

HARVARD UNIVERSITY
FACULTY OF ARTS AND SCIENCES



A REPORT ON THE HARVARD COLLEGE
CURRICULAR REVIEW

APRIL 2004

CONTENTS

I. Introduction	1
II. A Brief History of the Harvard College Curriculum	3
III. Overview and Themes	5
IV. General Education	11
A. More flexible requirements and Harvard College Courses	12
B. Written and oral communication	16
C. Foreign language	18
D. Quantitative skills	19
E. Basic science	20
F. Moral reasoning	22
V. Concentration	22
A. Timing of concentration choice	24
B. The structure of concentration requirements	26
C. Concentration advising	29
D. Concentration reviews	31
VI. Introducing Students to the College: The First-Year Experience	32
A. The freshman year curriculum	32
B. Pre-concentration advising	35
VII. Expanding Opportunities	39
A. International experience	39
B. Undergraduate research	42
C. A college within a university	43
D. January term	45
E. Arts in the curriculum	48
F. Public service in the curriculum	49
VIII. Fostering Pedagogical Improvement and Innovation	51
A. Improving the classroom experience	51
B. Coordinating resources to improve pedagogy	54
IX. Conclusion	56
Appendix 1: Participants in the Curricular Review	59
Appendix 2: The Undergraduate Academic Program for the Class of 2007	60
Appendix 3: The Undergraduate Concentrations: Numbers of Concentrators and Course Requirements, 2003-2004	62
Appendix 4: List of Recommendations	63

A REPORT ON THE HARVARD COLLEGE CURRICULAR REVIEW

I. INTRODUCTION

Harvard College brings together outstanding students from the United States and abroad, who come to Cambridge to study with faculty who rank among the most accomplished in their many fields of scholarship. We take pride in the diverse backgrounds, talents, and ambitions that these students bring to the College, and we believe that one of the most important tasks of the Faculty of Arts and Sciences (FAS) is to provide them with the best possible undergraduate education. As the world and the way we perceive and study it change, it is incumbent upon the Faculty to revisit both the structure and the content of the undergraduate education it provides.

In an era of increasing specialization and professionalization, we reaffirm our belief in a liberal education in the arts and sciences. We aim to educate our students to be reflective, disciplined, and independent thinkers. We believe that a liberal education should enable students to develop multiple perspectives on themselves and on the world, and give them the knowledge, training, and skills to provide a foundation for their lives. The recommendations in this report aspire to broaden the scope of a liberal education for the early twenty-first century and to expand the choices open to Harvard College students.

This report contains recommendations for curricular renewal at Harvard. But it has higher ambitions still. It aims to recommit this Faculty to the central mission of educating undergraduates. It reasserts our responsibility to define what it means to be educated in this time and place, to engage all members of the Faculty in the education of Harvard College students, and to create a learning environment known for pedagogical excellence and innovation.

In October 2002, William C. Kirby, Dean of the Faculty of Arts and Sciences, announced the first major review of the undergraduate curriculum in almost thirty years. He asked the Faculty and the wider Harvard community to consider what it will mean to be an educated woman or man in the first quarter of the twenty-first century. The review has generated great interest among faculty and staff, undergraduates, graduate students, alumni, and the wider community, leading to lively correspondence and conversations about those aspects of our curriculum that are working well, those that would benefit from change, and the enduring values of a liberal education in the arts and sciences.

To carry out the review, Dean Kirby and the Dean of Harvard College, Benedict H. Gross, formed four working groups to examine issues related to general education, the concentrations, pedagogy, and students' overall academic experience. Each working group included tenured and non-tenured faculty, two undergraduates, a graduate student, and an administrator who works closely with undergraduates. To ensure consideration of the ways in which the College interacts with and is enriched by other parts of the University, a member of another Faculty of the University was also included in each working group. Deans Kirby and Gross, and a steering committee that included the co-chairs of each working group, coordinated the process. A full list of the faculty, administrators, and students who participated in the review is included as Appendix 1. Throughout the past year, members of the steering committee and the working groups have met with students, faculty, administrators, and alumni to discuss the many ideas that have come under consideration.

