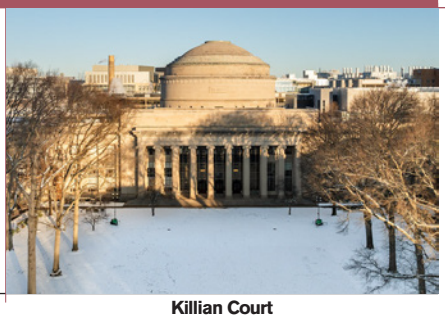
Massachusetts Institute of Technology

Vol. XXXVII No. 3
January/February 2025

MIT Faculty Newsletter

https://fnl.mit.edu

in this issue we offer a variety of views in response to the presidential administration in Washington. There's also Faculty Chair Mary Fuller's "Comms," (page 6); Paula Hammond on "Creating the Role of the Vice Provost for Faculty," (page 12); and "Reflections on the MIT Research Enterprise" by Ian Waitz (page 16).
[Deadline for submissions for the March/April FNL is March 17.]



Killian Court

The Historical MIT

Rosalind H. Williams

"MOST HUMAN BEINGS OPERATE like historians: they only recognize the nature of their experience in retrospect." This comment, by the late historian Eric Hobsbawm [*The Age of Extremes: A History of the World, 1914–1991* (Vintage, 1994)] describes many human beings at MIT these days. Not just the authors of "What's Driving This Bus?" (the editorial in the November/December FNL), but others of us at MIT find ourselves looking to past experience here in order to understand a puzzling present. Are we still an "engineering school," or have we morphed into something else? If so, what is that something else, and what are the forces that are currently defining the Institute? Why are some citizens seeing universities as enemies? How does past experience suggest where we are headed?

continued on page 4

Guest Editorial

A Call for Courage in the Face of Rising Antisemitism, White Supremacy, Misogyny, and Authoritarianism

Catherine D'Ignazio

IN CASE ANYONE DOUBTED what was unfolding before our very eyes, Elon Musk did a Nazi salute not once but twice during the presidential inauguration. To the horror of many in the Jewish community, the Anti-Defamation League rushed to Musk's defense. The new president pardoned 1,500 rioters charged with, among other things, seditious conspiracy, many of whom are known members of white nationalist and neo-Nazi groups. No number of sexual assault allegations (or poorly written patriarchal screeds) can keep violent men out of high office. Scientific progress on climate and global health is in jeopardy due to the US exit from the World Health Organization and the Paris Climate Accords, as well as freezing the funding of the National Institutes of Health (NIH). The number of "enemies" of the current administration

continued on page 4

Editorial

Reimagining MIT

WHAT IS THE ROLE OF higher education institutions in unprecedented times? How can we reimagine MIT's mission in this moment of urgency? What should our response be when universities are labeled as the enemy? While these questions offer no easy answers, the recent flurry of Presidential Executive Orders, that directly and indirectly threaten members of our community, should compel us to reevaluate the convictions we once considered self-evident. The threat is real, and it won't stop at the doors of 77 Mass. Ave.

As a community, we undoubtedly have differing opinions on the pace, scope, and boldness of the initiatives we should pursue. And yet, even a brief look at our recent past reveals how MIT upheld core convictions during challenging times by acting with courage,

continued on page 3

contents

The MIT Faculty Newsletter
Editorial Board

Nazli Choucri (Vice-Chair)
Political Science
Christopher Cummins
Chemistry
Yoel Fink
DMSE/EECS/RLE/ISN
***Sally Haslanger (Co-Chair)**
Linguistics and Philosophy
Thomas Heldt
Electrical Engineering and Computer Science
***Ceasar McDowell (Co-Chair)**
Urban Studies and Planning
***Tanalís Padilla**
History
Nasser Rabbat
Architecture
Balakrishnan Rajagopal
Urban Studies and Planning
Robert P. Redwine
Physics
Warren Seering (Secretary)
Mechanical Engineering
***Franz-Josef Ulm**
Civil and Environmental Engineering

David Lewis
Managing Editor

*Editorial Subcommittee for this issue

Vol. XXXVII No. 3 **January/February 2025**

Photo Credit: *Page 1:* Emily Dahl.

Address
MIT Faculty Newsletter
Bldg. 10-335
Cambridge, MA 02139

Website
https://fnl.mit.edu

Telephone 617-253-7303
Fax 617-253-0458
Email fnl@mit.edu

Subscriptions
$15/year on campus
$25/year off campus

Reimagining MIT
continued from page 1

creating meaningful impact, and moving with expedience. These examples could serve as a foundation for where we begin.

• For courage, recall President Charles Vest's response following the September 11, 2001 attacks. In October 2001, President Bush issued Presidential Decision Directive No. 2, which required the federal government, in consultation with the higher education community, to identify "sensitive areas of study" that should be off limits for students from certain countries[1]. Vest courageously resisted the federal government's interference in MIT's research and education. He alerted the faculty to the possibility of federal funding cuts in response to his decision. He was not alone in this stance; major US research universities joined him, recognizing the threat to academic freedom posed by the executive branch. His 2002 essay, "Response and Responsibility: Balancing Security and Openness in Research and Education"[1], is essential reading for understanding what it takes for a major research university to uphold fundamental principles, in this case, academic freedom.

• For impact, consider the 1999 Hopkins-Potter Report, *A Study on the Status of Women Faculty in Science at MIT*, which revealed that many tenured women faculty at MIT faced professional marginalization, often coupled with inequities. The report found that women faculty received lower salaries, less space, and fewer resources for their research than their male counterparts, and were often excluded from key decision-making roles within their departments[2]. The report was groundbreaking both within and outside MIT. Inside the Institute, President Vest set a goal of achieving gender equity moving forward. The study was expanded to all other Schools at MIT and led to the creation of the Council on Faculty Diversity, tasked with addressing the root causes of marginalization and the ongoing underrepresentation of women and minorities on the faculty, while developing institutional solutions to these issues[3]. Outside MIT, the challenges highlighted in the report resonated widely, revealing a universal problem for professional women and underrepresented minorities in the US. The report set in motion a fundamental shift toward Diversity, Equity, and Inclusion (DEI) frameworks in academia, the federal government, and corporate America. The 1999 Hopkins-Potter Report[2] and its 2002 update, "The Status of Women Faculty at MIT"[3], are essential reading for understanding what it takes for a major research university to confront a societal issue and help guide the arc of history toward justice.

• For expedience, consider the speed with which MIT responded to the Covid-19 pandemic. Whether or not you agree with the specific approach, there is no denying that MIT's community-driven response helped us not only navigate the pandemic but emerge stronger. In the face of such critical existential challenges, expedience is crucial. Notably, we should recall that within that expedience, MIT found ways to protect its most vulnerable by continuing to provide housing to those for whom returning home would have proven unsafe. The rapid campus closure minimized the virus's impact on our community, while the quick reopening allowed us to rise above the pandemic, which now feels almost like a distant memory.

Once again, courage, impact, and expedience are at stake as we reassess our convictions in the face of unprecedented challenges. For instance, the federal government's interference today echoes the 2001/02 threat to academic freedom following September 11, a struggle President Vest faced. The push to dismantle Diversity, Equity, and Inclusion (DEI) programs at federal, state, and corporate levels has already reached MIT's doorstep, and won't stop at the entrance doors of Lobby 7. The 2023 Supreme Court decision effectively ending affirmative action has already impacted the representation of underrepresented minorities in our admissions, who, once enrolled, face disproportionately high scrutiny in MIT's disciplinary process for alleged violations of institute rules. Federal research proposals are now being screened for DEI-related language, which can lead to grants being rescinded, while across-the-board cuts to federal research funding are threatened, including a cap on indirect cost reimbursements. While MIT has now joined a federal lawsuit alongside peer institutions to block these cuts, we must recognize that the pressure to conform in order to maintain federal and corporate funding could ultimately erode academic freedom, which has been in jeopardy since October 7, 2023.

If you believe this is just politics and that we, as faculty, should stay out of it, please rest assured that politics will come for us. In other words, the time for bold action is now. As the past has shown, we have the ability to reimagine MIT by championing a vision and committing to a mission of higher education in the United States that embodies courage and impact, and acts with expedience. We certainly have the capacity – now, the question is: do we have the will?

Editorial Subcommittee

1 Charles M. Vest (2002). "Response and Responsibility: Balancing security and openness in research and education," Report of the President For the Academic Year 2001-2022, 1126 MITP-o246/alt/db r6

2 The *Faculty Newsletter* had a special edition on the topic in March 1999: https://web.mit.edu/fnl/women/women.html

3 N. Hopkins, L. Bailyn, L. Gibson, E. Hammonds (2002) "The status of women faculty at MIT: An overview of reports from the Schools of Architecture and Planning; Engineering; Humanities, Arts, and Social Sciences; and the Sloan School of Management," *MIT Faculty Newsletter*, Vol. 144, The Status of Women Faculty at MIT

A Call for Courage
D'Ignazio, from page 1

is rapidly multiplying: immigrants, transgender people, the media, foreign students, student protesters, professors and the whole enterprise of higher education, women in the military, DEI, vaccines – science itself.

I wanted to write to you, my faculty colleagues whom I admire and respect, as well as to the students and to the staff of MIT to whom I am bound in terms of professional service and deep relationships of care. Part of my reason for writing is selfish. I want the historical record to show that when the very foundations of democracy and equality, not to mention people that I love, were under threat, I did not hide. I did not roll over. I did not capitulate. I did not change my research agenda. I did not hedge my values. I did not make excuses. I did not collaborate. I did not curry favor. I did not sacrifice some of you for my own privilege, comfort, and grant funding.

And that is exactly it: we are currently being invited to sacrifice each other. Almost daily, I think about the famous quote by Martin Niemöller which is on the walls of the US Holocaust Memorial:

First they came for the socialists, and I did not speak out – because I was not a socialist.

