

## Chair of the Faculty

In academic year 2014, professor Steven Hall (Department of Aeronautics and Astronautics) served as chair of the faculty, professor John Belcher (Department of Physics) as associate chair, and professor Susan Silbey (Department of Anthropology) as secretary. On behalf of the faculty, the three officers met monthly with the Institute's senior administration.

Eight faculty meetings were held, resulting in several changes to the *Rules and Regulations of the Faculty*. These included two updates to the charge to the Committee on Discipline, the elimination of the H-level designation for graduate subjects, and the creation of a standing committee on campus planning. In April, associate professor Nickolai Zeldovich received the Harold E. Edgerton Faculty Achievement Award; in May, professor Sallie (Penny) Chisholm was named the winner of the James R. Killian, Jr., Faculty Achievement Award. Over the course of the year, the faculty remembered four colleagues with memorial resolutions: Pauline Maier (History), Ann Wolpert (Libraries), James Roberge (Electrical Engineering and Computer Science), and president emeritus Charles Vest.

As faculty chair, Professor Hall was called to engage in several special initiatives. In July, president L. Rafael Reif charged then-provost Chris Kaiser and Professor Hall with leading a process of community engagement in response to the report prepared by professors Hal Abelson and Peter Diamond, MIT and the Prosecution of Aaron Swartz. The process began in August and continued through late February, involving a website that allowed members of the MIT community to respond to questions presented in the report, informal outreach activities, and a series of group discussions with different segments of the MIT community. The discussions included four forums on hacking, ethics, and community.

In September, professor Phillip Clay, chair of the Graduate Student Housing Working Group, and Professor Hall convened a faculty forum on graduate housing as a means of soliciting faculty perspectives on housing needs. Professor Hall served as a member of the Collier Memorial Committee, whose work led to a permanent tribute to MIT Police Officer Sean Collier. With professor Chris Capozzola and acting provost Martin Schmidt, Professor Hall facilitated community response to the devastation caused by Typhoon Haiyan in the Philippines.

The faculty officers also gave preliminary consideration to digital participation in faculty governance. After discussing the faculty's participation in meetings, a brief survey of peer institutions was undertaken, and various tools to increase participation—ranging from streaming to electronic voting on certain items—were raised. Although many faculty expressed interest in a fall survey, the faculty officers found that practical execution could be complex. Recognizing the continued merits of physical attendance, the faculty officers will determine next year whether to proceed with an initial experiment in digital participation in faculty meetings.

## Faculty Policy Committee

Chaired by Professor Hall, the Faculty Policy Committee (FPC) conducted consultative, oversight, and policy making activities this year. The committee continued its traditional Thursday meetings during the fall and spring terms. The year opened with FPC providing perspectives to the administration on policy issues related to *MITx*, on a developing legal case, and on the future of Endicott House. Following the announcement of chancellor Eric Grimson's transition to MIT's fundraising campaign, FPC responded to President Reif's call for input in the search process. At the beginning of the spring semester, the committee was pleased to welcome chancellor Cynthia Barnhart, who succeeded Professor Grimson as President Reif's designee. FPC ended the year with a decision to defer a proposal for a new graduate degree. An effort to establish a master of science degree in learning sciences and technology was warmly received by the committee, but yielded questions about the requisite threshold for faculty engagement. The committee recommended that the depth of faculty engagement and the availability of program resources be studied before the proposal moved forward.

Three themes dominated the remainder of the committee's agenda: recommendations on credit and academic integrity in online coursework, a review of the faculty open access policy, and a proposal to establish a standing committee on campus planning.

Last spring, FPC created an ad hoc subcommittee, chaired by Professor Silbey, to recommend the standards and policies necessary to guide decision making about MIT's residential education and degree programs in the context of *MITx* and other online educational platforms. After meeting for two semesters, the subcommittee submitted a draft report in February. Draft recommendations were presented at the March faculty meeting and a final report was published in May.

The subcommittee reviewed data on advanced standing, transfer credit, and the distribution of credit hours. Concerns included protecting the quality of existing programs while embracing innovation, preserving physical copresence, ensuring the accuracy of the three-unit credit designation, enabling broader coordination on experiments, and expanding faculty engagement in administration-driven efforts. The subcommittee's final eight recommendations encouraged further attention to these issues.

The faculty resolution in spring 2009 that adopted the open-access policy mandated that FPC review its implementation after five years. There was also impetus from the report, MIT and the Prosecution of Aaron Swartz, which asked the community whether MIT should strengthen its support for open access to scholarly publications. Steven Gass, interim director of the Libraries, and Ellen Duranceau, program manager for scholarly publishing, copyright, and licensing, assisted the committee in conducting the review.

On the basis of available data, the committee found that the open-access policy has worked well. There is anecdotal evidence that the policy benefits both users and MIT, but effects are difficult to quantify. The open-access landscape has also changed in the five years since the policy was adopted. There are newly adopted policies at other

institutions, new federal mandates, and varied publisher responses. In this environment, the faculty will need to consider compliance and coordination with other efforts.

The Libraries outlined a series of recommendations, the strongest of which was to revisit governance of the policy. The current model relies on a working group charged by the Committee on the Library System; however, open-access issues are broad. Other questions include whether the faculty should extend the policy to postdoctoral researchers or students and what types of investments are needed to help authors comply. In light of the ongoing changes and the scope of related issues, the committee recommended that an ad hoc task force be created.

A significant number of FPC's spring meetings were dedicated to discussions of campus planning. At the November faculty meeting, a group of 10 faculty (professors N. Choucri, J. Jackson, J. King, H. E. Lee, D. H. Marks, R. Perry, N. Rabbat, F. Solomon, R. Summons, and S. Teller) had introduced a motion to establish a standing committee on campus planning. The proposal was driven by concerns about the impact of economic development in the Kendall area, scarcity of available land for campus buildings, and increases in real estate costs in Cambridge. The topic generated considerable discussion at the December faculty meeting and was referred to FPC for vetting.

FPC consulted a variety of stakeholders and domain experts—including the Office of the Provost, the Executive Vice President and Treasurer, the Office of Campus Planning, and the Office of Government and Community Relations, as well as members of the Task Force on Community Engagement in 2030 Planning, the Graduate Student Housing Working Group, and the MIT Building Committee—on the most effective means of engaging the faculty in planning. After considering the stakeholders' input, the committee reached a consensus, both among its members and with the original proposers, to recommend adoption of a substitute motion. The committee studied questions of membership, charge, and interfaces with other bodies, with the guiding principle that any recommendation should serve the interests of both the faculty and the Institute.

