Massachusetts Institute of Technology

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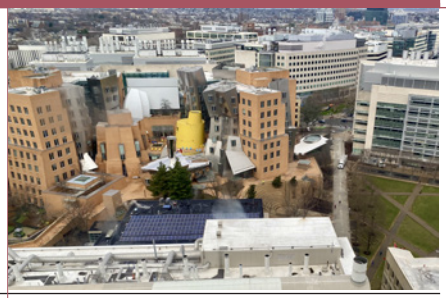
May/June 2026

MIT Faculty Newsletter

https://fnl.mit.edu

in this issue we offer a variety of viewpoints on current issues facing both the Institute and the faculty, as well as our newly graduated Class of 2026. See, for example, Faculty Chair Roger Levy, "Relationships Strong Enough to Solve Problems," (page 9); Alan Jasanoff, "An Archery Lesson for Our Graduates," (page 15); and two articles on the state of the MIT Libraries: "Future-Proofing the Academic Library," (page 22) and "Lamenting the MIT Libraries," (page 24).

[Deadline for submissions for the September/October FNL is August 24.]



From the 16th Floor

Faculty Travelogue

Out of Denver

Ceasar McDowell

WE CAME OUT OF DENVER, the Mile High City, at 5,280 feet above sea level, where the air is thin and the light falls clean and hard off the Front Range in a way that makes everything look slightly more permanent than it is. My father had settled there after the war, after service in the medical corps tied to the return of wounded men, through the Fitzsimons General Hospital in Denver (the largest medical hospital in the world) east of the city, received them. My father stayed on after discharge, as though the altitude itself had decided something for him. We did not move again. I was born there in 1950, into a city that still carried the discipline of the frontier – wide skies, thin air, and the habit of not speaking directly about the things that might undo you.

But every summer, that world loosened its grip.

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Where Does *Civilitas* Live? Wikipedia, MIT, and the Infrastructure of Equity

Amy Carleton

THIS SPRING I RECEIVED two invitations that turned out to be about the same question. The first was to write for this graduation issue of the *Faculty Newsletter*. The second was to present at Wikimania 2026, the annual global conference of the Wikimedia movement, taking place this July in Paris. The conference theme is Liberté, Équité, Fiabilité, or Freedom, Equity, Reliability. "Together," the organizers write, "let's protect knowledge, equity, and freedom."

I study Wikipedia. More specifically, I study how Wikipedia works as a democratic experiment – how strangers on the internet, who may disagree on nearly everything else, manage to build something both rigorous and reliable because they share a commitment to making knowledge freely available. This has been my research for years, and it has given me

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Editorial

Our Ecosystem Under Duress: An Invitation to Engage

Editorial Board of the MIT Faculty Newsletter

MIT'S ECOSYSTEM OF RESEARCH and teaching was established over generations by individuals drawn to this institution from around the world by the promise of academic freedom, resources, intellectual exchange, and institutional support. This ecosystem has served our community, the nation, and the world exceptionally well. It has created new fields, launched companies, trained generations of leaders, and produced ideas and technologies that society could not have anticipated.

Yet many now sense that this ecosystem is under increasing stress. The pressures we face do not arise from a single policy, administration, or external event. They reflect the convergence of forces both inside and outside MIT. If MIT is to remain a globally leading research university, we need to speak plainly about these

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NEXT ISSUE: The September/October 2026 FNL will focus on the problem of declining support for science and academia in the current national environment, and how MIT and the faculty can play a part in addressing this challenge. We invite thoughtful and creative submissions related to this crucial topic and encourage you to reach us at fnl@mit.edu.

Our Ecosystem Under Duress: An Invitation to Engage
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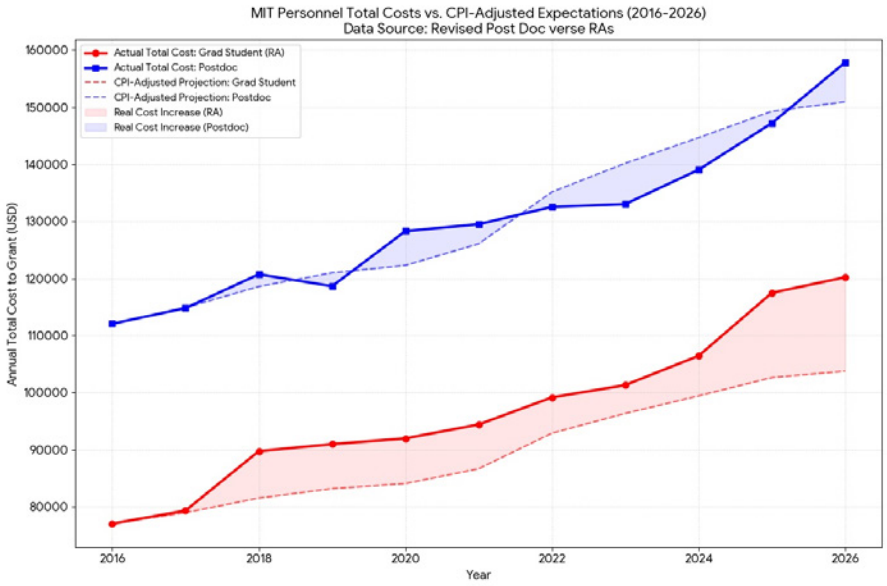
challenges and address them with seriousness and creativity. The *Faculty Newsletter* can help analyze and address these concerns, broaden awareness, and encourage constructive engagement. Based on informal input from colleagues across MIT, statements from the Institute's leadership, and our own observations, we believe that several outstanding challenges deserve our collective attention.

The first challenge is access to global talent. Across all fields, MIT's excellence depends on attracting students, postdocs, staff, and faculty from around the world. We have constantly assessed and reassessed the meaning of the meritocratic criteria we seek to apply when embracing new colleagues and trainees. At the same time, national immigration policies, rising geopolitical tensions, and a perception that suspicion and fear have begun to displace opportunity and trust, are making recruitment and retention more difficult. Prominent faculty have even chosen to leave MIT for positions abroad. The lack of clear pathways to support the retention of global research talent compounds the problem.

The second challenge is cost. The cost of graduate students and postdocs, the lifeblood of MIT, has increased by about 50% over the past 10 years alone well in excess of the inflation (see graph), while funding resources have failed to keep up. An inability to support as many students harms the research and teaching missions of every department and School at MIT. In experimental research, personnel costs are only the beginning: equipment, maintenance contracts, shared facilities, specialized staff, data infrastructure, and lab renovations all add substantial expense. Renovation costs now reaching thousands of dollars per square foot threaten the ability to launch junior faculty labs or adapt existing ones to new research needs. The new 8% endowment tax substantially reduces MIT's flexibility to meet these needs. At the same time, administrative staff growth raises difficult questions about the underlying reasons for some of the cost escalations, which may be unintended but are still an onerous collateral of MIT's financial model. Our higher costs can sometimes make our proposals less competitive dollar for dollar when compared with other research institutions.



The third challenge is federal funding for research. MIT's research infrastructure was shaped by the postwar partnership between universities and the federal government. That partnership enabled discoveries whose benefits often emerged decades later and yet its existence and value are now called into question. Through training grants and project-focused awards, the federal government has been MIT's first and foremost patron. It is now actively questioning the return on its investments and is certainly in the midst of shifting its priorities from PI-led research to larger efforts, such as the Department of Energy's Genesis Mission, that some say prioritize industry and national labs. Beneficiaries that become adversarial to their sponsors suffer significant consequences; to avoid this situation, we may need to rethink our approach to federal engagement if we are to prosper through shifting environments.

A fourth challenge is diminishing public confidence. This issue was elegantly analyzed in the recent Yale Report of the Committee on Trust in Higher Education, which concluded that "the issue of declining trust is real, urgent, and must be addressed." Universities have long benefited from the widespread belief that higher education and research serve the common good. That trust has weakened. Some of this reflects broader polarization and skepticism toward institutions and towards the scientific enterprise, and some also reflects universities' failure to explain themselves clearly and form bridges to the broader public. The public hears about large endowments, high tuition, controversial campus politics, and administrative expansion, but strains to understand the connection between research and education at MIT and the national interest – i.e., how federal funding becomes new knowledge, therapies, industries, national security capabilities, environmental tools, and trained people. One needs to focus on fixing the former while improving the latter.

Finally, we must look inward at our own culture. MIT has extraordinary strengths, but we are not free of faults. The status of academic freedoms on campus has been challenged from multiple directions. Sentiments expressed by a consider-

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able fraction of MIT's faculty regarding self-censorship and free expression reflect some of the community-wide tensions we face at present. Emergence of the student union represents another material change to our culture, which could benefit from further reflection and analysis. Interactions between the faculty and the administration have also been distant at times, leading to misunderstandings about policies and occasional missteps. As befits an institution devoted to learning, we must constantly evaluate our own performance as a community, acknowledging mistakes where appropriate and learning from them where possible.

The *Faculty Newsletter* aims to strengthen MIT-wide discussion of the challenges that face us all, in an open and productive way. With refreshed editorial leadership and improved policies and procedures soon to be adopted in the wake of the recent Silbey report, the FNL can become an even more consequential forum for addressing pressing Institute-wide challenges. In coming issues, we hope these pages will help the community examine, deconstruct, and mitigate the pressures facing MIT's research and teaching ecosystem. We invite colleagues with insight and concerns to share their perspectives on how MIT can remain resilient, dynamic, and worthy of the talent it seeks to attract.

The Editorial Board
of the MIT Faculty Newsletter

Congratulations to Our Graduates

Benoit Forget

To the NSE Graduates,

Congratulations on your graduation, and on all you have accomplished at MIT. On behalf of the Nuclear Science and Engineering department, we are proud to celebrate this milestone with you.

You are graduating at a moment when our field is gaining renewed importance around the world. Questions of energy security, climate, quantum engineering, computation, and national security are bringing nuclear science and engineering to the forefront in new ways. The need for people who can work across science, engineering, and policy with depth, care, and responsibility has rarely been greater.

Your education in NSE has prepared you for exactly this moment. You have learned not only technical skills, but also how to approach complex systems, weigh evidence carefully, and take seriously the broader consequences of your work. These are strengths that matter far beyond the classroom.

Wherever you go next, we hope you carry forward both confidence in your training and a sense of responsibility to use it well. Our field is evolving quickly, and we are excited to see the ways you will help shape its future.

Congratulations again. We are proud of all you have achieved, and we look forward to all you will contribute in the years ahead.

With best wishes,
On behalf of the NSE Department

A Message to Our Graduates

Kristala L. J. Prather

Dear Graduates,

Not long before your Commencement, I celebrated a personal milestone graduation as my elder daughter received her Bachelor of Arts degree from Emory University. I thus come to you as both a professor, charged with aspects of your education, and as a parent to a Class of 2026 graduate – and it is from both of those perspectives that I address you now.

First, I want you to know how very proud we are of you! As an SB 1994 Course X alumna, I know first-hand that MIT challenges you in ways both expected and surprising, and I know that your perseverance in the midst of those challenges have shaped the persons you have become. Remember that it is your hard work that has brought you to this moment of celebration, along with the relationships you have built along the way. As you move on from this place and this time, please also remember that your commitment and dedication to your professional development will take you far, but your life will be vastly enriched by the people you invite to join you in your adventures along the way. Never forget that you don't have to go it alone, and that you have much to offer to others.

When we look around at all of the difficulties in our world, it is natural to feel overwhelmed, outmatched, and/or insufficient. But you give me hope. I know that these obstacles, hurdles, and barriers are going to take a lot of hard work to address – and we've already established that you have learned how to do that in your time at MIT! I have also seen your brilliance, creativity, compassion, humor, and artistic talents, as well as your refusal to quit. It will take all of that and more to tackle the tough problems that need solutions. You are up to the challenge. It's your belief in a better world and your willingness to commit yourselves to making it so that gives me hope.

Please know that perfection is neither necessary nor expected. You will have setbacks and disappointments, and I trust that you will learn from these experiences as you continue to grow – just be sure to consider your "controls" and adjust your "experimental conditions" accordingly. Your resilience is an asset, cultivated during your time at MIT. Use it to your advantage, allowing yourselves to try new things and stretch beyond your comfort zones, always knowing that your foundation is strong, serving as an excellent springboard into the unknown.

You are joining a group of more than 150,000 alumni. Enter into community with them (okay, maybe not ALL of them!), forming connections with others who understand the special lingo of courses rather than majors and building numbers instead of names. You know what they are capable of because you know what you have accomplished. Together, you will be stronger and able to go further than you ever dreamed.

Lastly, please know that we, your faculty cheerleaders, will be here, always rooting for you, celebrating your achievements with a warm heart and a knowing smile. We can't wait to see what's next!

Kristala L. J. Prather
Arthur D. Little Professor and Head,
Department of Chemical Engineering

Where Does Civilitas Live? Wikipedia, MIT, and the Infrastructure of Equity
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a particular lens on a question MIT is now navigating in real time: when institutional structures around equity are reorganized, what endures and what evaporates?

Two Letters, Five Years Apart

Two letters, separated by five years, mark the arc of a significant institutional shift. In July 2020, then President L. Rafael Reif wrote to the MIT community describing 'a historic opportunity to accelerate the transition to a more just and equitable future.' The letter addressed the challenge through four lenses: collective responsibility, systemic strategy, community solidarity, and confronting MIT's own history. Among its most concrete commitments was a comprehensive strategic action plan for diversity, equity, and inclusion, with new investments, dedicated senior leadership, and centralized coordination through the Institute Community and Equity Office (ICEO).

In May 2025, a different letter was sent to the MIT community. It was noted that a working group had found that while the community valued the ICEO's programs and remained committed to inclusive excellence, there was "a broad desire to rethink how this work is done in practice." The common refrain: "community is best built locally rather than top down." The central ICEO would be sunset. The office's programs, including the MLK Visiting Scholars program, the Community Learning Initiative, Random Acts of Kindness Week, would be distributed across other units: the Vice Provost for Faculty, the Division of Student Life, Human Resources.