Then they came for the trade unionists, and I did not speak out – because I was not a trade unionist.

Then they came for the Jews, and I did not speak out – because I was not a Jew.

Then they came for me – and there was no one left to speak for me.

This is a meditation on silence, written by a German pastor who was no radical: he was a staunch anti-Communist who supported Hitler's rise to power. However, as the horrors of the Reich unfolded, he not only came to regret this decision, but joined the anti-Fascist movement in Germany. His famous words mourn the moment where solidarity and collective voice could have prevented the horrors of the Holocaust; that mourning also led him into a fight in which he risked not only his career, but his life.

Thus, in my first piece for the *Faculty Newsletter*, I offer you my one voice in the hopes that we may join together – in courage, even as we may feel fearful – and continue to pursue the work that we have always done. I will not sacrifice any of us to the tyrants, who might start with demonizing transgender people and Women and Gender Studies (a very common authoritarian strategy, see Hungary) but will only continue to find more and more "enemies", and demand more and more sacrifices, until only the most obsequious loyalists can continue their work unobstructed.

Those of you who know me know that I am a pragmatic person. Here is what I am doing specifically. I have joined all of the academic freedom groups on campus where faculty have been gathering for debate and dialogue. Thus, I would like to invite all of us to join the MIT chapter of the American Association of University Professors (AAUP) and the MIT Council on Academic Freedom (MITCAF). I hope to meet more of you in these spaces and I invite all of you to be in touch with me for anything you are planning that may help build our collective voice and nurture our resolve to continue the academic pursuit of truth and knowledge. None of us can have courage alone. But together our voice is mighty.

Catherine D'Ignazio is an Associate Professor in the Department of Urban Studies and Planning *(dignazio@mit.edu).*

The Historical MIT
Williams, from page 1

Hobsbawm contends that from mid- to late-twentieth century, "the world, particularly the world of developed capitalism, had passed through an altogether exceptional phase of its history; perhaps a unique one." (257-258). According to Hobsbawm, this period was "the greatest and most dramatic, rapid and universal social transformation in human history." (288). It was a worldwide phenomenon, bringing an end to some aspects of human life that had seemed timeless – the central role of the peasantry, for example – but also bringing science and technology into every corner of human activity.

Through it all, MIT was in the thick of this great transformation. The postwar epoch was exceptional, and the role of MIT in that epoch was exceptional. The design of the Institute matched the needs of what Hobsbawm calls "developed capitalism." MIT invented, innovated, promoted, and benefitted from technological innovation, scientific research, economic expansion, global influence, and widespread social and political support. In retrospect, it looked like a Golden Age.

What puzzles the authors of the editorial is how MIT managed to do this more or less intuitively, despite the lack of a Master Plan. How is it, they ask, that various processes interacted to ground this remarkable institution on the swampy north shore of the River Charles? How is it that MIT has so far managed to maintain a sense of direction and cohesion through unexpected, unsettling "moments of decision" [David Kaiser, ed. *Becoming MIT: Moments of Decision* (The MIT Press, 2010)]? There seems to have been a sort of magical realism at work.

continued on next page

The Historical MIT
Williams, from preceding page

The authors invite us to find more plausible reasons for MIT's evolution. They give us a historian's version of a problem set – a wide, thought-provoking range of examples of institutional changes over time. They invite us to think about these examples and to propose some conclusions about the processes that in their interactions have shaped this institution.

They do this in order to understand their own experience, but also to try to convince other people, including many not associated with MIT, to take a more informed view of our institutional home. "In light of perceived and in some cases explicit threats to universities," they tell us at the beginning of their essay, "we are being challenged . . . to explain the ways that we operate." The implied hope is that once "we try to explain these processes to others," they will take a less threatening view of MIT.

The problem is that the two key concepts they turn to in order to "explain the ways that we operate" – institutions and processes – are now widely suspect. When *processes* that shape and sustain *institutions* are distrusted, no logic can overcome the lack of trust in the key concepts. The dilemma of MIT today is that the assumptions that thrived during the Golden Age are increasingly regarded as problematic. The processes and institution we want to defend may be dismissed as *elitist*. The *expertise* they embody is denounced as an inherently unfair *meritocracy*.

The editorial asks excellent questions, ones that are not asked very often when *processes* and *institutions* are taken for granted. How and why has the balance between undergraduate and graduate students changed in recent decades? Who wins and who loses from that rebalancing? Why and how have grading options multiplied? How has the balance between graduates going into existing businesses and those starting new businesses changed in recent years? What about those who don't go into business at all? Where and how do people at MIT socialize? Does it matter that the Faculty Club lunchroom and the F&T diner are gone?

Such questions and the discussions they provoke are valuable to those of us associated with MIT and to those beyond our non-ivy-covered walls. However, we should not assume that discussing them will make the world more appreciative of us. Events of the past year have made it clear that suspicion about universities is not just an MIT phenomenon. Many universities, along with many other institutions, are on the defensive. As discussed in the faculty meeting of November 20, in this respect MIT has certain advantages over other "elite" universities, apparently because MIT's "polarization" around science and technology, deservedly or otherwise, seems to work in our favor.

There are advantages to this reputation, but also the dangers of misrepresenting MIT. When James Killian described the postwar evolution of the Institute, he described it as "a university polarized around science, engineering, and the arts." Science, engineering, *and* the arts: one thing to be learned from a historical view of MIT is its constant, conscious effort to understand science and technology as part of "a broader educational mission" (the title of chapter three of the 1949 Lewis Report).

In this time of threats to universities, safety is to be found in numbers and in united fronts. However special MIT may be, it already has multiple connections not only with other research universities, but also with other four- and two-year degree-granting institutions, including ones that share its Land Grant origins.

Such coalition-building could go far in addressing a major problem in higher education today: the need for technical and scientific education that goes beyond secondary school levels but does not necessarily require a four-year degree. MIT already has done a lot to address this need through OpenCourseWare and related initiatives: there are many more possibilities that could be explored. The most effective way to rebuild institutional trust is to provide such concrete collective benefits.

The history of MIT reminds us that its current institutional form – a Research 1 university – was by no means foreseen when it was launched. When William Barton Rogers managed to get approval for this private Massachusetts corporation in early April 1861 – two days before the Civil War broke out – he included in the plan not only a School of Industrial Science but also a museum and a Society of Arts. Some mixture of these elements, he believed, could provide a broader kind of education than an industrial science school alone. The founders of MIT emphasized that they were trying to define a "New Education" combining craftwork and professional education [Roe Smith, "'God Speed the Institute,' The Foundational Years, 1861-1894" in Kaiser (ed.), p. 21].

MIT has never had a Master Plan, but it has consistently sought a New Education. We keep changing our processes and institutional forms, but we are consistent in our goals: to understand the universe, and to understand ourselves. MIT has been wildly successful as a research university, but it has also experimented with other educational models and has collaborated with many different partners in these experiments. MIT is in a strong position now to respond to the moment with coalitions and innovations that will move the discussion from defense of the present to imagining new futures.

Rosalind H. Williams is the Dibner Professor for the History of Science and Technology in the Program in Science, Technology, and Society, Emerita *(rhwill@mit.edu).*

From The Faculty Chair

Comms

Mary C. Fuller

THIS SPRING FEELS A little different, and it has made me think again – and more – about communication. We are in the early days of a new federal administration that has both signaled an intent to take actions that would have significant effects on higher education, and rapidly begun to issue orders that are still being understood in terms of their impacts on funding and on current activities. As you all know, MIT relies on grants from federal agencies for a significant portion of our research, and that funding typically supports not only the work of individual investigators and students and their equipment (direct costs) but also a fraction of the infrastructure and operating expenses necessary for doing that work (indirect costs), at a rate regularly negotiated with and audited by the government to reflect MIT's actual costs.[1] Federal funding agencies are a very substantial partner in the research enterprise as we know it in the post-World War II era. Changes to levels of or conditions on federal support for research would thus affect the institution in profound ways. MIT also falls within a group of universities with especially high endowments. The federal administration has signaled a possible increase – maybe a sizable increase – in tax on endowment income (currently at 1.4%). That income currently makes up roughly 30% of MIT's operating revenue, and enables us (for instance) to offer need-blind admission to a growing number of students. We have seen that high levels of endowment are themselves triggering increased scrutiny and intervention in other areas of government interest. As I write in the early weeks of a new presidential term, along with active and diligent preparation and modeling there are large and changing uncertainties about how MIT might be affected and how (as an institution) we would want or need to respond. This is a hard moment to write a column that will sit passively for the next two months.

How can we best stay informed and be engaged to the extent necessary on matters affecting MIT? Two new resources should be called out before I go further. Many of you have probably seen Glen Shor's video primer, offering an introduction to MIT's finances; some basic financial literacy may be helpful over the next few years. (If you haven't, look for "Understanding MIT's Finances," ADM64076w in the Atlas Learning Center.) For research questions, you may want to bookmark the link to the "Information on changes to federal research policy," on the VPR website, https://research.mit.edu; this page will be regularly updated and provides an email address for questions.

> Looking ahead, I hope we will be able to add to the schedule of monthly Institute faculty meetings some forums or town halls on key topics where all of us need to be informed and provide input. But regular channels of communications will need to carry some weight; some of these will be very familiar, but others less so . . . .

