

MIT Faculty Newsletter

<http://web.mit.edu/fnl>

in this issue we offer Faculty Chair Steve Hall on “Issues for the Fall Term,” (page 4); celebrate the life of former MIT President Chuck Vest (page 6); report on redesigning Hayden Library (page 12); take a look at graduate student financial literacy (page 16); and offer an In Memoriam for Professor Seth Teller (page 18).



Charles M. “Chuck” Vest

Getting to Kendall Gateway Through the East Campus Planning Process

J. Meejin Yoon

OVER 18 MONTHS AGO, when Professor Adele Santos, then Dean of the School of Architecture and Planning (SA+P), brought together an eclectic group of planning and architecture faculty – the SA+P Faculty Design Group – to contribute as a school to the Institute’s East Campus Planning process, I think it is safe to say that most of us were doubtful that: 1) we could ever arrive at consensus given our divergent viewpoints and backgrounds within SA+P, and 2) even if we could arrive at consensus, there would be an opportunity to have a real impact on a process that was well under way.

In April 2011, MIT had filed a rezoning petition with the City of Cambridge to increase allowable density and building heights on MIT-owned property in the Kendall Square area. In October of 2012

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How the Retirement Transition Could Be Made Easier at MIT

Nigel Wilson

ON SEPTEMBER 1, 2014 I officially retired from the faculty position I had occupied at MIT for the past 44 years, the latest step in a process which started in earnest four years ago when I made the decision to transition to retirement over the following few years.

That decision was driven by a desire to have a different work-life balance than over most of my career at MIT in the wake of a couple of health-related events over the prior few years, but was also influenced by a recognition that faculty renewal was critical for MIT to remain at the cutting edge, and that it was time to give others the same opportunities I had enjoyed for many years. This article is aimed at making recommendations about how this transition might be facilitated based on my (albeit limited) experience.

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Editorial East Campus Development Plans

IN MID-JULY, THE Provost sent out an update on the East Campus/Kendall Square development plan. The plan has definitely been improved from the original MITIMCo proposal. With the inclusion of some graduate housing, as recommended by the Graduate Student Housing Working Group, it has begun to take into account one of the major concerns expressed by the faculty. The proposal to tear down Eastgate graduate student housing remains somewhat unresolved, but the Provost assures us it will be replaced either on the East Campus or elsewhere. We applaud the assertion that new graduate housing will be built first.

Moving the MIT Museum – a very popular resource for area families with school-age children – to the vicinity of Kendall Square ensures that there will be a connection to the surrounding Cambridge community.

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East Campus Development Plans
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We regret that the Provost made no mention of the newly formed Campus Planning Committee or of its expected role in the East Campus/Kendall Square process. This entity was created as a standing committee of the faculty by a unanimous vote at the May faculty meeting, and constitutes a new venue for faculty input and participation.

On page 1 of this issue, Professor MeejinYoon describes the input of the MIT School of Architecture and Planning faculty to the design process. Early on, failure to include our own MIT faculty in the design and planning was one of the criticisms expressed in these pages of the MITIMCo procedure. We have no doubt that the input of our colleagues has improved, and will continue to improve, the East Campus design. Three well-designed commercial office buildings are preferable to the three ungainly buildings. Design, however, is not synonymous with use. Many members of the faculty remain concerned about actual use – the educational/research content, and enhancement of MIT life and work. The core issue is this: Should irreplaceable campus land be used for commercial office buildings, rather than to meet pressing current needs of the academic enterprise – including housing for graduate, postdoctoral, and visiting scientists? [web.mit.edu/fnl/volume/265/chwany.html]

Members of the Graduate School Council, faculty, and staff argued that 600 new units are not adequate to provide for the more than 4500 graduate students who must find off-campus housing each year [web.mit.edu/fnl/volume/264/gsc.html]. With the heating up of the Cambridge housing market, generating one of the lowest vacancy rates in the nation, on-campus graduate housing is becoming a higher priority [web.mit.edu/fnl/

[volume/264/salvucci.html](http://web.mit.edu/fnl/volume/264/salvucci.html)]. We must not knowingly increase burdens on our graduate students. Already graduate students are forced to move further away from campus and spend more time commuting. This has reduced both their quality of

The core issue is this: Should irreplaceable campus land be used for commercial office buildings, rather than to meet pressing current needs of the academic enterprise – including housing for graduate, postdoctoral, and visiting scientists?

life and research productivity. A well-documented summary of the graduate student housing shortage is in the Waugh et al. article in the *Faculty Newsletter* March/April issue [web.mit.edu/fnl/volume/264/gsc.html]. The productivity of graduate students in chemistry, biology, materials science or other fields is a central issue for the overall mission of MIT.

Ensuring the best use of the East Campus development will require the input of, and potentially benefit from, the new faculty Campus Planning Committee, representing much broader dimensions of the needs of those who work at MIT. We hope the Nominations Committee will follow the recommendation of Faculty Chair Steven Hall and expedite the nominations process for this very important new standing committee.

* * * * *

Vote for FNL Editorial Board Members

EARLY THIS FALL, ALL MIT faculty and emeritus faculty will receive an e-mail with a link to a ballot to vote to elect (or re-elect) members of the *MIT Faculty Newsletter* Editorial Board.

Following procedures outlined in the *Policies and Procedures of the MIT Faculty Newsletter*, nominees for the Editorial Board will have been selected by the Newsletter Nominations Committee from submissions by the Institute faculty.

Elections will be electronically based, with each eligible voter receiving an e-mail with a link to the voting site. Faculty and faculty emeriti will need to have MIT Web certificates installed on their computer, to allow for voter authentication. No record of individual voting preferences will be kept.

According to the FNL *Policies and Procedures*:

“The Nominations Committee will have the responsibility of recruiting and evaluating candidates for the Editorial Board, taking into account the need for representation from different Schools and sectors of the Institute, junior, senior, and retired faculty, male and female, underrepresented groups or faculty constituencies.”

“Candidates for the Editorial Board should give evidence of commitment to the integrity and independence of the faculty, and to the role of the *Faculty Newsletter* as an important voice of the faculty.”

To our knowledge, this is the only Institute-wide faculty election. We encourage the participation of everyone eligible to vote. ■

Editorial Subcommittee

From The Faculty Chair Issues for the Fall Term

Steven Hall

A NEW ACADEMIC YEAR has begun, and it's always exciting to start a new year and meet new students. In this column, I'd like to talk about a number of issues that faculty might want to consider as the term gets underway.

Changes

Each year, the Faculty Chair works with the Associate Provost to host orientation for new faculty in August. Over the course of 2014-15, approximately 40 new colleagues will join the Institute. I invite you to join me in extending a warm welcome, and look forward to seeing new faces at the monthly Institute Faculty Meetings (September 17, October 15, November 19, December 17, February 18, March 18, April 15, May 20).

Joining the faculty officers this year is Prof. JoAnne Yates, who became the new Secretary of the Faculty. Former Secretary Prof. Susan Silbey stepped down on July 1 to begin a sabbatical leave. Susan did a splendid job as Secretary, and I enjoyed getting to know her. Her counsel was invaluable to me and the administration. I look forward to working with JoAnne in the coming year.

I would be remiss not to reflect briefly on our losses over the summer. Many of us knew Professors Seth Teller and JoAnn Carmin, and their absence in our classrooms, departments, committee meetings, and labs will be keenly felt. I had the pleasure of knowing Seth Teller. President Reif described Seth as "a person of great human warmth and intellectual intensity," which I think is a good description. Seth was an activist in community issues in Cambridge, where he lived. Seth was one of the proposers of the new faculty committee on campus planning, and I called on Seth in May to help work out some final details on the proposal to establish

the committee. Both Seth and JoAnn will be missed greatly. As is tradition, their personal and professional contributions to the Institute will be recognized with memorial resolutions this fall.

Pressure Points

Moving from the profound to the everyday, I also want to use this space to ask that everyone teaching this semester please check to ensure that your syllabi, assignments, exams, and other subject planning follow the academic term regulations. In this issue, you will find an overview of some of the key policies that the faculty has adopted over the years (see next page).

One of the responsibilities of being Faculty Chair is to respond to student reports on violations of term regulations in the *Rules and Regulations of the Faculty* at the start and end of the term. Although students are asked to raise concerns directly with their professors at the start of the term, not all violations are caught early, and sometimes violations are created when an instructor has to make a last-minute change. Some of the more common complaints deal with take-home exams after the last exam day or during finals week, which are prohibited as a general rule; academic activities outside allowable times (e.g., 5-7 pm); and assignments due after the end of the semester. Unfortunately, there are very limited solutions when these issues come to light at the end of the term. Although most violations by faculty are unintentional and well-meaning, they cause significant stress among students at an already stressful time of year.

Weighty Questions

At the same time, it's clear that as our curriculum continues to evolve, we will also need to revisit how we help students

manage the pace and pressure of life at MIT. Over the summer, the Institute-wide Task Force on the Future of MIT Education issued a final report for comment. If you have not yet done so, I encourage you to skim through their 16 recommendations, available online at future.mit.edu/final-report.