MIT's administration has said this decision was unrelated to the current White House administration's derision toward DEI in higher education or to MIT's status among colleges investigated for potential Title VI violations. I take that claim at face value. But I also note the landscape: in the same period, many other institutions closed or renamed their DEI offices. More recently, MIT's own fifty-year-old Office of Minority Education was folded into a broader advising structure as the new Office of Academic Community, Empowerment, and Success. Whatever the internal rationale, these changes are happening inside an environment of unmistakable external pressure – federal funding uncertainty, proposed research cuts, and an administration that has made opposition to DEI a stated policy priority.

In May 2025, a different letter was sent to the MIT community. It was noted that a working group had found that while the community valued the ICEO's programs and remained committed to inclusive excellence, there was "a broad desire to rethink how this work is done in practice." The common refrain: "community is best built locally rather than top down." The central ICEO would be sunset.

The question I want to ask is not whether the old model was perfect or the new model is wrong. It is a more genuinely difficult question: *What does distributed equity work actually look like in practice?* And here, my research gives me something concrete to offer.

What Wikipedia Teaches Us About Distributed Models

Wikipedia is, in many ways, the world's longest-running experiment in distributed equity. There is no central DEI office. There never has been. Equity work happens through volunteer-driven projects, community norms, talk-page discussions, and infrastructure choices made by editors who will never meet in person. The Wikimedia Foundation provides technical infrastructure and some programmatic support, but it does not dictate editorial content or community governance. The model is radically decentralized.

And it has produced something extraordinary. Wikipedia turned 25 this year. It remains one of the most visited websites on earth, available in over 300 languages, built entirely by volunteers, free to anyone with an internet connection. In his recent book, *The Seven Rules of Trust: A Blueprint for Building Things That Last*, Wikipedia co-founder Jimmy Wales argues that when people are united by a shared purpose and equipped with clear principles, collective intelligence can triumph over individual expertise. Wikipedia has demonstrated that this is possible.

But – and this is an important part to note – Wikipedia's distributed model has also produced well-documented equity failures. The gender gap among editors is persistent and severe. Coverage of the Global South remains thin. Sourcing biases systematically favor English-language, Western, and institutional perspectives. The community has been working on these problems for over a decade, and progress has been real but slow. The Wikimania conference in Paris is organized, in part, around the frank acknowledgment that the world "has never been so dangerous for the free encyclopedia and its entire ecosystem."

What my work suggests is that distributed models have genuine strengths (resilience, grassroots ownership, authentic peer-to-peer accountability, to name a few) but they do not self-correct automatically. Equity in a distributed system requires what I would call *intentional infrastructure:* shared norms that are genuinely internalized rather than merely posted on a website; visible feedback

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loops that reward equity work; low-barrier pathways for newcomers to participate; and someone – even if it's not a central office – tracking whether the system is actually producing equitable outcomes. Without that intentional infrastructure, "distributed" risks becoming a polite word for "nobody's job."

Civilitas and the Civic Arts

In a lecture I gave at the MIT Libraries earlier this year on Wikipedia's 25th birthday, I argued that Wikipedia embodies something the classical tradition called *civilitas* – not civility in the modern, diluted sense of mere politeness, but the original Renaissance and Roman meaning: the speech and behavior of people who treat each other as equals, who deliberate together about shared concerns, who understand that self-governance is a practiced art requiring cultivation and study.

Consider one of Wikipedia's most distinctive practices: the "barnstar." When editors want to recognize a colleague's contribution – resolving a difficult dispute, improving a contentious article, patiently mentoring a newcomer – they award a virtual barnstar on that editor's user page. The name evokes the American tradition of barn-raising: neighbors coming together to build something larger than any individual could construct alone. It is a deliberate (and very legible!) metaphor of collaborative construction rather than destructive conflict – barn-raising as opposed to barn-burning.

The barnstar represents exactly what *civilitas* requires: recognition that we build knowledge together, that individual contributions matter, and that the work of creating shared understanding deserves honor.

This culture pervades Wikipedia's daily operations. On talk pages, editors with different viewpoints must engage with one another as equals. They must explain their reasoning, respond to objections, and work toward language that reflects the weight of reliable sources rather than personal preferences. They cannot simply assert authority or dismiss disagreement. They must marshal evidence, appeal to shared principles, and treat other editors as worthy collaborators – even when they disagree profoundly.

These are not grand gestures – rather, they are precisely the habits of mind and heart that self-governance demands. Every Wikipedia article represents thousands of small acts of civilitas: someone noticed an error and fixed it; someone found a better source; someone accepted that their preferred phrasing wasn't neutral; someone compromised or arrived at consensus.

The question is whether those habits can survive without cultivation. And the answer, from Wikipedia's own experience, is: not reliably. The communities within Wikipedia where equity work thrives are the ones where someone is actively tending to it – organizing edit-a-thons, mentoring newcomers from underrepresented groups, maintaining WikiProjects focused on coverage gaps. Where no one tends to it, the defaults reassert themselves. The barn doesn't raise itself.

The Question for MIT

I do not presume to know the right organizational chart for equity work at MIT. Reasonable people can disagree about whether centralized offices become bureaucratic, whether distributed models are more authentic, or whether the answer lies somewhere in between. These are legitimate questions of institutional design.

But my research compels me to ask a few questions that I think deserve honest answers as MIT moves forward.

First: *Who is tracking outcomes?* In Wikipedia's distributed model, the Wikimedia Foundation still collects and publishes data on editor demographics, content coverage gaps, and participation trends. Without that function, the community would have no way to know whether its equity commitments were

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translating into equitable results. As MIT distributes the ICEO's work across multiple units, who holds the bird's-eye view? A Standing Institute Committee has been established, but committees are advisory. The question is whether anyone is accountable for equity outcomes – not as a compliance matter, but as a measure of institutional health.

Second: *What happens to the connective tissue?* One of the subtler functions of a central office is convening – creating the space where people doing equity work in different parts of the institution can learn from each other, share resources, and build solidarity. MIT is a famously decentralized place; departments and labs operate with enormous autonomy. That autonomy is a strength for research. Whether it is a strength for community-building is a different question. The working group that recommended the ICEO's closure also recommended "some mechanism for the people doing this work to collaborate easily." The gap between recommending a mechanism and building one that actually functions is where institutional intentions often quietly expire.

Third: *What message does structure send?* Organizational structure is not just a management question. It is a signal about what an institution values enough to invest in visibly. The creation of a vice president role in 2020 sent one signal. The sunset of that role in 2025 sends another. Both signals are visible – or to use Wikipedia parlance, on "mainspace" – for prospective students, to faculty candidates, and to the broader community… including the graduates reading this issue.

What Wikipedia's twenty-five-year experiment has taught me is that the art of building knowledge together across difference – what I have called *civilitas* – requires formation. It requires practice. It requires infrastructure (however lightweight) that someone is actively maintaining.

To the Class of 2026

You are entering a world where the infrastructure around equity is being renegotiated everywhere – in technology companies, in government, in universities, and on the platforms where knowledge itself is produced. This is not abstract. It is the world you will build careers in, raise families in, and exercise citizenship in.

The question is not whether equity matters. Wikipedia's global community is staking its twenty-fifth anniversary on it. President Kornbluth describes the Institute as dependent on talent of every background. Even the fiercest critics of DEI bureaucracy rarely argue that institutions should stop caring about who is included and who is left out. *The question is who holds this work, how, and with what resources.*

What Wikipedia's twenty-five-year experiment has taught me is that the art of building knowledge together across difference – what I have called *civilitas* – requires formation. It requires practice. It requires infrastructure (however lightweight) that someone is actively maintaining. The barnstars don't award themselves. The barn-raisings don't organize themselves. The civic arts require cultivation. That was true for the Romans, it was true for the American founders, and it is true for us.

As you leave MIT, carry this with you: that the habits of *civilitas* – reading carefully, thinking critically, engaging respectfully with those who disagree, distinguishing evidence from assertion, building rather than burning – are not just nice to have. They are the preconditions of every institution you will ever depend on. And they are always, always someone's responsibility to tend. Having worked with or alongside many of you for the last four years of your journey, I know with great certainty that you are up for the challenge – and that you understand, as this place has always insisted, that mind without hand builds nothing.

Amy Carleton is a Lecturer II in Comparative Media Studies/Writing *(amymarie@mit.edu).*

From The Faculty Chair

Relationships Strong Enough to Solve Problems

Roger Levy

THE MAY INSTITUTE FACULTY Meeting traditionally mixes business and pleasure. This May, our business included a report on our annual elections for faculty governance by Chair of the Committee on Nominations (CoN) and former Chair of the Faculty Rick Danheiser. The faculty have elected the next Chair of the Faculty for the 2027–2029 term: W. Craig Carter, Toyota Professor in Materials Processing and Professor of Materials Science and Engineering. Professor Carter will serve as Chair-Elect in 2026–2027, during which time he will serve on the Faculty Policy Committee and join the Faculty Officers Group, alongside me, Associate Chairs of the Faculty Bevin Engelward and Erica James, and Faculty Governance Administrator Tami Kaplan. The faculty also approved CoN's slate of 32 nominees to fill open positions on the Standing and Special Committees of the Faculty. Professor Carter and all incoming and outgoing committee members have my sincere gratitude.

During the May meeting, the faculty also approved the new Evening MBA program proposed in April by Professors Antoinette Schoar and Rodrigo Verdi. The Editorial Board of the *MIT Faculty Newsletter*, now chaired by Professor Franz Ulm, presented its inaugural annual report to the faculty, and Executive Vice President and Treasurer Glen Shor provided a brief overview of campus security cameras. Details of these presentations and ensuing discussions will be available in the minutes of the May meeting, which will be presented for approval at the September 2026 Institute Faculty Meeting.

The first item purely in the category of pleasure is the Report of the Killian Award Selection Committee. The Killian Award is the highest honor bestowed by the MIT faculty on a colleague. This year's award, presented by committee chair Professor Xuanhe Zhao, went to Professor Elazer Edelman, recognizing his exceptional contributions to medical engineering and science, to MIT, and to the world. Professor Edelman will deliver the Killian Lecture in the upcoming academic year.

The second is the honoring of our faculty colleagues who are releasing their tenure lines to move to the rank of Professor Emerita/us or of Professor, Post-Tenure. This year, 26 of our colleagues are transitioning to these ranks; collectively, they have contributed over 1,130 years of service as members of the MIT faculty. At the May meeting, for each such faculty member the Chair of the Faculty reads a brief citation highlighting their achievements and contributions. Reading the citations for our colleagues was one of the true highlights of the year for me.

These traditions at the May meeting remind us that being a member of the MIT faculty is not just a job, not just a career, not even just a vocation: it is also membership in a remarkable community. When I joined the faculty just over 10 years ago, I was unexpectedly struck by the character and strength of the Institute community. In my experience, what is truly special about MIT is not only that it nurtures and celebrates excellence, for which it is globally famous, but also its commitment to a supportive and caring environment, which is not necessarily well known.

With that gratitude in mind, I will use the remainder of this column to sound a cautionary note on our state of community, specifically regarding what I will call the strength of our social fabric. Over the course of the year, I have heard many remarks in different contexts to the effect that we are not as strongly connected to one another here at MIT as we once were, and as we should be. Two obvious reference points are the long period we spent largely remote due to the COVID pandemic, and the campus-internal tensions following October 7. Nonetheless, refrains that the past was better than the present are perennial, and not all can be trusted. The evidence I have available thus far is a combination of anecdotal reports and fragmentary local and global quantitative data. So my remarks and claims should be taken as tentative and speculative. But my judgment after a year's service as Chair of the Faculty is that there is sufficient cause for some concern.

As I wrote in my previous column, the Chair of the Faculty is an ex officio member of the Corporation Joint Advisory Committee on Institute-Wide Affairs (CJAC). CJAC is project-based, and one of our main projects for the year was to study ways to improve the campus climate with respect to civil discourse. The main activity for the subcommittee taking on this project (which I was on) was facilitating a series of informal conversations over meals between groups of Corporation members and undergraduate or graduate students (sometimes including a faculty member), loosely modeled on the random faculty–

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Relationships Strong Enough to Solve Problems
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Corporation member discussions initiated in 2021, which in turn were modeled on the random faculty gatherings hosted by the faculty officers. These informal conversations seem to have been informative and well-received for all parties. At the final meeting of the subcommittee, our conversation returned to the broader topic of the social fabric of the Institute, and Professor Cullen Buie, one of CJAC's faculty members, made an arresting remark: that "we want relationships that are strong enough to solve problems." This framing is potentially very powerful because it is simultaneously general enough to encompass the range and diversity of relationships within our community, concrete enough – at least in principle – for benchmarking (one can imagine sitting down and listing the relationships), and aligned to the goal of achieving purposeful work together. The question then arises: to what extent are the conditions at MIT conducive to the development of relationships this strong?

As a cognitive scientist of language, much of my research involves studying communication; as an MIT faculty member, nearly all my professional work takes place in collaboration. This knowledge and experience informs a commonsense but crucial point about how we interact with each other. As a general rule, the richer the communicative channel and the deeper the shared context, the better things go. Phone is better than text, a video call is better than phone, and in person is best of all. This idea is supported in fields ranging from psycholinguistics (Clark & Brennan, 1991) to organizational behavior (Daft & Lengel, 1986) to social psychology (Drolet & Morris, 2000). It also aligns with observations by accomplished academics. A recent comment from our own Randall Davis: "a two minute phone call is worth a dozen emails." A lengthier remark by the legendary computer scientist Richard Hamming attributes long-term research impact to making oneself available for in-person interactions with colleagues:

. . . if you have the door to your office closed, you get more work done today and tomorrow, and you are more productive than most. But 10 years later somehow you don't quite know what problems are worth working on; all the hard work you do is sort of tangential in importance. He who works with the door open gets all kinds of interruptions, but he also occasionally gets clues as to what the world is and what might be important.