This report summarizes what we have accomplished this year in thinking anew about the shape of a Harvard College education. We outline an overall framework that focuses on providing students with greater flexibility to explore new areas, to discover new intellectual passions, and to move easily among fields of study so that they may more freely shape their education in close consultation with faculty advisers. In many areas, there are specific recommendations, while in others we sketch a broad approach, leaving details to be filled in at a later stage. We have considered a wide range of proposals, and not everyone who has contributed to this review will agree with all of its recommendations. With this report, the first

stage of our review is complete. There will follow, now and next year, a period of comment, discussion, and further development.

II. A BRIEF HISTORY OF THE HARVARD COLLEGE CURRICULUM

This is not the first time that the undergraduate curriculum in Harvard College has been considered and revised in a comprehensive way. The earliest curriculum had uniform requirements, defined by a set of prescribed courses corresponding to those particular subjects that an educated man should know; it was a standard curriculum that offered little opportunity for students to exercise choice in their studies. Under President Charles Eliot (1869-1909), Harvard College moved to the opposite extreme, that of the elective system, which allowed students to choose their courses freely from among any of the offerings that the University could provide. This was an era of great expansion in the scope of the curriculum, as Eliot sought to make Harvard College a school “in which multitudes learn in many ways to take thought for others, to exercise public functions, and to bear public responsibilities.”¹ By the dawn of the twentieth century, however, questions arose as to whether students were shaping their educations to best effect. In 1902, a faculty committee on improving instruction was formed to review undergraduate education under the elective system. Professor (soon to be President) A. Lawrence Lowell was responsible for introducing into the report the notion that “every serious man with health and ability should be encouraged to take honors in some subject,” making the case for the value of completing a grouping of courses in a particular field.² The framework of “concentration and distribution,” which brought shape and structure to what existed under the pure elective system, began under President Lowell with the Class of 1914. This formalized the idea that students should be broadly educated while also studying one particular subject in depth.

The framework of concentration and distribution—depth and breadth—has continued to define our undergraduate curriculum since that time, though twice in the last century the College curriculum has seen further substantial revision. In the midst of the Second World War, President James Bryant Conant formed the University Committee on the Objectives of a General

¹ Quoted in John T. Bethell, *Harvard Observed* (Cambridge: Harvard University Press, 1998), p. 9.

² Samuel Eliot Morison, *Three Centuries of Harvard* (Cambridge: Harvard University Press, 1936), p. 386.

Education in a Free Society to articulate a unified concept of general education, not just in Harvard College, but, more broadly, for American education. This led to the “Red Book” of 1945, in which the committee, led by the Dean of the Faculty of Arts and Sciences, Paul H. Buck, defined general education as “that part of a student’s whole education which looks first of all to his life as a responsible human being and citizen.”³ The committee’s focus for general education in a free society was on heritage and change. For Harvard College, the General Education Program, in which students were required to take one of a very small number of full-year courses in each of the broad areas of the humanities, social sciences, and natural sciences, replaced an open distribution requirement in 1950.

Henry Rosovsky initiated the most recent major review of the undergraduate program in 1974, early in his tenure as Dean of the Faculty of Arts and Sciences. He and President Derek C. Bok sought to redirect faculty resources toward undergraduate education, and also to reengage the Faculty in the mission of undergraduate education following the divisiveness of the Vietnam era. The framework of breadth and depth was once again affirmed, but with a major reformulation of how breadth was to be defined. The Core Program, organized around “approaches to knowledge” rather than mastery of specific bodies of knowledge, was adopted by the Faculty in 1978 and fully implemented for students who entered the College in September 1982.

During the tenures of President Neil L. Rudenstine and Dean of the Faculty Jeremy R. Knowles, there were further curricular changes. In May 1997, the Faculty voted to introduce Quantitative Reasoning as a new Core area. The Faculty also voted in May 1997 to allow department alternates to Core courses in the humanities and social science areas of the Core; these already existed in the science areas. In 1998, the Educational Policy Committee began to work to reduce the number of concentration requirements. A year later, language citations were introduced as a means for recognizing students who completed significant work in a foreign language. Beginning in the 2000-2001 academic year, the Freshman Seminar Program began to

³ *General Education in a Free Society: Report of the Harvard Committee* (Cambridge: Harvard University Press, 1945), p. 51.

be reinvigorated. At the same time, the Core requirement was reduced from eight required areas to seven, to encourage student exploration of these seminars.

Most recently, under President Lawrence H. Summers and Dean Kirby, the Faculty began a major initiative to make study abroad a more natural and common part of a Harvard College education, creating a new Office of International Programs and asking concentrations to adjust their programs to facilitate study abroad. Core requirements were reduced by one area for each full term of credit earned abroad.