Looking ahead, I hope we will be able to add to the schedule of monthly Institute faculty meetings some forums or town halls on key topics where all of us need to be informed and provide input. But regular channels of communications will need to carry some weight; some of these will be very familiar, but others less so (especially to newer colleagues), so let me run through a short, representative list. MIT runs on a structure of regular meetings at a variety of scales. School Councils – heads of academic units and School deans – typically meet every other week. Academic Council – School and College deans, along with senior officers, vice presidents, vice provosts, and the chair of the faculty – meets every other week. Once a month, the president's office

continued on next page

[1] For more detail, see this FAQ prepared by the American Association of Universities: https://www.aau.edu/key-issues/frequently-asked-questions-about-facilities-and-administrative-costs. For an MIT perspective, see this article by Maria Zuber in a 2017 FNL: https://web.mit.edu/fnl/volume/295/zuber.html#:~:text=MIT's%20current%20indirect%20cost%20rate,F&A%20rate%20for%20administrative%20costs. On MIT's budget, see https://vpf.mit.edu/sites/default/files/downloads/TreasurersReport/MITTreasurersReport2024.pdf.

Comms
Fuller, from preceding page

brings together DLC heads, deans, senior officers, and the faculty officers for a topic-focused meeting. (Extra department heads' meetings have been added to the schedule this spring). Ideally, information that goes to deans and department heads also flows as needed to faculty – and back. As we've probably all experienced, there are gaps, filters, and lags in the way information travels from meeting to meeting and person to person in a vertical structure; in both directions, messages can get stuck and more channels will be needed. But this structure provides a baseline for regular information exchange alongside the regular business handled by these groups, and we should make it do as much as it can.[2]

On the faculty side, the Faculty Policy Committee – with representation from the five Schools, the Undergraduate Association, and the Graduate Student Council, along with President's and Provost's designees – typically meets every other week. The chancellor sits on FPC as the president's designee, and the president, provost, and chair of the Corporation all visit FPC on a regular schedule. We too have scheduled additional meetings for this spring, both to stay informed of matters arising and to offer perspective and counsel to the administration. Like other standing committees, FPC is constituted to be broadly representative and deploy long experience in the institution, but our networks may not touch everyone. We will be looking for ways to more effectively serve as another channel between faculty and central offices, in addition to the structured and unstructured ways in which the officers already hear from you.

These are challenging times. In our model of shared governance, none of us has complete control or complete access to information, and each constituency worries about having sufficient agency and voice to contend with the challenges that are especially prominent from wherever we sit. Do we have an appropriate amount of agency in the actions of the institution? If others are the ones to act, is our input heard and considered when decisions to act are being made? An op-ed in the previous issue of the *Newsletter* asked, what's driving the bus? Do they see that car coming up on their blind side? We are all on the bus together, along with staff, postdocs and students, yet it is natural for the corporation, the administration, and the faculty each to worry whether others are sufficiently alert to the landscape of challenges that their own role allows *them* to see.

These are challenging times. In our model of shared governance, none of us has complete control or complete access to information, and each constituency worries about having sufficient agency and voice to contend with the challenges that are especially prominent from wherever we sit. Do we have an appropriate amount of agency in the actions of the institution? If others are the ones to act, is our input heard and considered when decisions to act are being made?

So let's take stock of the formal agency and voice that exist for us as faculty. In act-with-power contexts, agency is typically both real and complex, shared with and informed by student representatives, professional staff, and members of the administration. (One example is the Committee on the Academic Program.) In the case of the educational program, where faculty are the true experts and owners, agency is difficult to exercise effectively at institutional scale. Within a large and heterogeneous institution, extraordinary efforts are required to grasp the big picture, and it's equally challenging to think collectively and reach agreement on common parts of the enterprise or changes with broad structural consequence. Long-term, setting the bar for an excellent STEM-focused education is at the heart of MIT's mission, and what it offers to the nation and world. While it may not give us immediate purchase on the short-term challenges that seem likely, we need to find the right way to exercise collective agency in this domain and to get traction on the things that typically make the process of doing so challenging.

Voice is a little bit different. The structure I've described has a vertical dimension that can lead to significant filtering of information – and voice – as signals travel in both directions. Neither dissent nor context and explanation travel well. The popularity of Pulse (where it is popular) surely signals a felt need for a better channel for faculty voices, even though a tool like this doesn't have the capacity as such fully to meet this need. Another signal might be the emergence of groups like the Council on Academic Freedom or the return of an MIT AAUP chapter, both of which have provided their members with a channel to exercise collective voice. Like the *Faculty Newsletter*, they have evolved organically and don't have a defined connection with faculty governance. That independence has advantages and disadvantages. Being on the outside of institutional structures offers real resources in an environment where we see diversity of opinion as both something to protect and a potential intellectual

continued on next page

[2] This is only a partial summary, and doesn't include regular meetings that bring together (e.g.) heads of house, lab directors, or other such groups.

Comms
Fuller, from preceding page

resource; smaller, more defined groups also foster a sense of community. One disadvantage is the absence of a formal connection to existing channels of information exchange; when exchanges require too much activation energy, what we know can be unduly siloed. Perhaps the immediate remedy will be good interpersonal habits of frequently reaching out across networks as well as within them.

Sometimes we're asked whether we have the right governance structure. A previous faculty chair organized a consortium of faculty governance leaders at Ivy+ institutions, and this has afforded a succession of chairs with exposure to how governance is organized and how it functions at other institutions. There is also a significant literature on faculty governance and faculty senates in particular. Our early observations seem to match what the literature indicates, which is that senates do not function better than (or on some topics, as well as) MIT's governance system; where it appears that they do (for instance, at Duke, as we have heard from the president), that high performance may be a function of culture rather than of the system itself. We would certainly like to learn more about well-functioning systems wherever we can identify them, though, and to see what effective properties could be translated here. And we would all benefit from some work on culture; I'll certainly try to do my part.

Be that as it may, there are unmet needs that characterize the system we do have. Here, I come back to communication. How else can or could faculty exercise a voice on matters that concern them? And to reverse the question, how can or could the senior administration most effectively seek the voice of the faculty when they need to hear it? Are there practices and tools we can discover? These are questions that continually preoccupy both the faculty officers and the senior administration both.

But there may also be untapped resources in what exists. This spring, you'll see the usual slate of nominations to the faculty governance standing committees and for two associate chairs who will join chair-elect Roger Levy (BCS) when the current officers reach the end of their terms June 30th. There are 11 standing faculty committees and two special committees (Killian and Edgerton) populated by the Nominations committee, which is itself a standing committee. Typically, the Committee on Nominations tries to ensure the membership has overlapping terms, and representation from across the institute (as well as from student governance). With some exceptions, these committees meet every two weeks, and the chairs also meet as a group periodically to share agendas and brainstorm. That structure of standing faculty committees should be fairly well-known to all of us, and I won't detail it here.

Yet if you think about faculty participation in deliberation and decision-making at institutional scales, these standing committees are the tip of a very large iceberg. At a rough count, there are 40 *more* regular committees listed on the faculty governance website that have significant faculty participation or leadership, and report to one of the senior administrative officers. In addition – importantly – many offices have their own faculty advisory committees. There is no complete central inventory of such committees, all of which inject faculty expertise and perspectives into key areas for the Institute.

This landscape suggests that there is quite a high level of participation and contribution by faculty who are *not* DLC heads or faculty officers – beyond the structures I described earlier – in how many parts of MIT run. What about this is an untapped resource? First, there are issues of navigation. It's hard to identify who might be dealing with a question or topic: this could be improved. Second, there are issues of visibility: it's hard to see what work is being done. We should reinstitutionalize the practice of sharing committee agendas and outputs in some well-known venue, and ideally not only for the standing faculty committees. Finally, there are issues of coordination. An opinion piece in the previous issue of the FNL commented that MIT's "decentralized structure poses challenges to the collective expression of faculty perspectives." This pervasive lower-case governance exists, but it is entirely decentralized; and there may be underserved areas that may need faculty input but don't currently have it in an ongoing way. We might all benefit from networks or platforms that enabled advisory groups and committees to communicate with each other and, at some level, with formal faculty governance, for information sharing, collective wisdom, and common cause. And we might all benefit from moving to a state where lower-case faculty governance would be more visible and accessible to all of us.

And so we take a breath on the verge of another semester. No one could say the last year and a half have been an easy or simple time, and communications has been a persistent challenge that I don't think we have solved. We will all need to be thoughtful consumers of the information in our environment. But one thing that also persists is the huge value of our presence together. For having colleagues like all of you with whom to communicate, I do feel sincerely grateful.

Mary C. Fuller is a Professor of Literature and Chair of the Faculty *(mcfuller@mit.edu).*

What to do if . . . .

RECENT PROCLAMATIONS BY THE new federal administration directed at institutions of higher education across the nation have left many of us at MIT in a quandary. With all the talk about immigration enforcement, you too may be wondering what MIT does when outsiders, such as immigration or law enforcement officials, come to campus. MIT's Office of General Counsel (OGC) has posted updated guidance for the community on these issues: "OGC Guidance for Interactions with Immigration and Law Enforcement on Campus."

Apart from this document, the OGC regularly posts updates that may be of interest to the MIT community. Those updates can be found here: https://ogc.mit.edu/latest. ■

Setting the Record Straight

IN HIS ARTICLE IN the last issue of the *Faculty Newsletter*, "The Pulse Update", (Vol. XXXVII, No. 2, November/December 2024), Prof. Yossi Sheffi writes "It [the FNL] also betrays its own rules by allowing unsigned articles to be published, sometimes by non-faculty members of the community." This statement is inaccurate. The editors know of only one article that was not signed by name, but it was submitted by a faculty member as indicated when it was published ("Thanking the Protesting Students").

Further down in the same article, Prof. Sheffi writes, "The one element that I wish the FNL would adopt, is The Pulse process of the transparency of the choice of the Keepers. Currently both Keepers are voted by the faculty in open elections." To our knowledge, it is false that the Keepers of the Pulse are elected by the faculty in open elections. Members of the editorial board of the *Faculty Newsletter*, however, are indeed elected in the only all-faculty and emeritus faculty open elections held at the Institute.