Investigating similar ideas, Drolet & Morris asked "whether, in a cooperative climate, negotiators' visual access to each other's nonverbal behavior fosters a dyadic state of rapport that facilitates mutual cooperation," and obtained affirmative findings as measured by quantitative joint gains in experimentally controlled negotiation settings.

Putting these pieces together: we want relationships strong enough to solve problems, and in-person interactions are unmatched for developing and using these relationships. How is this going for us today at the Institute? I have heard a number of remarks to the effect that colleagues simply aren't around as much as they were, say, a decade ago. Another acute observation by a highly respected colleague: the strengthening and professionalization of student support at MIT over recent decades has brought important benefits to students, but has also come at the cost of a narrowing of the typical range of faculty–student interactions and a resulting weakening of the bonds between us and our students.

Buttressing these anecdotal observations with quantitative data would be ideal; the evidence is fragmentary but still worth sharing. Starting in 2022, our Quality of Life survey has included a number of questions regarding how much community members work on campus or on site, and how much remotely. Analysis of responses by faculty (Figure 1) indicates that even after our formal return to campus in fall 2021, it has taken us years to return to a steady-state on-campus presence (if indeed we have reached a steady state). These data also indicate that tenured faculty survey respondents spend about half a day less on campus than tenure-track (i.e., pre-tenure) faculty survey respondents.

Perhaps more striking is the trend in response rate to the Quality of Life survey itself (Figure 2). Across most roles we see signs of a downward trend across the last 14 years, but this pattern is most pronounced for faculty: post-COVID our response rate is at least 12% lower than before COVID.* There could well be a positive correlation between time spent on campus and proclivity to respond to the Quality of Life survey, in which case

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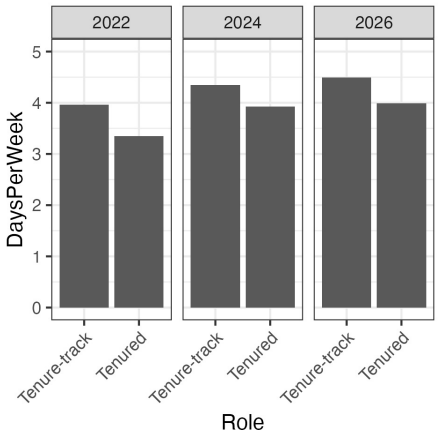

Figure 1: Average days/week working on campus among Quality of Life survey respondents

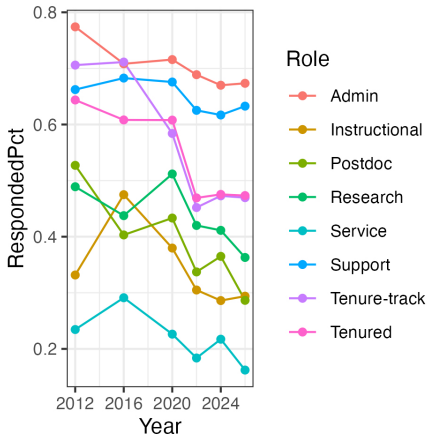

Figure 2: Response rate to Quality of Life survey, by role

Relationships Strong Enough to Solve Problems
Levy, from preceding page

extrapolating the days per week rates in Figure 1 to the entire faculty would overestimate our on-campus presence. Overall, these data raise concerns of a retreat from campus life by some of our faculty.

One last source of quantitative data is global. In many fields it is theoretically and empirically important to know how much we talk to each other. Pfeifer and Mehl (2026) note that in exploratory analysis based on a large-scale registered replication of a landmark study (Mehl et al., 2007) using conversations passively sampled by on-body electronically activated recorders between 2005 and 2019, Tidwell et al. (2025) estimated a year-over-year decline of about 300 words spoken per day during this period – a decline of over 2% per year, totaling about 33% during the course of the study. On my reading, this result should be taken as tentative but potentially remarkable: at a rate imperceptibly slow yet dramatically fast in terms of social change, talking to each other is becoming less and less a part of our social relationships. Additionally, social relationships are part of networks, and network effects can be nonlinear, offering further reason for caution.

We are about to enter the summer, a period where we faculty traditionally take time for focused research work, time with family, travel, or other pastimes. I'll close by suggesting that this year, we also use the time to think about the professional and social contexts and relationships that we will return to come September, and how we might reinvest in strengthening them. Enjoy the upcoming months, and see you in the fall.

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*I am grateful to Jon Schwarz and Gregory Harris of Institutional Research for helping me analyze and interpret these Quality of Life survey results, including the breakdown between tenured and tenure-track faculty. For Figure 1, I have treated the response category "5+ days per week" as 5 days per week. Note that the 2020 survey closed on March 11, the day after MIT's first major public response to COVID, and so is best understood as an effectively pre-COVID survey.

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Address to the American Physical Society on the Presentation of the Sakharov Prize 2026

Yoel Fink

I. What brings us here

THE SCROLL OF ESTHER, set in Persia 2,400 years ago, reaches its climax with a heart-wrenching dilemma facing the Jewish queen: the prospect of a genocidal plan she is being asked to confront, and a court whose laws assign capital punishment if she does so. The essence of Esther's dilemma is captured in a powerful verse: "If you remain silent, deliverance will come in other ways. For it may be that your ascent to privilege was meant for this moment." (Esther 4:14).

כִּי אִם הַחֲרֵשׁ תַּחֲרִישִׁי בָּעֵת הַזֹּאת רֶוַח וְהַצָּלָה יַעֲמוֹד לַיְּהוּדִים מִמָּקוֹם אַחֵר וְאַתְּ וּבֵית אָבִיךְ תֹּאבֵדוּ וּמִי יוֹדֵעַ אִם לְעֵת כָּזֹאת הִגַּעַתְּ לַמַּלְכוּת.

This timeless question, pondered by a queen 2,400 years ago, is also the question that shaped the life of Andrei Sakharov. What is the true meaning of our privileges – our status, our position, our discoveries, our reputations, our tenure, the special access they afford us? Are these merely the benefits of the job, the natural consequence of talent, hard work and success? Or do they carry with them an obligation – to stand for the rights of another human being, of a colleague or a student who suddenly finds themselves in the "loneliest place in the world?" And if so, are we willing to risk what we have in order to support that noble endeavor?

This moment, my colleagues, is not that rare or special. The opportunity is available for each one of us to make a difference, save a career or even a life. My name is Yoel Fink. Receiving the 2026 Sakharov Award is the honor of my lifetime. I am deeply humbled by this recognition – and equally puzzled by my own worthiness.

II. From top scientist to top dissident

Sakharov stood at the apex of scientific prestige in the USSR. He helped build the Soviet thermonuclear program believing that mutual deterrence is a necessary condition for peace; he made seminal contributions as a theoretical physicist including to the theory of the tokamak with his advisor Tamm. A Hero of the Soviet Union – he had a lot to lose; he certainly could have remained silent. Sakharov chose to harness his status, privilege and his unique access in defense of freedom of expression, the rights of individuals whom fate had placed in danger and importantly to courageously speak truth to power in the Soviet Union. He did risk it all.

I grew up in Jerusalem in the 1970s. At that time the struggle of Soviet Jews, refuseniks like Ida Nudel, Natan Sharansky, Boris Begun, and many others were the focus of national awareness and pain. These were individuals who faced enormous personal risks simply for demanding the right to leave, the right to speak, and the right to live freely. It was during that time, still in elementary school, that I first heard of Andrei Sakharov, whose courage in defending peace, freedom, and human rights made him one of the great moral figures of the twentieth century.

It was a mere few years after the 1968 "Thoughts on Progress, Peaceful Coexistence and Intellectual Freedom," was published arguing that there could be no scientific advancement without freedom of thought. Overnight, as Nathan Sharansky put it: "Sakharov was transformed from the Soviet Union's top scientist to its top dissident." Sakharov was a towering scientist – a four-time recipient of the Order of Lenin, a Hero of Socialist Labor. Yet when he was awarded the Nobel Peace Prize in 1975 he was not allowed to leave the Soviet Union to receive it. Think about that: one of the most decorated scientists in his country was not permitted to travel to his own award ceremony. Such were the times.

III. Righteous Among Nations – a call for universal advocacy

The young Sakharov was occasionally mistaken for being Jewish by virtue of his name or appearance – he experienced antisemitism firsthand. It is likely that these early life experiences help shape his belief. For those of us growing up in Israel, his courage had historical significance. We celebrated those rare individuals who, though not Jewish themselves, chose to risk their lives in defense of Jews and other persecuted people – we called them the "righteous among the nations."

But Sakharov's advocacy extended beyond. He spoke courageously not only for Soviet Jews but also for dissidents and oppressed peoples across the Soviet Union – including the Crimean Tartars, whose plight he famously raised in his 1975 Nobel lecture. I assumed that the great catastrophes of the past are over and with them the opportunities to take a stand on the right side of history. Sakharov taught us otherwise – that once we fail to protect human rights, science, progress, and peace will ultimately fail.

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IV. The materials of freedom

Young Sakharov was exposed to physics at an early age; he was home schooled, his father taught physics. His childhood apartment was lined with books. He experienced the poverty that followed the revolution and the great purges under Stalin. Sakharov began his illustrious career in physics as a materials scientist inspecting armor piercing shell casings during WWII.

My upbringing in comparison was sheltered. In high school I studied theology, served in the Golani infantry brigade, and travelled for a couple of years. My first encounter with physics was at the Technion. For graduate school I came to MIT, where I had the extraordinary privilege of working under John Joannopoulos and Ned Thomas. At MIT I encountered something remarkable – an intellectual culture where ideas moved freely across disciplines, an institution where at the time, none of the doors were locked both figuratively and literally; this was in great contrast to anything that I encountered before. In Israel any institution of significance is surrounded by a security fence and here I could not find even one.

That freedom emboldened me as a second-year graduate student to ask a simple optics question in a room that had in attendance Herman Haus, Erich Ippen and John Joannopolous, luminaries in the physics of light – only an open and free environment would allow what I believed was a silly question to be asked. It was John Joannopoulos who answered; under the mentorship of JJ, as we fondly called him, I was then able to help find the non-trivial answer to this question. The particular photonic band diagram that we discovered launched my career and eventually led to a precise optical scalpel used in hundreds of thousands of minimally invasive surgeries. None of this would have happened if not for the amazing mentorship of a great physicist at MIT who pretty much taught me much of what I know. John Joannopolos passed away after battling lung cancer last summer; it is in his memory that I dedicate this award.

V. Is dignity a preserved quantity?

There is no question that the scientific enterprise as we have known it is facing significant headwinds in this country – it is not apparent to me how much of this is an "American problem" or whether this is a sign of things to come. The measure of a theory is in its ability to predict the outcome of an experiment; the future is an experiment on the grandest scale and yet we are at loss to predict it.

In the absence of all-encompassing theories we have the next best thing: leading indicators – those early signs like the dark clouds on the horizon that foretell a coming storm. In 1821 Heinrich Heine famously wrote: "that was only a prelude, where they burn books, they will ultimately burn people as well." With Heine's 200-year-old warning in mind, I would distill my message today: "where the dignity of scientists is destroyed, science itself may soon follow" – in other words, ignoring the torching of a colleague's reputation carries immeasurable consequences to the human spirit and to truth itself.

This simple insight is quite ancient. Challenged to summarize the entire Torah while the listener stood on one foot – the sage Hillel responded by pointing out an underlying symmetry: "don't inflict on others what you wouldn't want for yourself." The constant of motion associated with this symmetry is human dignity. The safekeeping and defense of human dignity is at the heart of our matter and in order to forecast or take action to prevent the evils ahead we need to measure one simple thing: human dignity, is it indeed preserved? This observation scales to all levels of our existence, the institutional scale notwithstanding.

VI. Amtrak vs. NASCAR

How do violations of human dignity come about? Haven't we as a civilized society, created a system of rules, codes, and institutions that are designed specifically to shield us? Weren't our institutions of higher learning and research designed to do just that? The outcomes speak for themselves: neither the codified books of laws, nor our esteemed institutions, nor even tenure stand in the way when the forces of politics, expediency, institutional self-preservation, power, misinformed public, or plain old hatred of foreigners, intellect, or antisemitism bear down on us.

> I assumed that the great catastrophes of the past are over and with them the opportunities to take a stand on the right side of history. Sakharov taught us otherwise – that once we fail to protect human rights, science, progress, and peace will ultimately fail.

Most disappointingly is that our own academic institutions are unable or unfit to rise to the occasion. They lack the fundamental ability to process risk inherent to groundbreaking discoveries and love the prestige of an upside, while rendered incapable of handling failures which are central to any risky enterprise such as science. Are we in universities a form of AMTRAK, the train company concerned with on time arrivals? Or are we NASCAR where cutting-edge racing inevitably involves flipping a car? These are very different models as far as risk goes. For us, the race drivers of research, it may be a question of life and death. With failures on the institutional level and its managerial class abound, what should we as individuals do about it?

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VII. The loneliest place in the world

Mehmet, a former postdoc in the early days of my career, was the first to demonstrate a fiber that contained a conductor, an insulator and a semiconductor. A patriot of his homeland, I have never met a more devoted, more devout, or more hard-working scientist since. Mehmet and his wife Esra, who was getting her PhD in economics at Harvard, would be working in the lab well past midnight in a beautiful and pure pursuit of scientific discovery. Mehmet was passionate about science and led a simple life not driven by material concerns. He returned to Bilkent University to found and lead the national nanotechnology center UNAM while Esra taught economics.

None of this really mattered when the purges at universities unfolded after the failed coup attempt – Mehmet among many others was fired. A 700-page report detailing his offenses was generated in record time; "gold was missing from the fab" I was told by the president of the university himself. I was unsuccessful in countering this politically motivated termination, engaging among others a senior science advisor to president Ardgowan. All to no avail – my warnings that persecuting scientists is reminiscent of dark regimes and dark times fell on deaf ears.