At the May faculty meeting, FPC presented a motion to create a standing committee composed of nine faculty members; six would be elected and three would be appointed. The motion included a more flexible approach to committee membership, enabling the committee to invite members on an annual basis rather than specify *ex officio* appointments. The new Campus Planning Committee is expected to begin activities in fall 2014; its contributions will be evaluated after two years.

Over the course of the year, the committee engaged with leadership across the Institute around broad faculty concerns. Guests included the president, two provosts, the incoming dean for undergraduate education, the executive director of corporate relations, the director of the Technology Licensing Office, the vice president and general counsel, the interim director of the MIT Libraries, the director of digital learning, and the co-chairs of the Institute-wide Task Force on the Future of MIT Education.

Professors Randy Davis, Mary Fuller, and Roy Welsch completed their terms this year. Professors Krishna Rajagopal (chair-elect) and JoAnne Yates (secretary of the faculty), with professors Ed Roberts and Larry Sass, were elected to join the FPC in academic year 2015.

### **Committee on the Undergraduate Program**

During academic year 2014, the Committee on the Undergraduate Program (CUP) made decisions or recommendations on a number of matters related to MIT's undergraduate educational programs. The committee also received updates and provided input on a range of issues that cut across faculty and institutional governance. The committee, chaired by professor Stephen Graves, met every other week through the fall and spring terms.

In its role providing oversight of the general Institute requirements (GIRs), CUP heard from professor Michael Cima on his assessment of the experimental version of 3.091 Introduction to Solid-State Chemistry that had been taught in the fall; considered and supported the proposal to change the Advanced Placement scores used for mathematics GIR placement to AP5; and discussed and accepted the proposal to remove 18.023 Calculus with Applications from the mathematics GIRs. The Committee on Curricula initiated discussions with CUP about the proliferation and use of half-term and modular subjects and the effect of many minor changes to the undergraduate curriculum as a whole. This topic will continue to be an item for discussion.

CUP heard updates or provided input on other activities as they intersected with the committee's purview or related to the undergraduate academic program. The committee continued its practice of meeting annually with the chancellor; members shared priorities and concerns in November with Chancellor Grimson, and with the new chancellor, Chancellor Barnhart, in April. CUP also reviewed a proposal to establish a new interdisciplinary minor in entrepreneurship and innovation. Although the committee did not approve the minor at this time, it supported the creation of subjects that might serve as the basis of a minor in the future.

Members expressed an interest in better understanding the data that are currently collected through student and alumni surveys and that might be of use to the committee. The Office of Institutional Research (OIR) shared a sample of data they thought might interest CUP at a meeting in the fall. CUP decided it wanted to collect data to help members to understand, from the student perspective, what faculty-student interactions have been meaningful. OIR added an open-ended question to this year's Senior Survey, on behalf of CUP, and reported its findings at a meeting in May.

CUP dedicated time this year to the discussion of two reports that address the undergraduate program and student experience: the Preliminary Report of the Institute-Wide Task Force on the Future of MIT Education and the Draft Report of the *MITx* Subcommittee of the Faculty Policy Committee. CUP expects to have discussions again next year, as these groups finalize their recommendations. CUP also was briefed on an upcoming initiative, the Summer of Learning experiment, that will run next summer.

In addition to annual updates from the Subcommittee on the Humanities, Arts, and Social Sciences (HASS) Requirement (SHR) and the Subcommittee on the Communication Requirement (SOCR), the committee also heard the recommendations of SHR on the pilot HASS Exploration (HEX) Program. CUP supported SHR's recommendation that the HEX Program continue and reported these findings of the subcommittee at the Institute faculty meeting in May 2014.

### **Subcommittee on the Communication Requirement**

During 2013–2014, SOCR was co-chaired by professors William Broadhead and Mary-Lou Pardue. The subcommittee engaged in a number of activities in its oversight of the undergraduate Communication Requirement (CR) at MIT.

SOCR reviews all proposals for subjects that are Communication Intensive in the Humanities, Arts, and Social Sciences (CI-H) and Communication Intensive in the Major (CI-M), including the review of new communication-intensive subjects and the continuation of existing subjects. When appropriate, SOCR continues to consult with SHR. This year, SOCR reviewed and approved proposals for 18 new communication-intensive subjects (seven were CI-H and 11 were CI-M). SOCR also approved proposals to continue<sup>29</sup> subjects that are Communication- Intensive in the Humanities, Arts, and Social Sciences–Writing Focused (CI-H/HW) subjects.

The subcommittee resumed its work to refine the criteria for CI-M subjects to make them more parallel to the recently revised CI-H and CI-HW criteria. SOCR wanted a more adequate basis for addressing questions and issues emerging from the subcommittee's regular review and approval of subject proposals, and also wanted to develop criteria that focus less on mechanical criteria and more on educational objectives and the value of the educational experience. SOCR sought input from the academic units and CI-M instructors before arriving at a final set of criteria. SOCR will distribute and implement the criteria for academic year 2015.

In 2011, the subcommittee had given its provisional approval of the CI-M program for the BS degree in chemical engineering (Course 10-ENG). This year, following an update from the Department of Chemical Engineering, the subcommittee gave final approval to the 10-ENG CI-M program.

SOCR heard an update from, and provided feedback to, the group that is developing enrollment tools as part of Phase II of the Online Registration project. The cap on class size required for CI-H subjects had been managed largely through the HASS-D lottery because of the overlap between the two requirements. Given the need to cap the size of CI-H subjects and the phase out of the HASS-D subjects and lottery, new enrollment tools will support the CI-H/HW subjects, beginning with pre-registration for the fall term of academic year 2015.

The subcommittee reviewed and discussed changes to the communication component of the [Interphase EDGE](#) summer program offered by the Office of Minority Education. The subcommittee acknowledged that progress has been made with recent revisions, but

encourages closer alignment of the communication and writing component of Interphase EDGE with CI-H/HW subjects.

Finally, SOCR completed ongoing business, including the following items:

- A review of student petitions and attendant policy issues;
- An update on the Biological Engineering Writing Laboratory;
- An update on the d'Arbelloff Fund proposal, Developing Online Communication Instruction in Engineering Laboratory CI-M Subjects;
- A discussion of CI-H subjects and enrollment trends following revisions to the HASS requirement;
- A discussion of a proposal to merge Writing Across the Curriculum and First-Year Writing within Comparative Media Studies/Writing;
- An endorsement of SHR's recommendation that HASS Exploration (HEX) Program subjects remain optional; and
- A preliminary discussion of the recommendations of Working Group 1 in the Preliminary Report of the Institute-Wide Task Force on the Future of MIT Education.