Responsibility now rests with the community to discuss the ideas that have been raised. In my last column, I mentioned some related issues that faculty committees are beginning to consider this year, such as how to implement and practically manage more modular subject offerings, and how to award credit for online study. In some sense, exploring and accommodating modularity is simply responding to a trend that is already underway. However, the report also puts forward bold ideas around formalizing undergraduate service opportunities, and even reconsidering the GIRs. While the former has received support in the past, the latter has proven to be a notoriously contentious issue. As a faculty, we will need to think carefully about how to evolve the curriculum.

There are several ways to share feedback on the report. Aside from emailing the co-chairs, there will be a faculty forum on September 24 to share comments directly. Details are available on the Task Force Website (future.mit.edu).

Random Faculty Dinners

For the last 26 years, Jay Keyser has hosted informal dinners for the Institute faculty. These dinners are called the Random Faculty Dinners, because the guest list is random – invitations are sent to a randomly generated list of faculty each month. Typically, about 25 faculty will attend each dinner. The dinners offer a chance to converse with colleagues you are not likely to have met or spoken with recently or, in many cases, ever. There are

no planned agendas, although time is allotted for anyone to raise a current issue. This year, Provost Marty Schmidt and I will continue Jay's tradition by taking on the role of hosts for the Random Faculty Dinners. We hope that you will have a chance to join us this year.

At Your Service

As a reminder, the Committee on Nominations will circulate the annual

Institute Committee Preference Questionnaire in the coming weeks. This is the primary mechanism for opting into or out of service on the standing faculty and Institute committees for next year (2015-16). Whether you would like to add Institute service to your CV, or have a personal interest in one of the committee areas (such as the new Campus Planning Committee), please help the Nominations Committee by providing your availability.

For those who are overcommitted or have conflicting plans, there is an easy option to decline service.

Finally, if there are any issues that you would like the faculty committees to address this year, the faculty officers may be reached collectively at faculty_officers@mit.edu. ■

Steven Hall is a Professor in the Department of Aeronautics and Astronautics and Faculty Chair (srhall@mit.edu).

Teaching this fall? You should know . . .

the faculty regulates examinations and assignments for all subjects.

View the complete regulations at: web.mit.edu/faculty/teaching/termregs.html.

Select requirements are provided below for reference.

Contact Faculty Chair Steven Hall at x3-0869 or srhall@mit.edu for questions or exceptions.

No required classes, examinations, oral presentations, exercises, or assignments of any kind may be scheduled after the last regularly scheduled class in a subject, except for final examinations scheduled through the Schedules Office.

Undergraduate Subjects

By the end of the **first week** of classes, you must provide:

- a clear and complete description of the required work, including the number and kinds of assignments
- the approximate schedule of tests and due dates for major projects
- an indication of whether or not there will be a final examination, and
- the grading criteria and procedures to be used

By the end of the **third week**, you must provide a precise schedule of tests and major assignments.

Tests, required reviews, and other academic exercises outside scheduled class times shall not be held on Monday evenings. In addition, when held outside scheduled class times, tests must:

- not exceed two hours in length
- begin no earlier than 7:30 PM when held in the evening, and
- be scheduled through the Schedules Office

In all undergraduate subjects, there shall be no tests after Friday, December 5, 2014. Unit tests may be scheduled during the final examination period.

Graduate Subjects

By the end of the **third week**, you must provide:

- a clear and complete description of the required work, including the number and kinds of assignments
- the schedule of tests and due dates for major projects
- an indication of whether or not there will be a final examination, and
- the grading criteria and procedures to be used

For each graduate subject with a final examination, no other test may be given and no assignment may fall due after Friday, December 5, 2014. For each subject without a final examination, at most, either one in-class test may be given, or one assignment, term paper, or oral presentation may fall due between December 5 and the end of the last regularly scheduled class in the subject.

Collaboration Policy and Expectations for Academic Conduct

Due to varying faculty attitudes towards collaboration and diverse cultural values and priorities regarding academic honesty, students are often confused about expectations regarding permissible academic conduct. It is important to clarify, in writing, expectations regarding collaboration and academic conduct at the beginning of each semester. This could include a reference to the MIT Academic Integrity Handbook at: integrity.mit.edu.

In Memoriam

Charles “Chuck” Marsteller Vest 9 September 1941 – 12 December 2013

Robert J. Birgeneau

THE FIRST TIME THAT I saw Chuck Vest was in a large auditorium at MIT in the autumn of 1990 when Chuck and his wife, Becky, were being introduced to the MIT community. I remember being immediately impressed with Chuck’s warmth, sense of humor and a kind of Midwest folksiness. On the one hand, I thought that this was exactly the type of leadership that we needed at MIT at this stage in our history. On the other hand, MIT can be a harsh, arrogant place with often unrealistically high expectations placed on people. Insiders refer to MIT as a “praise-free zone.” I wondered how this gentle man from West Virginia would fare in this challenging community. It turns out that I need not have worried at all because underneath this gentle exterior was a core of steel that enabled Chuck to act with great courage in even the most challenging of circumstances.

Chuck Vest served with great distinction as the President of MIT from 1990 to 2004. This was followed by six years as the President of the National Academy of Engineering. He played an important leadership role both at MIT and on the national stage. This included major contributions to social justice for low-income students, especially those of color, and for women in the academy. In addition, he became the face of science and engineering in Washington when our community badly needed to repair its relationships with our representatives in D.C.

* * * * *

Charles “Chuck” Marsteller Vest grew up in an academic family in Morgantown,

West Virginia. His father, known affectionately as “ML”, was a Professor of Mathematics at West Virginia University. ML was notorious for having academic standards that were, in the words of one of his undergraduate students, John Curry, “somewhere near the heavens.” Chuck graduated from West Virginia University in 1963 with a Bachelor of Science degree in mechanical engineering. One of his fellow students at WVU, Dorothy Manning, says of Chuck in those days: “Yet, with all that brilliance, he was always humble, a little shy, always kind and encouraging to others, self-effacing, a little grin, a twinkle in his eye, humor, and caring for others.” This is exactly the same Chuck Vest who became such a great national leader in higher education. It was at WVU that Chuck met his beloved wife, Becky.

In 1963, Chuck and Becky moved from Morgantown to Ann Arbor, Michigan where Chuck began his graduate education in mechanical engineering at the University of Michigan. Chuck received his MS in 1964 and his PhD in 1967; he joined the Michigan faculty as an assistant professor in 1968. There he carried out research on heat transfer and, importantly, engineering applications of laser optics and holography. He was promoted to the rank of associate professor in 1972 and to full professor in 1977. Four years later, Vest began the transition from a career as a teacher and researcher to one as an academic administrator. At Michigan, he served successively as Associate Dean of Engineering, Dean of Engineering, and finally as Provost and Vice President for Academic Affairs.

The call from MIT came in 1990. As he said in his inaugural address, Chuck viewed the Presidency of MIT as a call to national service. This turned out to be more true than any of us attending his inauguration could have imagined. Chuck then began to put together his own leadership team. On the academic side, this included Mark Wrighton as Provost, Joel Moses as Dean of Engineering, Philip Khoury as Dean of Humanities and Social Sciences, and myself as Dean of Science. Later appointees included Bob Brown as Provost, Larry Bacow as Chancellor, and Alice Gast as Vice President for Research. Chuck was a great teacher as evidenced by the fact that five of his appointees went on to lead major universities across the United States, Canada, and Great Britain, Wrighton at Washington University in St. Louis, myself at the University of Toronto and UC Berkeley, Bacow at Tufts University, Brown at Boston University, and Gast at Lehigh and Imperial College, London.

Any doubts that anyone might have had about Chuck Vest’s ability to lead MIT were immediately wiped out by his bold action on the so-called overlap suit. The Justice Department had accused top private universities of violating antitrust statutes by sharing information about applicants’ financial needs. While other university leaders were collapsing under the government pressure and signing consent decrees, Vest understood that this was really about access to higher education by the underserved, most especially, underrepresented minorities. Accordingly, Vest led MIT to trial and won, enabling colleges committed to need-based aid to exchange certain data;

it also led to legislation permitting colleges to adopt a common methodology for measuring need. In one stroke, Chuck Vest had become my hero.

One of the important challenges that Chuck took on was rebuilding public understanding of and support for higher education and research. He became a regular presence in Washington, championing research, science, and innovative partnerships among universities, government, and industry. He did this in a bipartisan way, including developing a close friendship with Newt Gingrich. I remember well Chuck showing off various MIT-produced scientific “toys” that he was taking off to Washington to give to Newt. Chuck also went around MIT grilling people like myself about great unsolved fundamental scientific challenges in our fields. This led to Chuck Vest’s list of the 10 great scientific challenges of our time. His purpose, of course, was to demonstrate that scientific research was more vital than ever and that it needed robust government support.

After his great triumph with the overlap suit, Vest encountered an internal challenge at MIT which was less salubrious. The MIT Corporation decided that MIT needed to modernize its financial and administrative systems, that is, become more like a well run corporation than a loosely managed, inefficient university. Chuck took up the mantle and launched a major effort in “Reengineering.” This created significant tensions between the senior administration and both the faculty and the administrative staff. Some felt that Vest’s very presidency was at risk. I happened to be one who felt that MIT’s greatness, in fact, rested on some of these inefficiencies and that the social costs of reengineering might well outweigh any monetary gains. I was not shy in voicing my concerns in this regard. At one point I even wondered if Vest might ask me to step down as Dean of Science if I did not get in line. However, Chuck was a much bigger person than that and, in the end, I survived and so did reengineering. It is one of the great ironies in my own professional life that in my

capacity as Chancellor of UC Berkeley, after the unconscionable budget cuts by the state government, I had to lead a major reengineering effort at Berkeley, in that case called “Operational Excellence.” Everything that I had learned from Chuck at MIT about change management was invaluable in our efforts at Berkeley.

