

# MIT Faculty Newsletter

<https://fnl.mit.edu>

**in this issue** we offer Faculty Chair Rick Danheiser's "Task Force 2021 and Beyond" (page 5); "Why Have We, a Group of MIT Faculty, Signed the Letter in Support of Gang Chen?" (page 12); and "The Legacy of the Involvement of the Democratic Republic of the Congo in the Bombs Dropped on Hiroshima and Nagasaki" (page 18).



MIT Medical Building

## Reflections on the Humanities in Higher Education Today

Nasser Rabbat

**AS PRESIDENT BIDEN SAID** in his victory speech on November 7, 2020, "For American educators, this is a great day for y'all. You're gonna have one of your own in the White House." That educator, Dr. Jill Biden, is a humanities (English) professor.

This symbolic gesture should refocus the attention on the Humanities in higher education. Challenged for decades by shifts toward a utilitarian, narrowly specialized, and result-driven learning, our higher education finds itself today excelling in technical and technological problem-solving but ill-equipped to interpret the broader moral, social, political, cultural, and environmental conundrums affecting our lives, let alone guide their resolution. We need to reconfigure the academic culture to reposition a solid civic, socially and ethnically just, and

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## Moving Forward: MIT Medical's Response to the Covid-19 Pandemic

Cecilia Stuopis

**FOR MIT MEDICAL**, the Covid-19 crisis began January 21, 2020. That was the first day we began following the novel virus, now known as SARS-CoV-2, that has changed every aspect of how we live and work. With this global pandemic, MIT Medical's role in keeping our community healthy has never been more important.

At the beginning of the pandemic, the Institute made a bold prediction. If we could adhere to social distancing, hand hygiene, extensive testing, painstakingly detailed contact tracing, daily health attestations, vigilant masking, and ultimately widespread vaccinations, together we could minimize the impact of Covid-19 to the MIT community. While the pandemic is still far from over, I am proud to say that we have thus far been successful. It has been an "All Hands On Deck" approach,

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## Editorial

**I. New Leadership for Science Policy from Washington; II. Prof. Gang Chen and Trump's Last Anti-Science Campaign; III. Fresh Winds for the Nation from Biden/Harris; IV. Honorary Degrees, Confederate Statues, and Naming Buildings**

### New Leadership for Science Policy from Washington

**THE GENERAL HEALTH AND** welfare of our nation has been at increased risk as a result of the anti-science policies of the Trump administration. President Biden's selection of Professor Eric Lander as his Science Advisor and Professor Maria Zuber as the co-chair of the President's Council of Scientific Advisors (joined by Caltech biochemical engineer Frances Arnold) represents a necessary and welcome return to the inclusion of scientific knowledge and inquiry in national decision-making that is so badly needed.

Both of these colleagues have a deep history of engagement with publicly funded science and technology. Lander was vice-chair of President Obama's Presidential Science Advisory

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Photo Credit: Page 1: David Lewis

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**New Leadership for Science Policy**  
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Committee, and before that head of the publicly funded arm of the Human Genome Project. In addition to her work as Vice President for Research at MIT, Professor Zuber has longstanding experience as a NASA planetary mission leader.

Lander's recent mobilization of the Broad Institute in the service of improved Covid-19 testing has put him at the center of the effort to deploy biotechnology in the service of the response to the Covid-19 pandemic. His prior leadership of the Human Genome Project secured that a great number of critical human gene sequences would be in the public sector, rather than being privatized through patent monopolies gained by the competing private effort led by Celera Corporation. The continuing rapid development of vaccines and therapies for Covid-19 will depend on enhancing cooperation and collaboration, both in the private biopharma sector, and in the international arena.

The critical importance of public databases – such as the Genome Database and the Protein Structure Database – is generally unknown or unappreciated by the public. The rapidity of coronavirus vaccine development rests on the universal availability of all high-resolution data on the coronavirus proteins through the Protein Data Bank. Similarly, the immediate availability from Chinese scientists of the coronavirus RNA sequence accelerated development of the Moderna and Pfizer vaccines. The worldwide sharing of the emerging sequence information on coronavirus variants is crucial for responding efficiently to the pandemic.

Professor Zuber, as a former chair of the Department of Earth, Atmospheric and Planetary Sciences, is particularly well-equipped to tackle the climate change issue that Biden/Harris have put high on their agenda. As the daughter of a Pennsylvania coal-mining family, she will bring not only scientific but also social and personal insight to policy debates.

**Professor Gang Chen and Trump's Last Anti-Science Campaign**

The Trump administration has been marked by efforts to undermine the application of scientific approaches to public policy in the Environmental Protection Agency, the Food and Drug Administration, and the Centers for Disease Control, among other agencies and government offices. One form of obstruction was the effort to discredit scientific collaborations with Chinese scientists, as well as scientists of Chinese origin working in the U.S. The charges against our colleague, Professor Gang Chen, are a piece of this lingering Trump anti-science policy. We encourage you to read the letter to President Reif from our colleagues with respect to Professor Chen [on page 15](#), and the related article [on page 12](#).

**Fresh Winds for the Nation from Biden/Harris**

President Biden and Vice President Harris, together with Democratic Congressional leadership, have moved quickly to put their stamp on reforming national policy. The Biden/Harris \$1.9 trillion relief package to address the Covid-19 pandemic and the economic crisis is a strong start. It includes billions for direct Covid testing, tracing, and vaccinations; extends unemployment benefit supplements to September, protects food stamps and the Earned Income Tax Credit, and expands the child tax credit from \$2000 to \$3000. It will provide billions to open schools safely, and extends the evictions moratorium until March.

Nine of the 17 Executive Orders the new president signed on Inauguration Day sought to undo some of the worst aspects of Trump's immigration policies. These actions will release pressures on members of MIT's support and academic staffs, on students, and on our neighbors in surrounding communities. Biden/Harris declared a 100-day moratorium on deportations, cancelled the Muslim ban, halted work on the border wall, reinstated and fortified the Deferred Action for Childhood Arrivals (DACA) program,

took measures to reunite families, and began to consider a pathway to citizenship for 11 million undocumented. And they increased the number of refugees allowed into the U.S. from Trump's punitive limit of 15,000 to 125,000.

On climate policy, Biden/Harris have re-entered the Paris Climate Agreement, will cancel the permit for the Keystone XL pipeline, and have set forth an ambitious plan and infrastructure for a coordinated response to the climate crisis, including a cabinet-level position for John Kerry on climate.

The Biden/Harris foreign policy is not yet fully articulated. However, the decision to extend the New Start nuclear weapons treaty for five years is a welcome reversal from the Trump policy of abandoning nuclear weapons treaties.

**Honorary Degrees, Confederate Statues, and Naming Buildings**

One sound aspect of MIT Institutional culture is the absence of the annual Honorary Degree ritual. A healthy national development has been the removal of public monuments glorifying slaveowners and confederate generals. Perhaps it is time to stop naming buildings for financial donors. Certainly, computer scientists will regret being saddled with the name "Schwarzman" College of Computing, given Schwarzman's regressive politics, questionable business practices, and campaign contributions that contradict MIT's stated values. MIT's much admired and richly deserved reputation as a bastion for objective science and engineering can only be sullied by permanent association with a figure who represents such deplorable political and social viewpoints and actions. ■

**Editorial Subcommittee**

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**Reflections on the Humanities**

Rabbat, from page 1

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ethical compass at the center of all inquiry. We also need to reclaim an expansive, diverse, and inclusive knowledge base as fundamental to all learning.

A long exposure to different Humanities programs has offered me a comparative insight into what is great about the American academic ethos, primarily its open-endedness and inquisitiveness, and alerted me to the need to rethink its overreliance on specialization over wide-ranging knowledge. This perspective has fueled my commitment to instill a culturally rooted, historically informed, and ethically committed criticality in my teaching at MIT.

Diversity is a huge catch word today. The term, however, should be expanded to encompass, besides the officially recognized minorities in the U.S., Africa, India, China, Inner Asia, and the Mediterranean. Embracing the deep geographical and cultural significance of diversity would offer many opportunities to retool the aim and scope of the humanistic education in our interconnected world. Facilitating the free and creative interaction between students from around the world is a tremendous opportunity and responsibility. Weaving the complexity and richness of this interaction – expressed in literature, science, art, architecture, dance, music, textile, food, and of course language – is one of the primary objectives that the Humanities should institute.

Another objective is to explore the civilizational interaction across time from prehistory to the present by highlighting the significance of exchange as a vehicle for learning. Understanding the contributions of the global south and marginalized

and faculty can be empowered by the imaginative, humane, and moral dimensions of their disciplines. They can be specialized and broadly learned at the same time, goal-driven but committed to higher ideals, and culturally devoted yet global citizens.

Diversity is a huge catch word today. The term, however, should be expanded to encompass, besides the officially recognized minorities in the U.S., Africa, India, China, Inner Asia, and the Mediterranean. Embracing the deep geographical and cultural significance of diversity would offer many opportunities to retool the aim and scope of the humanistic education in our interconnected world.

cultures everywhere to our shared intellectual, artistic, and moral heritage will allow us to rethink the epistemic structure by which we had typically organized our knowledge. In our beleaguered contemporary world, there is an excess of cultural and racial stratification and an excess of socioeconomic and political inequality. They are related. By debunking the former and proposing instead a model of non-hierarchical, multicultural universality, the Humanities can impact the lessening, and hopefully eradication, of the latter.