### **Subcommittee on the Humanities, Arts, and Social Sciences Requirement**

This year, the CUP Subcommittee on the HASS requirement continued to meet regular responsibilities related to oversight of this GIR, discussed related questions of policy, and finalized a recommendation on the HEX Program. The subcommittee was chaired by professor Christine Walley during the fall semester and by professor Helen Elaine Lee during the spring semester. It met approximately every two weeks during the academic year.

Oversight activities were varied. The subcommittee continued to monitor enrollments in HASS distribution categories and concentrations. Members discussed the plans of the Committee on Curricula and the dean of the School of Humanities, Arts, and Social Sciences for the final phase-out of the HASS distribution requirement in the catalog and for facilitating the progress of the few students still under the HASS-D requirement, respectively. More than 60 petitions to count specified subjects toward the HASS Requirement were considered in academic year 2014. Approximately one-third of these petitions were for subjects taken at Harvard University through cross-registration. SHR reviewed more than 60 new and revised subjects that were proposed to count toward the HASS requirement, including subjects experimenting with pedagogies and format. The subcommittee also offered an opinion on both a proposal to move responsibility for Harvard cross-registration from the SHASS dean's office to the registrar's office and on questions about student advising that were related to combining some six-unit subjects to count as one HASS subject.

Much of the subcommittee's time this fall was spent on outreach to constituencies and to drafting the final report on the HASS Exploration (HEX) Program. In fall 2013, SHR recommended that the HEX Program not be required as part of the GIRs, but that it be continued as a faculty-recommended program. The subcommittee discussed program administration and established a process for managing the list of subjects included in the program.

In spring 2014, the subcommittee deliberated whether internships and independent studies should be counted toward the requirement. Members decided that independent studies and internships, although valuable learning opportunities for some students, are different from students' experience in the classroom and should not count toward the HASS requirement. Because the HASS concentration form is to be moved online (this is scheduled for next fall), subcommittee discussion of policies and processes for the concentration component of the requirement became necessary. The process and deadlines will remain the same as they are now, given the importance of a student's interaction with the concentration advisor to plan a program of study.

## Committee on Academic Performance

### Petitions and Academic Actions

The Committee on Academic Performance reviewed 301 petitions this year. Last year, petitions numbered 311; the average for the past 10 years is 297. Of this year's petitions, 272 (90 percent) were approved and 28 (9 percent) were denied. Three petitions were incomplete at the end of the year; six had been withdrawn.

In academic year 2014, the committee issued 266 academic warnings. Last year, there were 272 warnings; the average for the past 10 years is 293. Twenty-three students were required to withdraw. Last year, 42 students were required to withdraw; the average for the past 10 years is 40. Details of this year's actions are given below.

### Committee on Academic Performance End-of-Term Action Summary, 2013–2014

Year	Fall 2013		Spring 2014	
	Warnings	Required Withdrawals	Warnings	Required Withdrawals
Freshmen	18	0	43	1
Sophomores	44	1	42	4
Juniors	29	2	30	7
Seniors	31	5	29	3
<b>Total</b>	<b>122</b>	<b>8</b>	<b>144</b>	<b>15</b>

The committee continued an initiative begun last year by sending commendatory emails to students who succeeded in completing their term, after a warning, with a record above minimum expectations—52 for fall 2013, 44 for spring 2014.

## Readmissions

The Readmission Committee continued to oversee undergraduate readmissions, a responsibility that is assigned to the committee in the *Rules and Regulations of the Faculty*. The committee continues to use the process that was defined by the Committee on Academic Performance and Student Support Services in June 2010. The head of Student Support Services reports readmission data to the committee in September and February.

The committee received 73 completed applications for the fall 2013 semester. Of these, 48 (66%) were approved and 25 (34%) were denied. All decisions were made unanimously and approved by the chair of the Committee on Academic Performance. The Readmission Committee received 64 completed applications for the spring 2014 semester. Of these, 39 (61%) were approved and 25 (39%) were denied. One student who was denied readmission submitted an appeal, which was upheld after review by the chair of the Readmission Committee and the chair of the Committee on Academic Performance.

## Degrees

Faculty rules state, “The Committee shall present to the Faculty its recommendations on candidates to be awarded Bachelor’s degrees [Section 1.73.5 (c)].” In academic year 2014, the Committee on Academic Performance recommended degrees as follows:

- September 2013: 12 students, 14 majors
- February 2014: 79 students, 85 majors
- June 2014: 969 students, 1,126 majors

In June, two departments [Electrical Engineering and Computer Science (Course 6) and Management (Course 15)] requested single-deficiency degrees—that is, the departments recommended granting a degree despite a missing departmental requirement. The Course 6 request was approved, because the student had a total of 186 units out of the 192 units required for the 6-2 degree. The Course 15 request was denied because the record offered only 168 units; however, this student was able to gain approval of transfer credits to make up the final 12 units, and the student’s name was added to the degree list through the process outlined in [Faculty Regulation 2.82](#).

## Policies and Procedures

### **Online Registration and Add/Drop/Change Forms**

Academic year 2014 saw full implementation of the online registration system. During a Committee on Academic Performance discussion of petitions involving the sophomore exploratory option, the Registrar’s representative, Ri Romano, pointed out that the registrar’s staff had added a relevant message to the new system. During the week before fall registration day and on the day itself, juniors who had registered a subject as exploratory in the previous spring term saw a reminder that registration day is the deadline for converting an exploratory subject to listener status. The message was taken down immediately after registration day. The committee commended this effort to help students comply with registration deadlines.



The registrar pilot-tested an online add/drop/change form with freshmen between the add date and the drop date of fall 2013. At the committee's December meeting, associate registrar Brian Canavan presented the new form. The presentation was partly for general information, but it also supplied background for a late drop petition from a freshman, who claimed that he had not known he had to return to the online site to submit his drop after advisor approval. Mr. Canavan explained that Information Systems & Technology (IS&T) and the registrar had intended to allow students to begin filling in a form but then hold it before submitting it, to allow students to consider an impending test grade or something similar. This presents a risk that students will forget or ignore the last step of submitting the form to the registrar, even though the system sends the student an email with a link after the advisor or instructor approves the form. The committee suggested ways the registrar might improve that reminder.

This risk became clearer during the spring term, once the online add/drop/change form was available to all students. After the add date, and more so after the drop date, the committee received a significant number of petitions from students who claimed ignorance of the final step, even though the registrar's staff had sent individual emails the day before the deadline to all students with a pending form. At its May and June meetings, the committee reviewed each of 30 such petitions individually and approved most "with neglect," which puts the student on notice that a similar future petition will likely not be approved. However, the committee will work with the registrar to try to reduce the number of petitions for late drops and adds.