Charlie Lieber, a respected scientist and a serving department head of Chemistry, was interrogated and arrested on Harvard's campus in the early part of 2020, accused among other things of wire fraud and tax evasion. His institution – Harvard University – collaborated with the FBI, arranging an on-campus interrogation while not conditioning it on legal representation; Harvard prides itself on its school of law yet neglected to offer this basic right to its own faculty.

Lieber's reputation and dignity were effectively destroyed well before any trial took place. Painfully, his plight was met with a deafening silence not only by his complicit university but sadly by his own colleagues – the 2,400 members of the faculty of arts and science. This set the stage for a playbook that soon was to be used elsewhere. The DoJ and the FBI concluded that their approach for persecuting scientists at research universities was working; aggressive, innovative prosecutorial strategies would soon be tested on campuses around the country including at MIT.

VIII. We are all Gang Chen

Armed with a basic knowledge of history and the leading indicators mentioned above, I was deeply alarmed and took the time to read and study any and all material released on Lieber's case. In an MIT wide faculty meeting on February 5th 2020, I questioned our silence and warned that we may be next.

On Thursday January 14, 2021, the "China Initiative" hit home for us at MIT. Agents raided Professor Chen's home in Cambridge in an early dawn raid; his wife Tracy was ordered out of bed by agents while they looked on – she refused. We learned that evening that Professor Chen had allegedly defrauded the government of $19 million and was guilty of wire fraud. MIT's president expressed pain, but we the faculty decided to go further.

The very next day at 4:00 PM, a group of about 20 MIT faculty gathered on Zoom. The title of the presentation was "have you no decency sir?", the famous quote from attorney Joe Welch that effectively ended the McCarthy hearings in 1954. We ended the meeting by reading the poem "First they came for the Communists - And I did not speak out" by Martin Neimoller. It didn't take long for us to realize that the government's criminal complaint had serious factual errors – including listing Prof. Gang Chen as a recipient of a whopping $29 million from the Chinese government, which we all knew went to MIT.

Why would the government choose to mislead if they had a truthful case? We realized that if a person like Gang could be criminally targeted for routine scientific activities, then none of us are safe. The rally cry "We Are All Gang Chen" underscored that it wasn't his dignity and reputation alone that was maligned – it was ours.

The DoJ and FBI were bringing the heavy machinery of the federal justice system, such as "wire fraud" statutes developed for organized crime, into the halls of science. In doing so they were damaging the very same American innovation they sought to protect. Fear kills creativity and collaboration. A reputation built over a lifetime is gone in an instant. The concept of a "golden hour" applies to situations where the reputation of a colleague is assaulted by powerful forces. After the arrest of Professor Gang Chen, our community mobilized quickly, and today, Professor Gang Chen is a free man.

IX. Answering Sakharov's call

The stories of these individuals are intended to illustrate the impact of inaction but also to capture the opportunity in taking a stand. The US today is a world away from the USSR of Sakharov's times, however certain similarities in the persecution of scientists, in the suppression of free speech and in the violations of human rights remain. These were the very causes that Andrei Sakharov fought for.

The appeal to consider our privilege not as a source of benefit but as a deep personal obligation in defense of human rights captures the arc of Sakharov's life. For it may be that our ascent to privilege was meant for this moment. The call for action couldn't be more clearly articulated in Sakharov's words: "In struggling to protect human rights we must, I am convinced, first and foremost act as protectors of the innocent victims."

Thank you.

Yoel Fink is the Danae and Vasilis (1961) Salapatas Professor of Materials Science and Engineering *(yoel@mit.edu).*

An Archery Lesson for Our Graduates

Alan Jasanoff

THE PARADIGMATIC INSTRUCTOR in Indian legend is the guru Drona. Renowned for his ascetic ways and his skill with weapons of all sorts, Drona is tutor to the competing clans of princes whose story is told in the Sanskrit epic called the *Mahabharata*. In a famous episode, Drona offers an archery lesson to the young princes. The target is a bird-shaped dummy perched in a tree. One by one, the students step up and take aim, but before each boy lets his arrow fly, Drona asks a question: "What do you see?" Each answers in turn, "I see the bird, the branch, the leaves and the tree, the earth below, the sky, the sun, and the clouds." Each shoots – and misses! Until it is the turn of prince Arjuna. "What do you see?" Drona asks him. Arjuna replies, "The bird. Only the bird." His is the one arrow that hits the target, setting him on a trajectory to become the greatest warrior in the world.

Drona's teaching about the necessity of focus is one we can relate to at MIT. We select trainees for dedication and persistence in goal-driven activities, beginning with the art of gaining admission in the first place. Compared with earlier generations, the top US college recruits of today spend much more effort purposefully building their resumes, fueling an ever-growing industry of preparation services[1], as well as countless summer and after-school programs. Because of our reputation, we intrinsically attract students with the wherewithal to succeed in demanding STEM areas. They work harder than pupils at almost every other US institution[2], drinking heavily from the firehose of an MIT education. They also play hard, frequently choosing to spend their spare time in the more than 100 campus clubs devoted to educational, preprofessional, or technology-related topics[3]. Even the dating scene at MIT is science-oriented: "carbon-14 is the usual method," as the joke goes[4]. And when viewed as a group, our students are yet more focused than they are as individuals; they aim their arrows preferentially at a subset of the academic targets we offer, with more than half of upperclassmen here majoring in just two of the 21 active course numbers[5].

Staying focused brings rewards. This lesson has been popularized by media figures like Malcolm Gladwell, with his "10,000 hour rule" – the principle that solid effort over the equivalent of several years is what it takes to excel in a field of endeavor[6]. The stereotypical successful inventor or innovator is in fact a person who remains fixated on the task at hand, to the exclusion of all else. Thomas Edison taught us that perspiration is the key to realizing creative genius, and he was famous for his extreme work habits. In describing Demis Hassabis, the AI pioneer and former MIT postdoc who may be one of the Edisons of our time, a colleague remarked[7], "There is no 50% mode in Demis. There is not even a 99% mode in Demis. There is only 100%." Alumni of MIT in general are able to leverage their extraordinary work ethic and rigorous training to get better paying jobs than graduates of other top universities[8]. Their industriousness contributes to the economic heft of MIT spinoffs that collectively net trillions of dollars in annual revenue[9].

We as faculty are surely conscious of how important the ability to concentrate and compartmentalize is to our own careers, but who among us has not also realized that extreme dedication comes with a penalty? Most immediately, there is always an "opportunity cost" when commitment to one goal crowds out other business or pleasure. The trade-off between work and family is particularly challenging for many, exemplified by the statistic that academics tend to delay parenthood by years compared with the general population, with greater effects among female faculty[10]. Over a century ago, Marie Curie delayed motherhood by the standards of fin-de-siècle France, but the greatest personal cost of her relentless quest to understand radioactive materials was her own death by presumed radiation poisoning. Professor Curie's story is a reminder that the unintended consequences of single-minded professional focus can be dire indeed.

Narrow focus can also obstruct progress on a larger scale. In Thomas Kuhn's celebrated portrayal of scientific history[11], "revolutions" are required largely because scientists tend to cling to fixed ways of viewing the natural universe; the old guard literally needs to die off in order for better ideas take hold. Blinkered attitudes in science and engineering can

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have major implications for society. For instance, the journalist Charles Piller has argued that allegiance to a longstanding biological hypothesis may be partly to blame for hindering advances in Alzheimer's research[12]. In the recent past, the destructiveness of the Covid pandemic and its divisive reverberations might have been mitigated if policymakers had better balanced a variety of societal concerns, rather than prioritizing a strictly epidemiological view. And in our newspapers today, we can see the unwillingness of Silicon Valley to grapple with the negative effects of social media on mental health and the spread of misinformation, even though these externalities arise almost inevitably from core functions of the platforms. In all of these cases, more open-mindedness and less adherence to specific conceptual or commercial commitments could have led to better outcomes.

Each of us has a duty to use our gifts for the greater good. In the ancient vocabulary of the *Mahabharata*, this is our *dharma* as scholars. It also parallels the mission of our Institute, "to develop in each member of the MIT community the ability and passion to work wisely, creatively, and effectively for the betterment of humankind." In today's circumstances, the betterment of humanity depends increasingly on integrating science and engineering into the public sphere. To play a productive part in this synthesis, we cannot remain too fixated only on our technical goals, let alone on the financial rewards they could bring. We need to think broadly about how the ideas and innovations we work on will improve lives for people in a multidimensional world. Importantly, we must also be ambassadors for science and academia in general, doing our part to ensure that advances in knowledge translate into advances in public understanding and appreciation for the value of research itself.

A princely archer from an 18th century Indian manuscript.

The novelist Vikram Chandra provides an apt metaphor by flipping the script on Drona's original archery lesson[13]. In Chandra's reimagined version, it is Arjuna's lesser brothers who see only the bird, while Arjuna himself sees both the bird and its surroundings. His arrow is still the only one that flies true, but it is now guided by a fully informed view, rather than by tunnel vision. As we send our graduating students on their way, let us encourage them to be like this modern Arjuna – still aiming for the target, but engaged always with the environment around them.

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Names in Stone, Names Read Aloud

Franz-Josef Ulm

THERE IS A PARTICULAR COMFORT, in moments like this, in blaming the weather. A shift in the air, a disturbance arriving from elsewhere – something that unsettles what had seemed settled. Universities are practiced at registering such changes. They adjust, they endure, and, when necessary, they rename what has already shifted into something more manageable.

It is late April – the month of hesitation, and of thesis deadlines that arrive exactly when the calendar said they would.

Let us walk.

Across Killian Court, the names run across the buildings, set there in 1916, when MIT arrived in Cambridge, inscribing a lineage into stone. Newton. Darwin. Lavoisier. Mendeleev. Curie. Five names distributed across four buildings – some carved into the stone above us, others conspicuously absent. The gesture is not modest. It assumes continuity. It assumes that knowledge survives its conditions – and, more quietly, that the conditions themselves will remain stable enough to be forgotten.

Stand beneath Lavoisier – Building 4, turned inward, an arm of the long stone frame that holds Killian Court in place. It does not face the river. It faces the lawn, the procession, the space where the Institute stages its moments of continuity. The buildings form a deliberate enclosure: Building 1 to the west, 2 to the east, 3 and 4 stepping inward to meet Building 10 beneath the Dome.

The air slips in from the Charles, carrying that faint metallic dampness the river holds in April. The trees along the court have just begun to turn – buds still ahead of leaves – giving off a thin, green scent that suggests renewal without commitment. The grass is kept immaculate, almost unnaturally so, in anticipation of what is coming: Commencement, the Class of 2026 crossing this lawn in a few weeks. Groundskeeping, unlike history, tends to operate on a fixed schedule.

This cohort has seen much – too much for a class that entered under a different set of assumptions about how stable the world was meant to be.

In July 2020, the Institute spoke in one register, naming systemic racism directly, and committing itself to examination and change, and framing inclusion as an internal obligation rather than an external demand. The language was declarative and carried the confidence that a university could define its priorities and act on them.

A few years later – which, in the time scale of universities, is a blink of an eye – the tone has shifted. The commitments remain; the authority to define them has moved. The language turns toward support, toward navigation, toward operating within constraints now taken as given. The register becomes careful, procedural, responsive.

Nothing has been revoked. Much has been translated into forms that anticipate constraint before it arrives.

The change did not arrive in a single decision. It accumulated. For those who have moved through the classrooms during this time, the shift is legible as rephrasing: what can be said, and how it can be acted upon.

Look up.

Antoine-Laurent de Lavoisier, chemist, executed in Paris on May 8, 1794, during the Reign of Terror. His work in chemistry did not determine his fate. He was executed as a former tax farmer, a member of the *Ferme générale*, accused of conspiring against the people. The Revolutionary Tribunal required little time. Judgment and execution followed within a day, an instance of administrative efficiency carried to its end.

A sentence is often attached to that moment – perhaps apocryphal, perhaps too precise to survive intact: "The Republic has no need of scientists." Whether spoken or not, the logic held. The Terror did not refute knowledge. It rendered it irrelevant.

Chemistry continued.

The institutions that carried it were dismantled and rebuilt. The Académie was abolished. New schools – most notably the École Polytechnique – trained scientists for a different order, aligned more directly with the needs of the state. Knowledge persisted, while its authority shifted.

What persists is continuity under altered priorities.

Walk across the court. Look up again – from the river to the Dome.

Gauss. Helmholtz. Hertz – distributed across the façades rather than set in sequence. Helmholtz on Building 2, facing the river; Hertz on Building 3, facing the court. And Gauss – if he was meant to stand beside Euclid, Lagrange, Laplace – has slipped from the line – by design or omission. What did our predecessors intend, and what did they forget? Science

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advances, too often, through such misplacements.

Carl Friedrich Gauss brought precision to number theory, magnetism, and geodesy. Hermann von Helmholtz carried that precision into physiology and physics, establishing conservation of energy as a unifying principle. Heinrich Hertz made electromagnetic waves tangible, opening the path to wireless communication.

The sequence builds.

By the early twentieth century, Germany stood at the center of such systems – dense, interconnected, capable of correcting their own course.

Then came the break.

In May 1933, books were burned in front of the Humboldt University in Berlin. Within months, the Law for the Restoration of the Professional Civil Service removed Jewish academics from universities. Göttingen – home to Gauss's intellectual descendants – was hollowed out. Born was dismissed. Franck resigned in protest. In Berlin, Einstein left. Entire lines of inquiry dispersed, reconstituting themselves elsewhere, often in the United States, in what bureaucratic language described, with characteristic restraint, as "restructuring."

Work continued.

Laboratories functioned. Institutes remained active, increasingly aligned with state priorities. Physics and engineering moved into rearmament – materials, fuels, aerodynamics, ballistics, rocketry – and into the administrative systems that enabled large-scale destruction, executed with a precision once directed toward other ends.

The narrowing established direction.

Once fixed, that direction resisted internal challenge.