The editorial board of the *Faculty Newsletter* strives to maintain the highest degree of accuracy and integrity within every one of the articles offered in each issue of the FNL. As we have in the past, whenever we come across a misleading or otherwise erroneous statement we will attempt to correct it. We encourage our readers to feel free to communicate with us should they come across similar errors, at *fnl@mit.edu*. ■

The Leader as Moderator: Toward an Ethic of Everything (Everywhere, All at Once)

Leigh Hafrey

SOME ARE CALLED TO LEAD from the front; many lead from the middle. There, whatever our titular authority, we report to multiple constituencies each of whom wields significant power to shape our norms. It is no longer enough – if it ever was – to lead by the codes of ethics that physicians or attorneys or other professionals embrace. The same applies to the common man. Remember that standard, "common decency"? Never has a norm been more problematized.

Borrowing from the Oscar Best Picture of 2023, Daniel Scheinert and Daniel Kwan's *Everything Everywhere All at Once,* I submit that, in our troubled times, experience invites us to practice an "ethic of everything." Like Michelle Yeoh's Evelyn and the other characters in that film, we lead – if lead we must – by norms born of a chaos that we live, accept, and undertake to moderate.

I use the term "moderate" not in the conventional sense of damping or muting the disruptions that many of us encounter today. Much of my time both at MIT Sloan and outside Cambridge is spent creating seminars or courses designed to bring people together around current and demonstrably perennial challenges in leadership and ethics. The seminars usually take the form of moderated discussion: those present gather on the premise that they will take what they have learned from the experience and apply it to the work they do, the goals they embrace, and the values in which they believe; they will share their insights with those around them and, in doing so, become ethical leaders or affirm their status, already established, as such.

Moderation here means facilitation-plus. Ideally, leaders enhance and invigorate us, rather than depressing the spirit or blurring the focus of those who will fulfill our shared mission. In the spirit of Marshall McLuhan, the medium is still – and perhaps more than ever – the message: we moderate our way to ethical leadership, bridging gaps among participants created by different agendas, backgrounds, and inclinations. We find the language that everyone understands by inviting them to speak and encouraging them to hear one another. We mediate between our direction and theirs, recognizing that, even as we aspire to set the playing field, players will sometimes go out of bounds or propose boldly to go to a different field.

Against this backdrop, here are eight principles that seem to me essential to ethical leadership:

1. **Listen for the inner voice:** it's always there, though perhaps not in terms you would casually recognize. You have an obligation to bring that out, to everyone's benefit. See Mary Gentile, "Starting Assumptions," from *Giving Voice to Values* (2010).

2. **Mind the ecosystem:** remember that we are individually, and as part of the human family, minor players on a stage the scope of which we do not begin to grasp. See Benjamin Bratton, "Planetary Sapience" (2021)

3. **Embrace care:** for both individual and institutional success, showing up matters. An explicit commitment to presence can be hard, per #5-6 below, but caring for others begins with being there. See Nel Noddings, *Starting at Home: Caring and Social Policy* (2002)

4. **Anticipate the paradigm of no paradigms:** systems atrophy but people needn't. Short of chaos, some systems thinkers dream of transcending paradigms altogether. See Donella Meadows, "Leverage Points: Places to Intervene in a System" (1999)

5. **Accept that we are in constant flux:** nations may stop whole populations at the border, but we are nevertheless all in constant motion. Now and always, that is our quantum reality. See Mohsin Hamid, *Exit West* (2017).

6. **Do not claim or ascribe ownership:** like humanity, culture flows. Celebrate rather than appropriate the differences, and shared abundance will follow. See Kwame Anthony Appiah, *The Lies That Bind: Rethinking Identity* (2018).

7. **W/ thanks to generative AI, define a self:** our technologies challenge us to define the intelligence we are by revealing the strengths and weaknesses in the intelligences we create. See Ashish Vaswani et al., "Attention Is All You Need" (2017).

continued on next page

The Leader as Moderator
Hafrey, from preceding page

8. **Tell true stories:** you will need to address #1-7 in some combination to fulfill this principle. How many stories does it take to find a truth by which we can lead? See Chimamanda Ngozi Adichie, "The Danger of a Single Story" (2009)

We must see both the whole and its individual features to exercise a judgment that qualifies as ethical leadership. After a decision, doubts linger; missed better choices surface; questions and criticism do not cease. Knowing who we are, accurately gauging our limitations and our virtues, speaking for what we believe, recognizing what we owe our communities, allowing one another the curiosity to approach the truth – these norms emerge fully only in conversation with others; that is the inescapable core of ethical leadership. The moderated moment shows us we must routinely live it to lead ourselves and others. An ethic of everything seems to me our best hope of individual and systemic success in complex times.

Leigh Hafrey is a Senior Lecturer, Behavior and Policy Sciences in the Sloan School of Management *(lhafrey@mit.edu).*

Where do we go from here?

Karl W. Reid

LAST MONTH, I GAVE THE keynote address at a local high school for their annual Martin Luther King, Jr. assembly. In preparation, I was inspired to read and title my talk after Dr. King's last book, *Where Do We Go From Here: Chaos or Community*.

Writing in the year before he was killed, Dr. King penned his book from the tranquil shores of Jamaica while grappling with emerging storms within the civil rights movement. On the heels of the passage of the Voting Rights Act in 1965, the movement had begun to widen its focus to redress poverty and its deleterious effects on housing, education, and employment conditions in the north. Such a strategic shift was leading to defections by allies and outright backlash from enemies. Others questioned the practice of nonviolence as riots erupted in Los Angeles.

In his writing, Dr. King articulated a new vision for the movement by confronting fundamental questions of both the movement and America: *Who are we? What are we meant to be? Where do we go from here?*

Who are we? What are we meant to be? For MIT, I would argue, the answers to these questions are foretold by our 164-year legacy of innovation that's continuing to solve the most vexing problems in service to the nation and the world. The questions are answered through the "mens et manus" of 146,000 living alumni. And we answer the questions each year when we welcome and launch the next generation of leaders. And the intersections of these ideas, concepts, and cultures in one community produces a Medici Effect in our classrooms, labs, and offices. This begs the next question.

Where do we go from here? The answer to this question is the unfolding story we write together, but we must do so in community, just as we've done at other pivotal points in MIT's history – even if we are experiencing what feel like tectonic legal, cultural, and political shifts in the U.S. right now. We can cut through what he called "the chaos of division" and prioritize the power of community. Here, we hear a hopeful message from this important light in history:

"*Our most fruitful future is to stand firm, move forward non-violently, accept disappointment, and cling to hope.*" – Dr. Martin Luther King, Jr.

Sincerely,

Karl W. Reid '84, SM '85
Vice President for Equity and Inclusion

[**Editor's Note:** The above is reprinted from the February 2025 edition of the *ICEO News*.]

Creating the Role of the Vice Provost for Faculty

Paula T. Hammond

FROM THE MOMENT I BECAME an MIT freshman many years ago, to my experiences as a graduate student, and throughout my time as a faculty member here on campus, I have loved the wonder and excitement, the shared collaboration and enthusiasm around problem solving that are a part of the MIT ethos. I have always appreciated my fellow faculty colleagues – the incredible work that they do, the unique perspectives that they each bring to every problem, and the amazing conversations and ideas that are generated when our faculty commune.

When I was asked to take on the inaugural role of vice provost for faculty, I was excited by the prospects of finding ways to better enable our faculty to perform at the highest levels, to achieve their professional goals, and to thrive at MIT. At the one-year mark of my service, there is much to share with you about the Office of the Vice Provost for Faculty (OVPF), my role as Vice Provost, and the services that my office provides.

The OVPF consists of myself as vice provost, the Assistant Provost for Faculty Programs Donna Behmer, Director of Special Programs Rachel Beingessner, Senior Program Associate Yvonne Wong, Faculty Programs Coordinator Andre Dixon, and Executive Assistant Naglaa Elshamy. We will soon have an additional director joining us whose focus will include development and expansion of mentorship programs as well as other programming needs.

This team together develops all of the programming and informational tools for our faculty to support faculty advancement in many areas, ranging from early career needs to academic leadership training. As assistant provost, Donna Behmer not only leads much of our faculty programming, but supports individual faculty and departments in hiring, retention, and retirement. She designed and developed our existing Faculty Concierge website and service, which Rachel Beingessner now curates to offer a wealth of information regarding the Institute's programs and benefits. Donna also leads our Faculty Partners Program, described in more detail below. She is an incredible resource and I encourage faculty to check out Faculty Concierge and to reach out to her or Rachel for deeper conversations about any of these topics.

Provost Cindy Barnhart introduced the vice provost for faculty position, and it is an expansive re-imagining of the former associate provost role in this context. One of the first things that I did upon starting was to appoint a Faculty Advisory Council (FAC) consisting of faculty members from each of the five Schools and the College to work with me on a strategic plan for the office. This group of faculty members from diverse fields of study brings insight and thoughtful guidance, as well as perspectives from across the Institute, to bear in discussing key needs of our faculty and indicating where value could be added to the efforts of our office. The FAC has produced a strategic plan report that contains several strategies in the form of recommendations to accomplish the office's three primary goal areas: Faculty Recruitment and Retention, Faculty Advancement, and Faculty Community. The report is close to finalized at the writing of this article and following review we hope to share it on the vice provost website.

Along with the FAC, I met with the faculty chair and associate chairs, deans and department heads at School Councils, and many of you who have reached out to share your thoughts and ideas over the past year. All of this input has helped to inform the priorities of the office, and we have already begun to implement several recommendations as a result. Below is a summary of our current offerings and emerging initiatives under each of the three focus areas. I hope that it provides some insight into my role and the range of services provided by the office.