One of the important challenges that Chuck took on was rebuilding public understanding of and support for higher education and research.

While the drama surrounding reengineering was going on in the foreground, one of the most important events in Vest’s service was taking form in the background. Specifically, in 1994, 15 senior women faculty in the School of Science came together to share their experiences, many of them quite desultory. These women came to me as Dean of Science urging me to address what they viewed as systemic discrimination against women faculty in the School of Science. I immediately went to Chuck for guidance and he urged me to address their concerns head-on. If we were discriminating against our women faculty, either consciously or unconsciously, then we needed to understand this and seek out appropriate remedies. Accordingly, after a long and stressful process, in 1995 I was able to establish a committee chaired by Prof. Nancy Hopkins to investigate the status of women faculty in my school. The first report, which came in preliminary form in 1996, was both shocking and utterly persuasive. Chuck and I decided to start implementing remedies immediately, which we did with some success. I appointed a second committee, chaired by Prof. Molly Potter, to follow up this pioneering first study.

Much of the information in these first two reports was obtained from interviews that were conducted with the promise of confidentiality. The reports, among other things, documented specific inappropriate behaviors by individual faculty. Thus the reports could not be released publicly. However, several of the women faculty

understood clearly that what had been learned in the MIT School of Science was by no means restricted to MIT and indeed was both a national and international phenomenon. Therefore, it was essential that a version of the report be produced that could be distributed broadly and they did just that. It was in the foreword of this

document, first reported in the March 1999 *MIT Faculty Newsletter*, that President Vest made his famous statement: “I have always believed that contemporary gender discrimination within universities is part reality and part perception. True, but now I understand that reality is by far the greater part of the balance.” This frank, courageous statement by the President of one of our country’s great universities echoed around the world. Its effects are still being felt today. Vest, with the support of then Provost Bob Brown, extended these studies to all five Schools at MIT and formed a consortium of nine leading universities to address the issue of gender discrimination in universities. Academia has not been the same since.

Also in the foreground during this period was MIT’s response to the death of a freshman, Scott Krueger, following a fraternity initiation event involving alcohol. In the press and courts, as well as within the MIT community, the Institute was highly criticized for its policy of allowing freshmen to rush, join, and move into fraternities during their first weeks on campus, under conditions of minimal supervision. Other members of the MIT community, especially alumni who had lived in fraternities as students, valued this option for housing. Chuck had to deal with these internal differences at MIT as well as facing the reality of this student’s tragic death. Chuck’s first step was to confront the grief and anger of the Krueger

continued on next page

Charles “Chuck” Marsteller Vest
Birgeneau, from preceding page

family by attending Scott’s funeral, against the advice of local police who warned that his safety could not be assured. Not long after, he agreed to mediation with the family, again despite warnings that mediation was rarely successful in such circumstances. It did succeed, however, primarily because of Chuck’s forthrightness in expressing regret and determination to improve supervision of MIT freshmen. Once more Chuck’s decency and humanity shone through.

Chuck provided similar leadership in his support of the research enterprise. In the early ’90s the then chair of Biology, Phillip Sharp, and I decided that MIT’s impact in the field of neuroscience was far below what it needed to be. Accordingly, Phil and I established a committee to explore the research frontiers in neuroscience and to recommend how we could go about addressing these challenges at MIT. The committee produced a compelling report but one that required structural changes within MIT as well as significant new resources. One of Vest’s special talents as a leader was that he was able to identify and assess important new initiatives and then to lead their implementation. He did this brilliantly for neuroscience, ultimately raising hundreds of millions of dollars and helping to create the Center for Learning and Memory in 1994 which evolved into the Picower Institute for Learning and Memory in 2002, initially led by Nobelist Susumu Tonegawa, and the McGovern Institute for Brain Research in 2000, initially led by Nobelist Phillip Sharp. MIT went from being a secondary player in neuroscience to a world leading research center.

Vest’s talent for identifying, assessing, and then leading important new initiatives was most dramatically illustrated in the MIT OpenCourseWare (OCW) program. In the late 1990s, many universities were establishing e-learning programs with the intent of reaping significant new revenues. Chuck, together with Provost Bob Brown and Chancellor Larry Bacow, was

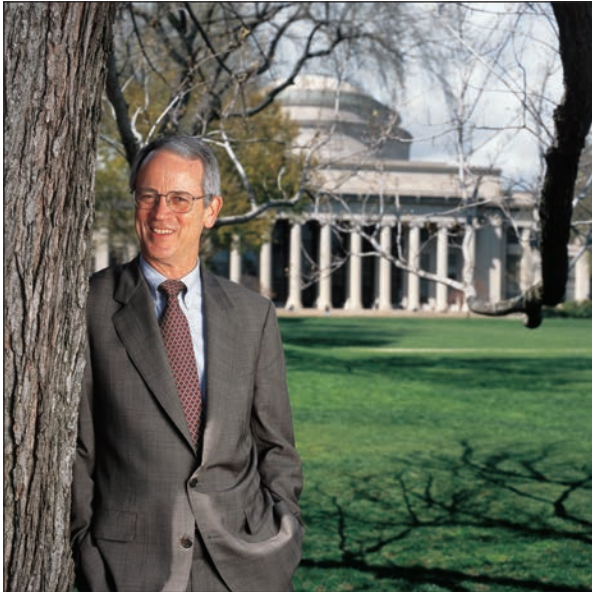
extremely skeptical about the idea of commercializing MIT courses and, accordingly, as academics often do, established a faculty committee to consider possible strategies for MIT in the Internet learning world. This committee, named the Lifelong Learning Committee, after much study came to the bold conclusion that MIT should put every single one of its courses online and should make them available for free. At that time, this was audacious beyond belief. The chair of the committee, Prof. Dick Yue, said “The idea is simple: to publish all of our course materials online and make them widely available to everyone.” He took this idea to Bob, Larry, and Chuck and Chuck’s instant response was: “That is brilliant.” Chuck immediately arranged to have breakfast with Bill Bowen, the then President of the Mellon Foundation, to present this idea to him. Bill, in turn, saw the brilliance of the idea and promised that Mellon would provide the necessary seed funds to launch OCW. They then approached the Hewlett Foundation who, similarly, understood the importance of the MIT OCW initiative and committed foundational resources. OCW was launched in 2001; today there are materials from 2150 MIT courses available online through OCW and so far there have been 125,000,000 visitors. The brave new world of Massive Open Online Courses, the so-called MOOCs, emerged from MIT’s OCW. Without Chuck Vest, this might never have happened or, at least, would have been delayed many years.

The above are among the many important contributions that Chuck Vest made to research and education at MIT. However, in parallel with this, he played a critical leadership role for science and technology at the national level. Vest was a regular presence in Washington. He logged more than 100 visits to the nation’s capital, personally conferring with some 250 officials during his time as MIT’s president. Near the beginning of his service at MIT, Chuck established the MIT Washington Office and recruited the inimitable Jack Crowley to lead it. One lesson which many of us learned from Chuck is that in Washington it is not all

about Senators and Congressmen. Much of the real work is done by staffers. In the words of Bill Bonvillian, the current director of MIT’s Washington Office: “Chuck knew where much of the real work was done, and purposely got to know the staff handling science and technology issues. It was easy for him, because that was him – no standing on ceremony, no pretense, just his honesty and forthrightness.” It is largely because of the efforts of Chuck and his ally, Norm Augustine, the former CEO of Lockheed Martin, that Congress passed and President Bush signed the America COMPETES Act.

Chuck served on a wide variety of important committees in Washington beginning with the President’s Council of Advisors on Science and Technology. At the request of President Bill Clinton, he chaired the Committee on the Redesign of the International Space Station, which revitalized the space station at a time when its future was in question. President Clinton said of Chuck: “He served with distinction as an ambassador and spokesman for science in Washington, advocating tirelessly for the essential role of research in our economic growth and national security.”

Perhaps Vest’s most challenging assignment was serving on the 2004 bipartisan “Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction.” The commission ultimately concluded that in reporting the presence of nuclear, chemical, and biological weapons of mass destruction prior to the U.S. invasion of Iraq in 2003, the U.S. intelligence agencies were “dead wrong” and their collected information was “worthless or misleading” – quite an astonishing and brave conclusion for a committee established by the President of the United States. Chuck also chaired the “Task Force on the Future of Science Programs at the Department of Energy.” I served on that committee at Chuck’s behest and was able to witness firsthand the consummate skill that Chuck exhibited in dealing with staff and Senators alike. Specifically, he was remarkably resistant to the inevitable political



Challenges Symposium and fostered better public understanding of engineering and its importance to the well-being of the nations and the world. He also expanded the NAE Frontiers of Engineering program by creating bilateral Frontiers of Engineering symposia with China and the European Union and initiated the Frontiers of Engineering education symposium series. He initiated a major NAE effort to understand the nexus between manufacturing, design, and innovation to the prosperity of our

pressures to come to certain conclusions and not others.