Each of these recent changes was eminently reasonable in addressing specific deficits in the curriculum or in the experience of Harvard College students. (A summary of current degree requirements, as they apply to the Class of 2007, is included in Appendix 2.) In retrospect, it is also clear that these changes, when taken together, represented the early stages of a major rethinking of the shape of undergraduate education in Harvard College. Deans Kirby and Gross observed that the time had come to step back and to consider the undergraduate curriculum as a whole. Did it convey a coherent vision of what the Faculty was trying to achieve? Did the pieces mesh in sensible ways? How did the curriculum intersect other parts of the overall undergraduate experience? It seemed wise to undertake a comprehensive review when this could be done from a position of strength, at a time when the Faculty remained deeply engaged in both the Core and concentration programs, yet was expressing a willingness—perhaps even a strong desire—to think about the larger purposes of undergraduate education.

As President Summers has noted on several occasions, every institution, however strong, should examine and reaffirm—or alter—its identity and structure at reasonable intervals. For Harvard to do otherwise would be to ignore the social role of the University and of its graduates at a time when the world in which they exist continues to change in profound ways.

III. OVERVIEW AND THEMES

What are the principles that have guided this review? What is it that we wish to achieve in the education that we provide to students in Harvard College?

In an era of increasing specialization, professionalization, and fragmentation in both higher education and in our wider society, we reaffirm our commitment to a liberal education in the arts and sciences. We aim to provide students with the knowledge, skills, and habits of mind to enable them to enjoy a lifetime of learning and to adapt to changing circumstances. We seek to educate students to be independent, knowledgeable, rigorous, and creative thinkers, with a sense of social responsibility, so that they may lead productive lives in national and global communities.

We seek to graduate broadly educated individuals, while encouraging them to develop a deeper understanding of one or another discipline. This commitment has informed much of our thinking about the curriculum and underlies our recommendations. We see the goal of concentrations not as mastery of a field of knowledge, but rather a means by which students can develop a greater degree of sophistication in their thinking by taking a set of courses in a single area. In general education, and indeed across the curriculum, we believe that the faculty must exercise its responsibility to define what students need to know and how they may best learn, while creating opportunities for students to gain sufficient exposure to a range of topics so that they have the background and confidence to continue their learning as informed citizens when confronted with new questions, ethical dilemmas, and opportunities over their lifetimes.

While maintaining the framework of breadth and depth, we seek to present students with a program that is both simpler to navigate and more flexible in its requirements than is the current curriculum. We have heard too often from students that the constraints of concentration and Core requirements force them to focus on narrow segments of the course catalog and leave them with too few opportunities to explore the rich array of courses that our faculty offer. Faculty members express the same concern in a different form, saying that their departmental courses are too infrequently taken by non-concentrators, who could add to the intellectual excitement in the classroom by bringing new perspectives and insights drawn from other fields. We wish to encourage students to range broadly, to follow their interests and curiosity, and to allow them the freedom to change their minds about the areas they wish to study. We seek to foster the kinds of intellectual engagement and excitement that pursuit of one's passions can provide—it is important to remember that many of our students are passionate about multiple

areas of study. We wish to maximize the flexibility that students have in shaping their academic programs, whether that means delving more deeply into a single field as preparation for graduate study or sampling many fields. Our aim is to ensure that students are broadly educated and that they do not over-specialize prematurely; hence concentration requirements should be designed not to train specialists but to promote the kinds of rigorous and creative thinking that we seek to engender.

In short, we seek to broaden the scope of a liberal education and to expand choices for Harvard College students, crafting an undergraduate curriculum that is defined less by the requirements that it places on students and more by the commitments that the Faculty makes to undergraduate education in the liberal tradition. To be sure, greater freedom of choice underscores the importance of strong mentoring and advising. In too many ways, our current set of requirements is so intricate that faculty lack the confidence to advise students even within their concentration, fearing that they can only get it wrong. Further, the constraint of requirements can leave little room for mentoring, and for helping a student to shape a sensible program around his or her many interests, and lead too many advising conversations to become exercises in checking boxes.