These are, of course, lofty ideas. They may even be idealistic. But this is precisely why I am presenting them as the scaffolding for the Humanities' education. Reconceptualizing idealism as the frame of higher education can propel the hard work of excellence along a different path. Students

This promises a broadened outlook for the Humanities: an inclusive base of knowledge, historically and intellectually expansive, and politically and ethically informed. Such a foundation would be perfectly suited to function in a multicultural environment while operating with the new and the different and cooperating with a wide panoply of other areas of expertise. Idealism, properly equipped and communicated, can thus be turned into a competitive edge in the marketplace of ideas in our thoroughly interconnected and hugely challenged world. It can be readapted to build a truly global, culturally, racially, and geographically wide-ranging, and creatively free and open space for learning. ■

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# From The Faculty Chair Task Force 2021 and Beyond – Toward “Building a Better MIT”

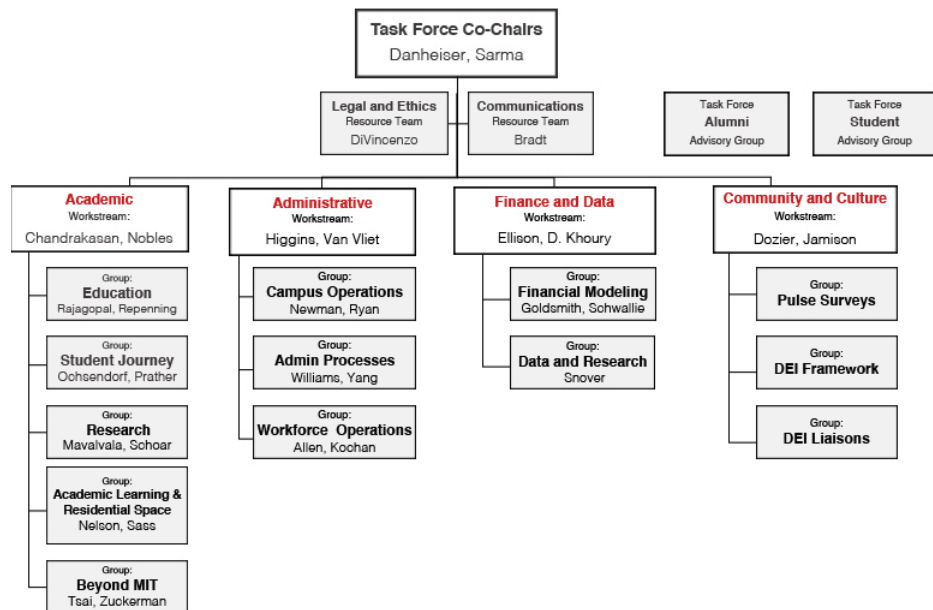
Rick L. Danheiser

**IN MAY LAST YEAR**, in a letter to the MIT community (<https://news.mit.edu/2020/building-post-covid-future-0504>), President Rafael Reif announced the creation of “Task Force 2021 and Beyond,” a major initiative aimed at re-envisioning MIT for the post-Covid world. In the opening charge, Rafael called on the new Task Force to

“distill and apply the knowledge we have gained together to help us imagine an MIT that is better, safer, more flexible, more effective, more efficient, more sustainable, more inclusive, more equitable, more affordable, and more financially resilient in the long term, while sustaining the Institute’s distinctive values and culture and its dynamic approach to education, research, and innovation. *In short, by drawing on expertise and experience from across the community, Task Force 2021 and Beyond is charged with developing the blueprints for building a better MIT.*”

To lead this collaborative, cross-Institute effort, Rafael recruited me and Professor Sanjay Sarma, the Vice President for Open Learning. Providing us with invaluable support in these efforts has been Glen Comiso, Senior Director for Institute Affairs, and Lisa Schwallie, the Executive Director for Business and Operations in Open Learning. The four of us have comprised an “Executive Committee” steering the work of the Task Force over the past nine months.

Our first task last May was to define an organizational structure for the Task Force and to recruit its members. As depicted in the accompanying chart, we



ultimately settled on an organization comprising four “Workstreams,” each then divided into two to five “Working Groups.” To fill the ranks of the Task Force, we recruited 108 MIT administration and staff members, 53 members of the faculty, and 17 students. The full membership of the Task Force can be found on the Task Force website at: <https://tf2021.mit.edu/members-task-force-2021-and-beyond>. Listed in each box above are the names of the co-chairs of the Workstreams and the co-leads for each of the Working Groups.

To co-chair the Academic Workstream, Sanjay and I recruited the Dean of SHASS Melissa Nobles and Dean of Engineering Anantha Chandrakasan. Our charge to this workstream was to develop recommendations for MIT’s academic programs in the “new normal” of the world

post-Covid, with attention devoted primarily to the educational and research activities of faculty and students. Associate Provost Krystyn Van Vliet and Vice President Joe Higgins agreed to chair the Administrative Workstream, which was asked to focus its work on administrative functions of the Institute, including information technology infrastructure, non-academic space, and administrative systems, processes and policies, including finance, procurement, facilities, security, planning, and human resources. Supporting the work of the groups in these two main workstreams was the Finance and Data Workstream (chaired by Professor Glenn Ellison and MIT Controller Danielle Khoury) as well as a Legal and Ethics resource team

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**Task Force 2021 and Beyond**  
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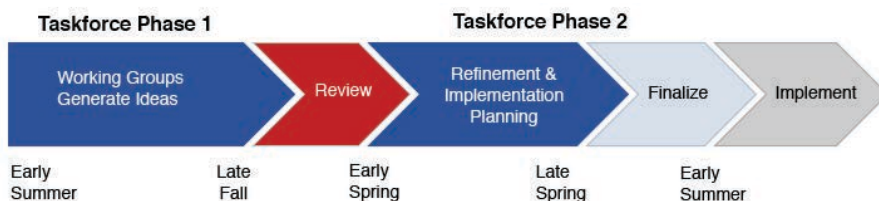
chaired by General Counsel Mark DiVincenzo. Finally, we also convened a Community and Culture Workstream chaired by ICEO John Dozier and Associate Provost Tim Jamison to ensure that values of culture, diversity, equity, and inclusion were incorporated in the deliberations of all of the working groups of the Task Force.

A series of “kickoff meetings” launched the Task Force in mid-June. Input from the MIT community was collected via an online Idea Bank and a virtual Community Forum held on July 23. Multiple meetings with an Alumni Advisory Group and a Student Advisory Group provided further input during the summer and fall, and eight plenary sessions featuring guest speakers were held during the fall for the benefit of Task Force members.

As shown in the accompanying timeline, Phase 1 of the Task Force called on the working groups to generate their ideas and proposals before the end of the calendar year. These ideas were then reviewed in an interim phase prior to “Phase 2,” at which time a new set of groups would be appointed to refine and plan the implementation of the “raw” ideas from Phase 1. In the event, over 50 ideas were developed by the working groups in Phase 1, and these were announced (<https://news.mit.edu/2020/task-force-2021-ideas-1221>) and posted for community comment in mid-December (<https://tf2021.mit.edu/user?destination=/wg-ideas>).

Sanjay and I have spent the past two months reviewing these 50+ ideas with the assistance of numerous groups and stakeholders including Academic Council, the Faculty Policy Committee, and the leadership of the workstreams and working groups of Phase 1 of the Task Force. For Phase 2 of the Task Force, we have assigned the ideas developed in the fall to 16 Refinement and Implementation Committees (“RICs”). The task of these 16 committees in Phase 2 will be to

further refine the “raw” ideas from Phase 1, in some cases reconciling and merging related ideas that were proposed by more than one separate working group. Importantly, the RICs are also charged with proposing implementation action



plans for the resulting “refined” ideas that emerge from Phase 2. In some instances, implementation will involve assignment to a unit of the MIT administration, while for other ideas assignment may be to a Standing Committee of Faculty Governance such as the Committee on the Undergraduate Program (CUP) or the Committee on the Graduate Program (CGP). In the case of some complex ideas with far-reaching impact, a RIC may call for the appointment of an ad hoc committee reporting to Faculty Governance and/or the MIT administration. In such cases it is expected that the RIC will propose the charge and membership of the ad hoc committee in order to expedite it beginning its work and will also suggest a timetable and checkpoints for completion of the work.

**The Refinement and Implementation Committees**

In the remainder of this column I have summarized the ideas assigned to each of the 16 RICs, the membership of which are in the final stages of determination at the time of this writing. Due to space constraints I can only provide an outline of the ideas involved in each area, and the reader is referred to the 93 pages of descriptions of the ideas on the Task Force website (<https://tf2021.mit.edu/user?destination=/wg-ideas>) for further details on any of the ideas that they have particular interest in.

It should be noted that some of the ideas emerged from Phase 1 in well-developed form, and in these cases only one or two meetings of the relevant RIC may be

necessary. Other RICs are expected to meet throughout the spring semester and in these cases meetings with students and colleagues via forums will likely be appropriate.