### ***Online Submission of Petitions***

The staff associate continues to work with an IS&T team toward online submission of late add, late drop, and change status petitions. This multiyear effort (first discussed in fall 2008 and officially begun in January 2011) is part of a larger project involving the offices of the registrar, the Communication Requirement, study abroad, and others. The project produced the "engine" that drives all these forms and implemented online add/drop/change forms in spring 2014. In late spring, the team changed direction slightly; late add/drop/change petitions should flow seamlessly from the on-time forms. The hope is to pilot-test online petitions in academic year 2015.

### ***Modular Subjects***

In each of the past several years, the committee has received petitions after the add date from students seeking to switch from one side of a "meets-with" or joint subject to the other. Most of these are for 7.10 Physical Chemistry of Biomolecular Systems, or 20.111—they are the same subject. This subject meets with 5.60 Thermodynamics and Kinetics for the first half of the spring term, splitting off in the second half. Some students are not aware of the overlap; others change majors during the term and need to switch to the version in the relevant department. The committee has approved most such petitions.

More recent petitions, however, have involved new half-term subjects in Mechanical Engineering, many of which overlap with parts of full-term subjects. The committee understands that Aeronautics and Astronautics and other departments hope to offer similar modular subjects. Members expressed a desire that departments would align such subjects with the existing add and drop dates, or at least make clear announcements about the deadlines to students in those subjects.

### ***Committee on Academic Performance and Committee on Discipline***

In April, the chair of the Committee on Academic Performance reported a conversation with the chair of the Committee on Discipline. Among other topics, they discussed the possibility that the Committee on Discipline would impose credit limits on students in cases of violations of academic integrity and other cases where time pressure seemed to be a contributing factor. No action was taken on this possibility, but conversations may continue next academic year.

### ***Athletic Conference Waiver***

In a very unusual case, John Benedick, assistant director of athletics, approached the committee chair in early November about possibly endorsing a request to the East Coast Athletic Conference (ECAC) for a waiver of eligibility rules. The case related to a discrepancy in calculating a student's progress toward a degree, tied to MIT's practice of admitting all transfer students as sophomores.

The committee is on record as stating:

MIT has never asked the NCAA for a waiver that would allow a student to participate in practice and competition while carrying less than a full time academic load or maintaining less than normal progress towards their degree. I confirm that, as we discussed yesterday, the MIT Committee on Academic Performance is not in favor of making such a request. MIT supports the NCAA regulation that students maintaining less than normal progress towards their degree or carrying less than a full time academic load may not participate in practice or competition. (April 2012 letter from chair Krishna Rajagopal to John Benedick)

At its November meeting, however, the committee recognized that MIT and NCAA/ECAC held different standards and endorsed the Athletic Department's request for a waiver, provided that good academic standing is maintained.

### ***Membership***

The committee operated with a faculty vacancy for fall 2013 while professor Rebecca Saxe was on parental leave. She returned in spring 2014, giving the committee a full nine-member complement. At the end of the spring term, professor Kate Kellogg reluctantly stepped down from the committee to lead the Sloan School of Management's MBA program. In response, the Committee on Nominations renominated Professor Stewart, whose term was due to end this year, to an abbreviated two-year term.

Average attendance at meetings was approximately six members in the fall and seven members in the spring.

### ***Committee on Curricula***

The Committee on Curricula acts on proposals to create, revise, or cancel undergraduate subjects; to create, revise, or terminate undergraduate curricula; on student applications for double majors; and on petitions for substitutions for the GIRs. In academic year 2014, the committee was chaired by professor Shankar Raman from July 2013 to January 2014,

and by professor Dennis Kim for the rest of the year. The voting members consisted of six faculty (including the chair) and four student members. The committee met seven times during the fall term, four times during Independent Activities Period (IAP), and eight times during the spring term. During the academic year, the committee acted on 520 subject proposals, including proposals for 90 new subjects, and approved numerous minor changes to degree charts. The committee also approved the following major curricular changes:

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<b>Course 1</b>	There were major changes to the Course 1-A SB program, resulting in a flexible program with a modular framework comprising several six-unit half-term subjects. The degree was renamed to Course 1-ENG Bachelor of Science in Engineering as Recommended by the Department of Civil and Environmental Engineering.
<b>Course 4</b>	Significant changes were made to the Course 4 SB program to provide a broader core curriculum with a smaller, more focused set of electives to choose from within the department's five discipline streams. The amount of overlap between the departmental program and the HASS requirement was also increased.
<b>SHASS Programs</b>	There is now increased overlap between the departmental program and the HASS requirement for the following majors: Literature (21L), Music and Theater Arts (21M), Writing and Humanistic Studies (21W), Philosophy (24-1), Linguistics and Philosophy (24-2), Comparative Media Studies, and the Program in Science, Technology, and Society.

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### Other Actions

- The Committee on Curricula approved two proposals to split an existing restricted electives in science and technology (REST) subject into two six-unit, half-term subjects that, when combined, provide credit for a single REST subject. The combination of 1.018A Fundamentals of Ecology I and 1.018B Fundamentals of Ecology II replaces 1.018 Ecology I: The Earth System. The combination of 6.0001 Introduction to Computer Science Programming in Python and 6.0002 Introduction to Computational Thinking and Data Science replaces 6.00 Introduction to Computer Science and Programming.
- Throughout the year, the committee engaged in several discussions concerning modularity in its various forms and its broader implications for the curriculum. The issue was referred to the Committee on the Undergraduate Program. Discussions will continue in academic year 2015.

- In conjunction with CUP, the committee reviewed a proposal to establish a new inter-School minor in entrepreneurship and innovation. The proposal was not approved; however, the Committee on Curricula authorized a number of new subjects for academic year 2015 that will provide a foundation on which to build the minor in the future.
- In conjunction with the Office of Digital Learning, the Committee on Curricula approved experimental subjects 2.S03 (an alternative version of 2.03) and 3.S01 to be offered during the summer of 2014. Additionally, the committee approved one-year experiments for alternative versions of 8.05 and 20.109, offered under 8.S05 and 20.S109 respectively, and renewed licenses for experimental versions of 3.044, 3.086, and 3.15, offered under 3.S044, 3.S086, and 3.S15.
- The committee held numerous discussions throughout the year concerning online learning. These included conversations with dean Dennis Freeman (dean for undergraduate education), professor Sanjay Sarma (Office of Digital Learning), professor Susan Silbey (*MITx* subcommittee), Dr. Lori Breslow (Teaching and Learning Laboratory), and academic departments. It was established that a full-term subject comprising fewer than two hours per week of copresent time with faculty (e.g., 2-0-10 unit distribution) must be reviewed by CUP as well as by the Committee on Curricula. The committee drafted a set of intake and assessment questions that would ultimately be provided to departments proposing digital experiments.
- The committee participated in consultations with regard to awarding academic credit for ROTC subjects that meet academic standards for regular MIT subjects. This work will continue into the next academic year in consultation with CUP and the three military branches. Amendments to *Rules and Regulations of the Faculty* are expected.
- The Committee on Curricula received reports from SOCR and SHR concerning petitions received and reviewed by those committees.