As we renew our commitment to liberal education, we must also create a curriculum appropriate to Harvard College in the first part of the twenty-first century. While there is a seemingly timeless quality to the principles of liberal education, what we teach and how we teach are shaped by the world that we inhabit and in which our students will live. Thus while we might agree with Thomas Jefferson that a liberal education should “develop the reasoning faculties of our youth, enlarge their minds, cultivate their morals, and instill into them the precepts of virtue and order,”⁴ it falls to our generation of faculty to define these ambitions for our time. Six themes have guided our thinking, three of these related to ways in which the world

⁴ Thomas Jefferson, “Report of the Commissioners for the University of Virginia,” *Writings* (New York: Library of America, 1989), p. 460.

or the world of scholarship has changed since the last curricular review thirty years ago, and three related to how we may better teach our students and expand the opportunities open to them.

First, today's world requires a greater emphasis on **internationalization**. As the "Red Book" of the 1940s sought to outline how Harvard students should be educated as citizens of a free society, we must aim to prepare students to live as citizens of a global society. Our students of the twenty-first century go out into a world made smaller by technology, but still defined by different and changing cultures and civilizations. They may well find themselves living and working in another part of the world, and surely must expect to work with colleagues who bring with them differing cultural assumptions. A central mission of Harvard College must be to educate its undergraduates to be intellectually acute citizens of the world. This is a moral responsibility, in the same way that educating students as citizens of a free society was in 1945. Of course, a focus on "global citizenship" must be, by necessity, rooted in an understanding of one's own national traditions. Given the role that the United States plays in the world, we have a special obligation to our students to help them understand how others view this country. This is not a matter of choosing the world *or* America, but rather the world *and* America, for our students should understand their own traditions in order more fully to appreciate the traditions they will encounter when working and living with others. For our international students, we have a responsibility to make their experience at Harvard a rich one in much the same way.

Second, our undergraduates will live in a world of ongoing **scientific and technological revolution**. We are revising our understanding of the biological infrastructure of life, and challenging conceptions of human nature and of our physical universe. As President Summers noted in his 2003 Commencement Address, "[B]ecause of the prospect science holds for progress in various domains, science and scientific ways of thinking are coming to influence a far wider range of human activity than ever before."⁵ We must prepare not only science concentrators but also those students more interested in the humanities and social sciences to grapple with the scientific and technological elements of the public policy issues and ethical questions that will arise in their lifetimes. We must provide all students with science courses that develop a basic understanding of the scientific method and of basic principles of the life and

⁵ <http://www.president.harvard.edu/speeches/2003/commencement03.html>

physical sciences, as well as the ways in which these principles are harnessed into remarkable innovations in technology. Despite the fact that many students are likely to use their scientific training to consider questions of policy, they must learn principles before application. Graduates of Harvard College should be able to understand the news and expository articles in journals such as *Science* and *Nature*. We should no more accept the proposition that some of our students are incapable of learning science than believe that other students are unable to master subjects in the humanities and social sciences.

Third, modern scientific and humanistic inquiry often crosses the boundaries of traditional disciplines. Most public policy decisions also involve considerations drawn from varying, and sometimes contradictory, disciplinary perspectives. Just as our faculty work increasingly in and across multiple disciplines, our students should be encouraged to explore topics that **cross disciplinary boundaries** and should encounter the intellectual controversies that exist among disciplines. We must remind ourselves that the disciplinary-based departments that we take for granted and on which we map most of our undergraduate concentrations are little more than a century old. While these may continue to be appropriate structures for fostering the intellectual rigor that comes from performing concentrated work in a field, we must also find ways for our students to explore a variety of disciplinary approaches to a problem and to pursue collaborative work with others who have different disciplinary skills.

Fourth, turning from themes related to what we teach to those related to how we teach, we should aim to foster **communities of learning** between faculty and students. A criticism of Harvard College today is that direct, educational student-faculty contact is too limited. That criticism is justified. In 2002-2003, 48 percent of all undergraduate enrollments were in courses with more than 50 students, though these accounted for only 10 percent of our undergraduate courses; among Core courses, 79 percent of enrollments were in courses with more than 50 students, and 62 percent were in courses with more than 100 students. We must expand opportunities for students, throughout their four years in the College, to engage in small-group instruction with faculty who not only interact with them in the classroom and in office hours, but who also directly evaluate their work, commenting on papers, presentations, and lab results. Indeed, we must make such encounters unavoidable, limiting severely the opportunities for

students and faculty to avoid intense intellectual engagement with one another. Harvard College should be known not only as an institution in which students can sit in lecture halls to learn from faculty who make original contributions to knowledge, but also as a place where they may encounter, and challenge, these scholars directly in seminar and small class settings.