Academia is filled with exceptionally gifted people. Many will not hesitate to let you know immediately just how brilliant they are. Chuck was equally intelligent but took the exact opposite approach. He was humble to a fault but all you had to do was to listen to him to realize just how gifted he was. It was this innate humility that made Chuck so effective in Washington.

One might ask how Chuck himself looked on university leadership. In the year 2000, when I was preparing to leave MIT to assume the Presidency of the University of Toronto, Chuck dropped by my office to offer his advice. He said, "Bob, I have only two pieces of advice for you. First, being President of a university is not a job, it is a life. Second, even when you are off the record, you are on the record." Both proved to be remarkably true.

* * * * *

In 2007, Chuck was elected president of the National Academy of Engineering and vice-chair of the National Research Council. In the words of Dan Mote, the current President of NAE: "Chuck promoted evergreen programs on the Grand Challenges for Engineering which spawned Grand Challenge Summits at universities around the U.S., a Global Grand

nation. Chuck became the spokesperson for engineering by illuminating the forces reshaping the landscape of engineering nationally and globally, including its practice, education and future."

In 2006, Chuck was awarded the National Medal of Technology by President Bush and the Vannevar Bush Award by the National Science Board.

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Chuck was deeply devoted to his wife Becky, his daughter and son-in-law, Kemper Vest Gay and John Gay, his son and daughter-in-law, John and Christina Vest, and grandchildren Mary and Robert Gay and Ameri and Charles Vest. He took great pride in the accomplishments of his children and grandchildren. I remember well a conversation that I had with Chuck when we discovered that we had grandchildren on the same soccer team in Arlington, Virginia and we both expressed our pride in our emerging soccer stars. Chuck was particularly devoted to Becky to whom he had been married for more than 50 years. During Chuck's presidency of MIT, Becky suffered a serious illness and Chuck stepped in to care for her with extraordinary tenderness just as Becky did for Chuck when he fell ill in the time leading up to his death. Theirs was a true partnership.

On August 29, 2012 a number of us who were close to Chuck received a shocking e-mail from him. In it, Chuck reported that after experiencing some very modest symptoms, he had gone for a check-up and a CT scan revealed that he had pancreatic cancer. In describing his plan for treatment he expressed both confidence in his medical team and optimism that his treatment would be successful. Unfortunately, as so often happens with pancreatic cancer, even the best medical team in the world could not effect a cure. Chuck dealt with the challenges in his treatment remarkably well, viewing them with the objective eye of the consummate engineer that he was.

It was characteristic of Chuck that when he first learned about his cancer he said that he was not afraid of dying. Rather, he was still focused on higher education and the nation. Larry Bacow met with Chuck just two weeks before he finally passed away. Chuck talked about the state of higher education, the challenges in governance of our great universities, and the eroding public support for higher education broadly and research universities, in particular. Chuck was our national leader right to the very end. Chuck finally passed away on December 12, 2013, less than a year-and-a-half after the initial diagnosis. We all lost a wonderful friend and the greatest leader of higher education of our era.

* * * * *

I would like to thank Larry Bacow and Rosalind Williams for their many contributions to this memoir. I also want to acknowledge the excellent article written by Steve Bradt, the Director of News in the MIT News Office, from which some of the content in this essay was extracted. ■

This memoir will be published in the *Proceedings of the American Philosophical Society*.

Robert J. Birgeneau is Silverman Professor of Physics, MSE and Public Policy, UC Berkeley; Green Professor of Physics Emeritus, MIT (robertjb@berkeley.edu).

Making the Retirement Transition Easier
Wilson, from page 1

While I am happy with the final outcome in terms of my retirement, I feel that there was quite a bit of uncertainty and stress over the past year which could have been avoided. The recommendations at the end of this article are aimed at achieving this outcome and I believe if they are enacted, there is a lower likelihood that other faculty would face a similar period of uncertainty as part of the retirement transition.

When I made the decision to plan retirement, I spoke to my department head and we agreed that I would go to half-time after the 2010/2011 academic year with a reduced teaching load and no major administrative responsibilities, but continue to run my research program (the transit research program). This research program involves commitments to up to five full-time research staff and one part-time research staff member as well as about 15 graduate research assistants with funding from research sponsors (both domestic and international) of approximately \$2 million annually. At that time, I believed that I should be able to fully retire at the end of this period if another principal investigator had been identified for this research program; alternatively, if such an individual was not recruited, I would continue as the principal investigator, with salary support from the research program, as a professor without tenure – retired (PWOTR).

Looking back with the benefit of hindsight I realize that I was naïve when I made this decision, relying on my good relationship with my department head. In fact, there was no formal signed agreement between MIT and me describing the understanding; rather there were simply two short letters, one from my department head and the other from me, both of which proposed a three-year half-time appointment leading to retirement with a new title of emeritus professor. As a faculty member of long standing with a benign relationship over the years with MIT, I did not feel the need to seek a more formal agreement.

In what became a specific bone of contention, I did not realize the distinction between emeritus professor and PWOTR, assuming that the difference was simply whether one had research funds available to pay up to 49% of one's full-time salary. I now realize that the PWOTR appointment requires the approval of the department head. More generally, I did not understand what alternatives were available to me, given that I was seriously thinking about retirement. Probably, I should have been more assertive in finding out about those alternatives.

Over the following two years, I worked diligently to implement this plan. In particular, I recruited a senior researcher who would be qualified to become the principal investigator on the transit research program and instructor of the key graduate subject (1.258) which supports this research, when I retired.

Last summer a new department head was appointed, apparently with a mandate for radical change. My new department head believed strongly that only faculty should lead research activities and teach virtually all subjects. Therefore, he was unwilling to agree to my request that the senior researcher who had been recruited with the expectation that he would eventually take over my principal investigator responsibilities on the research program and teach the graduate subject essential to continuing this research, actually take on these roles. Also, in the course of the next few months, it became clear that my new department head viewed my previously proposed transition to emeritus professor in September 2014 as a firm commitment to retire and play no further role leading the transit research program. So in his eyes, neither the senior researcher nor I should be the PI after September 2014. This would inevitably have resulted in the early termination of this substantial research program. That was totally unacceptable to me because of the impact on graduate students, research staff, and sponsors.

When it became clear to me that I was at an impasse with my department head I wrote to him notifying him of my decision not to retire, but rather to continue as a

tenured faculty member and return to full-time status. This seemed to me to be the only way to protect my research program, although neither of my initial objectives in planning to retire would be fulfilled.

I then sought advice from various other colleagues and administrators outside my department and eventually made a transition proposal to my department head which led to an agreement for me to retire on August 31, 2014, but to continue my research leadership role as PWOTR for a further three years before becoming professor emeritus. Also, my department head agreed to provide financial support to permit the teaching of 1.258. I am pleased with this arrangement and only regret that it took such a long and tortuous process to arrive at it.

Recognizing that every faculty member faces different circumstances and that there are several aspects of my own experience which are probably unusual (if not unique), I think the following changes in the retirement planning process, as I experienced it, could help avoid other senior faculty being exposed to similar difficulties in the wind-down to retirement:

1. There needs to be greater transparency and more effective counseling of faculty in terms of their options as they begin to consider retirement. Granted that I was naïve four years ago as I began to think seriously about retirement, a more effective counseling effort by MIT could have avoided some serious heartache later on.
2. There should be a written agreement between the retiring faculty member and the Institute, which both parties sign, specifying what will happen and whether and under what conditions these terms may be changed subsequently. In my case none of this was clear nor has it been fully resolved what would have happened if the department head and I had not reached an agreement.

Department heads at MIT exercise considerable power, and department heads change periodically, so it needs to be clear whether an agreement reached with a current department head on a retirement

transition plan can be changed unilaterally by their successor. This is one of the important roles for the written agreement referred to above. It seems to me that this agreement should be standard across the

Getting to Kendall Gateway

Yoon, from page 1

the Faculty Task Force on Community Engagement in 2030 Planning had made several recommendations should the zoning petition be approved, which included: 1) a comprehensive urban design plan for the East Campus is completed before any buildings are built, 2) a faculty group or similar task force participate directly in the East Campus Planning process, and 3) development be guided by a set of design principles laid out in the report. MIT revised its rezoning petition and resubmitted it in December 2012. The City of Cambridge approved the petition in April 2013, adding approximately 900,000 square feet of additional office, lab, retail, and housing beyond the 800,000 square feet of “as-of-right” development already available in the East Campus.

In late April of 2013, when Dean Santos asked us as part of the SA+P Faculty Design Group to roll up our sleeves and use our collective planning and design experience to contribute to East Campus, most of us, having only heard bits and pieces of information about the East Campus Planning efforts, approached her call to action with measured skepticism. Despite our doubts, we engaged in several intense planning and design charrettes (the term that architects and planners use to describe such a design workshop) to research, model, and draw through the potential options for East Campus from a physical planning perspective. Needless to say, it was impossible to reach consensus among the seven participating faculty and we arrived at seven different approaches to the plan. While that was probably to be expected, the unexpected outcome was that these alternatives – based on expanded design principles – were not only well received by the East Campus Steering Committee and the administration,

Institute and it is the responsibility of the Institute rather than just the department in which the faculty member is appointed.