## **Committee on Discipline**

### **Reported Cases**

In accordance with its purpose of adjudicating cases of alleged student misconduct, the Committee on Discipline, chaired by professor Munther A. Dahleh, had 217 cases brought to its attention in academic year 2014. These cases were resolved in multiple ways. The following is a summary of types of violations for academic year 2014, compared with the previous year's totals.

Academic Year Total–Incident Type	2012–2013	2013–2014
<b>Academic Misconduct</b>	51	61
Cheating	*	30
Plagiarism	*	4
Unauthorized Collaboration	*	13
Other	*	14
<b>Personal Misconduct Total</b>	133	151
Alcohol	50	73
Other drugs	16	11
Assault (including domestic)	5	5
Harassment (other than sexual) and stalking	6	2
Property damage	5	2
Disorderly conduct	11	10
Theft	8	2
Unauthorized access, improper use of Institute property	20	23
Domestic violence/argument	*	7
Fire safety, arson	*	3
Weapons, dangerous objects	*	3
Other	12	10
<b>Sexual Misconduct</b>	5	4
<b>Sexual Harassment</b>	*	1
<b>TOTAL</b>	<b>189</b>	<b>217</b>

\* Some subcategories were not used in academic year 2013.

Note: Each case was counted once, even when more than one allegation existed.

### Case Trend

The number of reported cases was 14% higher in academic year 2014 than it was in academic year 2013. The number of cases presented to the Committee on Discipline has risen 325% over the past five years.

### Resolutions

In July 2013, the Committee on Discipline implemented a new resolution method, the Committee on Discipline Sanctioning Panel, for use in cases in which the complainant and the respondent agree on the facts of the case and the respondent's responsibility for violating policy, but do not agree on the appropriate sanction. In cases where probation with transcript notation, suspension, or expulsion are possible outcomes, three members of the Committee on Discipline meet with the complainant and the respondent in a sanctioning panel and determine an appropriate sanction. The use of this sanctioning panel was deemed a success by the committee. Cases were resolved more quickly and with less stress on the students involved. This process will be modified in the coming academic year to include additional faculty involvement in the panels.

Academic Year Total–Resolution Type	2012–2013	2013–2014
Committee on Discipline, Administrative resolution	92	108
Committee on Discipline, Hearing	27	0
Committee on Discipline, Sanctioning Panel	0	10
Faculty letters added to file	44	43
Withdrawal or dismissal of case	6	0
Restorative justice or alternative dispute resolution	3	1
Case closed because of help-seeking protocol	10	26
Non-adjudicative resolution	0	16
Cases pending (as of 6/30/14)	7	13
<b>TOTAL</b>	<b>189</b>	<b>217</b>

### Case Outcomes

The philosophy of the Committee on Discipline is that student discipline is one expression of the comprehensive education that a student receives when attending MIT. By participating in structured educational sanctions (e.g., substance abuse education, mentoring programs, essays that demand critical thinking and personal reflection, and so on), the student learns to correct his or her mistakes and becomes a citizen more ready to enter life after MIT. There are some cases that require a student to be separated from the Institute, either temporarily or permanently, because of the Institute’s need to ensure a safe environment. This table presents the outcomes assigned by Committee on Discipline in the 2014 academic year compared with the 2013 year.

Academic Year Total–Sanction Type	2012–2013	2013–2014
Expulsion	0	1
Suspension or degree deferral	8	7
Removal from Institute housing (house or FSILG)	3	3
Probation	14	24
Committee on Discipline letter in file	91	71
Substance abuse education or treatment	53	78
Restitution	4	4
Other educational sanctions or referrals	85	123
No-contact order or directive to stay away from certain buildings	*	7
Faculty letter in file	38	43

\* Some subcategories were not used in academic year 2013.

Note: It is common for the Committee on Discipline to assign more than one sanction in a case, so there are more sanctions than cases. Sanctions exclude all cases in which the respondent was found not responsible, the case was dismissed, or the case is still pending.

## **Rules Changes**

In addition to resolving cases of alleged student misconduct, the Committee on Discipline is also responsible for maintaining and updating its internal rules, which govern the process used to resolve cases.

During the summer of 2013, the Committee on Discipline implemented changes to its rules, which were the result of a working group led by professor Robert Redwine during the 2013 academic year. These changes included the introduction of the sanctioning panel option, authorizing the chair of the Committee on Discipline to assign probation during the administrative resolution process, student involvement in decisions made in the administrative resolution process, and a series of improvements to the process designed to respond to the increasing concern about sexual misconduct. The result of this implementation was the streamlined resolution of many cases that used to require a hearing, more efficient use of Committee on Discipline members' time, and improved consistency.

During the 2014 academic year, the Committee on Discipline began discussions about its response to sexual assault and sexual misconduct complaints. At the request of the committee, Chancellor Barnhart charged a task force to assess whether the current process for resolving sexual misconduct complaints should be modified and, if so, to recommend the modifications. This task force is led by Professor Dahleh and includes students, faculty, staff, and several members of the Committee on Discipline, including the past, current, and future committee chairs. The task force began its work in June 2014 and expects to complete its work in fall 2014.

This year, the Committee on Discipline was approached by the Interfraternity Council (IFC), who requested that jurisdiction for certain violations that had been historically handled by IFC's peer judicial process be transferred to the Committee on Discipline's portfolio. After consulting with the FPC, the Office of the General Counsel, the Division of Student Life, and student leaders, the Committee on Discipline tentatively agreed to IFC's request. The Committee on Discipline then met with representatives of other student governance bodies, including the Association of Student Activities (ASA) and the Panhellenic Association. Representatives of IFC, ASA, and the Panhellenic Association agreed that the Committee on Discipline should take responsibility for student organization misconduct generally, and delegate individual cases to be handled by peer adjudication methods as appropriate. A motion to amend the faculty rules so that the Committee on Discipline would have responsibility for student organization misconduct was presented at the March faculty meeting by Professor Dahleh and approved unanimously by vote of the faculty in April 2014.

## **Committee on Graduate Programs**

The Committee on Graduate Programs (CGP), chaired by professor Nicolas Hadjiconstantinou, consulted on a broad array of issues affecting graduate education. The September meeting set forth a list of potential agenda items for the 2014 academic year; the majority of these were reviewed by the committee, along with others that emerged during the year.