Faculty Recruitment and Retention

MIT's excellence relies on our ability to attract and retain the top talent to our faculty, and to establish an environment in which faculty can advance in their work and are more likely to be retained. I work to ensure that policies and processes support best practices, including those related to hiring; mentoring; tenure and promotion; and re-appointment and review.

My role includes working closely with department heads to assist departments on strategies for broadening the pool of faculty applicants to ensure we have access to the most highly qualified scholars from every part of the nation's demographics and every corner of the world. By working alongside deans and department heads, I seek to complement their efforts at recruitment and ensure best practices in faculty searches and hiring.

continued on next page

Creating the Role of the Vice Provost for Faculty
Hammond, from preceding page

As a member of the Provost's Council, which includes the provost and the deans of the Schools and College, I work with Provost Barnhart to open discussion and reach convergence on policies that address the needs of our faculty. One example of this shared work with the council is the recent development of a more systematic and uniform approach to handling partner career needs and hiring during the recruitment or retention of faculty, using a template developed in partnership with Assistant Provost Donna Behmer. This work has led to an update of our policies and should provide a more readily accessible service for our prospective hires in the newly named Faculty Partners Program. Additionally, I have been working with other members of the Provost's Office and MIT Institutional Research (IR) on focus groups held across the Institute to understand pain points that faculty may be experiencing.

Department climate is also a critical factor in the well-being of faculty. As a former department head, I learned how impactful positive and collegial interactions within a department can be in laying groundwork for peer support, collaborative engagement and decreased likelihood of friction. As a thought partner, I work with academic leaders to consider ways to ensure healthy and inclusive department cultures.

Mentoring of junior faculty is a key component of faculty retention. At MIT, different departments handle mentoring differently, with many officially assigning senior faculty as mentors to junior faculty. This practice, which has evolved over the past few decades at MIT, can provide an extremely valuable resource to pre-tenure faculty as it provides an opportunity to gain insight, discuss strategies for success, and openly talk about expectations for promotion and career advancement.

There is a great deal of heterogeneity in the nature and consistency of mentoring, and critical factors such as accessibility, alignment with or knowledge of research field, and degree and extent of communication vary both within departments and across the Schools and the College. Furthermore, there remain some areas in which senior mentors are not officially assigned, and informal mentoring can be ad hoc and irregular.

One of the areas of focus for my office as recommended by the FAC will be to work with DLC heads and deans to organize a set of principles around senior mentoring of junior colleagues to help set expectations and ensure junior faculty needs are met. It is also important to note that mentoring needs do not end at tenure, and that in fact it is useful to provide guidance and mentorship toward achieving the full professor promotion and beyond.

Mentoring of junior faculty is a key component of faculty retention. . . . Ultimately, faculty benefit from the opportunity to learn from each other at every stage, and my office will be working toward building a culture of mentoring across the Institute that is inter-generational and works for faculty members at all points in their career.

Ultimately, faculty benefit from the opportunity to learn from each other at every stage, and my office will be working toward building a culture of mentoring across the Institute that is inter-generational and works for faculty members at all points in their career. Examples of future potential programs include mentoring circles that involve a small group of faculty across different departments who are at various career points.

Faculty advancement

The OVPF provides opportunities for the development of key faculty skillsets and enabling capabilities to enhance faculty professional growth and leadership qualities. In my role as vice provost, I guide and inform these offerings for faculty development and other Institute-wide programs that are provided by the OVPF. Some of the already existent and well-received programs offered through the Provost's Office include: the New Faculty Program, Life With Tenure Program, Faculty Leadership – Professional Skills Development Program, a Group Coaching Pilot Program, and the Academic and Department Head Program.

The OVPF team will continue to develop and grow these programs, using attendee feedback, input from the FAC and other modes of feedback to continue to add relevant and critical content based on the interests and needs of our faculty. One example of changes that we have implemented include new additions to our department head training program that introduce new department heads to a range of skillsets and services for handling conflict and difficult situations, and panels on topics such as equitable resource sharing and establishing a strong and positive departmental climate. An upcoming change for offerings of our Faculty Leadership Program in future years will be a process for self-nomination for the leadership program that would be considered with the current nominations for the program provided by deans and department heads.

We will also add to this programming to address key gaps and needs for faculty advancement. For example, early career faculty can struggle with the generation of impactful proposals for research funding;

continued on next page

Creating the Role of the Vice Provost for Faculty
Hammond, from preceding page

providing a resource to help faculty, along with strategies learned from past successful proposals, could be very useful. The OVPF is collaborating with the director of research development in the Office of the Vice President for Research (OVPR) on programming directed toward addressing this need.

Our first workshop, "Strategies for Competitive Proposals Part I: An MIT Faculty Insider View", was offered on January 31, 2025. This workshop involved senior faculty panelists from all the Schools and College who had success with funding from a variety of sources pre-tenure, and who shared some of their perspectives and strategies for pursuing grants early in career. An upcoming Workshop Part II will focus on putting together a funding strategy and specific approaches to proposal writing. We also plan an offering later in the calendar year that will focus on how to launch and fund a large research center or initiative, a topic of interest to faculty at all points in career. We will put together informational sessions on the workings of MIT, with topics ranging from finances to governance, in collaboration with a range of different offices including the Executive Vice President and Treasurer (EVPT) and our Faculty Chair. These topics were of high interest based on a Pulse survey question that I submitted at the start of my role, and are the result of discussions and recommendations from our FAC.

Finally, with respect to establishing a culture of mentoring, one of the important determinants of success for faculty is the ability to advise, support and guide graduate students in their pursuit of knowledge and training. The ability to advise, like the ability to teach, is not something that faculty are typically provided training or insight on – yet so much of the outcomes and success of faculty are reliant on graduate students, and regardless of field, the guidance and training of graduate students is an important part of our role and responsibilities as faculty. We have formally changed our policies and procedures to recognize graduate student mentorship as one of the factors to be weighed for tenure and promotion, and our Schools have begun adopting or are in active discussion about means of evaluating graduate advising in a manner that informs promotion decisions. In this setting, there is a true need to provide our faculty with some introduction to core principles in working with and advising graduate students as informed by research. The OVPF is creating workshops and mechanisms to prepare our faculty so that they can excel and succeed as mentors, just as we provide resources for success in research and teaching. In doing so, we help faculty learn how to incorporate best practices into their own mentoring style, learn some general principles that can make advising more effective and prevent escalation of crisis situations, while lowering difficulties and enabling more fruitful and positive experiences for both students and faculty.

In 2024, we introduced the first workshop on mentoring for junior faculty, offered in May and December, which focused on faculty in the Schools of Engineering, Science, and College of Computing. These workshops, led by CIMER-trained facilitator Jenny Frederick, associate provost at Yale, were highly successful in part because they emphasized faculty learning from each other as well as from the offered materials. In the upcoming year, we plan to expand this offering to include additional principles and concepts as part of a two- or three-workshop series. Here the idea is to form cohorts of faculty who have learned together and can relate to each other about mentoring perspectives as they advance in their career. We will be working with SHASS, SAP, and Sloan to also address mentoring needs in these Schools.

We have also initiated a Department Head's program, in which CIMER-trained facilitator Bruce Birren of the Broad Institute and Maryanne Kirkbride from MIT's MindHandHeart work together to connect with department heads to formulate workshops or activities tailored specifically to the department faculty, thus providing an opportunity for faculty within a department to engage with each other on topics of relevance to mentoring within their field.

Examples of gatherings of community that the OVPF sponsors or co-sponsors include the Women Faculty Dinners, which have been a partnership with our Faculty Chair Mary Fuller that has enabled women across the Schools and at different career points to connect and spend time together.

Faculty Community

One of the important aspects of being at MIT is its unique ability to bring excellent people together across such a broad range of fields; our community embraces exchange, lively discussion, and investigation of new ideas in a way that can greatly enhance the MIT experience. As vice provost for faculty, a part of my charge is to advance climate, community, and culture-related goals for our faculty community.

A part of this charge involves creating more opportunities for faculty to convene – whether it is to address an important topic of shared interest or concern, to share each other's scholarship, or to simply allow us the opportunity to share food and fellowship with each other.

continued on next page

Creating the Role of the Vice Provost for Faculty
Hammond, from preceding page

Examples of gatherings of community that the OVPF sponsors or co-sponsors include the Women Faculty Dinners, which have been a partnership with our Faculty Chair Mary Fuller that has enabled women across the Schools and at different career points to connect and spend time together.

This past semester we have newly introduced Junior Faculty gatherings, a partnership with a group of junior colleagues, led by Marzyeh Ghossemi, which has brought junior faculty together and provided opportunities for them to both provide me feedback on junior faculty needs and to spend time together, exchanging, and often building networks and creating added support structures for each other.

The OVPF is also happy to support important discussions on topics that may impact our faculty community, such as the information provided to faculty on the topic of the *Students for Fair Admissions (SFFA) v. Harvard* Supreme Court decision regarding undergraduate admissions. I can collaborate with faculty officers and other faculty groups to convene faculty around specific topics that are of high interest and relevance. More recently, I have also been working with the Office of the President on a new Presidential lecture series that will provide faculty a chance to hear exciting research topics from fellow faculty.

Another aspect of my role to advance climate and community is to act as a resource for faculty to address conflicts and develop constructive solutions. As such, one of my charges is to understand the current faculty complaint systems and make recommendations for possible improvements. Here, the FAC has worked with me to engage with both key staff involved in handling of faculty complaint processes and with faculty to understand potential areas for improvement and have recommended that I work in partnership with the provost and chancellor, using input from external and our own internal expertise to examine processes at our peer institutions and consider best practices to inform aspects of our procedures. A separate recommendation from the FAC is to provide an alternative mode of conflict resolution between faculty that might be chosen as an option for the many cases when issues might be resolved through a mediative process. This alternative mode could take the form of a senior faculty advisory group of peers that hears complaints or concerns and determines proposed solutions. Additional approaches could include increased resources for approaches such as restorative mediation.