Fifth, with a faculty that constantly transforms knowledge, we should aim to expand **student research** opportunities. Harvard College can be distinguished from many fine colleges that focus on the liberal arts and sciences by the quality of its research faculty. We should be similarly distinguished by the opportunities that we provide for students to engage in research, and we should take advantage of the potential that student research provides for students to work closely with faculty, further fostering communities of learning. In the 2003 senior survey, 29 percent of graduating seniors reported that they had participated in research with a faculty member for credit, and 31 percent said that they had participated in research with a faculty member not for credit; students in the sciences took part in these activities to a considerably greater extent than did concentrators in the humanities and social sciences. In addition, 48 percent of graduating seniors indicated that they had completed a thesis or other senior project. These numbers should be higher still, if students are generally to benefit from being part of a leading research university.

Sixth, as Harvard's professional schools increasingly include scholars in core FAS disciplines—ranging from cell biology and biophysics to sociology and economics to philosophy and religion—the FAS should take the lead in planning how our students—and indeed our colleagues—may benefit from increased educational cooperation with our sister Faculties. Ours is **a college within a university**, and we should help our students explore educational opportunities across the University. Already, some students engage in research with faculty members from other parts of the University and cross-register for courses; some faculty from other Harvard schools teach courses designed specifically for undergraduates; and several concentrations draw increasingly on faculty from across the University. We should reduce the barriers to increased educational cooperation across the University to create opportunities that would benefit our undergraduates. As with research, its place within a great university

distinguishes Harvard College from many fine colleges and should also distinguish the education we provide.

Framed by this statement of our mission in undergraduate education and the several themes that we have identified, the curricular review working groups and steering committee offer a set of proposals for moving forward.

IV. GENERAL EDUCATION

Every college makes a statement of what it thinks important in the education of students through the way it structures requirements for the undergraduate degree. With the expansion of knowledge at an ever-accelerating rate, it is not possible (if indeed it ever was) to cover in four years all that a given student might need to know. In any event, disseminating information is not the same as providing an education. As custodian of Harvard College, the FAS has the special responsibility of defining what it means for undergraduates to be educated in the arts and sciences. To educate College students broadly, the Faculty must step back from its research focus and the specialization that it seeks to foster in the concentrations and in its training of graduate students, and focus instead on how fields of knowledge intersect and can be made relevant and accessible to a broad audience. The Faculty has an obligation to guide students both collectively and as individuals in how best to shape their educations.

How, then, should we conceive of a general education requirement? Different institutions have defined general education in different ways. Some stress coverage of specific knowledge that every educated person should have, while others emphasize development of skills that are essential to the acquisition, communication, and generation of knowledge. Still others foster common academic experiences that may serve as reference points in the intellectual life of the community. While each of these approaches has merit (and they are not entirely incompatible), none provides sufficient guidance to structure a requirement that meets our goals of a curriculum that expands choice in a liberal education while also asserting the need for courses that are both integrative and foundational.

A. More flexible requirements and Harvard College Courses

In reimagining the general education component of the Harvard College curriculum, we have kept in mind both the strengths and weaknesses of our current structure. The centerpiece of general education in Harvard College has been the Core Program, designed as a closed distribution requirement with eleven precisely defined areas and a relatively small number of courses available in any given area. In addition to their Core requirements, all students take at least one term of Expository Writing, and students who have not satisfied the Foreign Language requirement upon matriculation must enroll in a full-year language course during the freshman year.

In many ways, the Core Program has been successful. It has led to the introduction of many courses explicitly designed to be accessible to generalists, free of prerequisites, and able to stand alone as the one course a student may take in a given field. Offering a Core course is often attractive to faculty members seeking to educate a broad range of students and to teach in areas of interest outside their departments. Most Core courses are very well taught and the Core Program's attention to pedagogy—for example, the nature and timing of assignments—has had beneficial effects on other courses.

