 in the morning, 3 in the morning, and I was like, ‘What are you doing awake?’” Mills recalled.

Hudson’s popularity was confirmed in 2008, when he received the Everett Moore Baker Memorial Award for Excellence in Undergraduate Teaching, an award based solely on student nominations.

The Baker Award is also colloquially known as the “kiss of death” to tenure, which stems from the attitude that professors who spend too much time in the classroom aren’t spending enough time in the lab.

But the “kiss” is simply a myth, says Gray. Sive agrees. “Competent teaching is required for promotion,” she says. Although “extreme excellence [in research] can compensate somewhat for less excellent teaching skills,” since acquiring teaching skills is “always in progress,” good teaching alone is not enough for promotion.

## The MIT way

Each college approaches tenure with a distinct style. For MIT, that style is a tradition of growing its talent from the ground up.

MIT only hires professors that it believes can be successful, according to both Sive and Professor Thomas A. Kochan, the current Chair of the Faculty. “We are not in a mode like some universities historically have been, where you hire x number of people but you only expect x minus some to be successful at tenure,” said Kochan. This attitude is reflected by a policy of “no required attrition,” says Sive. When an Assistant Professor is hired at MIT, there is a corresponding, unique tenure position waiting for that person. A math nerd might say that there is a bijection between Assistant Professors and tenure positions.

Furthermore, MIT likes to hire people who are unestablished but promising, rather than mining superstars from other universities, says Kochan. (Though it does court superstars, relatively rarely, he adds.) “Then we do everything we can to help those individuals be successful. Not everyone makes it, that’s the reality. But we are committed to hiring people that we believe have the capability to be successful and then working as hard as we can, and that’s the way we want to grow our faculty.”

MIT’s tenure style stands out from that of its neighbor down the street. “Harvard has a reputation of tenuring almost nobody,” said Winston. Gray added that Harvard, in contrast to MIT, will often dip into the already-tenured staff at other colleges. So Harvard gets great people, he says, but it doesn’t contribute to their career development.

## Knowledge of the appeals process seems varied. Hudson was not aware of an appeals process.

“It seems to me that if you bring in bright young people, treat ‘em well, be critical in your tenure review, you’re contributing to the larger dimension of education than just your institution,” he says. “And the thing that is problematic about it, is that when Harvard goes outside to hire a world-class person of high level, in many cases the first place they look is right here [at MIT].”

For example, two years ago, Harvard had offers out to three senior MIT faculty in economics. Gray thought that was “indecent.”

“I can tell you we won all three,” he said, smiling. “They stayed.”

## ‘Tremendous goodwill’ toward junior faculty

Part of the reason for MIT’s

warmth toward tenure candidates is that it is in departments’ interests for them to succeed. For one, the recruitment process requires time and resources, and it’s often costly to support new junior faculty. They require lab space, some need a couple million dollars for lab equipment and help with funding before securing outside grants, and there may also be relocation costs for the faculty and their families.

“It’s expensive to hire a junior faculty member, amongst anything else, so we want to make sure that the investment in the junior faculty member is repaid, and the repayment is that they stay on as a senior faculty member,” says Sive.

But the departments’ friendliness toward new untenured faculty extend beyond financial reasons. “I tell the junior faculty that they are really the most important faculty at MIT because in twenty years’ time they’re going to be running the Institute... So there is tremendous, tremendous goodwill on the part of the senior faculty to help the junior faculty succeed,” says Sive.

Hudson felt the wholehearted support of the Physics Department. “The department is really amazingly friendly,” he says. “For some reason I think there’s this perception from the outside that because it’s hard to get tenure here that it’s somehow mean, and it is not at all like that.”

The generosity of his senior colleagues went beyond any of his expectations. When Hudson first arrived at MIT, he was assigned lab space in Building 24, but because of construction, there was no room for him to work for the time being. So, a couple of professors offered up their own facilities to him.

“That would never happen anywhere else,” said Hudson brightly. “They gave up their lab to me for like six months! That was like, ‘Welcome to MIT!’”

## Imperfect, but still ‘a good thing’

Tenure is not infallible. “It’s a process that works pretty well,” said Winston. “But it’s a process that can make mistakes both ways.” Some deserving individuals are not tenured, and sometimes tenured individuals “aren’t suited to helping the long-term reputation of the institution, or their problem is not of long-term interest.”

Tenure decisions are also susceptible to the bias of contemporary academic interest. Winston recalls that for a period of time, “string theorists couldn’t get jobs” in physics departments. In a later era, “you couldn’t get a job unless you were a string theorist.”

Deserving or not, tenured professors become diamonds with fine print: their positions last “forever,” secure for the rest of their lifetimes, barring “adequate cause.” However, that cause has to be “pretty egregious,” according to Gray. Asked just what a professor would have to do get his tenure revoked, Gray paused a moment to think. “Cheating on your research. Cookin’ the books. Producing data you didn’t really take.” And even that might not be egregious enough.