**Undergraduate Program**

This committee stands out as not being associated with any specific ideas from Phase 1. The Undergraduate Program RIC, which I will chair together with Vice Chancellor Ian Waitz, will resume the discussion begun by the two of us prior to the pandemic on the possibility of standing up a task force to review the undergraduate academic program, including in particular the General Institute Requirements.

**Social Responsibility**

A major thrust of the recommendations from no less than three of the Academic Workstream groups focus on providing our students with experience and education in the area of social responsibility, broadly defined. The charge of this RIC will be to consider these related, and in some cases overlapping, ideas, and to propose one or more directions for implementation. It is possible that this RIC may propose that an ad hoc committee be convened to follow its work with the charge of proposing specific new options or even new academic requirements in this area.

Two of the five ideas described by the Education Group are aimed at achieving the overarching goal of “educating the whole student.” The Education Group proposes “that every MIT undergraduate student, as well as students in many, or potentially all, graduate programs should learn to recognize and engage critically with the Structural, Systemic and

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Institutional Hierarchies (SSIH) that shape our professional, civic and personal lives; and, further, that every Department and Section should contribute to this education in appropriately discipline-specific ways.” The Education Group notes that SSIH encompasses both DEI and ethics, and they discuss several modes for implementation of their proposal. In a second idea, the Education Group proposes “a concerted and substantial expansion of public interest-focused experiential learning opportunities for MIT students that immerse them in contexts that feel far from MIT.”

Similar themes are involved in the proposal of the Student Journey Group to “embed ethics education within the curriculum and popular co-curricular programs in a fully integrated and holistic manner.” They suggest that this be achieved by cultivating and funding “a critical mass of immersive nonprofit, public sector, and for-profit social responsibility internship opportunities.”

Finally, the Beyond MIT Group argues that “we need to give our students more opportunities to do substantive, sustained, and meaningful work in communities that are different from their own so that they can understand different points of view and different ways of defining problems.” To support this aim, they propose the creation of a “Community and Nonprofit Liaison Program” (CLP), analogous to the Industrial Liaison Program (ILP), overseen by a Social Equity Committee. Readers are referred to the description of this proposal on the Task Force website for details on how the CLP might support the aims of all three of the Academic Workstream groups in the area of social responsibility.

**Graduate Student Professional Development**

Several groups in the Academic Workstream have proposed ideas aimed at

implementing “holistic graduate education,” a goal that also has been under discussion in CGP during the past year. On the agenda for consideration by this RIC are the introduction of professional development opportunities for graduate students, including perhaps even a “professional perspective requirement,” which might be satisfied by internships (both corporate and social-good), by research exchanges and research collaborations with companies, and via the exploration of non-research careers through teaching experiences and other activities.

**Graduate Student Advising and Mentoring**

The Student Journey Group recommended that MIT enhance the scope and effectiveness of graduate advising and faculty mentoring. Coincidentally, Ian Waitz, Tim Jamison, and I had been discussing this important need since September, and joined by Martha Gray, Chair of CGP, we constitute the RIC in this area. The result of our discussions was the decision to convene an “Ad Hoc Committee on a Strategic Plan for Graduate Advising and Mentoring” and Paula Hammond has agreed to chair this group. At this writing we are finalizing the charge and membership of this new ad hoc committee which will be charged with implementing this idea based on the work of both the Task Force and the Committee on the Graduate Program.

**Undergraduate Experience: Advising, Mentoring, and Development**

The Student Journey Group declared in their report that “Advising is broken and is in need of a radical re-imagining.” The charge to this RIC will be to propose an implementation plan to address the recommendations of the Student Journey Group for enhancing undergraduate advising, including strengthening the UROP program, teaching the MIT “hidden curriculum”, and expanding advising networks.

**Under-recovery Commission**

Both the Research and Financial Modeling Groups highlighted under-recovery as an area requiring urgent attention. The Research Group pointed out that “Under-recovery is a persistent concern for both researchers and administrators at MIT, especially as it relates to funding from foundations that do not pay the federally negotiated F&A rate.” This RIC will be charged with studying current under-recovery funding levels and processes, and making concrete proposals to the Provost to enhance the transparency and efficiency of identifying sources of under-recovery funds.

**Career Support for Postdocs, Research Scientists, and Instructional Staff**

Career support for postdocs and research scientists emerged as a major concern in the deliberations of the Research Group. This working group noted that while “research scientists are critical to managing research activities at MIT”, “their career advancement opportunities are often limited.” The Research Group offered several recommendations for career support of postdocs and research scientists, including providing multiple paths for advancement and providing training options to facilitate career transitions. Also suggested were systems to foster DEI and prevent mistreatment. The Career Support RIC will be charged with developing concrete proposals to realize the recommendations of the Research Group in this area.

**Campus Working Spaces**

This RIC will further develop the recommendations of the Campus Operations Group on spatial needs and decentralization, considering how new technology and changing work practices have affected our requirements for space. The work of this RIC will be coupled to the discussions of the New Ways of Working committee described below.

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**New Ways of Working**

Recognizing that “flexible work at and for MIT is a key part of MIT’s future, and is not default work from home,” the Administrative Workstream proposed several “New Ways of Working”. Specifically, the workstream recommends that “MIT should immediately advance planning and piloting of flexible work practices and places. This should include options for hybrid working schedules (remote and on-campus) for diverse MIT teams, and include implementation pilots to evaluate physical spaces and best practices for more flexible work of research, education, and administration teams. Internal and external experts should be consulted to plan such pilots.” Readers are directed to the detailed writeup of these recommendations by the Administrative Workstream in the report of the Task Force Phase 1 ideas for further information on the proposals that this RIC will be considering during Phase 2.

**Employee Development, Strategy, and Career Pathways**

In their report, the Administrative Workstream noted that “For the past several years, exit interviews and survey data of MIT employees . . . consistently show that the leading reasons employees leave MIT are that they don’t feel MIT is committed to their professional development, and that there are not enough opportunities for career advancement.” The Administrative Workstream recommends that MIT “establish integrated opportunities and expectations to develop skills for mentorship, management of teams, and career advancement through tools, training and support of career pathways and networks at MIT – as a natural part of working at, contributing to, and being part of One MIT.” The Employee Development RIC will develop concrete action plans to realize these recommendations of the Administrative Workstream.

**Lifelong Learning / Post-graduate Education**

“Lifelong learning” and other aspects of postgraduate education are central to the ideas posed by several groups of the Academic and Administrative Workstreams. The Education Group argued in their report that “Digital technology radically alters the economics of education delivery and it is high time that we revisit both the frequency and dosage of our offerings.” The Education Group then discussed several approaches to lifelong learning before concluding that “Our core recommendation is that MIT charge a new committee with tackling this question in depth and proposing a set of experiments in lifelong learning.”

In their report, the Beyond MIT Group noted that at the Institute “we currently lack a coherent vision and plan for an MIT ‘Postgraduate Education of the Future’ that makes MIT a pioneer in preparing people to work at ‘good jobs’ of the future.” The Beyond Group then went on to propose “an MIT Postgraduate Education of the Future Initiative.” This initiative “would establish a new college or university-wide unit at MIT dedicated to online postgraduate education with a range of postgraduate subjects and coherent, intentional programs.” They recommend the creation of a “purpose-built committee” to implement a five-year plan to examine this initiative and offer a thoughtful discussion of the pros and cons of this proposal. Their recommendation and that of the Education Group will be the subject of the Lifelong Learning RIC, whose charge will be to evaluate these ideas and propose a plan forward.

**Collaborations**

The report of the Research Group of the Academic Workstream pointed out that multidisciplinary research is an historical strength at MIT and noted that interdisciplinary research is a key to the solution of some of the most difficult and pressing problems that face society today. This RIC will consider the several recommenda-

tions of this working group for fostering collaborations within the Institute, for promoting new engagement models with industry and with the government, and to encourage appropriate international collaborations.

**Strengthen Pipeline of Underrepresented and Minority Researchers**

The Research Working Group wrote that the “lack of DEI . . . pervades MIT’s research enterprise and adversely affects the experience of researchers who are members of minority groups that include women, non-cisgender men, and especially people of color. Many factors contribute to this, including the prevalence of conscious and unconscious bias, structural barriers to success, structures of power created by tenure, hierarchy and control of resources, funding, and career advancement. Every aspect of MIT, including the research enterprise, must implement significant and urgent reforms to address this . . . This shortfall in implementation and accountability must be addressed.” In their report the Research Group went on to urge that “MIT develop mechanisms for responding to recommendations in a proactive and timely fashion, and implement benchmarking strategies that allow for transparent assessment of progress. Furthermore, implementing a system of incentives and accountability will be crucial to ensuring progress.”

In conjunction with other ongoing efforts at the Institute, this RIC will be charged with developing concrete plans to build a stronger pipeline of young researchers from underrepresented groups, considering both hiring and providing a more supportive, attractive environment once at MIT for members of such groups.