Finally, as vice provost I am often called to engage in committees or activities in which community needs are discussed or addressed. Examples include membership in the Ad Hoc Committee on Academic Freedom and Campus Expression (CAFCE), and participation in search committees for academic leaders and key Institute staff in faculty-facing roles.

This past semester we have newly introduced Junior Faculty gatherings . . . . The OVPF is also happy to support important discussions on topics that may impact our faculty community, such as the information provided to faculty on the topic of the *Students for Fair Admissions (SFFA) v. Harvard* Supreme Court decision regarding undergraduate admissions.

Conclusion

Across these three areas as defined, there are connecting themes that are at the core of the office. These include: providing tools and skills for faculty to grow and advance in their career and to achieve their goals; building and expanding a culture of mentorship that provides greater opportunities for us to learn from and support each other at every career point and allow new generations of faculty to thrive; and finding means of increasing and enhancing our engagement, whether it is in a learning setting or a community gathering.

I have learned a great deal in what feels like a very short year. I am grateful to all those who have provided input formally and informally and who shared their wisdom and experience. I hope that you continue to share your thoughts and concerns with me, and that you are patient as the office expands into its new areas of growth and we begin to build out programs and efforts. I remain excited about this role and hope that it provides an opportunity to help make MIT an even better environment for advancing knowledge for our faculty.

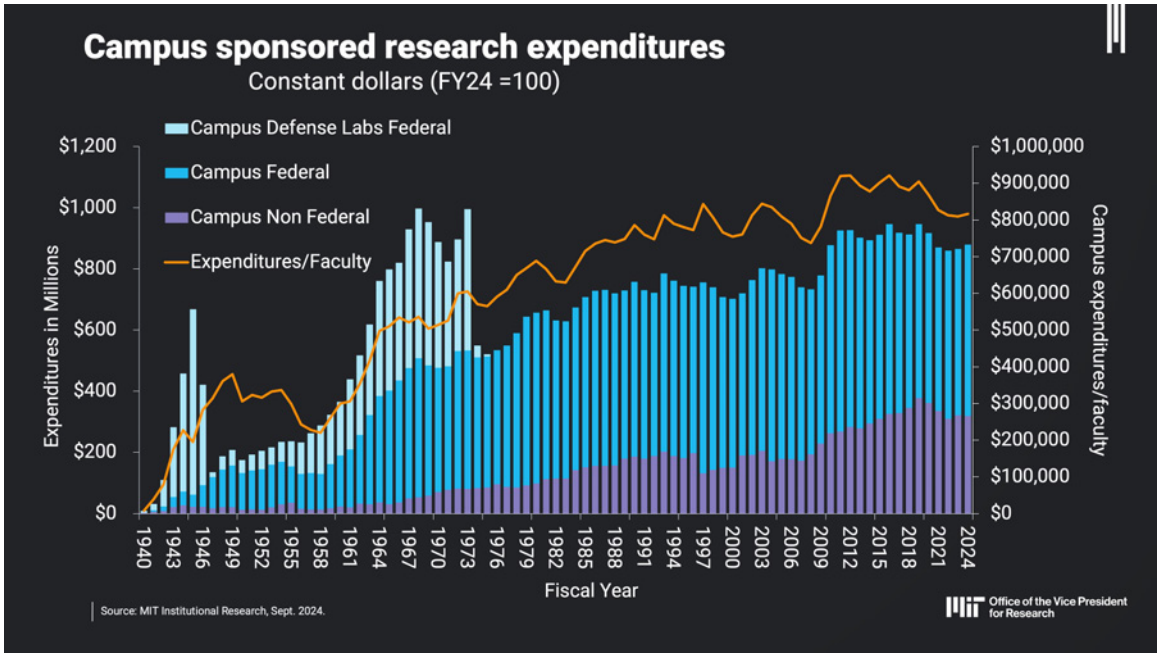
Paula T. Hammond is Vice Provost for Faculty and Institute Professor (*hammond@mit.edu).*

Reflections on the MIT Research Enterprise

Ian A. Waitz

WHEN I STARTED AS MIT'S vice president for research, on May 1, 2024, one of the first things I did was collect data to help me understand the state of the research enterprise, aided in this work by our research reporting team in VPR, by MIT Institutional Research, and by the Office of the Vice President for Finance. I presented an in-depth version of this analysis at the December 11 Institute faculty meeting and have since recorded a video of the presentation. In light of the unprecedented actions being taken in Washington, DC, which may dramatically impact our research enterprise, I think it is important that we all understand more about how this enterprise works. I encourage members of the MIT community to view this video (Touchstone login required); it contains many more details and insights than I will share here.

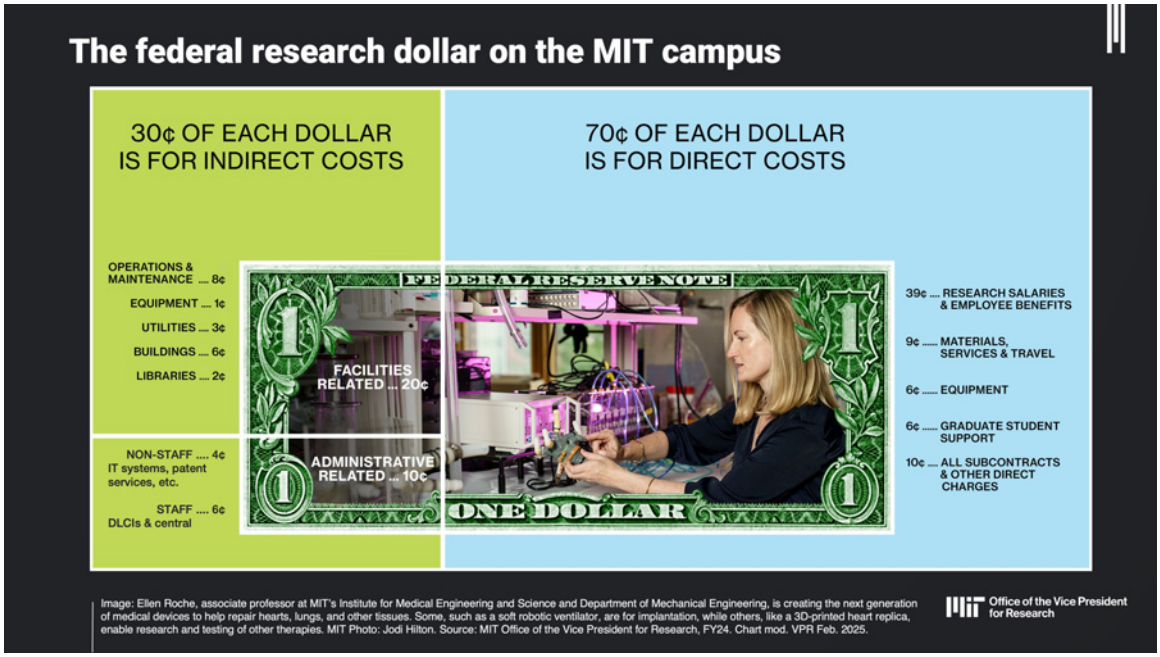
1. The MIT research enterprise is remarkable in its breadth and depth. One can see this in many ways – from the fundamental discoveries and new inventions, to the influential publications, to the awards, to the companies formed, to the dynamic new initiatives we have launched. Fueling this, on campus last year we had almost $900M in sponsored research. Combined with $1.5B in sponsored research at MIT Lincoln Laboratory, this represents a significant investment in advancing discovery, innovation, and research-based education, to the benefit of the nation and the world. Over the course of our history, the research enterprise has experienced remarkable growth, even when corrected for inflation and faculty size. The chart below shows campus sponsored research expenditures, and expenditures per faculty, in constant dollars from 1940 to 2024.



continued on next page

Reflections on the MIT Research Enterprise
Waitz, from preceding page

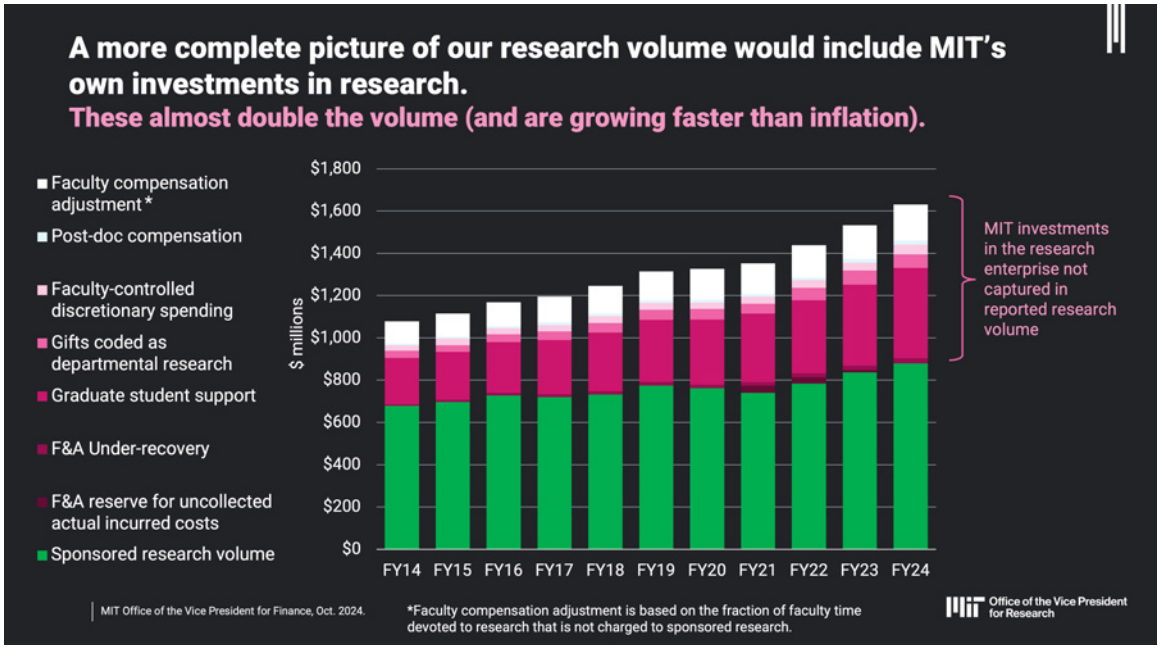
2. If we consider only the last fiscal year, our sponsored research volume was $879M. This was composed of $660M in direct costs (i.e., those costs that can be easily identified with a particular research project) and $219M in indirect costs. These indirect costs are real costs borne by MIT to support individual research efforts, but they are harder to assign to a particular project, so we pool them and assign them to projects at a fixed average rate. They are things like water, electricity, and heating; building depreciation, maintenance, and debt; IT costs; environmental health and safety; costs for shared core facilities; staff to maintain and fix facilities; and staff to administer the research contracts and grants in the face of rapidly growing compliance needs (see COGR's Figure 1 here). What many people don't appreciate is the relative magnitude of these indirect costs. For every federal research dollar at MIT, about 70 cents is composed of direct costs, and 30 cents is indirect costs. Of that 30 cents, most (20 cents) is for facilities costs, which largely support buildings. Only 10 cents is administrative related, and of that, 4 cents is for IT systems, patent services, and other non-staff costs. The remaining 6 cents is for staff who administer our research enterprise in support of 90 different DLCIs, 1,500 PIs, about 1,500 post-docs, and over 5,000 graduate students doing research. Many such staff work directly with PIs in the DLCIs; others are in central offices (e.g., finance, research administration).