Gray tried years ago, as MIT Chancellor in the 1970s, to relieve a tenured professor who had been accused of passing off work of other faculty in his department as his own, and lying on his resume, claiming to have a doctorate he did not have. A committee of disinterested faculty reviewed the case and agreed with the charges, but they didn’t think it warranted taking away tenure. That was the only attempt in his nine years as Chancellor and ten years as President. Part of the reason for the low number, he says, is that “the tenure process is thorough, and usually the people who get through are great people.”

## The purpose of tenure

Despite the rare deviants, tenure serves an important purpose. It was established in the early twentieth

century to protect professors from being fired for having views that college administrators disagreed with. Tenure “guaranteed you freedom of speech,” said Gray.

Gray also sees value in evaluating professors early on in their careers, both for the universities and the professors. It prevents universities from “making big mistakes that [they]’ll regret later on” and does so while professors are young enough to seek employment elsewhere. “You know, you’re not supposed to discriminate against people on the basis of age, but you don’t find very many 55-year-olds who think it works that way,” he said.

Hudson also agrees that tenure is valuable for the institution. “I think the tenure process is a good thing,” he said. “The reason MIT is a fantastic place is because they’ve gotten rid of all the people who aren’t fantastic, right?” he said lightheartedly with a laugh.

But he also wishes there could be a slight modification to the current tenure criteria.

**“There is definitely a feeling, of ‘Look, getting tenure here is hard, you should just do research, and just forget about everything else.’”**

“The problem is that there are always exceptions to the rule,” he said. “An administrator in the physics department, her comment was, ‘It would really be nice if once every ten years MIT would say: expletive the letters, we know this guy is just good to have around and we’re going to keep him.’ And I think it would be nice if departments had that flexibility. And probably that’s the right time scale too. Because if you start doing that... the problem is, we really like everybody, and so we’d never fire anyone and then we wouldn’t be number one anymore.”

“So it’s good to say... you’re great, but you’re not MIT material, and I’m willing to accept by those standards that I’m not MIT material, as hard as it is to hear that. But it would be nice if there were occasionally another option.”

## Looking forward

So that’s how tenure works in theory. But how well is the process actually being carried out?

The Report of the Special Faculty Committee on Promotion and Tenure Processes is currently being compiled to answer that question. It is expected to be released in the fall, according to Kochan, who co-chairs the committee. According to him, the report investigates the management and transparency of the tenure process at MIT. It will highlight the need for improvement across several fronts, including appeals, diversity, and mentoring.

Kochan expressed the need for a clearer tenure appeals process. Currently, it’s one paragraph in a larger section on grievance procedures in the official MIT Policies and Procedures, and begins, “if the complaint is not successfully resolved within the academic lines of supervision in the relevant department and School, the aggrieved faculty member may write to the Provost requesting further review of the process that led to the decision.”

The report will recommend replacing the appeals process as its own section and expanding it to be clearer and more detailed.

Knowledge of the appeals process seems varied. Hudson was not aware of an appeals process. Winston and Gray admitted some uncertainty but recommended a letter to Provost L. Rafael Reif. Sive said that there are many points of

# Hudson leaves mark at MIT

*Despite being denied tenure, Hudson pursues academia*

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entry to file an appeal—through the head of the department, the Dean, or the Provost—and “there is a process by which appeals are organized by the Provost, but such appeals are very rare.”

Second, the Race and Diversity report argues for a more diverse faculty at MIT, and this new report echoes that conclusion. “It’s imperative for MIT to increase the number of underrepresented minorities on the faculty and to help them be successful,” says Kochan. “I see that as one of the key goals of my time as Faculty Chair.” So in recruitment for tenured positions, he says, MIT needs to be more proactive in broadening the scope of their search.

There’s also a need to handle an increasing diversity in research interests, as more professors engage in interdisciplinary work. That creates a problem when it comes time to find outside recommendations for a tenure candidate. “It’s difficult to identify who are the right experts,” says Kochan. “We still need to go to the best experts in the fields that the person is working in, but the knowledge of who those people are and the right mix may require a bit more work.”

Finally, the mentoring that junior professors receive is “highly variable” among and within different departments. For instance, some departments have an entire committee that advises junior faculty, whereas others have individuals as mentors. The report identifies best practices in this area and recommends that MIT “reward the people who are doing a good job for mentoring by giving them a little more credit for what they are doing—more visibility, more recognition,” says Kochan.

If these sound like big issues to address, they are. “There’s a lot to do,” said Kochan. “This is not a one year, or a three year, or even a five year process.”

## A move, a reflection

While Kochan looks forward to revitalizing the tenure process, Hudson looks toward his next step. First, he has to tie up matters at MIT.