Finally I urge the Institute to think about strengthening the existing retirement

but fully embraced as part of the next iteration of the East Campus planning process.

The planning and design process of the MIT campus is a complex one, involving dozens of stakeholders, administrators, faculty, students, and planning and design professionals. As a professor of architecture and design, I tell my students that design is not a linear process but an iterative one. Schemes are tested, redesigned, presented, debated, and redesigned again and again, improving along the way. The planning and design process weighs ideals, planning visions, and design principles with economic viability, regulatory constraints, and pragmatic needs. Over the last 12 months, members of the SA+P faculty have worked intensely together on the East Campus Working Team with the Office of Campus Planning and MITIMCo to balance the quantitative metrics with qualitative aspirations to arrive at a process and a plan that embodies MIT from inside-out and outside-in.

In “Twenty to Thirty Questions About MIT 2030” from the November/December 2011 issue of the *MIT Faculty Newsletter*, the “SAPIens” (brought together by Professor Caroline Jones and representing over a dozen faculty members from SA+P), put forward 26 concerns/challenges to the Institute. As the process continues to evolve, I look back at the points made by my colleagues, and I am struck by how many of those challenges have been embraced by the planning process over the past year. From the initial studies by Elkus Manfredi Architects, to the plans by Mack Scogin Merrill Elam Architects & Michael Van Valkenburgh Associates, to the MIT and community meetings in response to the plans, and the further study by an SA+P faculty group, the plan framework has adapted and transformed with every level of engagement. Programmatically, the current East Campus plan has become

incentives in the interests of a faster pace of faculty renewal. ■

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more “MIT” with new graduate student housing, childcare facilities, an Innovation Center, and the MIT Museum at the Kendall Gateway. The integration of MIT and retail/service programs into the commercial office and lab buildings will be essential to the identity, vibrancy, and success of the East Campus plan. The proposed large open space that both reaches out and draws community in has the potential to define the values of MIT for the next century.

Currently, the selection process for the professionals to design the buildings and public spaces that constitute the Kendall gateway is under way. Over the summer a Request for Qualifications (RFQ) and Request for Proposals (RFPs) for architectural design teams yielded 30 firms for consideration. Three-to-four teams were selected for interviews for each building site by a committee comprised of members of the faculty, Office of Campus Planning, Campus Construction, and MITIMCo. Within each of the committees many different viewpoints were expressed and passionately debated until a recommendation could be made. The recommendations for the site architects were presented at a meeting of the MIT Building Committee at which Professor and Chair of the Faculty Steve Hall was present (acting as an interim representative for the soon to be formed Faculty Planning Committee).

It has been an incredible learning experience to witness the passion, commitment, and difference in so many who have a shared goal – the successful outcome to the Kendall Gateway and East Campus. It is clear that there is still much process ahead and that community engagement and open communication will be essential to the development of a uniquely MIT Gateway and East Campus. ■

J. Meejin Yoon is Professor and Head of the Department of Architecture (meejin@mit.edu).

Redesigning Hayden Library and the Future of Library Spaces at MIT

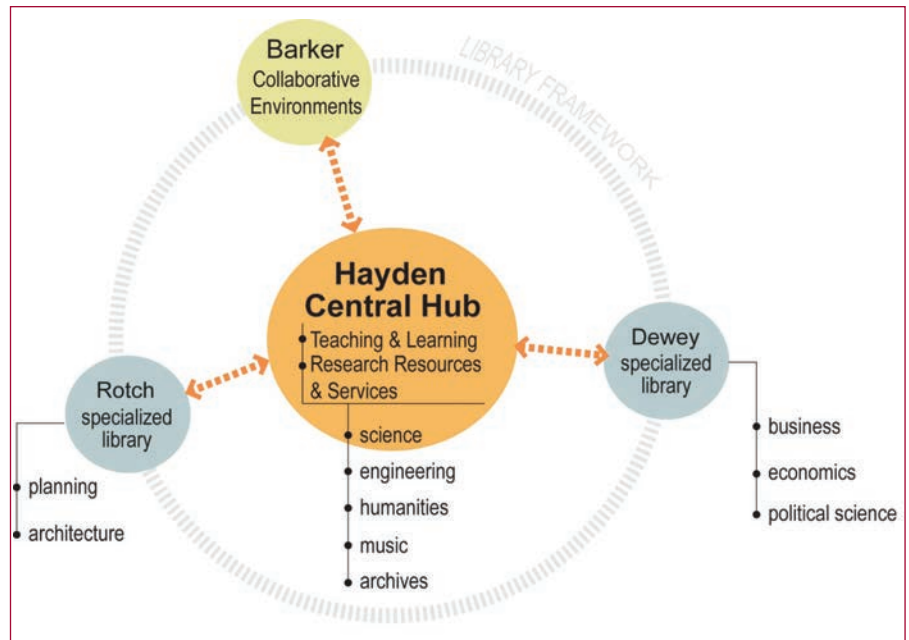
Steven Gass
Jeffrey Ravel

“In the applications of technological process to intellectual expansion, there lies a natural field of leadership for MIT. Accordingly, the Hayden Library will provide a laboratory in which these and other processes can be explored.”
– The Charles Hayden Memorial Library, 1946, page 13

THESE WORDS WERE WRITTEN

with a sober but lofty confidence at the dawn of the post-war era in a brochure outlining MIT’s ambitious plans for its new central library, the Charles Hayden Memorial Library. Designed to serve as an “integrating force” at the Institute, the Hayden Library inaugurated the expansion and modernization of MIT’s academic facilities. MIT collaborated with architect Ralph T. Walker (class of 1911) in developing a plan for the library that stressed “maximum flexibility.” This meant both creating a building that allowed for potential future restructuring of the library system, and designing spaces that serviced scholarship of the humanities and the sciences with equal proficiency. It was this future orientation that allowed the library to smoothly adapt to the staggering technological changes of the second half of the twentieth century.

The building has adapted to programmatic changes as well. The library has always housed the humanities and science collections, as well as a music library. But a space that once served as a gallery now houses Killian Hall (a heavily-used performance venue), while an area that originally contained an open-stacks facility is now firmly secured, and houses the unique historic materials administered by the Institute Archives and Special Collections. Despite these changes the Hayden Building, now over 60 years old,



Framework for Space Planning in the MIT Libraries: Phase One - Shepley Bulfinch

requires significant investment to renew the building infrastructure, and to exhibit the necessary flexibility going forward so that the Libraries’ program will continue to meet the needs of current and future faculty and students. The necessary redesign of Hayden provides an opportunity more generally to rethink library spaces across campus.

In the fall of 2011, with the support of the Faculty Committee on the Library System (FCLS) and the Committee for the Review of Space Planning Program (CRSP), the Libraries and Campus Planning and Design engaged the architecture firm Shepley Bulfinch to develop a framework for space planning in the Libraries over the next five to 10 years. Completed in June 2012, this Phase One report envisions library spaces in Hayden (Building 14) as the hub of the library system, providing a rich mix of learning

environments and collections for science, engineering, humanities, music, and archives. It endorses the concept of Hayden becoming a library centric academic village. To complement the remodel of Hayden, the focus of the Barker Library in the dome of Building 10 will become 24-hour spaces with a rich mix of quiet study, collaborative, and instructional spaces, but largely without tangible collections or a traditional staffed service point. Two specialized facilities meeting the needs of their campus neighborhoods will remain: Rotch in Building 7, serving architecture, art, and planning; and Dewey in E53, serving management, economics, and political science. Such a strategic shift will strengthen the Libraries ability to support and enhance the academic priorities of the Institute.

Upon completion of this study, CRSP then launched a Rapid Response Building



Charles Hayden Memorial Library, ca. 1949

Assessment Study of Building 14 as part of its Accelerated Capital Renewal Program. The study documented numerous capital renewal needs to be addressed including accessibility, safety, and infrastructure (elevators, mezzanines, lack of restrooms, HVAC, building envelope). With this study in hand along with the Shepley Report, CRSP approved the launch of Phase Two of library space planning last fall. After a competitive bidding process during spring 2014, MIT selected the firm of Shepley Bullfinch and Van der Weil Engineering to create conceptual and schematic designs for a series of phased ren-

ovations that will respond to both program and capital renewal needs within Hayden Library. Funding for the capital renewal and some renovations to support new programmatic uses of the Hayden Library space are a priority in the Institute's Capital Plan. The project will also create conceptual designs for targeted renovations to Barker Library's 5th floor perimeter and upper floors (building on the hugely successful renovation and restoration of the 24x7 reading room), and improvements to Rotch Library. The conceptual designs for Barker and Rotch will enable us to propose projects to CRSP for future funding.

Over the summer the project team has engaged in a number of meetings with faculty, students, and staff to solicit program ideas for library spaces with a particular focus on Hayden Library. Programming for Phase Two will be informed by the Libraries' strategic plan, MIT's CRSP and Capital Renewal processes, MIT's 2030 campus planning effort, MIT's upcoming Capital Campaign fundraising efforts, and MIT's new Innovation and Future of Education initiatives. Feasibility and impact of early concepts ideas will be shared and tested through feedback from the MIT community and library staff. The Libraries will be creating a Website early in the fall term to keep the community informed of the project's progress. The Faculty Committee on the Library System will play a key role in providing input, and ensuring broad participation in the process. We welcome your ideas and observations as we continue this process; please feel free to send both of us your thoughts at the e-mail addresses listed below. ■

Steven Gass is Interim Director of the Libraries (sgass@mit.edu);

Jeffrey Ravel is Chair of the Faculty Committee on the Library System and Professor of History (ravel@mit.edu).