In September 2013, in response to a proposal from the History, Theory and Criticism of Architecture and Art (HTC) program in the Department of Architecture, the CGP reviewed the Institute's policy regarding thesis holds and the dissemination of graduate theses online via DSpace@MIT, an electronic archive of MIT's research that includes peer-reviewed articles, technical reports, working papers, and theses. Faculty, alumni, and students in the HTC program raised concerns that its graduates often find that publishers are reluctant to accept a manuscript based on a thesis if the thesis is publically available. Since such publications are a required milestone on the tenure track for academics in this field, the HTC program was concerned that recent graduates would be disadvantaged. After careful consideration of these concerns, and in balance with MIT's commitment to open research and the free interchange of information, the committee determined that the dean for graduate education may approve requests to limit public access outside of the MIT community to theses for a period of up to two years. This policy will apply to all MIT doctoral degree recipients.

During the fall term and early in the spring term, the committee continued a long-running examination of the H-level subject designation, a topic that the committee first took up in 2009–10, and continued to discuss during 2010–11, 2011–12, and 2012–13. Following the decision made by the 2012–13 committee and approved by the Faculty Policy Committee to abolish the G/H-level distinction and have one single graduate-level course classification, this year's committee undertook a close examination of the related language on master's degrees in section 2.85 of the *Rules and Regulations of the Faculty*. With input from graduate programs and the Office of the Registrar, the committee took care to craft new language for this policy statement that would be clear and straightforward. The final changes to section 2.85 were brought to the FPC for approval in March, and approved by a vote of the Faculty in April. The Office of the Registrar will work with graduate departments and programs during 2014–2015 to prepare for this change, which will go into effect at the start of the fall 2015 term.

The committee's careful review of section 2.85 also brought to light several minor but long-standing discrepancies between master's degree requirements described in this policy statement, and the current-day degree requirements determined by graduate degree program committees over time, communicated to students in the MIT Course Bulletin and department materials, and used to perform degree audits on a practical basis. In some cases, these differences have existed for several decades. The committee discussed these discrepancies in detail at its May 2014 meeting; subsequent required changes to section 2.85 will be brought forward for FPC approval and Faculty vote in 2014–2015.

The committee also considered a proposal to establish a master of science in learning sciences and technology. After an initial review of the proposal at the October 2013 meeting, the committee asked the authors to provide more details in a revised proposal that would address concerns about the significant number of required coursework units relative to the program timeline, the limited hands-on teaching component, and the availability of research assistantships and teaching assistantships as the sole proposed means of funding for second-year students. The committee discussed the revised proposal at its November 2013 meeting, determined that these concerns had been



addressed adequately, and approved the proposal. Following changes to the proposed LST program that were suggested by FPC, CGP considered a new version of the proposal at a special ad hoc meeting in April 2014. Although it was generally supportive of this reconceptualized proposal, the committee noted concerns about student housing during IAP and the summer; the need for explicit language in admissions letters regarding second-year funding; the long-term financial sustainability of the program; and the program's pedagogical independence as an academic unit.

In February 2014, the committee continued a discussion from the previous year on how to handle graduate applicants with criminal backgrounds involving violent crimes, a topic that arose in response to several cases during the 2012–2013 admissions cycle. The committee learned about the Sloan School's practice of performing background checks of application accuracy and for criminal records on all accepted applicants, and agreed that the financial and personnel resources required for this task might make it prohibitive for wider adoption across the Institute. It would also be difficult to assess how such a broad practice might contribute in real ways to a safer campus community.

At the April 2014 meeting, the committee reviewed recommendations contained in the draft report of the *MITx* Subcommittee of the Faculty Policy Committee presented by professor David Gamarnik (the CGP representative on the subcommittee), and considered the future role of this committee in establishing graduate education policy on online coursework. On a related topic, the Department of Physics presented a proposal for its first advanced graduate course to be taught online via *MITx*. With input from the Office of the Registrar, the CGP determined that its purview lay in reviewing a corresponding Special Subject (8.S851 Effective Field Theory) that would be the MIT catalogue counterpart to *MITx* subject 8.851x. This Special Subject was approved under the condition that the faculty instructor formalized his in-person contact hours with the students by setting a weekly discussion time.

At the final meeting of the academic year (May 2014), CGP reviewed a proposal by the master of finance (MFin) program to make structural changes to the program and increase its duration by adding an optional summer internship component, in an effort to meet the needs of students who are looking for practical work experience. Although generally supportive of this change, CGP had substantial concerns about the resulting increased demand on graduate student housing during the fall term. The committee asked the MFin program to submit a revised proposal, with a letter of support from the dean of the Sloan School indicating that the provost is aware of any effect that this programmatic change would have on campus resources. This discussion will continue in academic year 2015.

The committee also contributed to the search process for a new chancellor, who was appointed in early February 2014.

### **Committee on Student Life**

Mirroring changes elsewhere at MIT, the Committee on Student Life (CSL) went through a transition period for in academic year 2014, with a new chair (professor Gunther Roland) and new staff, student, and faculty members. Consequently, the CSL meetings

at the beginning of the fall and spring semesters were dedicated to discussing the role of CSL in campus life and clarifying the committee's charge in terms of advising the student deans, while acknowledging the lack of formal decision power on student life issues. Following discussions with outgoing Chancellor Grimson and the student deans, one of the themes identified for the CSL meetings in the past year was student stress and its origin, identification, and mitigation, following presentations on the outcome of the student quality of life survey.

In this context, CSL discussed concerns and initiatives related to student housing, student safety, and undergraduate and graduate orientation. Guests for CSL meetings included incoming Chancellor Barnhart, dean for graduate education Christine Ortiz, senior associate dean for residential life and dining Henry Humphreys, senior associate dean for student outreach and support Judy McGuire Robinson, and professor Phillip Clay, chair of the Graduate Student Housing Working Group. In several of these discussions, the importance of timely and open communication of residential life issues, in particular residential housing, was stressed and acknowledged by both student and administration representatives. Another repeated suggestion by CSL was to add to the existing initiatives related to student stress a greater focus on prevention, e.g., not only by improving faculty awareness, but also by informing student self-expectations early on in the transition from high school to the MIT environment.

A topic of internal CSL discussion was engagement with the student quality of life survey, with a strong interest by the committee in learning more about the present data and possible CSL input to future iterations of the survey. Unfortunately, the committee was not able to schedule a meeting with a DSL representative on this topic. Other issues that were raised repeatedly concerned the integration of international graduate students in the residential life structure, which is complicated by visa-related legal issues.