Over time, the rupture appears differently. In the immediate term, knowledge served war. Over the longer term, a quieter loss emerges: the density of a system able to question itself. After 1945, reconstruction required more than rebuilding institutions; it required restoring a culture of inquiry that had been dispersed, often rebuilt elsewhere, including here.

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Among Colleagues.
(from left to right, as remembered): Antoine-Laurent de Lavoisier (1743 in Paris, France – 1794 in Paris, France), Dmitri Mendeleev (1834 in Tobolsk, Russia – 1907 in Saint Petersburg, Russia), Marie Curie (1867 in Warsaw, Poland – 1934 in Passy, France), George Washington Carver (c. 1864 in Diamond, Missouri – 1943 in Tuskegee, Alabama)
(Image created with ChatGPT.)

Names in Stone, Names Read Aloud
Ulm, from preceding page

Look back at the names – and at the ones that are missing.

Marie Curie is not carved into these buildings. The omission is quiet; it is not incidental.

Born in Warsaw, trained in Paris, working across borders and institutions, she isolated radium and opened new domains in physics and chemistry. Her work moved, and in moving, it reconstituted itself.

That pattern runs through this campus, though not written into the stone.

It also took shape under different conditions. George Washington Carver, working at Tuskegee in the American South in the early twentieth century – at the very moment when institutions like this one were fixing names into their façades – developed an agricultural science within the constraints of the Jim Crow order, where access to laboratories, funding, and recognition remained uneven. Crop rotation, soil regeneration, new uses of plants: a body of knowledge formed with limited institutional support, yet responsive to the needs around it.

The movement of knowledge is not only a matter of displacement, but of where it is allowed to form, and under what conditions.

The scientists who left Germany in the 1930s arrived without ceremony. They came as displaced people – von Neumann, Bethe, Fermi, among many others – rebuilding their work in institutions that could absorb it. American universities did not inherit a lineage; they became one because others were forced to leave theirs.

The movement of talent is structural to science.

Structures, once stable, reverse.

Look again at the court.

In a few weeks, the Class of 2026 will cross this lawn. Among them are students who came from elsewhere and, for a time, made this place their intellectual home. Some will leave without choice – not for lack of ability or intent, but because the system that trained them provides no mechanism to keep them, redirecting them by rules that sit entirely outside the work they have done.

The scale differs. The mechanism remains familiar: a system that trains talent and then, quietly, directs it elsewhere.

Mendeleev stands above Lavoisier – on Building 4 – inscribed as *Mendelejeff*, an earlier Russian transliteration. The periodic table, first set down in the 1860s, invited revision and absorbed correction as new elements were discovered. It encoded a principle: that knowledge advances through the capacity to change itself over time.

Some decades later, under Lysenko in the Soviet Union of the 1930s and 1940s, that capacity was deliberately constrained. Established genetic theory was rejected on ideological grounds, and dissenting scientists were removed from their posts. Biology continued, yet its ability to correct itself was constrained by decree.

That is the failure that matters – the loss of a system able to correct its own course.

Look again at the names.

They mark discovery. They also mark a system that permits error and absorbs correction.

Students in the Class of 2026 understand that science advances through error, in spaces where one is allowed to belong, an insight reached between a failed experiment and a looming deadline.

The present offers familiar pressures: politics, law, public scrutiny. Recent legal decisions have narrowed the space in which institutions define their own commitments. The internal response has taken a quieter form. Decisions move through compliance structures, risk frameworks, and procedural review. Austerity sharpens the filter. What cannot be justified in advance does not begin; proposals are rewritten before submission, and questions are set aside when they cannot survive the process intact.

Diversity, equity, and inclusion – once articulated as commitments – now move through the same structures. They are defined and evaluated in advance, shaped by the need to align with constraints that are no longer internally set. Their presence remains; their condition of possibility changes – the space in which they can be pursued is reduced before the work begins.

The change becomes visible here, in what takes shape and what does not.

From the outside, the system appears adaptive. From within, it feels more limited.

The risk is not that knowledge disappears, but that the conditions that allow it to question itself contract – quietly, and in advance.

A university earns its autonomy by protecting work that does not yet know what it is for. Its role in moments of change lies in holding open a space where ideas can form before they are translated into utility, compliance, or alignment.

History offers a consistent record. Knowledge continues. Universities persist. The form remains while direction shifts. Fields contract, migrate, or stall. Recovery, when it comes, unfolds over decades and often in different places.

We have reached the edge of the court. The names remain fixed above us. They mark achievement. They also mark the continuity of systems that, at critical moments, either preserved or surrendered the conditions that made such achievement possible.

In a few weeks, another set of names will be called on this lawn, one by one, before dispersing again, with a logistical precision that would have impressed Lavoisier.

Late April holds that uncertainty. Names are read aloud before they are fixed into trajectories, before a system decides what it will permit to take form and what it will quietly direct elsewhere.

The names in stone do not change.

Those spoken here will move outward into systems not yet fixed.

What they make of those systems will.

Franz-Josef Ulm is Class of 1922 Professor in the Department of Civil and Environmental Engineering *(ulm@mit.edu)*.

Open Letter on the Proposed Changes to the General Institute Requirements

From DMSE Leadership:
Rob Macfarlane
Polina Anikeeva
Juejun Hue
Cem Tasan
Yet-Ming Chiang
Rafael Jaramillo

This document was written prior to the TFUAP committee's updated report and FAQ, which respond to a number of the topics discussed below. We appreciate the committee's engagement with these concerns, but believe further discussion remains warranted.

Thesis: *This letter highlights the intellectual risks and pedagogical challenges associated with the proposal by the Task Force on the Undergraduate Academic Program (TFUAP) to compress science General Institute Requirements and suggests an alternative framework to infuse concepts of probability, statistics, and machine learning (PSM) through Institute-wide collaboration inspired by the Common Ground framework. We employ curriculum of the Department of Materials Science and Engineering as a test case to demonstrate the impact of the TFUAP proposal and the intellectual benefits of the collaborative approach to ensuring PSM fluency in MIT graduates.*

This letter is presented to the Task Force on the Undergraduate Academic Program (TFUAP) in consideration of the proposed changes to the undergraduate education at MIT. We appreciate the extensive work of the TFUAP, and the thorough nature with which all aspects of the curriculum have been examined. **We share the TFUAP's goal of ensuring that MIT graduates are prepared to lead in a rapidly evolving scientific and technological landscape. We support the goal of incorporating computation, statistical thinking, and data literacy more explicitly in the undergraduate curriculum.** A periodic review of MIT's educational structure is vital to maintaining our leadership in science and engineering education, and the TFUAP report clearly shows dedication to this important goal.

Nevertheless, we believe the proposed restructuring of the General Institute Requirements (GIRs) is ill advised.[1] For decades, the GIRs have served as a shared intellectual foundation for all MIT students. These subjects establish a common baseline of preparation that allows departments to build advanced curricula with confidence in students' prior knowledge. They ensure that all students are exposed to critical concepts from fields outside of those explicitly required for their chosen subject focus. The proposed shorter "exposure" subjects and integrated GIR options will fragment that shared foundation. While curricular flexibility has clear advantages, it may also result in significantly more heterogeneous preparation among students entering advanced coursework.

This heterogeneity will shift the burden of maintaining foundational training from Institute-wide GIRs to individual departments. Many programs depend on specific GIR subjects as prerequisites for advanced instruction. If students arrive with varying levels of exposure to core topics, departments would be compelled to add new prerequisites, redesign existing courses, or create "bridge" or catch-up modules to ensure students reach the necessary level of preparation. The proposal itself anticipates the possibility that departments may need to develop such catch-up options to cover gaps between different GIR pathways. **As a result, the desired result of "returning units to departments" will be negated by the need to include these new classes as prerequisites, and the net effect would result not in an increased but a decreased flexibility in major design for many disciplines.**

Using the undergraduate curriculum for the Department of Materials Science and Engineering (DMSE, Course 3) as a test case, there are concrete examples of these challenges:

- **Loss of foundational preparation:** The introduction of 6-and-6-unit pairings of some GIR requirements and the consolidation of the Physics GIRs into a single required subject could result in students entering the DMSE core without prior exposure to critical concepts that underlie many areas of materials science and engineering (semiconductor devices, polymer synthesis, photonics, etc.).

- **Increased instructional complexity:** Addressing emerging gaps would require additional subjects and/or the creation of supplemental 6-unit modules, increasing instructional complexity via the introduction of two sequential modules intended to reconstruct the depth of a 12-unit course.

- **Diminished intellectual depth:** Two separate modules that introduce material at increasing levels of depth are not pedagogically equivalent to a single coherent 12-unit course

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[1] The proposed changes would reduce the number of GIR subjects from 17 to 15 and replace the current science core with a new Science, Math, and Computing framework that includes flexible and integrated subject options across chemistry, biology, computation, and probability/statistics/machine learning. It also eliminates the REST and Institute Laboratory requirements, returning those units to departmental programs.

Open Letter on the Proposed Changes to the General Institute Requirements
continued from preceding page

designed as an integrated progression of concepts. Introductory subjects are typically structured so that ideas are introduced, reinforced, and revisited in a logical sequence. Splitting this progression into separate exposure and catch-up modules disrupts that structure and will likely require substantially more than the nominal difference in units to restore the same conceptual foundation.

Collectively the proposed changes will sacrifice flexibility at the sophomore, junior, senior levels in Course 3/3A degree programs for flexibility in the first year. **We argue that flexibility in later academic years is of greater value, because this is when students are best prepared and motivated to pursue opportunities (internships, ambitious research etc.) that are a springboard for their careers.**

These challenges are not unique to DMSE/ Course 3/3A. Many departments rely on the GIRs to ensure rigorous preparation. Introducing multiple preparation pathways will likely force a broader expansion of degree requirements, shifting foundational instruction from the GIR system into the majors. This would undermine one of the central goals of the proposal (reducing complexity in the undergraduate curriculum) while curtailing students' ability to pursue ambitious and self-motivated goals in their 3rd and 4th years, as illustrated above.

This letter highlights the downside risk of creating flexibility within the GIR to enhance MIT students' foundational exposure to computation, statistical thinking, and data literacy. **However, this should not be interpreted as resistance to curriculum modernization.**

Departments across the Institute are already integrating computational and data-driven approaches, in recognition that such modifications are essential to future-proof the education that we proudly deliver. In DMSE, subjects 3.029 and 3.C01[J] (taught jointly with the Schwarzman College of Computing and Courses 7, 10, and 20) incorporate machine learning and modern data analysis methods, and our faculty expertise in these areas continues to grow with strategic hiring in computational materials science. The question is not whether new competencies should be incorporated into the curriculum, but how best to do so while preserving the coherence and rigor that characterize an MIT undergraduate education.

In the spirit of collaborative brainstorming, we suggest an alternative mechanism to integrate foundational exposure to probability, statistics, and machine learning (PSM) for every MIT undergraduate without eliminating a GIR. Just as we have not eliminated or curtailed established GIRs to teach essential communication skills, we propose that PSM should be integrated by adapting (or reimagining, as needed) existing courses within each major. A *PSM Intensive in the Major* (PSM-IM) credit requirement would provide the necessary structure to ensure that all MIT students graduate with foundational understanding of PSM, and an exciting incentive for creativity and collaboration in teaching PSM across the Institute.

DMSE/Course 3/3A is well on its way to implementing such an approach. Our curriculum includes multiple laboratory components in which students produce data (computational as well as experimental). Recrafting these labs to integrate PSM topics and to add suitable deliverables will provide both foundational and working knowledge. **Creating lab-based PSM-IM subjects is an opportunity to teach machine intelligence (e.g., relevant to AI-driven experimentation), which today is a frontier topic but soon will be an essential competence. We are hiring new faculty in this field and plan to have a leading AI researcher co-teach an experimental lab class.** Further, our degree chart includes requirement 3.029 (Mathematics and Computational Thinking for Materials Scientists and Engineers). **This course will be collaboratively reimagined via collaboration with the Common Ground framework to emphasize PSM.**

We believe similar implementations could be designed within other departments. It is exciting to imagine an Institute-wide rollout of PSM education in the context of lab experiences (now including computational labs) as a form of *mens et manus* for the AI, as well as for our students. That said, the suggested mechanism does not hinge on lab subjects alone. The broader opportunity is to create an imperative for all undergraduate programs to modernize without necessarily creating entirely new subjects and additional subject requirements.

Drawing again from our experiences with the CI-M requirement, a PSM-IM requirement would necessarily create new education-focused collaborations as experts in PSM topics are engaged to co-teach PSM-IM subjects. **This structure mirrors the successful Common Ground program and would yield broader intellectual impacts across the Institute, for instance accelerating the adaptation of AI for research programs. This set of benefits that would likely not accrue from offering PSM foundational education as a standalone GIR.**

MIT's General Institute Requirements embody a cohesive intellectual experience that informs and contextualizes each student's specialized education in their chosen field. As we seek to adapt the curriculum to match current and future STEM and societal challenges, it is essential that we preserve this common foundation while thoughtfully integrating new areas of knowledge. We welcome continued dialogue with the TFUAP and the broader faculty community to ensure that the next evolution of MIT's undergraduate program strengthens both disciplinary depth and the shared academic culture that defines an MIT education.

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Future-Proofing the Academic Library

Chris Bourg

WHEN CALLED UPON TO define the research library of the future, MIT, as usual, chose a bold path. The library envisioned by the Ad Hoc Task Force on the Future of Libraries would prioritize public access to knowledge, serve a global audience, and unlock computational access to research and data.

"The better world we seek is one in which there is abundant, equitable, meaningful access to knowledge and to the products of the full life cycle of research…Moreover, access to knowledge must be fluid, interactive, contextualized, participatory, programmable, and comprehensive" -MIT Ad Hoc Task Force on the Future of Libraries

When considered in the context of what the MIT community has experienced since 2016 – a global pandemic, attacks on higher education, declining public trust in science, significant loss of research funding, and the "tectonic forces" of artificial intelligence – the prescience of this vision is striking.