Nominate a Colleague as a MacVicar Faculty Fellow

PROVOST MARTIN SCHMIDT IS calling for nominations of faculty as 2015 MacVicar Faculty Fellows.

The MacVicar Faculty Fellows Program recognizes MIT faculty who have made exemplary and sustained contributions to the teaching and education of undergraduates at the Institute. Together the Fellows form a small academy of scholars committed to exceptional instruction and innovation in education.

MacVicar Faculty Fellows are selected through a competitive nomination process, appointed for 10-year terms, and receive \$10,000 per year of discretionary

funds for educational activities, research, travel, and other scholarly expenses.

The MacVicar Program honors the life and contributions of the late Margaret MacVicar, Professor of Physical Science and Dean for Undergraduate Education.

Nominations should include:

- a primary nomination letter detailing the contributions of the nominee to undergraduate education,
- three-to-six supporting letters from faculty colleagues, including one from his or her department head if the primary letter is not from the department head,

- three-to-six supporting letters from present or former undergraduate students, with specific comments about the nominee's undergraduate teaching,
- the nominee's curriculum vitae,
- a list of undergraduate subjects, including the number of students taught, and a summary of available student evaluation results for the nominee.

For more information, visit web.mit.edu/macvicar/ or contact the Office of Faculty Support at x3-6776 or macvicarprogram@mit.edu.

Nominations are due on Thursday, November 20. ■

HEX Subjects: One Pathway Into the HASS Requirement

Diana Henderson

THE PILOT PHASE OF the HASS Exploration (HEX) Program [web.mit.edu/hassreq/reports.html] has now concluded and the Program has moved to a steady state, with these subjects being recommended to all undergraduates. HEX subjects approach topics from different disciplinary and interdisciplinary perspectives, have no prerequisites, and are taught collaboratively by MIT faculty – providing a valuable opportunity especially for our first-year students, so that they get to know faculty members at the start of their MIT careers. The Subcommittee on the HASS Requirement (SHR) advocated that the HEX Program be recommended to all undergraduates as one important pathway into the humanities, arts, and social sciences curriculum at MIT, stating in its Report on the HASS Exploration (HEX) Program:

“... the HEX subjects developed to date have tremendous potential to introduce our students to the rigorous and passionate study of the Humanities, Arts and Social Sciences at MIT. While these subjects are not the only pathways into HASS disciplines, their emphasis on interdisciplinarity and faculty-student contact in small group settings make them a welcome complement to the already vibrant, discipline-based, introductory subjects in our undergraduate curriculum.”

The Committee on the Undergraduate Program (CUP) publicly endorsed SHR's recommendation at the May 2014 Institute Faculty Meeting. As a result, the Dean of Undergraduate Education (through the Office of Faculty Support

within the DUE) is looking to bolster the roster of HEX subjects by providing support and funds to faculty interested in designing or sustaining a HEX subject to be offered in Academic Year 2016. Please do consider taking this opportunity to team with colleagues within or beyond your academic unit to develop an innovative subject that could enrich our students' experience of their HASS coursework. To join the HEX Program a subject should adhere to the following definition:

HEX subjects are team-taught classes that explore a major concept or topic from multiple viewpoints found across or within disciplines in the humanities, arts, and social sciences (HASS). By showcasing the generative value of dialogue and debate among diverse disciplines, specialties, theoretical frameworks, or methodologies, HEX subjects allow students to approach a given problem, phenomenon, or topic from multiple vantage points. Emphasizing close interaction with faculty, the courses encourage the development of foundational skills such as critical reading and analysis of primary materials. More broadly, they provide a pathway into modes of thinking that are central to the HASS curriculum and offer students an opportunity to explore concepts, topics, and histories that are crucial to understanding and inhabiting the complex world in which we live.

HEX subjects are open to undergraduates of all years. Class sizes vary but student enrollment should not exceed 25 students per instructor.

Brief History of HEX

The idea of a HEX Program originated as a recommendation from the Task Force on the Undergraduate Educational Commons (2006) to create an experimental set of interdisciplinarity foundational subjects in the humanities, arts, and social sciences and, in part, create a common discussion among first-year students. Funding from the SHASS Dean's Office and d'Arbeloff Funds for Excellence in Education enabled the design and continuation of these pedagogically innovative subjects. In 2009, the CUP charged SHR with evaluating and defining these experimental subjects (originally termed First Year Focus) and recommending whether they should become a required permanent part of the HASS Requirement. SHR instead favored recommending them as complementary additions to other routes into the HASS Requirement.

Over the five years of assessment, the HEX subjects' definition evolved as SHR emphasized the importance of providing more opportunities for faculty-student interactions within foundational subjects and recognized the value of team-teaching when approaching topics from multiple perspectives across or within disciplines. Because HEX subjects can be resource intensive and challenging to design and sustain, SHR endorsed a support structure for faculty who wish to participate; the Office of Faculty Support stands ready to aid in such efforts.

How to Participate

Please contact Diana Henderson (dianah@mit.edu) for more information.

The staff within the Office of Faculty Support (OFS) can answer questions, provide logistical support for interested faculty, and help find teaching partners. Funding is available through the Alex and Brit d'Arbeloff Fund for Excellence in Education [web.mit.edu/darbeloff/] (proposals due October 1, 2014) to create new subjects for Academic Year 2016.

The current HEX Program roster is available on the HASS Requirement Website [web.mit.edu/hassreq/exploration.html]. Some potential HEX topics suggested by faculty that may be of interest include:

Chaos / The City / Creativity / Democracy / Social Protest / Science and Religion / Crime and Punishment / Modernity

These are just a few possibilities: we look to our creative faculty and students to find the topics and approaches that will further ignite a passion for learning within the HEX Program. ■

Diana Henderson is Dean for Curriculum and Faculty Support (dianah@mit.edu).

Request for Preliminary Proposals for Innovative Curricular Projects

The Alex and Brit d'Arbeloff Fund for Excellence in Education

THE OFFICE OF FACULTY SUPPORT seeks preliminary proposals for faculty-led projects to enhance the educational experience of MIT undergraduates. Projects that strengthen faculty-student direct interactions, that cross disciplinary boundaries, that explore new pedagogies including online components in residential education, and that aspire to provide dynamic, effective teaching are all appropriate.

Projects can be focused at any level of our undergraduate education. Special attention will be accorded to enhancements of subjects offered in the first year and as General Institute Requirements (GIRs). The d'Arbeloff Fund Review Committee is interested in proposals aimed at fostering faculty participation in the educational experiences of undergraduates, especially freshmen, in and beyond the classroom. Collaborative projects with the potential to affect large numbers of students over time, transcend

specific departmental curricula, or span multiple subjects are particularly valuable.

This year the Dean for Undergraduate Education, Dennis Freeman, and the Director of Digital Learning, Sanjay Sarma, are encouraging and offering additional support for projects aimed at introducing online components to MIT classes, including modules to be used within a subject or across subjects. As distinct from efforts to develop classes for edX, these projects must be focused on regular undergraduate MIT subjects and be designed to enhance faculty-student interactions.

Examples of other possible proposal areas include: establishing and enhancing HASS Exploration (HEX) subjects (web.mit.edu/hassreq/exploration.html); providing opportunities aligned with the faculty resolution that envisions every MIT freshman having a faculty mentor (web.mit.edu/fril/volume/254/grove_et_al.html);

and increasing freshman participation in appropriately focused group UROPs, project teams, or other forms of supervised research with faculty.

For all projects, the d'Arbeloff Fund Review Committee encourages assessment of the value of our educational innovations and the dissemination of good practices and results. For the projects involving online elements, the Office of the Dean for Undergraduate Education and the Office of Digital Learning will also be sponsoring workshops and other opportunities for faculty to share experiences, discuss challenges, and consult with each other about pedagogical approaches.

For guidelines and more information, visit web.mit.edu/darbeloff/ or contact the Office of Faculty Support at x3-6776 or darbeloff-fund@mit.edu.

Preliminary proposals, with an estimated budget, are due by Wednesday, October 1. ■

Improving Graduate Student Financial Literacy

Christine Ortiz
Heather Konar

FINANCES ARE A KEY ASPECT of graduate school, and graduate student financial literacy is a topic of increasing discussion nationally. The Office of the Dean for Graduate Education (ODGE) is committed to enhancing graduate student financial knowledge to support informed and effective decision-making regarding financial support, budgeting, and long-term planning. In this article, we will discuss practices for promoting graduate student financial literacy that graduate programs have found useful, the resources available to MIT graduate students, and possible new avenues to increase graduate student financial literacy. The information contained within this article was obtained via a poll of MIT graduate programs, the Office of the Provost/Institutional Research, and publicly available sources.

Financial Offers in Admissions Letters

A graduate student's financial journey begins even before she arrives on campus. Transparency and clarity in admissions offer letters is important, for example, articulating the amount and length of financial support committed; the definitions of different types of financial support and their associated responsibilities (e.g., research assistantships or RAs, teaching assistantships or TAs, fellowships or traineeships, student loans, self-funding, and combinations thereof); the breakdown of financial support (e.g., living stipend, tuition, fees, health insurance, etc.); the process of applying for support after the program financial commitment period is over; as well as a list of financial resources (e.g., Student Financial Services, ODGE, Housing Office).