In summary, the 2013–2014 CSL meetings provided a valuable channel of communication between student representatives and the MIT administration on key issues relevant to student life. As had earlier been the case, CSL members felt that a more crisply defined role for the committee in the decision making process related to student life might be desirable and could enhance the engagement of future CSL members in these discussions.

### **Committee on the Library System**

Over the past academic year, the work of the Faculty Committee on the Library System (FCLS), chaired by professor Janet Conrad, has been dominated by three major themes: the need for a new director of the Libraries, the open access policy and the Open Access Working Group, and space planning.

#### **A New Director**

The search for a new director was made necessary by the death of Ann Wolpert, director of the MIT Libraries since 1996. She was an extraordinary individual who led the MIT Libraries through the difficult shift to digital dissemination of scholarly material. Her steady presence and wise thoughts were greatly missed in this year of work by FCLS.

The Institute was fortunate that Steve Gass stepped in as interim director of the Libraries while the search committee was formed. He has had many years of experience at MIT and is providing excellent leadership.

Late in the spring semester, the provost formed a search committee. Several FCLS members are on the committee; as chair of FCLS, Professor Conrad was asked to meet with the search committee. Thus, there is substantial input from FCLS in the choice of the next director, and the committee looks forward to working with that individual.

### **Open Access Policy**

This year was the fifth anniversary of the faculty open access (OA) policy, which is presently implemented through the Libraries. Library staff member Ellen Duranceau has done exceptional work in organizing the open access repository through DSpace@MIT and faculty participation is growing. She has also shown great leadership in helping the faculty understand the issues of law surrounding copyright and access legislation.

One outcome of the initiation of the policy was the organization of the Open Access Working Group under FCLS. The Open Access Working Group was originally headed by Richard Holton, who moved to Oxford University at the start of academic year 2014. Following his departure, the working group had no chair and was not very active.

The open access effort, as it relates to the Libraries, has been a great success, but the combination of the problem of finding a head for the working group with the need to respond to the Swartz report led FCLS to reconsider its oversight of Open Access Working Group activities. The committee believes that the scope of open access issues goes beyond those that can be addressed by the Libraries. The committee identified some substantive issues that were not being addressed because they are outside the scope of the Libraries. As a result, after discussion within FCLS, Professor Conrad recommended to the chair of the faculty that open access issues be handled by a separate committee of the faculty rather than a working group of FCLS. The proposal is for both library staff and FCLS representatives to maintain strong involvement, but the committee membership and the scope of questions considered would both be expanded. No final decision on the future of the Open Access Working Group had been made as of the end of spring 2014.

### **Improving Library Spaces**

For several years, the committee has been involved in a study of how to improve MIT's library spaces to better facilitate the goals of the Campus and Learning Study. In 2012 a report was commissioned from Shepley Bulfinch that examined library spaces at peer institutions and made recommendations on how the MIT Libraries might be better organized. Central to that report was the potential renovation of Hayden Library. This was followed by a rapid response feasibility study of Building 14, completed in 2013.

In response to these reports, MIT's Department of Facilities and the Libraries put out a request for proposals to initiate the next phase of planning and renovation. The focus is primarily on the Hayden building, but Barker Engineering Library and Rotch Library will also be considered. Construction could begin in late 2014.

## Conclusion

FCLS is pleased to report that the MIT Libraries are functioning well. Those who run the Libraries have done an extraordinary job of guiding the system through the leadership transition in a way that minimized the effect on the students and faculty while maintaining momentum on important initiatives. And this spring, Professor Conrad concluded her service as head of FCLS, noting that it had been a pleasure to serve on the committee.

## Committee on Nominations

The Committee on Nominations, chaired by professor Gareth McKinley, performed most of its work from November to February. In November, the committee conducted an annual survey of all faculty members to identify service preferences for standing faculty and Institute committees. In consultation with the faculty officers, the survey included several questions on faculty meeting attendance, electronic voting, and themes of interest. The Committee on Nominations contacted deans and committee chairs for suggestions, noting that some Schools consider Institute service to be a factor in promotions, and offered updated materials to share with prospective committee members and officers. The committee made four out-of-cycle (interim) appointments and nominated 32 faculty member to appointments beginning on July 1, 2014. The slate included nominees from 23 academic units in all five Schools, with approximately one-third of nominees new to faculty governance. The committee led a process to nominate Krishna Rajagopal (Physics) as chair of the faculty for 2015–2017, and JoAnne Yates (Sloan School) as secretary of the faculty. Professor Yates will succeed Professor Silbey, who is stepping down to take a sabbatical. The slate was presented at the March faculty meeting and unanimously adopted in May.

## Committee on Outside Professional Activities

The Committee on Outside Professional Activities did not meet during the course of the year. The chair of the faculty and the chair of the committee, professor Yet-Ming Chiang, met to lay the groundwork for a possible reexamination of the committee's role in faculty governance.

## Committee on Undergraduate Admissions and Financial Aid

The Committee on Undergraduate Admissions and Financial Aid (CUAFA), chaired by professor Leslie Kaelbling, focused on two major issues: the consideration of race in admissions and changes to the financial aid policy.

## Diversity at MIT and the *Fisher v. University of Texas* Ruling

The US Supreme Court ruling in *Fisher v. University of Texas* came out shortly before this year's committee began meeting. The Supreme Court sent the case back to the US Court of Appeals for the Fifth Circuit, using language that implied that there would not be any immediate additional limits on MIT's ability to consider race as one factor among many in an individualized, holistic review of admissions applicants. However, the Supreme Court's ruling also suggests that the issue will continue to be raised and that MIT should be ready with a clear statement of the value of diversity to the educational mission of MIT.

After a briefing by the Office of the General Counsel, CUAFA has written a draft statement of the value of diversity to the educational mission of MIT. It will likely be finalized and publicized by CUAFA in academic year 2015.

### **Adjustments to Financial Aid Policy**

The committee has observed that there has been a decrease in the number of incoming MIT students whose family income is between \$75,000 and \$150,000, with an especially worrisome decrease in yield. These students are most likely to appeal their financial-aid packages, which led CUAFA to believe that financial considerations are responsible for the decreased yield. Students from families with income of less than \$75,000 have their tuition completely covered, and students from families with income of less than \$100,000 do not have home equity taken into account in determining the amount the family is expected to pay. Betsy Hicks, executive director of Student Financial Services, proposed a change to current financial aid policies that are intended to decrease the financial burden on this group of families and increasing their representation at MIT. The proposal was to raise the threshold for eliminating home equity in the determination of parental contribution to a family income of less than \$150,000.