**One Agile MIT**

“One Agile MIT” is a concept developed by the Administrative Workstream that involves the creation of a new, perma-

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**Task Force 2021 and Beyond**  
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nently staffed project management team for prioritized projects to modernize MIT’s administrative processes and systems, along with the development and adoption of new practices for the sharing of digitized data across Departments, Labs, and Centers. The Administrative Workstream suggests that this will benefit the work efficiencies of faculty and administrative staff across the Institute, “enabling increased strategic focus and time for mission-critical activities of research, teaching, and mentorship of students and research staff.”

**Graduate Student Funding**

Both the Research and Financial Modeling Groups highlighted the high cost of graduate students at MIT as an important priority for attention and this RIC will work with Provost Marty Schmidt in developing a plan to address this longstanding issue of “research deferred maintenance.”

**Undergraduate and Graduate Student Living and Learning**

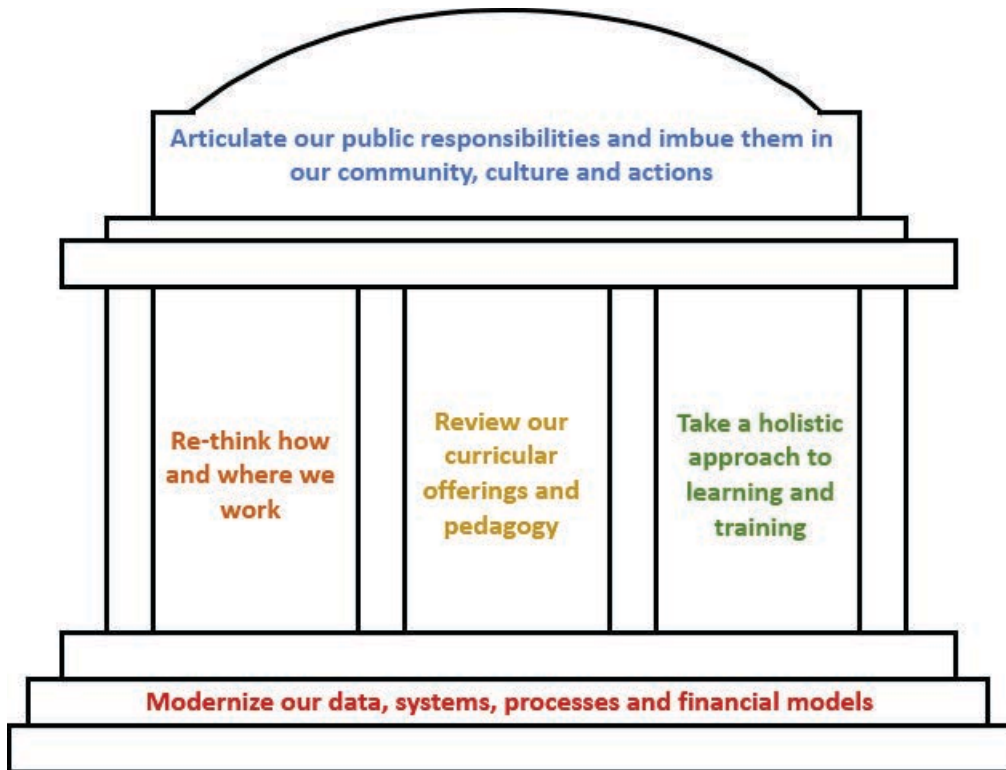
This RIC will address several ideas posed by the Education and Academic Learning and Residential Spaces Groups, including how best to leverage digital technologies in pedagogy as well as proposals of the Spaces Group on community and outdoor spaces

and on the design and planning of classrooms and other academic spaces.

**Next Steps**

As indicated in the timeline shown earlier, we hope that each of the Refinement and Implementation Committees will complete their work before the end of the semester, setting the stage for implementation to begin during the summer or by the beginning of the fall. Needless to say, Sanjay and I are sincerely grateful to the faculty, staff, and student members of the Task Force for their dedication and enormous efforts over the past eight months aimed at “building a better MIT.” ■

**Rick L. Danheiser** is the Arthur C. Cope Professor of Chemistry and Chair of the Faculty ([danheiser@mit.edu](mailto:danheiser@mit.edu)).



The ideas of the RICs (Refinement and Implementation Committees) were organized into five themes, shown in the “dome” graphic. At the base, we need to upgrade our systems. The pillars correspond to the overhauling we need to take on in response to the lessons of 2020. The dome describes a key outcome that has become even more important for the years ahead. – Sanjay Sarma

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## MIT Medical's Response to the Covid-19 Pandemic

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with every corner of MIT coming together as one. But it is working.

### Who will be allowed to access campus?

It was clear from the start that regular testing would be a big part of answering that question. MIT Medical conducted our first Covid-19 test on March 17. We conducted 91 tests that month. By April, we had built dedicated tents and were conducting surveillance testing of individuals who were living and working at MIT. By late June we had moved to a custom-built trailer designed and built by MIT to safely test the MIT community with minimal PPE.<sup>1</sup> That month, MIT began repopulating the campus after the spring lockdown and all employees were required to test for Covid-19 before returning to work. By August, testing had become mandatory for anyone wishing to access campus. By the end of 2020, MIT had conducted 257,670 unique Covid-19 tests.

Almost a year later, access to campus remains strictly limited. Individuals are allowed entrance to only the buildings they need to perform their daily duties. With the exception of one-time visitors, anyone wishing to come to MIT must undergo Covid-19 safety training, have a recent negative Covid-19 test on record, and if they are on campus more than three times a week, they must test twice weekly to retain access to buildings. Individuals on campus three days a week or less need to test once a week. But everyone – including one-time visitors – must attest to their health and lack of symptoms before accessing MIT property. Everyone must also adhere to MIT's policies regarding masking, social distancing, room capacity limits, and other public safety measures.

Each department, lab, and center has a designated individual assigned to grant authorized individuals access to campus

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<sup>1</sup> <https://news.mit.edu/2020/covid-19-testing-trailer-0813>

via the Covid Access system.<sup>2</sup> Once in Covid Access, you can download and use the Covid Pass app (available via the App Store or Google Play).<sup>3</sup> Through the app, you can attest to your health, check in for testing, and view your testing results.

If an individual attests to being symptomatic, they immediately lose campus access until MIT Medical can ascertain their condition. Whenever someone tests positive, access is also immediately turned off and MIT Medical's contact tracing team begins a comprehensive case investigation to determine if anyone may have been a close contact to the positive individual, and to make sure anyone exposed is told to quarantine.

### Vaccines are coming

The Commonwealth of Massachusetts has approved MIT as an employer-based distributor of the Covid-19 vaccine.<sup>4</sup> This means we have the official go-ahead to vaccinate the entire MIT community – students, employees, affiliates, and their dependents – not only MIT Medical patients. Ultimately, we could immunize some 50,000 individuals, (up to 100,000 injections in total). But the timing of vaccinations for individual members of the community depends on both vaccine supply and the state's prescribed priority timeline.

The Commonwealth of Massachusetts has a strict Covid-19 rollout procedure.<sup>5</sup> MIT can only immunize specific demographics based on the state's prescribed priority timeline, and violating the state's mandate jeopardizes our ability to perform any further Covid-19 immunizations. At the top of this priority list was healthcare workers. On December 28, MIT Medical administered the first Covid-19 vaccine on campus to Fatima Rosario, the Lead Medical Housekeeper at MIT Medical.<sup>6</sup> Before the end of the year,

<sup>2</sup> <http://covidapps.mit.edu/covid-access>

<sup>3</sup> <http://covidapps.mit.edu/covid-pass>

<sup>4</sup> <https://news.mit.edu/2021/mit-framework-covid-19-vaccinations-campus-0129>

<sup>5</sup> <https://www.mass.gov/info-details/massachusetts-covid-19-vaccination-phases>

<sup>6</sup> <https://news.mit.edu/2021/video-covid-vaccines-0110>

MIT had immunized every campus healthcare worker who requested a vaccine. By mid-January, the same was true for the rest of the MIT community who qualified as Phase 1 individuals. This included MIT Police and MIT EMTs.

Phase 2A began on February 1, 2021 and MIT Medical was ready. That date was the first day that we were allowed to immunize patients, but we were limited in that we could only give vaccines to those who were ages 75 and older. We administered approximately 140 shots on that day, and some 300 shots that first week. As I write this, the general public will likely be eligible for vaccinations by April 2021, if Phase 2 has been completed. We are working closely with the Institute's Vaccine Planning Team to establish MIT's priorities for vaccine distribution in Phase 3, which at this time, will likely be much less controlled by Commonwealth guidelines. This means MIT could be providing thousands of Covid-19 vaccinations a week throughout the spring and summer months. This will not only keep our community safe, it will take pressure off vaccination sites across the Commonwealth.

### Measuring success

The MIT community is doing everything we can to keep each other safe. But is it working? I can confidently say the answer is yes. In 2020, we had 402 individuals test positive through our Covid-19 screening process. Again, each one of those cases underwent an extensive contact tracing investigation, and was reviewed in a de-identified manner by a cross-functional group of MIT leaders to help identify trends and inform Institute policies. In total, only seven positive cases are thought to be due to direct transmission on campus, and in nearly all of those instances, there were individuals working in circumstances where the nature of their role could not support adequate distancing. That's just 1.74 percent. Our efforts have kept MIT virtually Covid-free.