The task force, which benefited from broad faculty representation across MIT's DLCIs, presented 10 recommendations. The core recommendations and vision of the task force continue to guide the Libraries strategy:

- MIT Libraries should provide comprehensive digital access to content in our collections, by expanding our capacity to acquire and make available born-digital content and by digitizing much of our analog collections.

- The library should be a repository of knowledge available to be accessed and analyzed by humans and by machines and algorithms. Comprehensive digital access will permit "future uses of our data that we cannot yet imagine."

- Library spaces serve a unique and valued function across campus and should support a full range of activities: quiet contemplation, collaborative work, community events, and serendipitous connections.

- While the Institute's commitment to open access is widely recognized, most of MIT's scholarship remains unavailable for open dissemination. "MIT should remain a leader in this movement, for its own good, and for the good of the world."

- The library should establish a research center to explore challenges in information science and scholarly communication.

What We've Done

Since the report's release, the Libraries have made significant progress on these ambitious goals. The following is just a partial list of projects advancing us toward the task force vision:

- Built TIMDEX, a unified discovery index and API, making the full breadth of library collections searchable through a single interface, with semantic search underway and agentic access on the horizon.

- Developed a Discovery Strategic Plan to determine the future direction of the Libraries' discovery ecosystem, the tools, platforms, interfaces, and data that support library users in engaging our collections and services.

- Increased support for data-intensive and computational research: Data Services staff had more than 1,000 engagements with MIT community members last year between individual consultations and workshops, and visits to the GIS & Data Lab have doubled in the last two years.

- Renovated Hayden Library and the Building 14 Courtyard to provide areas for collaborative work, exploring collections, a teaching and event space, a new cafe, and expanded 24/7 study space.

The world continues to look to MIT as a model for open scholarship policies and practices. This area has also seen significant progress:

- The Libraries established the Center for Research on Equitable and Open Scholarship (CREOS) to produce and support research and education on the policies, practices, and impacts of open scholarship.

- Since 2022 the Libraries have awarded the MIT Prize for Open Data with the School of Science, recognizing MIT researchers who make their data openly accessible and reusable.

- Crafted with the Committee for the Library System (CLS), the MIT Framework for Publisher Contracts, which has been guiding our publisher negotiation strategy since 2019 and has been endorsed by more than 200 other institutions.

- The Open Access Articles collection has increased both the total number of OA articles in DSpace@MIT (21,000 to 55,000+) and the percentage of faculty articles openly available (38% to 50%).

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With journal subscriptions, the Libraries have shifted to a more sustainable approach for providing access to paywalled content. After Elsevier could not present a proposal that aligned with the principles of the MIT Framework for Publisher Contracts, MIT ended negotiations in June 2020. The Institute has achieved significant savings remaining out of contract, while the Libraries are providing quick alternative access to Elsevier content.

In light of recent significant budget reductions, the Libraries have cancelled additional costly subscriptions and are providing quick on-demand access to even more articles for the community. Browsing is still available for most journals, regardless of subscription status. Articles covered by previous subscriptions (as well as open access articles) can be accessed directly. I encourage you to visit our website to explore tools for requesting and browsing, ensuring your path to the literature continues to be as seamless as possible.

Together with the CLS and other MIT supporters of open science, we continue to strongly advocate for open and equitable scholarship – so that neither paywalls nor exorbitant APCs (article processing charges) stifle the reach of scholarship or drain institutional resources.

An Enduring Vision

The task force's forward-thinking vision and the Libraries' progress enacting many of its recommendations allowed the Libraries to continue supporting the vast majority of MIT's teaching and research needs during the pandemic. This period of all-remote research and teaching catalyzed our transition to a digital-first library. The Libraries designed, built, and implemented an electronic theses and dissertations submission tool to enable degree-granting departments and programs to easily upload and submit approved digital work. We have seen a four-fold increase in on-demand digitization requests since 2020 and have increased born-digital acquisitions: In FY2025, we dedicated 97% of the collections spend to digital resources.

The principles of the task force vision were not only a North Star in a time of crisis, but they also continue to prove as relevant as ever post-pandemic, as we see distinct changes in user behavior:

- Use of digital collections is skyrocketing, alongside declining circulation of physical items.
- Foot traffic has decreased at all library locations during regular staffed hours, except at the newly renovated Hayden Library.
- There is high demand for 24/7 unstaffed study spaces, which we expanded significantly since 2021.
- A higher proportion of users now prefer online reference help and research consultations than pre-pandemic.
- Library events, such as the MIT Reads program, have expanded their reach through hybrid programs.

These user trends, together with the enduring principles of the task force report, informed our approach to budget reductions last fall. Developed in consultation with the CLS, our plan allows us to more efficiently meet declining – but still relevant – needs for physical collections and library space, while closely aligning with MIT's strategic initiatives. These updates to our services reflect our response to both FY26 and FY27 budget cuts and position the Libraries to continue to evolve in alignment with the community and pursue our vision for years to come.

Redefining the Library Space

Library spaces have always been more than book stacks and study spaces; they are essential sites of intellectual life, where community, inquiry, and discovery take shape. As the role of the library and the research and study habits of scholars evolve, we are intentionally developing spaces that foster and inspire the kind of deep, human, social, and intellectual engagement that cannot be replicated on a screen. In these spaces, the physical and digital are not in tension -- they intersect to enable and inspire new ways of thinking. From the strategic reimagining of Hayden – literally built from the vision of the Future of Libraries Task Force -- to the specialized environments of the Lewis Music Library and the Distinctive Collections Reading Room, we are focusing on spaces that empower users through connection, collections, and expert partnership. This spirit also defines our work with the School of Architecture and Planning; we are co-creating a dynamic future for Rotch that ensures our physical presence is resilient and responsive to the needs of future generations of scholars.

What's Next

The Libraries continue to advance our digital-first strategy, support data-intensive and computational research, and pursue a more open and equitable scholarly publishing landscape. Some of our current projects include:

- Recently launching a beta version of Unified Search, streamlining discovery of library resources across multiple systems. Unified searching is part of a broader set of improvements aimed at easier access to collections and services, including upgrades to DSpace, Dome, and the Libraries homepage. The implementation of LibKey simplifies journal article access.

- Meeting high demand for basic computing skills for researchers through the Carpentries@MIT program: This workshop series has reached more than 400 participants, and we waitlist almost as many people as we register. We have partnered with ORCD and the Schwarzman College of Computing and are developing discipline-oriented workshops, including specialized lessons for Biology and EAPS.

- Continuing to lead in open scholarship: CREOS is developing a tool to help model read and publication costs for journals. The initial findings are available to inform open scholarship policies and practices at Ivy Plus institutions. In addition, discussions with MIT's Graduate Student Council led to their recently passing a Resolution on Scientific Publishing and MIT Libraries. If you would like to get involved in open scholarship advocacy, please reach out to scholarlypub@mit.edu.

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Future-Proofing the Academic Library
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Future goals include:

• Establishing funding for large digitization projects, including the digitization of nearly 74,000 MIT theses and dissertations that remain available only in print, and the digitization of 70,000 MIT Technical Reports and working papers that have never been available in digital form.

• Partnering with MIT students, faculty, classes, and labs on developing new innovative tools for exploring and analyzing library collections, including the creation of new tools that provide scholars with a meaningful digital browsing experience that not only recreates physical browsing of library stacks, but improves and expands that experience in digital space.

As we look ahead, the MIT Libraries remain committed to advancing a digital-first, open, and computationally enabled future for scholarship. At a time when the production and sharing of knowledge is contested and under strain, the role of the academic library is more critical than ever. By continuing to innovate in access, discovery, and research support, we aim not only to serve the evolving needs of the MIT community, but to help define the future of the academic library itself.

My colleagues and I are always eager to discuss our work and collaborate on our future goals with faculty across the Institute. We especially welcome invitations to join regular department, lab, and center meetings for such discussions. Feel free to contact me at director-lib@mit.edu.

Chris Bourg is Director of Libraries *(director-lib@mit.edu).*

Lament for the MIT Libraries

Elizabeth Cavicchi

FOR UNIVERSITIES ACROSS TIME, the library was the heart, research center, and substance of the knowledge and processes of education that any university contributed to, built on and extended. Indigenous Poet Kaitlin Curtice celebrates how libraries pervade, inspire and become substance of our lives, communities and development [see the first quote below]. Libraries invite us into worlds, understandings and questions that stretch our experience and put us in dialogue [see second quote below] with the direct words and efforts of those of disparate times, outlooks, cultures and conditions.

I write with dismay, grief and sorrow for the permanent closure of MIT Libraries Barker, Dewey and Rotch [not yet closed, but likely to suffer the same fate, *ed. note*], and termination of library staff in those libraries. For over half a century, I have learned, studied, researched, reflected, taught, created and rested in these libraries, as an MIT undergraduate, graduate and postdoc student, as an MIT researcher and instructor, and as an MIT alum. Across the diverse ever-changing areas of the studies and investigations that involve me and my students – from physics to poetry, from historical science to electrical engineering, from sculpture to photography, from philosophy to psychology – all the MIT Libraries have stimulated, opened, and connected us with human efforts, current and historical, to understand, express and learn in and with the world. Welcoming for me, and all students, the MIT Libraries were oases, spaces apart from the stresses, deadlines, demands of this school, where one could reflect apart, go to a familiar bookshelf, read in companionship with others and be challenged by human voices new, unexpected and concerned for nature, learning and truth. The MIT Librarians and MIT Libraries Circulation desk were available, interested and open to assist for whatever confused questions, incomplete references, tangential details or specific analyses we might be working on or stumped by [see MIT 1912, third quote below]. There were always other places to look, another staircase to climb, or resources to consider. MIT Libraries could open to anywhere and also facilitate rethinking of one's own understanding and local contexts.

For MIT to be closing three of its four major libraries, demonstrates a significant retreat from that commitment to truth and knowledge, to engaging students and faculty with voices, works and researches across time and the present. It's shocking that the 1916 MIT Dome, designed by Architect William Welles Bosworth to hold "the finest engineering library in the world" [still quoted in display in the Building 10 corridor] is now empty of students, staff and closed to the library experience. The MIT Dome has become a shell empty of meaning. There is not a single book or journal in the Reading room under the dome! The brass lettering, Barker Engineering Library 5th floor, embedded in the Lobby 10 Marble walls, is now nonoperative. Rotch Library, with what are, to me, the windowed New Rotch Stacks 7A, built outside of Bosworth's 1938 Building 7 wall, is still described on MIT's website as "one of the premier architecture libraries in the US". Whereas this week I went spontaneously into Rotch stacks for Calder's *Intimate World*, that experience soon becomes extinct; this library's loss is portending for architects and students of art!

Those library spaces matter, with all the stairs, bookshelves, study areas and with the staff, students and readers wandering

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Lament for the MIT Libraries
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among them. As a student and researcher, I walked and searched around and around Barker's circularly arranged stacks [often traversing the entire perimeter to find some specific book or journal]. Having first walked among the card catalogue stacks, opened drawers, flipped through cards and written down book's LC numbers, I went up and down stairs, in all the MIT libraries, seeking out widely separated LC locations. Those peregrinations had me stop spontaneously, notice something unconsidered, and add to and carry heavy piles of books and journals to a table, xerox or scan station, or circulation. In those physical experiences, balancing drawers, searching among shelves, climbing stairs high and low, carrying heavy volumes – the learner is continually re-impressed by the vast extent of human writing, researching, and expression, that has been the grounds, the work and the process of investigation and knowledge across history. Whereas recently, some students accompanied me into the library stacks, seeing the books, spaces, and for reading, this experience will no longer be available for future students. Already this week when my student and I visited Dewey Library, we were disappointed to find that Dewey no longer displays Berenice Abbott's creatively composed and historically significant photographs of science in action.

When texts are accessed solely by digitized means, without experiential basis in the original volumes, organization and material contexts, the learner is cut off from the process, extent and relationships that ground and constitute human works and knowledge. Those original works on paper, now being stored in dark spaces away from learner – or even staff-access, are the irreplaceable core and heart of human knowledge, history and expression. As the digital scan forms of many of those works [but probably excluding those whose copyrights are still enforceable] enter the repositories of AI, the works, ideas and facts become plagiarized and misrepresented. [When I was educated, plagiarism was the most serious academic offense; now it is epidemic via AI.] As AI-generated plagiarized text and images expand across the internet's digital world, the actual voice of human-generated content diminishes.

At another local university, reference librarians are in increasing demand. Chat GPT has not replaced them. Librarians are essential in assisting students and faculty in accessing datasets and other electronic resources that are crucial to the researchers and that have complex and intricate access and use aspects. One librarian at another location uses data transparency laws to uncover and find data that government and other agencies are deliberately seeking to hide. Librarians are inseparable from the research and learning process for these ongoing efforts.

My brother Tom [SB '82] reflects that he learned engineering in the Barker Library [he remembers the Foucault pendulum in the Dome journal reading room], spending more time there than in his dorm: "I would go to the stacks to teach myself, look at numerous offers of books on similar topic, looking at the books on the shelves, taking several together, I could understand the subject better than what was said in class. It was difficult material; I read several books. How do you gain perspectives in an efficient manner with no books anymore? How many classic books are available now?" While some academic libraries provide students with electronic access to textbook subscriptions to a particular publisher – there are more than a few publishing companies. Some are out of business, and some will not make their books available online. Present-day students thus have reduced access to diverse perspectives and analyses of engineering topics.

At some future time, historically inclined students may wonder about what people really wrote, said and created. Maybe they will find ways to hack into the spaces, volumes and experiences where humans spoke, wrote, created and struggled, seeking understanding, relationship and connection.

Until then, I grieve for Barker, Dewey and Rotch, the staff, students and works within.