First-year fellowships can be effective in terms of recruitment competitiveness by providing graduate students with the intellectual freedom to explore and choose an advisor and research topic, or non-conventional research areas. They may also give graduate students motivation and self-confidence to pursue external fellowship opportunities. Care should be taken with students who are admitted with no committed funding, as lack of stable financial support can contribute to stress and to the quality of a student's educational experience. In addition to admissions letters, some departments send general information to admitted students about how RAs and TAs are awarded, as well as information on costs associated with attending MIT, including housing. Setting clear expectations can be of particular benefit to international students, so that cultural differences do not lead to ambiguity and so as to avoid unnecessary complications with the financial aspects of procuring visas.

Orientation and Transition to MIT

Once on campus, the first large-scale opportunity to interact with students around financial literacy is during orientation. The Graduate Student Council (GSC) informs first year graduate students of financial resources on campus during orientation via Grad School 101/102 and a free USB Drive. The Sloan School of Management takes advantage of this opportunity via the Associate Director of Student Funding, who coordinates presentations during orientation and in the fall of the second year, organizes webinars, videos, and frequently asked questions (which are available on

the Sloan intranet), and meets with students one-on-one, including exit counseling sessions. Every MIT student begins their tenure with a student account through which funds are moved for their tuition and fees. Each student also has an account representative at Student Financial Services (SFS: web.mit.edu/sfs/) who is available to provide guidance about MIT billing and payment procedures.

As a resource to both students and administrators at any time of the year, the ODGE maintains a student finances Website (odg.mit.edu/finances/) which includes an extensive list of fellowships, including opportunities for international students. ODGE Administrative Officer Keiko Tanaka (ktanaka@mit.edu) is also available to assist with the often complex task of explaining procedures for student fellowships that need to be supplemented by partial RAs and TAs. Looking ahead, students should be encouraged to seek out funding a year or more in advance of the expiration of their departmental commitment. ODGE Manager of Graduate Fellowships Scott Tirrell (stirrell@mit.edu) is available to counsel students and to provide sessions on fellowship acquisition to graduate programs. Regarding financial support planning, a number of departments mandate progress reports each semester between the student and thesis advisor to discuss funding for the following semester.

Stipends and Cost of Living

A key component of graduate student support is the living stipend; each year the GSC partners with the ODGE to analyze graduate student living costs and makes a

recommendation for the percentage increase to the Dean's Group. In 2013-2014 the standard Doctoral RA stipend was set at \$31,969 (graduate programs have the option of deviating -10% or +15% from standard stipend rates without approval) and the corresponding annual Masters level stipend was set at \$29,224, while tuition and fees are listed on the Office of the Registrar's Website (web.mit.edu/registrar/reg/costs/index.html). The 2011 Graduate Student Cost-of-Living survey carried out by the GSC breaks expenses down by category, the largest of which are housing (~52% of income) and food (~23% of income); other expenses include health and dental insurance, transportation, books and supplies, and the student life fee. All figures are available on the GSC Website to aid in student budgeting (gsc.mit.edu/programs-initiatives/col/). This year the MIT Housing Office (housing.mit.edu) within the Division of Student Life offered new webinars to all graduate students that covered both on- and off-campus housing, with an overview of the Boston rental market. The Housing Office has many online resources and staff members who are available to meet with students individually about both on- and off-campus housing, including reviewing leases before a student signs.

Loans

Students may take out federal and private loans (offered by banks, credit unions, and other financial organizations), and many professional Masters degree candidates utilize this option. The SFS Website (web.mit.edu/sfs/loans/index.html) includes tips on how to be a smart borrower, as well as information on the types of loans available. Each MIT student has a financial aid counselor who is available to assist with applying for federal or alternative loans. SFS also has two loan officers who ensure that all students complete an online loan entrance session and an in-person loan exit interview, ensuring that students have the time to consider their specific student budget and all payment options. For more general education, SFS

makes staff members available for departmental and other presentations.

Taxes

While MIT provides some general information to students (odge.mit.edu/finances/taxes/), taxes are widely cited as the area where additional resources are desired. However, MIT cannot legally give tax advice. In order to provide aid to our students, every April the ODGE and the International Students Office within the ODGE sponsor separate workshops with tax professionals for domestic and international students that are exceedingly popular. In the future, the ODGE will also send a message to all students in January reminding them where to find their W2 statements, their responsibility to understand their individual tax situation, and pointing them to the available resources.

Additional Financial Resources

A variety of financial literacy offerings are available to students during Orientation, Independent Activities Period (IAP), and throughout the year by the MIT FCU, the MIT Alumni Association, and MIT Human Resources.

- *Independent Activities Period Workshops.* Multiple organizations have basic financial planning sessions that cover how to construct a budget and the importance of establishing an emergency fund; tax planning; savings vehicles; credit fundamentals; basic investment concepts, including risk tolerance and the difference between pre-tax, after-tax and tax-deferred investments; and insurance planning (search: web.mit.edu/iap/).
- *The MIT Federal Credit Union* provides a number of seminars for members on Estate Planning, Retirement, Roth IRA Conversion, Social Security, Planning for Long Term Care, and Special Needs Planning (www.mitfcu.org/home/member/calendar).
- *The MIT Work-Life Center* offers the service Work-Life Resources 24/7 (hrweb.mit.edu/worklife/worklife-resources),

which provides round-the-clock phone consultations and guidance to any member of the MIT community on the many financial, medical, and social issues that arise when providing care for children and elderly family members. For example, they can provide a listing of local childcare resources and their associated costs, and speak in general terms about budgeting for care.

- *The Council for Graduate Schools (CGS)* recently launched "GradSense," a new Web initiative (www.gradsense.org/gradsense) that provides information and tools to help students make smart decisions about graduate school finances. It includes an "Add it up" feature that encourages saving by allowing you to calculate how much compound interest you can earn by cutting back on typical expenses, and a "Loan repayment" feature that provides a guide to understanding the many loan repayment options for federal loans.

Post-MIT Finances

The calculus on the financial impact of graduate school has longer-term implications than just the graduate school years, however. Students are also interested in their earning potential after they have a degree in hand. Most departments do not make this data publicly available, though some provide it on request to prospective applicants and others. MIT Sloan prepares detailed annual employment reports (mitsloan.mit.edu/cdo/employment-reports/current-reports-mba.php) that include base salaries (also by industry, job function, geographic location, and professional experience), top hirers, top industries and functions, and reason for accepting the position. The MIT Global Education and Career Development Center (GECDC) provides survey data by broad degree type each year (<https://gecd.mit.edu/resources/data>). Externally, the CGS GradSense Website has a "By degrees" feature that helps calculate what a degree might be worth in terms of annual income.

continued on next page

Improving Financial Literacy

Ortiz and Konar, from preceding page

As an additional point of financial literacy, savvy students affect their baseline pay through negotiation with a potential employer. MIT GECD (<https://gecd.mit.edu>) organizes periodic sessions on negotiating job offers; this topic is also a part of the ODGE “Path of Professorship” workshop each October. The GradSense “Job tips” feature gives helpful advice on evaluating a job offer, negotiating terms, and financially transitioning out of graduate school.

Looking Forward

The MIT Atlas site is available to students and provides self-service functions such as paystubs and an interface for direct deposit. Beyond Atlas, a “Student Dashboard” project was initiated this past spring as part

of the Education Systems Roadmap, a strategic plan to modernize applications and processes central to the Institute's educational priorities. The goal of the Student Dashboard is to create a personalized, transactional hub that enables students to use a single interface to conduct key academic and administrative functions. While still in the conceptual stage, the Dashboard concept includes financial transactions.

While financial health will vary by each student's starting point, field of study, and individual decisions, faculty and administrators can play a positive role by contributing to financial literacy wherever possible. As articulated by Joshua DeMaio, Associate Director of Student Funding at the Sloan School, currently the best departmental practices on financial literacy “involve as much outreach as possible for all programs, as early as possible.”

This is especially helpful for students with combinations of funding types; the Department of Aeronautics and Astronautics is starting new sessions for these students this fall. The ODGE is working to increase conversation on graduate student financial literacy, the sharing of useful practices, and will be exploring the development of Institute-wide resources. We welcome your comments and ideas at cortiz@mit.edu.

We would like to thank departmental graduate officers, administrators, Student Financial Services, Joshua DeMaio, and the Graduate Student Council for their contributions. ■

Christine Ortiz is Dean for Graduate Education, Professor DMSE (cortiz@mit.edu); **Heather Konar** is Communications Officer, Office of the Dean for Graduate Education (heatherf@mit.edu).

In Memoriam

Professor of Computer Science Seth Teller

ONE OF THE SADDEST EVENTS of the early summer was the unexpected death at 50 of our colleague Prof. Seth Teller of EECS, leaving behind his wife Rachel and their two young daughters. Seth's scientific, technological, and educational accomplishments are well described in his obituary [newsoffice.mit.edu/2014/professor-seth-teller-dies]. Seth had a history of productive engagement with student and faculty concerns, and had served as Secretary of the Faculty. He was also engaged with pressing social problems and had recently returned from a team trying to help solve the pressing radiation problems at the heavily damaged Fukushima nuclear plant. Here we recognize his contribution to defending the integrity of the MIT campus and its role in the life of the MIT community, and his accomplishments as a leader in preserving the integrity of his East Cambridge residential community.