[continued on next page](#)

**MIT Medical's Response to the Covid-19 Pandemic**  
Stuopis, from preceding page

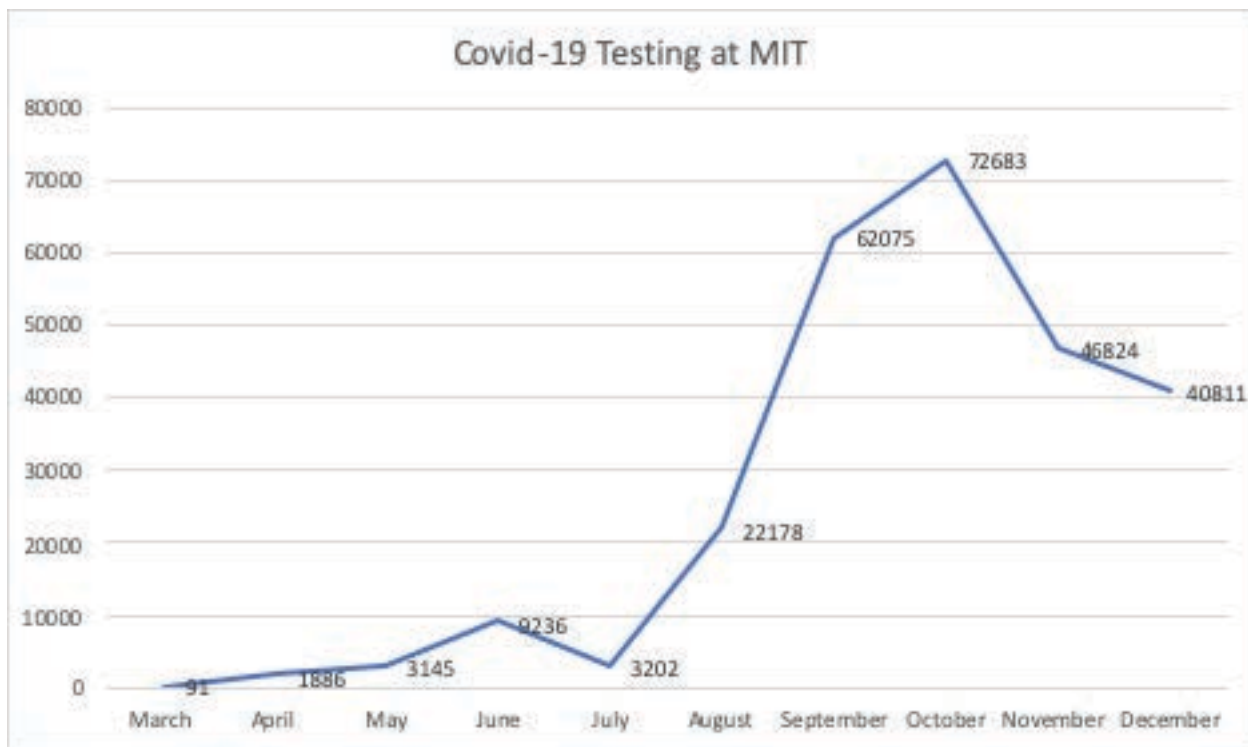
This all said, we must stay vigilant. We have to keep testing, because, while we know the vaccine is very effective at preventing severe illness, we don't know if vaccinated people can still become infected and/or transmit the virus to others.

**Looking ahead to the end of the pandemic**

This pandemic has been exhausting, both mentally and physically. Many of us have lost loved ones to Covid-19, or we know someone who has. Some of us have suffered from Covid-19 personally and others still have lingering symptoms. Celebrations of events such as graduations, weddings, birthdays, and retirements have been postponed or celebrated in very different ways.

However, this period has also shown us the true strength of the MIT community. The vaccine rollout has brought us much needed hope, and finally, it feels like this difficult time will indeed pass. I am proud of what we have accomplished together to keep each other safe and I am confident we will continue to do so. And I look forward to the day when we can congregate, laugh, learn, and celebrate together as we did before.

**Cecilia Stuopis, MD** is Medical Director, MIT Medical ([cws@med.mit.edu](mailto:cws@med.mit.edu)).



Testing began at MIT Medical in March 2020. In April and May, MIT Medical offered optional testing for campus residents and essential employees. June marked MIT's return to research and all employees coming back to work were required to take an initial Covid-19 screening test. In mid-August, testing became mandatory, yielding a large jump in tests performed. November and December saw drop-offs due to vacations and students returning home after the end of the semester.

## Why Have We, a Group of MIT Faculty, Signed the Letter in Support of Gang Chen?

**BECAUSE IF SUCH A PROMINENT** citizen of our country, a loyal American, a person who has raised his children here, a beloved teacher and scientist who has dedicated his creativity and energy to his students and MIT and this country, is criminally targeted for routine scientific and educational activities, we are all at risk. Questioning his loyalty is an outrage, and reminds us of dark periods in history. We therefore felt it imperative to step up to defend our colleague and, more broadly, to protect the fundamental freedoms of scientific research and open education. The last line in the Letter – “We are all Gang Chen” – captures our feelings and concerns.

As the faculty are aware, on January 14, 2021, Professor Gang Chen was arrested by the U.S. Attorney and FBI on allegations of federal grant fraud. President Reif noted in his message to the community that “For all of us who know Gang [as a widely respected scholar, teacher and member of our faculty since 2001], this news is surprising, deeply distressing and hard to understand.” Shortly following this news, a group of faculty gathered to discuss the case. Serious questions emerged in that meeting regarding the *factual basis* of the published allegations, and the group decided to bring these concerns to the attention of President Reif in an “open” letter, signed now by approximately 200 faculty from across five Schools ([see page 15](#)).

Here is a timeline summarizing events and perspectives surrounding Professor Gang Chen’s arrest and the faculty Letter:

**1.22.20:** Professor Chen’s cell phones and computer are searched and confiscated at the border by the INS when he returns from a trip to China.

**1.14.21 Thursday:** Professor Chen is arrested at his residence, search warrants are executed at MIT and the Chen residence, a criminal complaint is filed. In a press conference U.S. Attorney Lelling and FBI Agent Bonavolonta announce criminal complaints, among them: “. . . he [Chen] knowingly and willfully defrauded [the public] out of \$19 million in federal grants by exploiting our system to enhance China’s research in nanotechnology.” And “. . . he even went as far as recommending several students to participate in various Chinese talent programs.” (FBI Special Agent J. Bonavolonta, Press Conference Remarks on [fbi.gov](#)).

**1.14.21 Thursday:** President Reif announces the arrest to the MIT community, expressing that “MIT was deeply distressed by the arrest of Professor Chen.”

**1.14.21 Thursday:** The global media reports on the arrest, extensively citing the government’s allegations: “MIT Professor Gang Chen Charged With Millions In Grant Fraud, Hiding China Ties” (WBZ CBS Boston, 12:07 pm)

**1.15.21 Friday 4 pm:** A group of faculty (~20) assembles online to discuss the criminal complaint, the allegations presented at the press conference, and other open-source material. Serious questions

emerge in that meeting regarding the factual basis of the allegations in the criminal complaint and press conference summary on the [fbi.gov](#) website. The group decides to take action by writing an “open” letter to President Reif.

**1.16.21 Saturday:** Draft Letter is written and refined. The Letter details apparent factual errors in the criminal complaint and multiple misleading statements on [fbi.gov](#). The Letter also expresses concern about the ethnic targeting of faculty of Chinese heritage by the DOJ’s “China initiative” and the chilling effect on scientific research. This version (1.19.21) requests President Reif’s support for Professor Chen.

**1.19.21 Tuesday 11:49 am:** The Letter is circulated (peer to peer) and signatures start accruing.

**1.19.21 Tuesday:** Criminal indictment U.S. vs. Chen is filed with U.S. District Court of Massachusetts. No reference is made to multiple allegations mentioned only a few days earlier in the complaint.

**1.21.21 Thursday 4:43 pm:** An updated letter (>100 signatures were received) is sent to President Reif, including a statement of appreciation for MIT’s ongoing financial support of Professor Chen (the knowledge of this support was not in the public domain at the time).

**1.22.21 Friday 6:51 am:** Letter comes out in social media via a Harvard professor and is featured in the Chinese media.

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**Why Have We Signed the Letter**

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**1.22.21 Friday:** The *Wall Street Journal* references the Letter as part of its “Amnesty” story.

**1.22.21 Friday 4:43 pm:** President Reif releases a [detailed explanation](#) of the MIT–SUSTech relationship as an institutional relationship, clarifying that the \$19M of funds went to MIT and benefited MIT’s mission and multiple faculty and students.

**1.22.21 Friday 7:02 pm:** LAW360 piece is posted, “MIT Profs Back Colleague Facing ‘Flawed’ Fraud Charges”.

**1.22.21 Friday 7:09 pm:** The *Boston Globe* piece is published, “MIT President and Faculty members defend professor arrested for China ties”.

**1.23.21 Saturday:** 135 signatures are sent to President Reif (in confidence).

**1.26.21 Tuesday 11:56 am:** The *New York Times*, “A scientist is arrested and academics push back”.

**1.26.21 Tuesday:** The *Conversation*, “Intense scrutiny of Chinese born researchers in the U.S. threatens innovation”.