Students generally think highly of many of the individual Core courses they take, yet student and faculty enthusiasm for the program has fallen over time. Many faculty members find the review process by which courses are evaluated for inclusion in the Core to be opaque and cumbersome. Neither students nor faculty have a clear understanding about the specific guidelines of each Core area, and distinctions about why certain courses are in and others are out are therefore difficult to explain or to justify. Because in meeting requirements students are largely restricted to courses offered in the Core, they sometimes find themselves in courses targeted at a lower level than is appropriate to their ability or their ambition. Symmetrically, more advanced department courses—which do not meet requirements for non-concentrators—often attract only concentrators. As students exercise their limited options for satisfying Core requirements, they feel that they are involuntarily being channeled into large courses. Because the range of Core courses is determined largely by individual faculty initiative, students

sometimes complain that courses in areas that interest them, and that would meet the Core guidelines, are not available. Most important, by restricting student choice, the Core requirement may serve to constrain intellectual development.

Harvard College students want two things from a general education program. First, they want the flexibility to explore and define their intellectual interests as they choose courses to meet various requirements. As noted, they frequently find the choices offered by the Core Program to be too limiting. Second, they want guidance about which topics and approaches are most important for them to study. While Core courses introduce students to various modes of thought, they may do so by presenting only a narrow slice of a discipline. Many students would prefer a set of options that provides broader and more integrated introductions to foundational knowledge, which can thus inform their future work in the College and their lives as educated persons. We believe that both of these desires have merit, and accept the implicit critique of the current Core Program that underlies them. Moreover, we believe that faculty members have the responsibility to transcend specialized areas to provide our students with an integrated foundation to their education. As we worked to outline a framework for general education in Harvard College, we sought to meet these several objectives.

We recommend that the Core Program be succeeded by a general education requirement that will enhance curricular choice, educate students in a set of areas that are defined broadly, include a wide range of courses, and provide for the development of a new set of integrative, foundational courses. There are many ways to achieve the goals defined by general education, and students should have greater flexibility to choose the courses that will best serve these goals. We must hold ourselves to a high standard of curricular imperative before imposing requirements that constrain students' ability to explore broadly, to develop their wide-ranging talents, and to experiment with different subjects.

It is essential, however, that the Faculty provides students with guidance about the important concepts, texts, and knowledge that might underpin a liberal arts and sciences education. There are, to be sure, different ways in which this might be done. Careful consideration of the manner in which general education requirements are structured and fulfilled

is necessary, as is advising students about curricular choices. We have concluded that one important way in which the Faculty can guide students' general education is by providing courses that will introduce them to important fields of knowledge and critical skills.

We recommend that the FAS develop a new set of courses, to be known as “Harvard College Courses,” that will serve as a central component of a new general education requirement. These courses will seek to be foundational with respect to broad areas of knowledge, to cut across traditional disciplinary boundaries, and to define the basis of an educated citizenry. Unlike the Core Program, which is meant to introduce students to the major “approaches to knowledge” of different disciplines, Harvard College Courses are to be *integrative* courses, moving beyond the disciplinary perspectives that have defined much of modern academic life and the Core Program.

The reasons for developing this new set of foundational courses deserve emphasis, for they emerge from the basic principles underlying this review. We live in a society, and a world, of specialization. Our faculty members are, increasingly, specialists in particular fields or subfields. While specialization can advance understanding, it can also lead to greater fragmentation. If our specialist faculty are to be engaged in undergraduate education, and to make their advances in knowledge part of that education, then they must find ways to translate specialized knowledge into formats that are accessible to the generalist, that show how a field is related to other areas of knowledge, and that demonstrate why it matters. Harvard College Courses will seek to draw on multiple disciplines, assumptions, and traditions of knowledge. They are not meant as introductions to any discipline *per se*, and the courses themselves are not likely to fall under the aegis of any single department. Faculty in related areas would come together across disciplinary boundaries, both within the FAS and across the University, to speak with one another and with students in a common language and to define the most important concepts and approaches that students should know about their fields. These courses might be co-taught, or taught by a single faculty member with broad interests. They should play a significant role in the enhancement of critical skills: close reading, logical argumentation, expository writing, oral presentation, and, where appropriate, quantitative reasoning. We see this

as an opportunity for innovative and collaborative teaching, and would expect that the preparation and teaching of Harvard College Courses would be well supported administratively.