Because Hudson is relocating, the graduate students in his lab have to decide whether to leave with him or to find another mentor. Fortunately, Hudson recently graduated his first round of graduate students, and the two students he has now are first- and second-year, not too far into their projects.

For them, “it’s a disappointment but it’s not a huge loss,” says Hudson.

As of the end of May, Hudson had not decided where he’s headed next. He wants to stay in academia, though, as he’s drawn to the feeling of discovery in research, calling it “pure joy.”

It’s certainly not an easy path. The challenge of working for tenure extends beyond research and can consume one’s personal life.

“There is definitely a feeling, of ‘Look, getting tenure here is hard, you should just do research, and just forget about everything else,’” says Hudson. Everything else, including teaching, family, fun.

For Hudson, that wasn’t the way to go. “I chose just to ignore that advice. Maybe that was bad on my part,” he laughed. “But I have a family. I have three young kids, so I would go home in the evenings at not too unreasonable an hour, and I would stay home on the weekends and spend some time with them. And maybe to some extent my work suffered because of that. But if it did, so be it—I wouldn’t trade the family life for even getting tenure. And with teaching it’s the same thing.”

Even though he’s leaving, Hudson has already left a mark on MIT. He’s worked to increase minority and women enrollment in the Physics Department, serving as the department minority adviser and working on several diversity panels in the School of Science

and the Institute.

He’s also helped develop the 8.02 TEAL curriculum, having been staff since the first term the system became standardized in Spring 2003. He’s worked to make the curriculum “much more demanding” compared to the 80s and 90s, and hopes “that TEAL will stay around long after my departure and be sort of, uh, ‘Eric Hudson—he made that slide,’ or ‘He’s the reason that we’re doing these stupid back-of-the-envelope calculations,’” he joked.

Hudson has also valued and learned from his years at MIT, doing research in a rich intellectual environment of both faculty and students. On the teaching front, TEAL changed his view of how students learn. He said. “I used to be happy to stand in front of a class, and I’ll never do that again.”

Hudson will soon be among the many professors who pass through MIT for a few wondrous years. Afterward, though, these professors go on to find positions in academia elsewhere, go into industry, or even start their own businesses.

“The fact is that MIT faculty who are doing really well get offers all the time,” said Gray. There are also non-tenured teaching positions at MIT, such as lectureships, which also offer job security, says Gray, and rarely, someone who doesn’t get a tenured appointment takes one of these non-tenure track positions.

No matter where people go or what jobs they do, the key to success, perhaps, is staying motivated despite obstacles. And it’s clear Hudson has found his motivation.

“Every time a student comes into [my] office, and says, ‘I just didn’t understand that but then you explained it and now I get it.’ You know? That is so... happy!” His eyes were bright, and he beamed. “Every time I get an email from a student who says that, that just keeps me going for another year.”

# Boston gets air of rare tornado watch

*Strong winds take down trees, tent*



AVIV OVADYA—THE TECH

**A macroburst, a large downdraft of hurricane force winds, hit the Esplanade** during Sunday’s tumultuous thunderstorm. Over 30 trees sustained significant damage and cleanup crews were brought in to remove the debris.

**By Jericho Dickinson-Ricardi**

A series of powerful thunderstorms tore across Massachusetts this past weekend. Lightning and high winds caused loss of power to thousands of residents statewide. A tornado watch was put into effect on Sunday in Middlesex County, Worcester County, Franklin County, Hampden County and Hampshire County.

MIT also suffered the effects of the storm. The storm knocked over a tree near pika, causing it to nearly land on the house. The house was spared when another tree blocked the falling tree from hitting the house. The large white tent put up on Kresge Lawn for commencement partially collapsed due to excessive water and wind.

Other storm difficulties were more comical. Yan Zhu ‘12 Course XIII, said that it was a clear day when she and a friend decided to visit Clear Conscience Cafe in Central Square, but the sky quickly turned dark. “All this water just suddenly came down,” said Zhu, “Pretty much everyone in the cafe just

turned around and stared. A guy was walking outside in a facemask and snorkel.”

On the bright side, the storm turned down the heat in the Boston-area. On June 5, before the storm began, temperatures ranged from a high of 85°F and low of 64°F. The day after the storm, highs were down to 75°F and lows were in the low 50’s. Also, the weather became less humid, with dew points dropping from the high 60’s to the low 50’s

The tornado watch was issued for every part of Massachusetts, except for the Cape, Nantucket, and Martha’s Vineyard. Wind gusts reached as high as 68 MPH on Sunday June 6 at the peak of the storm. In the Greater Boston area, the rain accumulated to 0.71 inches, far higher than the normal June average of 0.11 inches per day.

Trees were reportedly knocked in several parts of the Greater Boston area. According to The Boston Channel, in Brookline, winds uprooted a tree on Beacon Street, crushing two cars. No one was injured.

*Jingyun Fan contributed reporting to this article.*