**1.27.21 Wednesday:** Bloomberg, “Criminalizing Science is Really Dumb”.

**1.27.21 Wednesday:** The final version of the Letter (with minor changes) posted on [FNL website](#) (*MIT Faculty Newsletter*).

**1.28.21 Thursday:** ~200 MIT faculty sign the Letter.

**1.29.21 Friday:** WBUR airs a piece on the arrest and the Letter, “MIT Faculty Rally Around Professor Charged with Concealing China Ties”.

**1.30.21 Saturday:** “We are all Gang Chen” change.org petition started by faculty at Northwestern University.

**2.5.21 Friday:** *Science Magazine*, “U.S. scientists want Congress to look into complaints of racial profiling in China Initiative”.

**2.10.21 Wednesday:** U.S. Attorney Andrew Lelling tenders his resignation to President Biden.

As this timeline suggests, the concept of a “golden hour” apparently applies not only to trauma medicine but also to situations where the reputation of a colleague is assaulted by powerful forces and then upheld by rapid action taken by his peers and colleagues. After the arrest of Professor Gang Chen, our community mobilized quickly. In a little more than two days, the number of signatures on the Letter in support of Gang Chen grew from 0 to 100 and has continued to grow ever since. We had to move fast, to clarify facts we knew and help turn the tide.

A meaningful shift in the media’s reporting on Professor Chen’s case occurred the afternoon of Friday, 1.22, coinciding with the release of the Letter and President’s Reif’s press release. The press initially described Professor Chen’s case in terms of allegations of large “eye popping” (NYT) amounts of money, greed, hiding ties, and disloyalty. Since the release of the Letter that Friday, the public’s perspective as reflected in the media has changed significantly to highlight the extraordinary support of Professor Chen by President Reif and the MIT faculty. The detailed questions that our Letter had raised are now framing the public discourse. This change came not a moment too soon for our colleague and his family, who saw his reputation destroyed and his loyalty questioned.

Whereas the brunt of this case is certainly personal, felt primarily by Professor Chen, his family and his friends, the impact of the DOJ’s “China Initiative”

campaign reaches far beyond the Chen residence and affects us all. This campaign that our colleague Gang Chen got caught up in appears to be a deliberate attempt to intimidate rather than an effort to increase compliance.

We are aware of many MIT faculty and students of Chinese heritage who feel targeted, fearful, and intimidated. All of us understand the disastrous impact of this campaign on science, on research, and on education – and frankly on the future of this country. We are concerned about the emergence of clear signs of ethnic targeting of scientists of Chinese heritage who are loyal citizens of this country. We view the persecution of researchers of Chinese heritage as damaging to our national interests and to the quality of research in this country. One cannot embrace science and facts while creating an atmosphere of fear for scientists.

MIT’s faculty understand competition. Science and engineering at the level practiced at MIT and other research universities in this country are highly competitive, in particular with China. Yet our research universities continue to attract global talent that advances domestic science and engineering here in the U.S., which helps create jobs and build our national brain trust. It is not by chance that a major Covid-19 vaccine was developed a block from MIT’s campus, where so much research is aimed at generating innovative therapies. Engaging and attracting global talent advances our competitiveness and is truly an American interest.

On the MIT campus, we are engaged in basic research that is ultimately published and put in the public domain. As such, we do not conduct classified or other commercially confidential work here. We fully understand and respect the importance of disclosures to federal and other funding agencies; as individuals, and as a community we spend significant time, energy, and other resources to comply. The complexity of disclosure forms and the associated red tape have grown significantly in recent years, increasing the likelihood of making

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**Why Have We Signed the Letter**

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mistakes. We are not above the law: when we make a mistake or omit information, we should be held responsible.

We truly hope that lawmakers of both parties, together with the new administration, will engage academia in search for solutions that will appropriately address the concerns of illegitimate IP transfer to China. However, bringing the heavy machinery of the federal justice system – such as “wire fraud” statutes developed and honed to deal with organized crime – into the halls of science, engineering, math, and education is damaging the very same American innovation it seeks to protect. Fear kills creativity and collaboration, the characteristics that bring the best minds from around this country and abroad to our universities, and that have contributed to making our institutions of higher learning the global leaders that they are.

We are proud to see the Institute take a strong position in defense of Professor Chen. MIT’s leadership in this matter stands in contrast to other universities that have distanced themselves or even severed ties with accused members of their own communities. We have been made aware that MIT was in fact supporting Professor Chen well before we all knew about this case, and we wholeheartedly commend MIT and President Reif for his courage and support.

“We are all Gang Chen” has become a rallying cry for the cause of science, academic freedom, the importance of global scientific collaborations – and to stand against the criminalization of academic activities, to

object to ethnic targeting of scientists of Chinese heritage, and to vocally protest the unjust treatment of our colleague.

In closing, it is our hope that the Letter, a collegial expression of outrage and support, working in concert with MIT’s institutional actions and coupled with efforts at other universities nationwide, will help Professor Chen return to his research and teaching in the near future.

For comments and to add your signature to the “MIT Faculty Letter to President Reif in Support of Professor Gang Chen” please email: Professor Yoel Fink ([yoel@mit.edu](mailto:yoel@mit.edu)).

**Hal Abelson**, Class of 1922 Professor of Computer Science and Engineering

**Robert Armstrong**, Director, MIT Energy Initiative, Chevron Professor in Chemical Engineering

**Moungi Bawendi**, Lester Wolfe Professor of Chemistry

**Sangeeta Bhatia**, John J. and Dorothy Wilson Professor of Health Sciences and Technology and of Electrical Engineering and Computer Science,

**Claude Canizares**, Bruno Rossi Professor of Physics

**Robert Desimone**, Director, McGovern Institute, Doris and Don Berkey Professor of Brain and Cognitive Sciences

**Yoel Fink**, Professor of Materials Science, Joint Professor of Electrical Engineering and Computer Science

**Alan Guth**, Victor F. Weisskopf Professor of Physics

**Anette (Peko) Hosoi**, Neil and Jane Pappalardo Professor of Mechanical Engineering

**Yasheng Huang**, Epoch Foundation Professor of International Management

**Wolfgang Ketterle**, John D. MacArthur Professor of Physics

**Thomas Kochan**, Geo Maverick Bunker Professor of Management

**Ruth Lehmann**, Professor of Biology; Director, Whitehead Institute

**Harvey Lodish**, Professor of Biology and Biological Engineering; Founding Member, Whitehead Institute

**Keith Nelson**, Haslam and Dewey Professor of Chemistry

**Yang Shao-Horn**, W.M. Keck Professor of Energy

**Phillip Sharp**, Institute Professor and Professor of Biology

**Michael Sipser**, Donner Professor of Mathematics

**Peter So**, Professor of Mechanical Engineering and Biological Engineering

**Timothy Swager**, John D. MacArthur Professor of Chemistry

**Emma Teng**, T.T. and Wei Fong Chao Professor of Asian Civilizations

**J. Kim Vandiver**, Professor and Director of the Edgerton Center

**George Verghese**, Henry Ellis Warren Professor of Electrical and Biomedical Engineering

**Jing Wang**, S C Fang Professor of Chinese Language & Culture

**Rainer Weiss**, Professor of Physics, Emeritus

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## MIT Faculty Letter to President Reif in Support of Professor Gang Chen

January 21, 2021

Dear President Reif:

As colleagues and friends of MIT Professor Gang Chen, we share our dismay and pain over his recent arrest [1]. We all know Professor Chen as a truly beloved teacher, scholar, scientist, mentor, colleague, and world-leading academic. We also know him as a loyal and devoted member of the MIT community. Professor Chen has served MIT with distinction over decades through his extraordinary scientific work, his profound contributions to education, and his leadership. His work has contributed significantly to American scientific welfare and economic growth, as well as to MIT's worldwide scientific standing. All his global work has been furthering MIT's mission "to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century."

We stand in solidarity with our colleague. We wish to express our appreciation for the support that MIT leadership is providing to Professor Chen as he prepares to defend himself [2, 3]. We feel that he deserves full support and commitment from MIT. Moreover, we are writing to encourage you and MIT to stand forthrightly, proudly, and energetically behind Professor Chen.

With the information that is publicly available [1, 2], we are writing to share our concerns both on the allegations against Professor Chen and its implications for

open academia and intellectual freedom – essential elements of progress towards solving the World's greatest challenges. We are troubled that the complaint against Professor Chen vilifies what would be considered normal academic and research activities, including promoting MIT's global mission.

We recognize and respect that the United States government has an interest in keeping any country from stealing intellectual property. Many of the signatories to this letter are inventors of record on hundreds of patents. We recognize the importance of protecting the rights that patents confer. We also recognize that the United States Government has expressed concern that China uses illicit means to steal intellectual property [4]. We strongly support efforts to oppose any such activities conducted by any foreign country.