Quotes

1. "Libraries mark a passing of Time. They hold memories not just in their walls but in all the books we've touched and shared over the years. Libraries hold stories, thousands of them, and in those stories we find ourselves. Libraries are incredible resources not just for communities but for families… Libraries are micro spaces for us to gather… a whole world unto ourselves where we figure out who we are." Kaitlin Curtice, *Everything is a Story: Reclaiming the Power of Stories*, 2025, 44.

2. "A book or a letter may institute a more intimate association between human beings separated thousands of miles from each other than exists between dwellers under the same roof." John Dewey, *Democracy and Education*, 1916, ch.1.2. [the brother of MIT economics Prof. Davis Dewey, Dewey library's namesake; both brothers sent their sons to MIT]

3. "That a library without a librarian is an incumbrance rather than an asset, is becoming more and more recognized, and with this has come an increased recognition of librarianship as a profession. The day is past when any honest person who could write a fair hand and loved books was supposed to be fitted for such a position. The modern librarian is not a mere custodian of books, nor a simple classifier and cataloguer. He is, on the contrary, a specialist skilled in the uses of books as sources of information, able in classifying and cataloguing the books so as to make them most available for use, and ready to instruct anyone who desires to know how to use the library to the best advantage. The larger engineering offices and industrial establishments are finding a well selected library to be a necessary part of their equipment and a properly qualified librarian of equal importance." MIT President's Report, 1912, p. 42.

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Faculty Travelogue: Out of Denver
McDowell, from page 1

A good stretch of my boyhood belonged to Brownsville, Louisiana – every summer of my childhood, in the years including the Supreme Court's ruling (Brown vs. Board of Education) and the Civil Rights Act, when the country was deciding something about itself and had not finished deciding yet. Brownsville sat in Caldwell Parish in the north-central part of the state, a small, predominantly Black community near Columbia, the parish seat, which perched along the slow green curve of the Ouachita River. It was where my people were from. Extended family fanned out across that land – aunts, uncles, cousins, grandparents – and the summers I spent there shaped me as surely as the streets of Denver did, maybe more. The two places could not have felt more different to a *boy* with energy that had nowhere to go. And yet they were bound together by blood and by the long, unfinished story of why Black families like mine had made that journey West in the first place.

More than a thousand miles separated Denver from Brownsville, whether you went by road or rail, and every mile was a kind of instruction. As a kid you didn't always recognize what you were being taught. But the way the adults prepared for those trips – the careful routing, the food packed the night before, the conversations that dropped to a murmur when they brushed certain edges – told you that this was something more than a summer visit. Getting from Denver to north Louisiana required knowledge, timing, and a steady quiet courage the adults around you wore so naturally you didn't recognize it as courage. Almost.

The Car

We had one family car in Denver, and in the summer it ceased to belong to the city and became a vessel of return. Uncle Robert drove. He was the youngest of my mother's 10 siblings, the tall one – well over six feet – who had to fold himself into the front seat with his knees angled and his shoulders turned slightly inward, as though the car had been built for a smaller version of the life he contained. He carried something of the South in him still, and something restless alongside it, something already leaning past what the South had tried to make him.

My father could drive. I know that. But he did not take the wheel on those trips south. There was something unspoken in his story – something about ambulances and speed, about the cargo of men who did not always arrive alive. Whatever it was, he kept his hands off that particular road. So it was Uncle Robert who drove, and we who followed, with enough people to rotate through the miles, enough watchfulness distributed among the adults to carry us all the way through. And my mother was the backup driver.

The car was packed the night before every trip. Not just luggage – a full cooler of food. Fried chicken wrapped in wax paper, still warm from the night before. Boiled eggs. Sweet potato pie. Biscuits that had been baked that morning. You didn't pack a cooler because you were hungry. You packed it because you could not be certain, once you left Colorado, that you could walk into a roadside diner in Kansas or Oklahoma or Texas and be served with anything resembling dignity, or served at all.

There was a published guide called the *Negro Motorist Green Book* – a slim directory, updated annually, listing hotels and service stations and restaurants across the country where Black travelers were known to be welcome. Many families carried it like a second passport. Our family didn't. What we carried was older: the accumulated intelligence of family, neighbors, and community. It moved by telephone, by kitchen table, by the back end of church parking lots. Which towns you moved through without stopping. Which stretches required that you clear before dark. Which stations had decent people behind the counter. That knowledge was ours.

There were thousands of sundown towns – places where, if you were Black and the sun was going down, you needed to be gone. You knew them. You fueled up where the welcome had been verified. You ate from what you'd brought. You planned every stop around what had already been tested.

For a boy who could barely sit still, the trip was its own territory. From Denver through the high plains and down into the Gulf South, the road taught harder lessons with every mile. No interstates in the early years – two-lane highways that took you straight through the middle of towns rather than around them, so you saw everything: the storefronts and the courthouse squares and the signs that told you without ambiguity what kind of place you were passing through. You watched the soil change from the pale, alkaline dust of the high plains to the deep red clay of Oklahoma to the sandy loam of north Louisiana, the land itself recording its own history in color and texture. You were in the South now. The rules had changed. The adults had been preparing you for this, quietly, since before you backed out of the driveway.

You noticed when your father's jaw tightened going through certain towns. You noticed when the adults stopped talking, when the car went quiet rolling through a small Southern downtown at 30 miles an hour with the windows up in August heat, because that was the way it was done. And when you finally turned off the highway onto the red-dirt roads leading into Brownsville, and the dust rose behind the tires, and you could see the cousins already running toward the car from a hundred yards off – the exhale from the front seat was something a child felt in his body long before he could name what had been held.

We had made it.

And then, in 1964, it stopped altogether.

I remember the day not because I understood it but because of where it interrupted us. We were in the living room watching *Maverick* on the black-and-white television – a Western, though not the solemn kind. This one played with the idea of the frontier, a gambler moving through it on wit and bluff, the sense that survival depended as much on reading a

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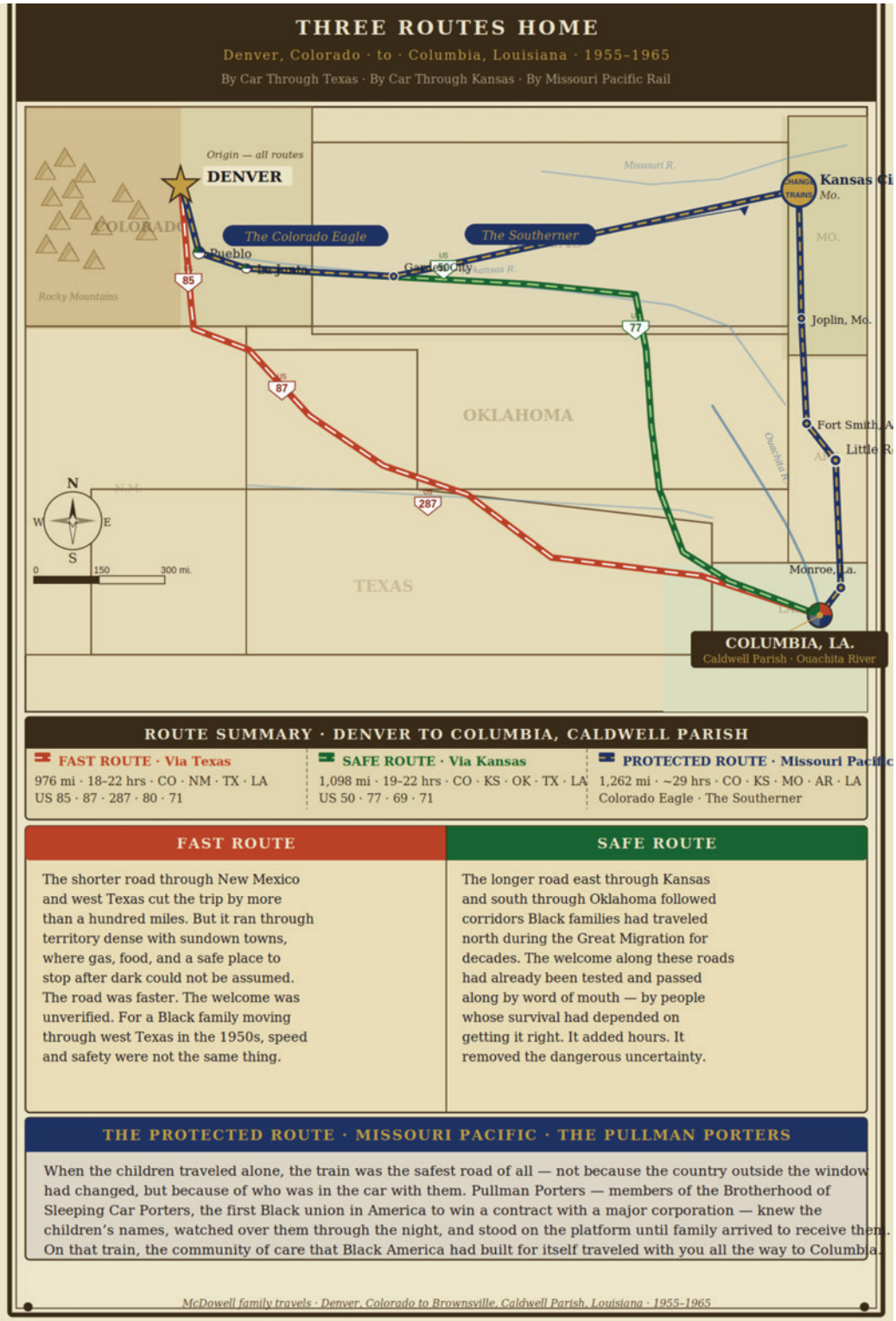

This map was produced using artificial intelligence, recording the travels of the McDowell family between Denver, Colorado and Brownsville, Caldwell Parish, Louisiana during 1955–1965. Route geography, highway designations, and mileages are drawn from historical road atlases and US highway records of the era. Railroad routing is based on Missouri Pacific Lines timetables and the documented history of the St. Louis, Iron Mountain, and Southern Railway. The narrative passages reflect the first-person recollections of a Black child born in Denver in 1950 who traveled these routes during the years recorded.

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room as on drawing a gun. The hero was suspended between trick and fate, about to be hanged, when the telephone rang. My father got up to answer it.

He stood there longer than he should have needed to. He did not speak much. When he came back, the room had changed, though nothing in it had moved.

Uncle Robert had been killed.

A Louisiana road somewhere outside of Arcadia. No details reached us. No account traveled beyond the family. One of those roads that does not enter the record, where something happens and folds back into the trees and is not required to be remembered by anyone except the people who loved the person it happened to.

He was 24 years old. After that, the car no longer made the trip south. But the South stayed. The same year, and in the face of potential violence by the Klan, Rev. Carter became the first Black man to pass the poll test and register to vote since 1906 in West Feliciana Parish. But Louisiana never forgot 1906, 1964, or 1965 – and in 2026, with the Supreme Court's ruling in *Louisiana v. Callais*, the state became the instrument for dismantling the federal protections that had made Rev. Carter's hard-won registration mean something beyond a single name on a single roll.

The driver was gone. The road had been held together by his presence – his height folded into the front seat, his hands on the wheel, his refusal to stop where stopping carried a cost. Without him, the journey had to break itself into different pieces.

My sister and I were also old enough to travel by train.

The Train

The Missouri Pacific Railroad laced itself across 11 states, its tracks running from the thin air of Colorado all the way to the humid Gulf Coast ports of Louisiana and Texas like a long dark thread stitching two different Americas together. Its fleet of Eagle trains was the architecture of that journey – boarded in Denver, transferred in Kansas City or St. Louis, then carried on south through the pine hills of Arkansas into Louisiana, where family would be at the Columbia depot to carry us the last stretch home to Brownsville. The better part of two days, with the whole country unreeling outside the glass, and the train rocking underneath you with a rhythm that felt, after a while, like your own pulse.

Sometimes we made that journey without the adults. A group of us, my sister and cousin – old enough to be trusted with the distance, young enough that the distance still felt like freedom – put on the train in Denver with tickets in our pockets, food in our bags, and instructions committed to memory and the certainty of the grown-ups that we would be looked after.

That assurance had a name and a uniform. The Pullman Porters.

The first Pullman Porters and Maids had begun working the sleeper cars around 1867, recruited by George Pullman almost entirely from the ranks of formerly enslaved Black men, many still carrying in their bodies the discipline forged by survival. By the time we were making those runs in the late 1950s, Pullman Porters and Maids were among the most respected figures in Black America – people who had traveled everywhere, seen everything, and belonged to something larger than the company that had tried to define them. What stood behind them had been built at enormous cost over 12 years of organized resistance: the Brotherhood of Sleeping Car Porters (BSCP).

On August 25, 1925, 500 members of the BSCP gathered in secret in a Harlem hall and chose A. Philip Randolph to lead them. Beside him, from the beginning, was Rosina Corrothers Tucker – who spent the next 12 years as International Secretary-Treasurer of the Ladies' Auxiliary, traveling city to city, organizing the wives and families of porters, building the community networks that kept the movement from breaking when Pullman's pressure was at its worst. Randolph did not work for Pullman, so Pullman could not fire him, and the company's most reliable weapon was useless against him. The company fought with everything else it had: spies in the meetings, mass firings of known organizers, and at one point – reportedly – a blank check sent to Randolph's desk, to be filled in for any amount up to one million dollars, in exchange for walking away. He sent it back.

The fight lasted 12 years. On August 25, 1937, a contract was signed: wages raised, hours reduced. The Brotherhood of Sleeping Car Porters and Maids became the first Black labor union to negotiate a collective bargaining agreement with a major corporation. It was, in the language of the era, a victory of Negro workers over a great industrial corporation. It was also, in the longer language of history, a rehearsal for what came after.

What that union built stretched well past the page of any contract. Pullman Porters and Maids were the nervous system of the civil rights movement before the movement had a name – carrying copies of the *Chicago Defender* from the North into barbershops and churches across the South, where its words arrived like contraband and were read until the paper fell apart. They reported lynchings to the NAACP. They carried in their heads the map of what the country actually was – the country as it showed itself when you crossed it with the wrong skin.