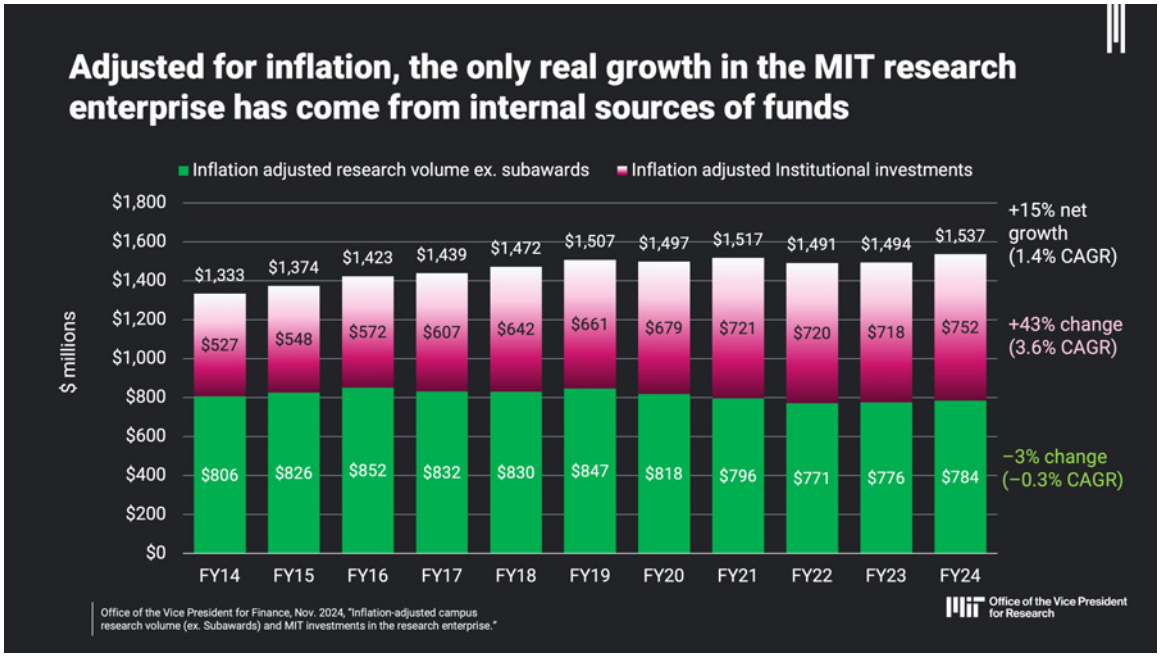
3. Importantly, the roughly $900M in sponsored research on campus represents a little over half of the funds that sustain the campus research enterprise. The other half can be characterized as a co-investment by MIT. An estimate for these co-investments is shown below. The Institute's own investment in the strength of the research enterprise does a number of important things. It pays the portion of faculty salaries that are devoted to research (55% on average, based on faculty surveys) but not billed to sponsored accounts, ensures top-tier graduate students can thrive here amid the high cost of living, supports departmental research activities, absorbs F&A under-recovery on certain grants, and more. In valuable, tangible ways, it keeps MIT competitive with its peers and helps keep the US at the forefront of global science and technology.

continued on next page

Reflections on the MIT Research Enterprise
Waitz, from preceding page



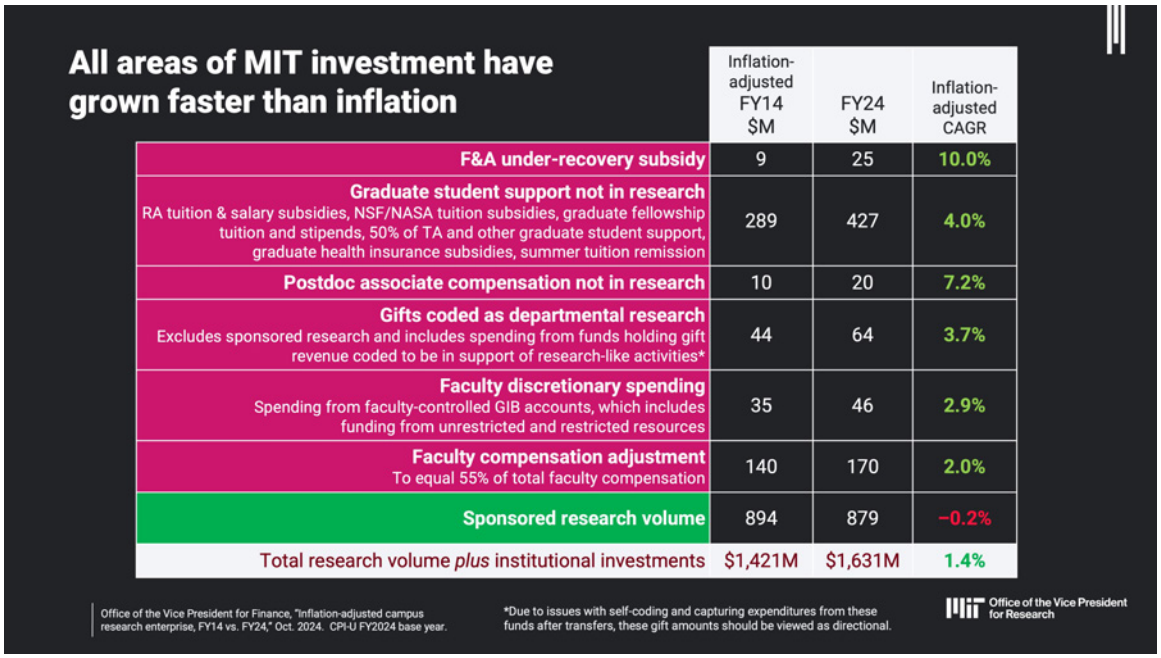
4. As shown below, when correcting for inflation over the last 11 years, the total on-campus research enterprise has grown by about 15%. Over this same time, sponsored funding has been essentially flat (-3%), so that all real growth in the research enterprise has come from MIT's own resources. This occurred during a period that included the global pandemic. In this chart I have removed the portion of sponsored research funding that flows to external collaborators via subawards in order to focus only on the work done on our campus. MIT's investments are currently almost equal to the total sponsored research funding spent on our campus.



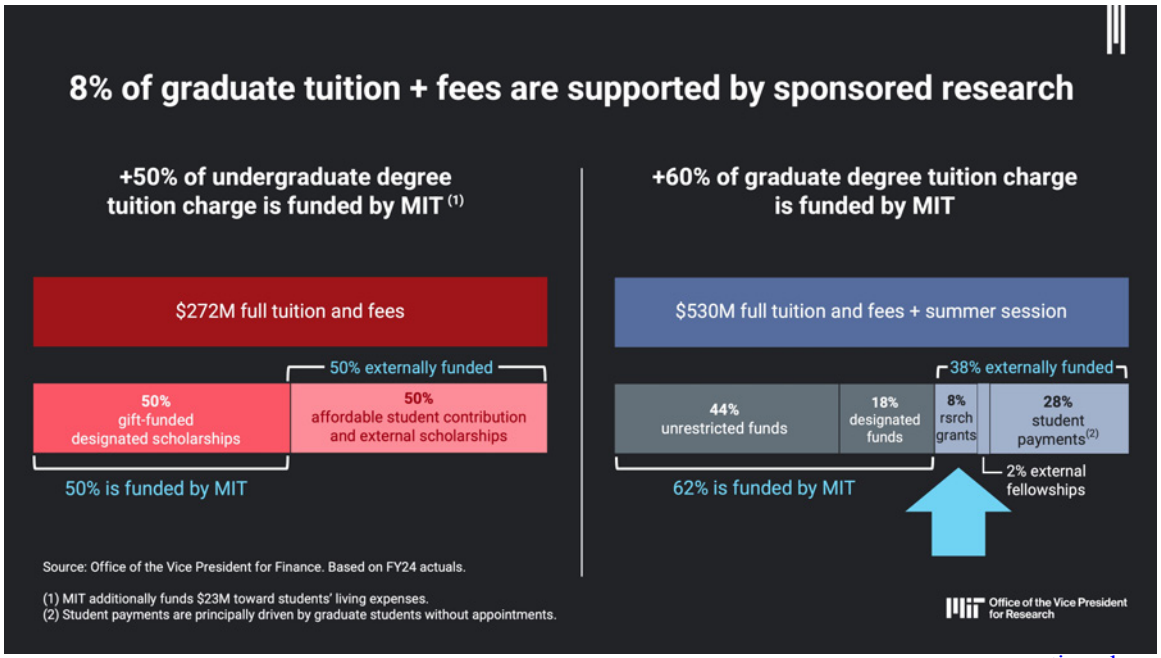
continued on next page

Reflections on the MIT Research Enterprise
Waitz, from preceding page

5. The sources of growth in MIT's investments in research are shown in the following table. The FY14 column has been inflation-adjusted to be directly comparable to the FY24 column. The single largest source has been an increase in investment in graduate student support, which is a direct result of the performance of our endowment over this period. Notably, the number of research master's and PhD students has not grown significantly over this same period: +4% (0.4% CAGR), which is less than the 7% growth in the faculty (0.6% CAGR). The number of postdocs has decreased by 2% (-0.2% CAGR). So, the dramatic growth in MIT's investments to support graduate students has served to offset the need for sponsored-research funding to support these students.