Over the past few years, Seth was a key member of the group pressing for full

faculty input, influence, and representation, in the administration decisions as to the redevelopment of the East Campus. He was one of the senior faculty who proposed and promoted the motion establishing a Campus Planning Committee as a standing committee of the faculty, voted unanimously at the May faculty meeting.

In Cambridge, Seth was a founder of the Neighborhood Association of East Cambridge. This group has led the effort to correct the egregious errors they believed were inherent in the construction of the Middlesex County Courthouse and jail tower on public land in the midst of residential East Cambridge. Seth was a leader in the ongoing effort to respect community concerns and return the land to its original public use, or replace it with a more desirable commercial building.

His close colleague Michael Hawley captures some of his character: “Many remarked on the twinkle in Seth's eyes – the spark. It usually accompanied a knowing grin that quickly morphed into a smile and

a laugh. The friends and neighbors who worked with him in trying to make East Cambridge a better neighborhood felt many things in that spark – warmth, passion, moral decency, dedication to better futures, tenacity in problem solving, courage in the face of tough odds – and the love of finding a worthwhile problem. Seth found joy in bringing people together to tackle challenges that, like the Middlesex Courthouse problem he hoped to remedy, would need the best efforts of many. He fought hard for better futures, and always with that bright, optimistic twinkle.”

Seth's social concern and civic responsibility provides an ongoing model for MIT faculty, students, and staff. Gifts in Teller's memory may be made to the Seth Teller Memorial Fund [giving.mit.edu/givenow/ConfirmGift.dyn?desig=3919430] which will support research, education, and other innovations that advance and improve assistive technology for people with a range of disabilities.

Jonathan King

Can We Make Smart = Nice?

Eve Odiorne Sullivan

MIT IS KNOWN FOR taking on challenges and, using “inventive wisdom” – the phrase chosen for the Institute’s 150th anniversary in 2011 – to find solutions for difficult problems. Let me describe a vexing and perplexing challenge that MIT itself faces and ask if we can take it on, individually and collectively.

As a long-time host to international visitors of all ages, from students through emeritus faculty, I hear many say how cold and unwelcoming they find the Institute community. Guests in my home have told me that lab mates do not return their greetings, never mind initiate conversations or organize social gatherings, and that, more often than not, fellow researchers eat alone at their desks. Of course people come to MIT to work, and work hard, but shouldn’t informal interactions be part of a visitor’s experience? It is true that many departments and centers do organize regular, informal get-togethers, but not all.

The International Scholars Office (ISO) staff does a top job orienting Institute visitors and this is a big undertaking. As the ISO’s online posting says, over 2000 international scholars – visiting researchers, professors, and lecturers and accompanying family members – are affiliated with the MIT community. In 2012-2013 they represented 90 different countries and worked in 77 different MIT departments, laboratories, and centers.

What does the ISO tell our visitors? One element in the orientation describes the culture shock they may experience as a disease, with symptoms that may include feeling anxious, irritable, homesick, even

depressed. Visitors are advised to seek help if they are sleeping or eating too much or too little, or drinking alcohol excessively. This is excellent advice, but what about the proverbial ounce of prevention?

As a long-time host to international visitors of all ages, from students through emeritus faculty, I hear many say how cold and unwelcoming they find the Institute community.

Many Institute visitors come alone and do not have the support of family to cushion the loneliness they may experience in their work. Students, especially undergraduates, American and international students alike, for the most part live on campus and have a ready-made living group “family.” Individual visitors do not have such support and many have told me they feel estranged from the very work groups they have come to join.

The characteristics and habits that get people, including visitors, to MIT in the first place – being work-oriented and competitive – may, I believe, stand in the way of their getting the most out of the experience of being at MIT. I have to ask, does MIT culture unintentionally give people an excuse to be rude? A personal sense of wellbeing comes not only from individual achievement but from a sense of connection to others. A month-long or a six-month visit to the Institute is actually quite short. If we are to both manage and meet the expectations of our visitors, perhaps the rest of us could benefit from repeated reminders, if not regular orientations, on being more welcoming, and therefore more effective, hosts.

An article in *The Economist*, entitled “Bumpkin bosses” (May 10, 2014), says that leaders of Western companies are less globally minded than they think they are and that “parochialism at the top can

impose huge costs in terms of reduced creativity, missed opportunities and cultural blundering.” The article concludes, “It is always tempting to think that multinational companies are cosmopolitan by nature; in fact, they have to work hard at debumpkinising themselves.”

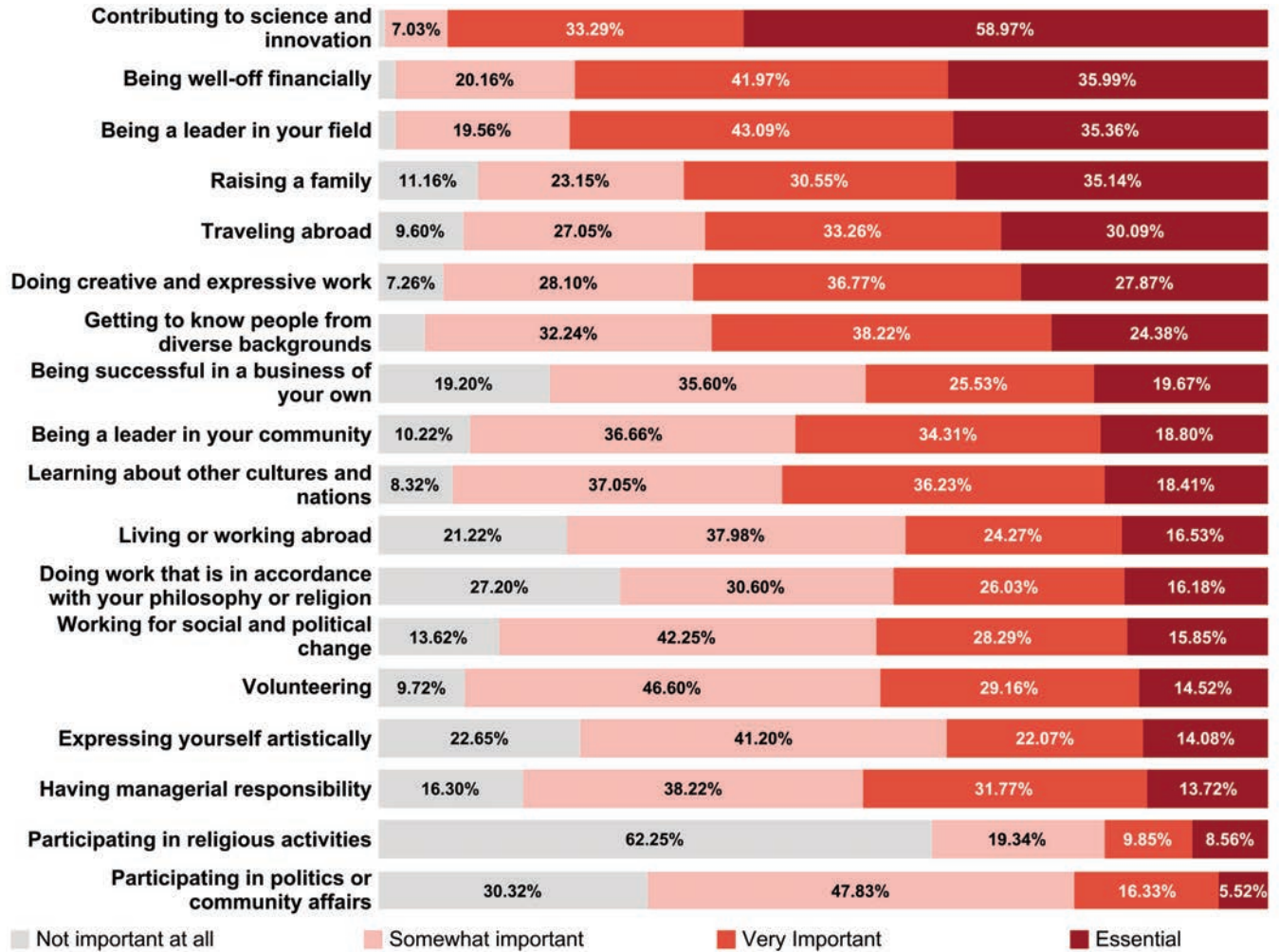
Let’s work on this. MIT graduates lead and found companies with worldwide impact. The experience of doing exciting, rewarding, and important research here should be more than a two-line entry in a CV. Can we offer more collegiality and friendship to our visitors?

We don’t need another program, which people are inevitably directed to find online . . . sigh. I am asking for a renewed commitment at the top level – policy – and at the individual level – practice – to be more welcoming. Why not ask your next visitor: Is this your first time in the U.S.? How long will you be here? What do you miss most from back home – or – like most about MIT? (and maybe) Would you like to have coffee together? ■

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M.I.T. Numbers from the Survey of Incoming Freshmen

“How important is each of the following to you as you think about your own life and future?”



Source: Office of the Provost/Institutional Research