E.D. Nixon of Montgomery, Alabama, a Pullman Porter and Brotherhood leader, had spent decades organizing. When Rosa Parks was arrested, Nixon was ready. He arranged her bail. The union hall opened. The calls went out – to Abernathy, to the other ministers, to a young pastor named Martin Luther King Jr. who was new enough to the city that his name wasn't yet famous – that summoned the movement into being. When a BSCP leader spoke, people in those communities listened with a particular attention, because a Porter had been to the places they hadn't, and had come back.

None of that was abstract on the train. You felt it in how they moved through the

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car – deliberate, unhurried, possessing the space with quiet authority. They knew your name. They knew your stop. At night if something frightened you, deep into the Arkansas night, they were who you found. One BSCP member remembered it this way: "I always catered to the kids. They'd come back to the club car and I would point out the scenery as we traveled. Their parents were appreciative that I had knowledge about where we were going." That was exactly the shape of it. They turned the darkness outside the window into geography with names. That river bending south – that's the Arkansas. Oklahoma's behind us now; this here is Texas. Louisiana's not far. They gave the journey a narrative you held on to.

The care we received from the Porters and Maids was etched from their character. Their "job," however, was to tend to the white men, women, and children on board.

When the train finally slowed into Monroe and whichever Porter had kept watch over us walked us onto the platform – standing there until the family face appeared in the crowd, making the handoff certain before stepping back – that gesture required no translation. We had been carried through, and not merely by steel wheels on iron rails. We had been carried by members of the BSCP who understood precisely what it meant to move Black children safely across the American South in 1958, and who had, behind them, the weight of an organized movement to do it with something more than luck.

Brownsville: What the Summers Gave

The last miles from Columbia into Brownsville were their own country of arrival. The roads narrowed as if the land were slowly gathering itself inward. The trees pressed closer – pine and sweetgum and live oak wearing Spanish moss that hung like gray curtains from branches, a sight that did not exist in Colorado and never would, something between beautiful and mournful, depending on the hour and the light.

The first thing that hit you was the smell – not one smell but a whole conversation arriving at once: rich dark soil and something cooking inside the house and underneath all of it something wild and slightly rotten at the edge of the tree line, the smell of a place alive in a way Denver simply wasn't. Then the cousins were on you before you'd fully straightened up, barefoot and loud, grabbing at your arms, and the summer cracked open like something that had been sealed shut all year waiting for exactly this moment.

Cooper's was the first landmark that mattered to a 12-year-old – the only store, which meant the only place you might talk someone into a cold something and stand watching the world go by. But Cooper's had a back room, and Friday and Saturday nights that back room became the most compelling place in the universe to a boy who wasn't allowed inside it. You could hear it from the road – the crack of dominoes hitting the table, sharp and declarative, and underneath it the jukebox running its blues like a river under ice, and the laughter of men and women. You circled the building in the warm dark and stood near the door and listened, trying to absorb something just beyond your reach – the sound of men among themselves, at ease, in the only hours that fully belonged to them. Mrs. Cooper's house was where you went when you were hungry in the way that had nothing to do with not having eaten – hungry for her red beans, cooked down since morning until they became something dense and dark and almost sweet, something with no equivalent in Colorado. You sat at her table and felt that this place was claiming you. That it recognized you even while you were still figuring it out.

There was a clock running in Brownsville that had nothing to do with any clock on a wall, and at 12 you felt it in the mornings when the older cousins were already gone. Gone – out of the house before I was fully conscious, into the blue-gray Louisiana dawn, heading to the cotton

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fields to hoe or pick before the heat made the work impossible. By noon the air above the rows was shimmering and my cousins came back with that slowness of people who had already spent what they had – clothes dark with sweat, carrying the morning in their posture. I watched from the porch and felt something between guilt and awe. These were kids barely older than me, kids I'd be chasing through the woods in two hours. I didn't say anything about it. Nobody did. But I felt it as information that mattered – about where I'd been born, about what the summer required from each of us depending on that.

Rev. Joseph Carter stands guard on his front porch amid threats of Klan violence after he registered to vote, 1964. *Photo:* Bob Adelman

When the heat finally relented the woods pulled you in like they'd been waiting. Dense and bottomless, creek bottoms running under pine and hardwood. My cousins moved through those woods like they owned them because in the way that matters, they did. The woods charged a tax for admission and the tax was ticks. Coming out was as serious as going in – everybody stopped at the edge of the yard and checked everybody else, hands moving across legs and arms, thorough because missing one meant an adult finding it and the day going sideways. Standing still while your cousin's fingers searched the back of your neck, doing the same for them – it sounds like nothing, but it was something. The first time in my life I understood what it felt like to be genuinely looked after by someone your own age.

My grandfather's fire is the thing that lives deepest. He built it every evening after supper not for warmth but for smoke – his answer to the mosquitoes that arrived at dusk in genuine clouds, organized and sure of themselves. He kept a wet burlap sack beside the fire and at intervals laid it across the coals, the flame vanishing, white smoke spreading outward in every direction, the mosquitoes falling back. Then he'd uncover the fire, let it breathe, and wait. I sat across from him and felt the particular quality of sitting beside someone who knows exactly what they're doing and has no need to explain it. Sometimes he talked about the land and people who had lived here before either of us could remember. Sometimes he said nothing, and the silence held more than the words would have. When the coals dropped low the lightning bugs came out in their hundreds and the night sounds changed register – frogs and cicadas taking over, the whole bayou humming a single long note underneath everything – and I was 12 years old with nowhere I had to be and nothing I had to do except sit across the fire from my grandfather and watch the smoke rise and feel that I was inside something very old that was also, somehow, mine.

The next afternoon there would be green beans to snap on the porch, everybody sitting together in whatever shade the yard offered, the older women talking and the younger ones listening or pretending not to, history moving from one set of hands to another through the sound of beans breaking clean, the bowl filling, the afternoon going slowly gold. There would be gardens to walk through – rows of collard greens and okra and sweet potatoes that the adults tended like the serious business they were, food grown from soil that belonged to the people growing it, and a pride in that which I could feel even if I was years away from understanding why it mattered so much that it be theirs.

The Double Vision

What those summers gave you, accumulated over years, was something no single place could provide alone: to carry two versions of America in your body at once, to feel them both as true as weather.

Denver had been the destination – the city your family had traveled toward, that your father had chosen to stay in after the war offered him the choice. It was a city with its own hypocrisies and its own segregations, its redlined neighborhoods and its sunburned racism that imagined itself more polite than the Southern kind because it didn't put its name on signs. But Denver could also produce in a Black child a certain softening at the edges, a sense that the worst of the American story had been left somewhere behind and south. Brownsville corrected that every summer, without ever speaking directly about it.

The screen door slapping behind you. The grandfather lifting the wet burlap. The cousins gone before sunrise and back before the worst heat. The jukebox bleeding out through Cooper's walls into the warm evening. None of these were small things dressed up to look small. They were the substance of a life built with intention and defended with stubbornness across generations inside a social order that had devoted enormous energy to preventing it from existing at all.

That it was also genuinely joyful – loudly, physically, extravagantly joyful in the way only a childhood summer among people who love you can be – was because of all of it.

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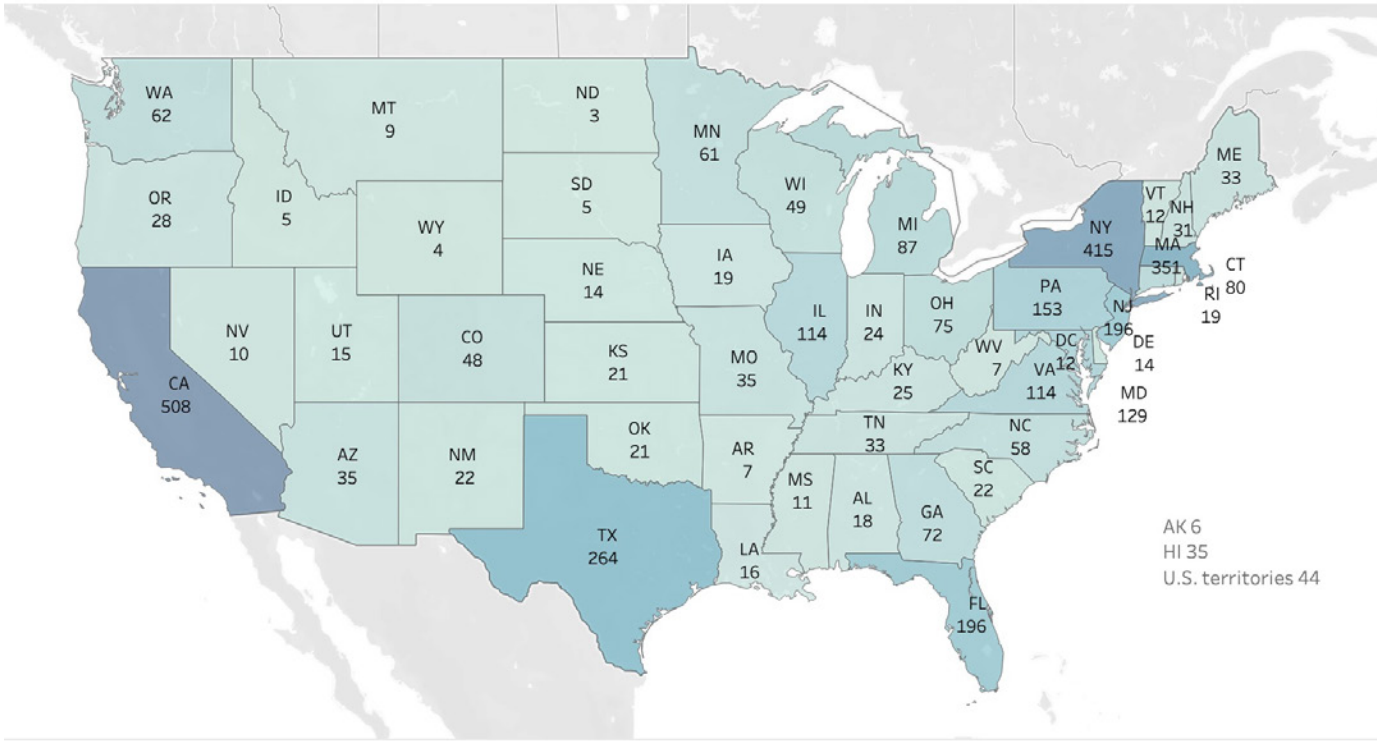
MIT Numbers

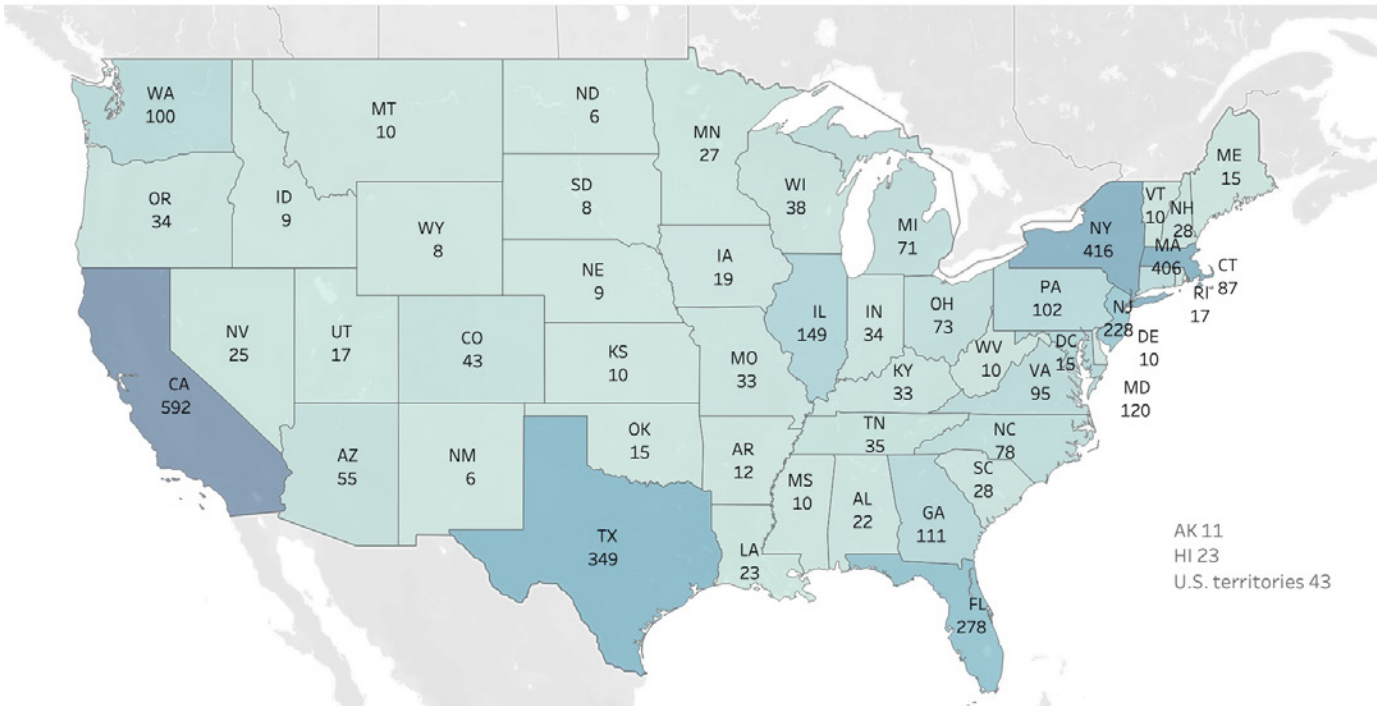
AY2006, Home State of Enrolled Undergraduate Students

10% of 4,053 total have non-U.S. home country



AY2026, Home State of Enrolled Undergraduate Students

12% of 4,561 total have non-U.S. home country



Source: Office of the Provost/Institutional Research