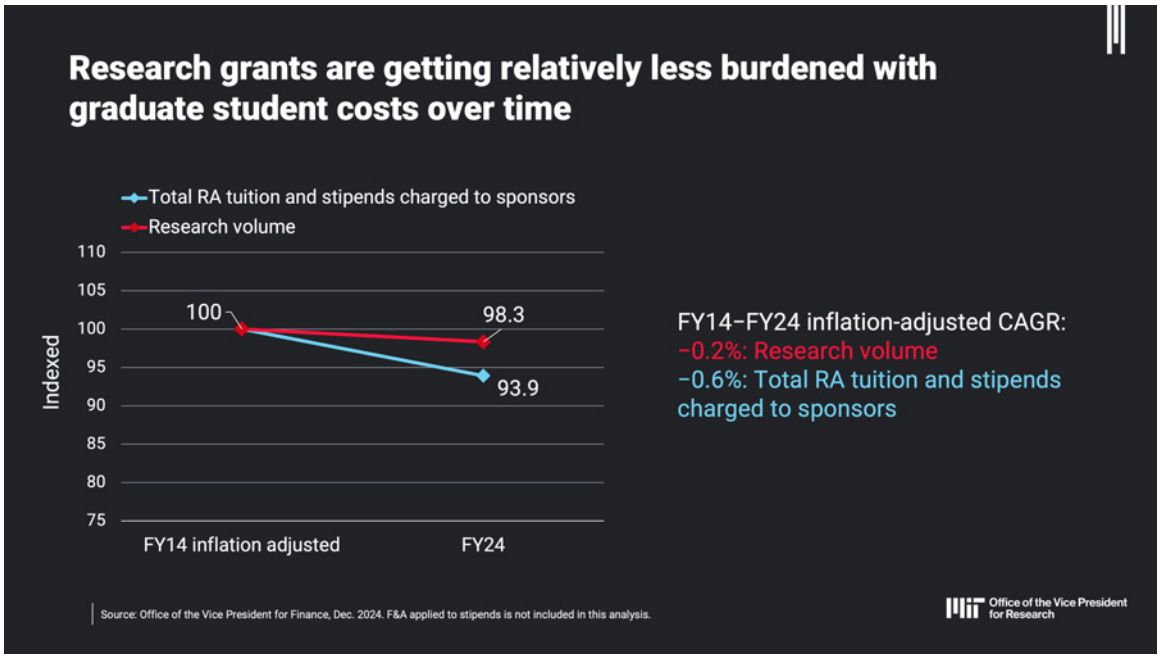
6. Indeed, it is remarkable that only 8% of the total graduate student tuition is now charged to sponsored research projects at MIT. (There is an equally remarkable story to tell on the undergraduate side: When measured in real dollars, the average cost of an MIT undergraduate education for those who receive financial aid has been reduced by 32% over the past two decades as a result of our dramatic increase in support for undergrads as well.)



continued on next page

Reflections on the MIT Research Enterprise
Waitz, from preceding page

7. These trends run counter to the perception some have that graduate student costs have grown unbounded. It is true that costs to a grant per graduate student supported have grown faster than inflation (3.4% versus 2.8% CPI over the past 11 years), even when accounting for the increased tuition subsidy and new centrally funded benefits. This is because of the growth in stipends driven by our commitment to provide livable wages to our graduate students during a period when local housing costs increased significantly. However, fewer contracts and grants are being charged for research assistants because we have provided more support for students on fellowships. In the end, the net cost of graduate students to contracts and grants has fallen in real terms, as shown below.



8. In the internal video linked above, I discuss the research enterprise in more depth. For example, I provide information on the growth in federal compliance requirements and the implications for research administration staff (95 people in OVPR, and another 270 in the DLCIs); how many proposals our faculty and PIs write, and the success rates over time; and a variety of other interesting ways to characterize the functioning of the enterprise. With these and other data as a foundation, we have developed a broad strategy to advance the research enterprise across six key areas. For anyone who would like to learn more about the details, or the broader strategy outlined in the bullets below, I am happy to come to any MIT DLCI to share more.

continued on next page

Reflections on the MIT Research Enterprise
Waitz, from preceding page

Ian A. Waitz is Vice President for Research (*iaw@mit.edu).*

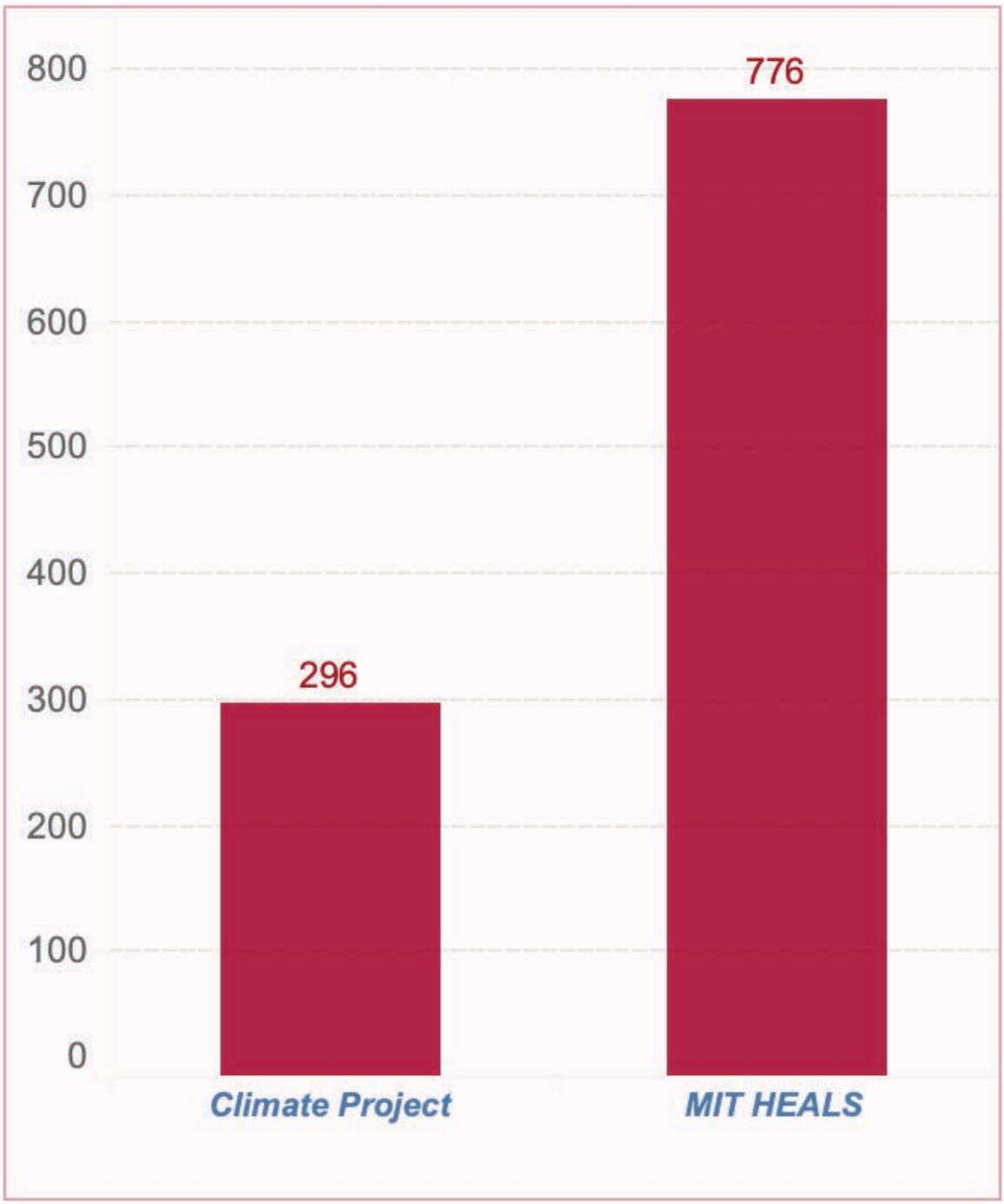
The Ups and Downs? of MIT

Thomas Heldt

Thomas Heldt is an Associate Professor in the Department of Electrical Engineering and Computer Science *(thomas@mit.edu).*

MIT Numbers

Faculty with Recent Publications Related to the Presidential Initiatives



***MIT HEALS: MIT Health and Life Sciences Collaborative**

Source: Office of the Provost/Institutional Research