But we are baffled by many elements of the official complaint [2] and the associated public statements [3] against Professor Chen. The criminal complaint against Professor Chen has nothing to do with protecting intellectual property. As published, it is deeply flawed and misleading in its assertions. At best, it represents a deep misunderstanding of how research is conducted or funded at a place like MIT. The official complaint is filled with allegations and innuendo based on what are, in fact, some of the most routine and even innocuous elements of our professional lives. Standard practices such as writing recommendations for our students so that they might receive fellowships or other prestigious and well-deserved career advancements, are portrayed as some sort

of collusion with outside forces in an effort to help them steal American technology. Our routine participation in the evaluation of research proposals seems to be viewed in a similar manner. The fact that we do not report all of these activities in our own research proposals is used as a basis for allegations of intentional wrongdoing, when in fact information about these practices is a well-known and is a routine requirement of our job. In many respects, the complaint against Gang Chen is a complaint against all of us, an affront to any citizen who values science and the scientific enterprise.

While the full extent of the charges against Professor Chen are not known at this time, the criminal complaint as published to justify Professor Chen's arrest already contains some deeply flawed and misleading statements:

### **Allegation**

*That since 2013 "CHEN and his research group has received approximately \$29 million of foreign funding, including \$19 million from the PRC's Southern University of Science and Technology [SUSTech]."*

### **Facts**

Our understanding is that Professor Chen did not receive \$29 million. MIT was the recipient of this money, which benefited the Institute, the research programs of many of its faculty, and its students. Singling him and his research group out as the "sole" recipient is simply wrong. The partnership with SUSTech was approved and overseen by MIT at the highest levels.

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**Letter to President Reif**

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**Allegation**

*That SUSTech operates as a proxy to the Chinese government and thus is not a legitimate organization to collaborate with.*

**Facts**

MIT has created a formal Center with SUSTech University. It is MIT who appointed Professor Chen as the Faculty Leader of this Center. The mission of this center is to encourage scientific and educational exchange, which is exactly what Professor Chen has done under its auspices. MIT has similar relationships with universities and other entities from other countries, as well as China. Most major universities in the world are public institutions and can be described reasonably as belonging to some arm of their country's governments. If leaders in the U.S. government believe that cooperative research relationships with them are improper, the issue could be addressed legislatively or with executive authority.

**Allegation**

*That Professor Chen hid his affiliation and collaborations with China in applying and reporting on a DOE grant and in doing so committed "wire fraud," a federal felony.*

**Facts**

Professor Chen's scientific collaborations and broader connections to China are a matter of extensive disclosure and public record. They are anything but hidden from the eyes of the public, let alone the sophisticated grant reviewers at the DOE. Professor Chen routinely, consistently, and extensively credited these scientific collaborations and funding in his publications available on public databases before and during this grant execution. His CV, available for download on MIT's website, contains 62 references to China, and his publications cite international funding specifically from the very sources claimed in the complaint to be "hidden." We emphasize that more generally, the extensive collaborative efforts that Professor Chen is involved in are far from secret.

**Allegation**

*That Professor Chen recommended students for positions in China and for scholarship awards funded by the Chinese Government. That Professor Chen served as a reviewer for the National Science Foundation of China and in doing so served the PRC.*

**Facts**

Recommending students for international positions and awards, as well as reviewing proposals and projects for the scientific community in the U.S. and world-wide, is an essential and routine part of our job as faculty. That this activity would be portrayed as improper, un-American, or as a service to a foreign power is an affront to all of us. Moreover, reviewing scientific proposals and recommending students for positions and awards is a routine activity. There are many innocuous explanations for omissions on forms.

**Allegation**

*That Professor Chen "knowingly and willfully defrauded [the Taxpayers] out of \$19 million in federal grants by exploiting our system to enhance China's research in nanotechnology." – FBI Special Agent Joseph R. Bonavolonta [3]*

**Facts**

We believe that there is no substantiation provided to this broad and unqualified accusation. Professor Chen's research at MIT has been funded in part through federal grants over the years. Professor Chen's research has benefitted American science and technology, MIT's worldwide scientific standing, and the global scientific community, as well as Professor Chen's many American and international students. Dozens of scientific publications demonstrate that Professor Chen's intent and use of research support were consistent with MIT's core mission of conducting outstanding basic scientific research.

These misleading statements lead us to question the motivation for taking the extreme step of arresting Professor Chen, a dedicated scientist and educator performing his duties at MIT. Although the

criminal investigation apparently started more than a year ago, we find it noteworthy that U.S. Attorney Andrew Lelling commenced the arrest in the last few days of his tenure. Attorney Lelling was appointed by President Trump and is a member of the Steering Committee of the DOJ's "China Initiative," which has spearheaded the use of "innovative prosecutorial methods" [5] to target academics who are from or have participated in scientific exchange with China. The racial undertones of this campaign are reflected in the following quote from Lelling himself in a recent interview for *Science* [6] "...unfortunately, a lot of our targets are going to be Han Chinese. If it were the French government targeting U.S. technology, we'd be looking for Frenchmen." Our concerns are compounded by the number of investigations involving Chinese-American scientists and other scientists of Asian and Asian-American descent conducted by federal authorities in the United States in recent years [7].

Finally, we appreciate your and MIT's support of Professor Chen. We understand that the Institute is supporting him financially and providing him with the information he needs to defend himself. We also understand that preparations are underway to support Professor Chen's students and research activities. We stand ready to work with you in whatever way is necessary to help in this difficult time.

We also urge that MIT assume leadership in transforming this difficult time to a learning moment, in which the allegations against Professor Chen are discussed in the context of defending academic freedom in this country. In many respects the defense of Professor Chen is the defense of the scientific enterprise that we all hold dear – we are all Gang Chen.

Signed by:

~170 MIT faculty (1/26/21)

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**Letter to President Reif**

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## The Legacy of the Involvement of the Democratic Republic of the Congo in the Bombs Dropped on Hiroshima and Nagasaki

Jean Bele

**ON AUGUST 6, 2020**, people around the world commemorated the 75th year since the first atomic bombs were dropped on Hiroshima and Nagasaki, Japan. People gathered with flags and flowers to remember the effects and destruction caused by the thermal and nuclear radiation from the bombs.

No such ceremony took place in the Democratic Republic of the Congo. And the link between the Congo's uranium and Hiroshima, where more than 200,000 people were killed, is still largely unknown by the people from the three countries involved: The United States that made and dropped the bomb; the Democratic Republic of the Congo (DRC) that supplied the uranium used to build the bomb; and Japan that was the victim. Another ignored link is the disastrous health effect on Congolese miners who handled the uranium, working virtually as slaves of the Belgian mining giant Union Minière du Haut Katanga (UMHK), the owner of the Shinkolobwe mining site in what was then the Belgian Congo, today the Democratic Republic of the Congo<sup>1</sup>.

*Spies in the Congo: America's Atomic Mission in World War II*, by the British researcher Susan Williams<sup>2</sup> is the sole definitive book on the topic. Equally important, it pays tribute to a sizable number of individuals who labored in obscurity under dangerous conditions to fulfill their mission with no other explanation than that it was "important."<sup>3</sup>

*Spies in the Congo* provides a well researched and detailed history of the efforts of the Office of Strategic Services (OSS), America's first strategic intelligence agency and the forerunner of the

CIA, to establish itself in the Congo as well as in West Africa. In telling the OSS story, Dr. Williams reveals two other stories as well: She provides a strategic overview of the joint program among the United States, the United Kingdom, and Canada to develop an atomic weapon; and unfolds the story of the Congolese people.<sup>4</sup>

### Search for uranium

Nuclear weapons are made with uranium or plutonium. To get uranium, you need to mine it using workers digging this highly radioactive material. This was the forced work done by Congolese miners without proper protection. Although Article 3 of the Belgium Colonial Charter stated that "Nobody can be forced to work on behalf of and for the profit of companies or private," the Belgium government closed their eyes on the forced labor imposed on Congolese miners.

When the U.S. began the secret Manhattan Project that led to the fabrication of the first nuclear bombs, the uranium mined from the U.S. and Canada yielded ore with less than one percent uranium, which was not enough to build a nuclear weapon. The only mine that had enough uranium with the potential for making nuclear weapons was the Shinkolobwe site in the Democratic Republic of the Congo, the richest uranium mine in the world.

When Nazi Germany occupied Belgium in June 1940, Leo Szilard, a Hungarian physicist who took refuge in London from Nazi Germany, feared that the Nazis might develop a nuclear bomb. On August 2, 1939, Szilard and Alexander

Sachs had drafted a letter that Albert Einstein signed and sent to President Roosevelt. Over Einstein's signature, it warned Roosevelt of the possibility of an incredibly powerful bomb, of Germany's cessation of all sale of uranium from the Czech Republic mines, and of the uranium resources of the Congo.

General Leslie R. Groves, director of the Manhattan Project, struck a deal with the Belgian government, which was exiled in London at the time, granting them rights to the Shinkolobwe mine for uranium extraction. Edgar Sengier, director of the UMHK, helped with the project. Production at the mine would continue throughout the war, using Congolese workers to do the secret, dirty, dangerous and radiation-steeped work. Several hundred tons of uranium were shipped monthly to the various Manhattan Project sites. Ultimately, the Congolese mine furnished nearly two-thirds of the uranium used for the bomb (nicknamed "Little Boy") dropped on Hiroshima<sup>5</sup>, and it also contributed to the production of much of the plutonium used in the bomb ("Fat Man") dropped on Nagasaki three days later.