Ms. Hicks also observed that, compared with MIT's peer institutions (Harvard University, Princeton University, Stanford University, Yale University), MIT asks that students save a significantly larger portion of their summer earnings to contribute to their educational costs. These high summer-savings expectations have an effect on students and lead some of them to forgo summer educational opportunities, such as the MIT International Science and Technology Initiatives Program or the Undergraduate Research Opportunities Program, in favor of higher-paying jobs. An additional proposal was made to decrease the expected summer savings for all MIT students.

These two proposals were presented to the Enrollment Management Group. The senior administration considered the proposals and decided to take the first one (raising the family-income threshold for excluding home equity) to the Executive Committee, where it was approved. This policy was put into place for calculating financial aid packages offered in spring 2014. MIT experienced an increase in the yield of students from families with incomes between \$100,000 and \$150,000, although their numbers remained at 13% of the entering class.

### **Additional Topics**

In addition, CUAFA discussed results from studies by Hoxby, Turner, and Avery, showing that many low-income students do not apply to highly selective universities even though they might be highly qualified for them. Dean of admissions Stuart Schmill spoke with these researchers, and his office developed and distributed a brochure aimed explicitly at encouraging very high-performing low-income students to apply to MIT. Early indications are that this project had a positive impact on the number of applications to MIT from the targeted prospective students, and the admissions office will distribute a similar brochure to a larger sample next year.

Finally, the committee discussed a new initiative to give special consideration to students who are “makers” —that is, who have portfolios of engineering or design project work. These students are now more easily able to submit a maker portfolio (much as an artist might submit a portfolio) directly in their admission application. These portfolios are evaluated by an Engineering Advisory Board made up of MIT instructors and alumni, and students with very strong portfolios are given extra consideration in the selection process. There was a substantial response to this initiative by student applicants, and although no hard data are yet available, it seems to have led to the admission of some very strong students who might otherwise not have been admitted.

### **Edgerton Award Selection Committee**

The Edgerton Award Selection Committee, chaired by professor Deborah Lucas, met on March 3, 2014, to review nominations. At the April Institute faculty meeting, the chair announced that this year’s award winner was Nickolai Zeldovich, associate professor in the Department of Electrical Engineering and Computer Science.

An expert in computer systems and security, Professor Zeldovich is a graduate of the department’s master’s degree in engineering program. He received his PhD from Stanford University in 2008 and joined the MIT faculty that same year.

Professor Zeldovich’s research has broad implications for today’s technology-enabled society. The consequences of computer network breaches can be devastating. Professor Zeldovich has been working on novel methods of repairing the damage caused by such attacks. At MIT, he has spearheaded a project called “undo computing,” which offers the potential to automate system recovery. Until now, recovery has entailed rolling the entire system back to its state before an attack took place, then manually reconstructing any changes made after the system was compromised. Professor Zeldovich’s group solved this problem by developing a way for the system itself to evaluate and restore legitimate actions. Equally deserving of mention are his work in enabling encrypted computation in the cloud and his group’s development of analytical tools to detect security bugs. The latter have been used to flag and fix more than 300 bugs in real systems.

A well-regarded teacher, Professor Zeldovich developed 6.858 Computer Systems Security to teach students how to build secure computer systems. The subject has quickly become one of the department’s most popular offerings. The laboratory assignments that Professor Zeldovich developed for the course—and that are now being exported to other institutions—require students to build a secure web application and then attack it. One former student wrote, “Professor Zeldovich exemplifies what I imagine to be an MIT-class professor.” Another attested, “His class inspired me to start working on security myself.”

This award is only the latest recognition of Professor Zeldovich’s achievements. He received his department’s Spira Award for teaching in 2013, a National Science Foundation CAREER Award in 2011, and the Sloan Research Fellowship in 2010. Last

year, he was recognized with two best paper awards at the premier conference on computer systems. The selection committee was struck by the words of one faculty member, who concluded: “We are fortunate to have Nickolai.” The Edgerton Award recognizes Professor Zeldovich for his dedication to students and his impact both within and beyond his field of scholarship.

### **Killian Faculty Achievement Award Selection Committee**

The Killian Award Selection Committee, chaired by professor Patrick Jaillet, selected Sallie W. (Penny) Chisholm, the Lee and Geraldine Martin professor of environmental studies in the Department of Civil and Environmental Engineering (CEE), as the recipient of MIT’s 2014–2015 James R. Killian Jr. Faculty Achievement Award.

Professor Chisholm has been described as both a groundbreaking scientist and a trail-blazing colleague. In 1988, she led a team that made a critical discovery about photosynthetic organisms in the sea. For many years, oceanographers had studied the sea as a key source of photosynthesis, the process of converting sunlight into energy that sustains life on Earth, but were not aware of the existence of a microscopic marine bacterium called *Prochlorococcus*. Thanks to Professor Chisholm’s work, this tiny bacterium has been revealed as one of the most abundant photosynthetic organisms on Earth, responsible for at least half of all atmospheric oxygen. This discovery of a microorganism with global impact is symbolic of Professor Chisholm’s career. As one faculty colleague observed, “[h]er work is a defining example of the value of thinking both big and small to make sense of the complex interplay of life and the environment.”

Over the years, Professor Chisholm’s impact has been felt from marine ecology to environmental science in a broad sense. In the spirit of the Killian Award, she has been a leader in connecting environmental scholarship with practical challenges. As one example, she has coauthored three children’s books that explain ecological principles.

Having received a BA from Skidmore College and a PhD in biology from SUNY Albany, Professor Chisholm made her way to MIT in 1976, when she accepted an appointment as assistant professor in what is now CEE. A biologist joining a civil engineering department has had lasting impact on the composition and perspective of CEE. Professor Chisholm has also held a joint appointment with the Department of Biology since 1993.

At MIT, Professor Chisholm served as associate chair of the MIT Faculty from 1987–1989. She has maintained an active relationship with the Woods Hole program, and has been involved with the Council on the Environment, the Committee on Senior Women Faculty in the School of Science, and the President’s Task Force on Student Life and Learning. She was the founding director of the MIT Earth System Initiative and has co-taught Introductory Biology for more than 20 years.

Outside MIT, her many awards include election to the American Academy of Arts and Sciences, the National Academy of Sciences, and the American Association for the Advancement of Science. In 2010, she received the Alexander Agassi Medal, given by the

National Academy of Science every three years for an original contribution in the science of oceanography. In 2013, she was presented with the National Medal of Science at the White House.

As environmental issues continue to gain momentum, the selection committee found it timely to recognize Professor Chisholm with the 2014–2015 Killian Award for her scientific achievements, interdisciplinary leadership, and inspirational vision.

**Steven R. Hall**  
**Chair of the Faculty**  
**Professor of Aeronautics and Astronautics**

**Lynsey Fitzpatrick**  
**Faculty Governance Administrator**