### The secret race for Congo uranium

By April 1945, only four members of the U.S. Congress had been given any concrete information about the Manhattan Project. Harry Truman was not informed of the Project before assuming the presidency after Roosevelt's death in April 1945. The contract was secretly signed in October 1939. Correspondence was limited, and the United States Federal

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Reserve Bank was directed to omit the uranium transaction from its reports. All transactions had proceeded directly between the Manhattan Engineering District and Sengier. The Belgium Ministry of Colonies and the Governor General in Kinshasa (formerly Leopoldville) were not involved. Sengier sold ore to the U.S. containing tons of uranium without Belgium government approval.

This secrecy extended to everything related to Congolese uranium and the Shinkolobwe mine. The Belgian uranium deals were “one of the most tightly kept secrets” of the war, notes Jonathan Helmreich in a detailed study of *United States Relations with Belgium and the Congo between 1940 and 1960*<sup>6</sup>. A top-secret American Intelligence report published in November 1943 mentioned the Congolese uranium: “The most important deposit of uranium yet discovered in the world is in the Shinkolobwe Mine in the Belgian Congo.”

The Congo’s “known resources of uranium, which are the world’s largest,” the report concluded, “are vital to the welfare of the United States. Definite steps should be taken to insure access to the resources for the United States.”

General Groves was worried about the Nazis trying to get uranium from the Congo. To deal with this threat, Groves turned to the OSS, which had established a station in the Congo. The United States was determined to obtain all the uranium it needed from the Congo, and at the same time deny German attempts to secure any Congolese uranium. The actual acquisition of the uranium ore was not an OSS function; that was accomplished by the U.S. Military, the State Department, and the Foreign Economic Administration. In 1943, the OSS sent a top agent, Wilbur Owings “Dock” Hogue, to the Congo to tackle the problem of smuggling. Hogue went on to become OSS Chief of Station in the Belgian Congo.

Throughout the course of World War II, the OSS deployed 93 agents to Africa. The one who figures most prominently in *Spies in the Congo* is Hogue, who arrived in Leopoldville in November 1943. By the fall of 1944, Hogue had learned that the feared scenario had occurred: some Belgian companies in the

extremely low cost for the sake of U.S. national security. A huge amount of money was pumped into building a processing plant near Shinkolobwe, and the World Bank extended \$70M in loans to Belgium for the improvement of the Congolese transportation infrastructure to facilitate the export of the ore.

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Congo, one of them Union Minière, had sold uranium ore to the Germans. Over 1,200 people were sentenced to death for such activities, 242 of whom were actually executed. Groves also was compelled to intervene to prevent Belgian officials from exposing the secret relationship with the Allies and, in a secret White House ceremony in 1946, President Truman awarded the Medal of Merit to Edgar Sengier, the New York-based managing director of Union Minière, to recognize the company’s contribution to the Allied war effort.

In the 1950s, after winning the race against Germany, the U.S. began another race with the Soviet Union and wanted to keep them from gaining access to Congo uranium. Despite strenuous efforts by the U.S. to find alternative sources of rich ore, Shinkolobwe remained its greatest single source. In 1947, according to figures from the U.S. Atomic Energy Commission, the U.S. obtained 1,440 tons of uranium concentrates from the Belgian Congo (now DR Congo). The ore was exported from there in complete secrecy. By 1951, the total quantity of uranium obtained by the U.S. was 3,686 tons, of which the largest amount, 2,792 tons, still came from the Congo. As a result, Congolese miners continued to be underpaid and overworked. They were forced to work under secret contracts to produce uranium at

**The effects of the atomic bomb are still being felt in the Democratic Republic of the Congo**

#### *Political consequences*

Belgium understood that if it did not share the uranium with the United States they couldn’t expect U.S. support for their colonial rule in the Congo after the war. The U.S. was pushing for direct open trade with the Congo without Belgian participation, and was clear that it would not accept the colonial system if Belgium were blocking the direct trade of uranium. For the Belgians, the American ideas of loosening colonial ties, emancipation of colonies, and ideology in favor of direct free trade with the Congo threatened the future of Belgium in the Congo. In the end, Belgium gave up much power to the U.S. over Congo uranium.

The Congo eventually gained its political independence from Belgium on June 30, 1960. The new prime minister, Patrice Lumumba, made it clear that he would not give the U.S. the same freedom to control Congo’s uranium as had Belgium. On July 11, 1960, the Katanga province where the Shinkolobwe mine was located seceded from the country. UMHK planned the move to secure the uranium production, no matter who would be running the country.

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On July 31, 1960, Prime Minister Lumumba reached out to the Soviet Union for assistance after his government's request was rejected by the U.S. The move worried the U.S., and Lumumba was assassinated on January 4, 1961. The country then entered a five-year civil war, resulting in around two million deaths. That spiral of human disaster is still going on. It is the world's bloodiest conflict since World War II, in which more than 10 million people have died by atrocity killings, starvation, and disease, as well as the rape of women throughout the country. The Congo is ranked 176 out of 188 for its human development (UN Human Development Program) and 161 out of 180 for corruption (Transparency International).

### *Health issues for the Congolese population*

Several Americans involved closely with the uranium ore died early deaths. Dock Hogue died at age 42 of stomach cancer. His replacement, Henry Stehli, died at age 52 of brain cancer, and Doug Bonner died at age 58. Whether or not their premature deaths were due to exposure to the radioactive uranium ore is left unanswered, as is the fate of the Congolese workers and Union Meniere managers who were constantly exposed to the threat.

Soon after the war, several studies were done to study the effect of the atomic bomb on the Hiroshima and Nagasaki population. But there was surprisingly no research carried out on the long-term effects of uranium ingestion in humans in the extraction site in the Congo. Still, there is no plan today to protect the population from uranium mining activity which will persist for generations. We will never know the number of Congolese victims as the suppliers of the uranium which ended WWII.

From 1939 to 1960, there was no plan surrounding the Shinkolobwe mine site to monitor uranium in drinking water and

to deal with the effect of mining activity on agriculture or residential populations. Uranium is a heavy metal with the potential to cause a spectrum of adverse health effects, ranging from renal failure and diminished bone growth to damage to DNA. The effects of low-level radioactivity include cancer, shortening of life, and subtle changes in fertility or viability of offspring, as determined from both animal studies and data on Hiroshima and Chernobyl survivors.

The dust from the sites and the water used for dust control contain long-lived radioisotopes that spread into the surrounding areas. Low radioactive effects can be delayed for decades or for generations and are not detected in short-term toxicology studies. In the atmosphere, radon decays into the radioactive solids polonium, bismuth, and lead, which enter water, crops, trees, soil, and animals, including humans.

The Congo's total tragedy due to WWII will never be known. The effects of the war on the Congolese people are still being felt to this day. Nuclear disarmament and non-proliferation will be the best remedy to avoid this suffering from ever happening again.

### *Uranium smuggling and terrorist organizations*

Increasingly well-organized and funded terrorist organizations which now have easy access to the know-how needed to build a nuclear bomb have declared their intent to seek the materials necessary for weapons of mass destruction. If terrorists can obtain a sufficient quantity of nuclear material, they could design, construct, deploy, and detonate a nuclear bomb. The consequences would be so devastating for the world that it justifies every effort to prevent it. And the danger of nuclear material smuggling is real in the Democratic Republic of the Congo.

While many countries are taking important measures to secure vulnerable nuclear materials around the globe, it is not the case in the Democratic Republic of the Congo. To thank and reward DR Congo for their

sacrifice that helped the U.S. build the WWII nuclear bombs, America funded the creation of DR Congo's nuclear center, Centre Regional d'Etude Nucleaire de Kinshasa (CRENK) in 1958. In the late 1970s, a bar of uranium disappeared from the Center, raising concern about security at the site. Moreover, the site of the Centre is facing erosion problems, bringing fear of a landslide that could lead to a wider disaster.

Further, the International Atomic Energy Agency (IAEA) has long called into question the Centre's safety and security. The *Guardian* reported in 2006 that the shutdown research reactor, together with its used fuel, is protected by little more than a rusty barbed-wire fence and a single padlock. To add to concerns, illegal mining of uranium is believed to continue at the shutdown Shinkolobwe mine in southeastern Congo, although the IAEA has tried and failed to inspect the mine.

In addition to its worries about Iran's nuclear program, the United States fears that raw uranium and processed nuclear material could make its way from the Democratic Republic of the Congo into the hands of terrorist networks. A United Nations report in November 2011 revealed that a Rwandan gang operating in Eastern DRC tried unsuccessfully in 2008 to sell six containers of what was claimed to be uranium mined during the Belgian colonial era. American concern was highlighted by the signing in 2007 of an agreement with the DRC aimed at preventing trafficking of nuclear and radioactive materials.

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1, 2, 3, 4 Susan Williams (Public Affairs, 2016), 332 pp, *Spies in the Congo: America's Atomic Mission in World War II*.

5,6 Jonathan E. Helmreich, *United States Relations with Belgium and the Congo, 1940-1960*. ■

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