What might a representative Harvard College Course entail? A Harvard College Course on world histories might be built around “cultures and contacts,” introducing students to significant moments, from multiple centuries and continents, in which civilizations interacted in cooperative or competitive ways; it might introduce students to episodes of international trade, war, conquest, and international organization. A world literature course might look at cultural representation in different places and periods, and cultural flows across traditional national boundaries and among hierarchies of culture. A social science course could focus on poverty, bringing together historical, political, sociological, economic, public health, and normative perspectives. In the life sciences, a Harvard College Course on the human genome could introduce students to the processes of life from chemical, cellular, developmental, organismic, and evolutionary perspectives.

Harvard College Courses should be flagship courses, listed at the front of the course catalog. They should develop distinctive course materials for use in, and potentially beyond, Harvard College. A Harvard College Course should be accessible to students who bring no college-level background to the subject, and should make sense even if it is the only course a student takes in a particular area of the curriculum. At the same time, we hope that these courses will inspire students to pursue additional work in the area, and perhaps even choose to concentrate in one of the disciplines introduced by the course. Some concentrations might require specific Harvard College Courses as gateways into the concentration. We expect that Harvard College Courses will be excellent courses that attract large numbers of students and provide common intellectual experiences for many students in the College, but we do not advocate requiring them as the sole means by which students fulfill the general education requirement.

We recommend that Harvard College Courses provide one means to fulfill a general education requirement. Students should also have the opportunity to meet the requirement by selecting courses drawn from departmental and other offerings and representing work

across broad areas of knowledge. One possibility for defining such areas is to build upon our current divisional structure by requiring that students complete two courses each in the humanities, the social sciences, the life sciences, and the physical sciences and engineering, with two additional courses in a category defined to emphasize international perspectives. On the assumption that each concentration would include at least two courses in one of these areas, this would entail a maximum of eight courses. Both Harvard College Courses and a large number of designated department courses in these areas would count for the general education requirement. Many current Core courses could be offered through departments or form the basis of a Harvard College Course.

Having set out these recommendations, the task remains of determining more precisely the areas of a general education requirement and the criteria for Harvard College Courses. **We recommend that the Dean, in consultation with the Faculty, set out the specific criteria for Harvard College Courses, and define the structure of requirements for general education.** In seeking simplicity, we anticipate that the total number of areas will be fewer than the current number; in endorsing flexibility, we expect that the structure for determining how individual courses will meet requirements will be less cumbersome. The requirement sketched above, which builds on our current divisional structure with requirements in the humanities, social sciences, life sciences, and physical sciences, has the virtue of reinforcing existing structures that reflect the ways in which faculty members do their work. But we appreciate that there are many other ways to define a general education requirement, and do not wish to constrain those who will work to develop it next year, with one exception: in light of the overall curricular goals of this review, **we recommend that the international and science components of the general education requirement be significantly strengthened** both in terms of the amount of time that students devote to these subjects and the nature and quality of the instruction provided.

B. Written and oral communication

A central skill that we seek to reinforce in Harvard College is clear and effective writing. Writing is important not only as a tool for communication, but also as a tool for thinking. The very act of writing forces us to clarify our thinking and to marshal supporting evidence. The

importance that Harvard College places on writing instruction is reflected in the requirement of a one-term writing course, Expository Writing 20, which all students must complete in the freshman year. Roughly 100 students each year also enroll in Expository Writing 10, a writing course that precedes and supplements the required course. While these are designed to be courses that focus on writing, each section has a subject that provides the occasion for writing assignments similar to those that students will do in their other courses.

Although Expository Writing serves as a common experience in providing students with writing instruction, writing is a skill that must be developed throughout the four years of an undergraduate education. Many concentration tutorial programs, particularly in the humanities and the social sciences, focus on writing within the discipline. Similarly, writing is an important aspect of departmental and Core courses. Some of these tutorials and courses work closely with the Harvard Writing Project (a part of the Expository Writing Program) or with the Derek Bok Center for Teaching and Learning on matters of writing pedagogy. Despite these efforts by individual faculty members or concentrations, no systematic attention to writing in the curriculum exists beyond the freshman requirement, particularly for the students concentrating in the sciences. The Expository Writing Program is inadequately integrated into the rest of the College curriculum, and there seems to be insufficient continuity between the required Expository Writing course and the experiences students have with writing in their later courses.

Harvard College has been even less systematic in its focus on oral communication, despite the importance that this skill will have for students both in the College and in their professional lives. Harvard College graduates should have the ability to speak cogently and to persuade others. Regardless of what they choose to do later in life, the ability to stand before a group to make a presentation, and to argue persuasively a point of view, will serve them well. Of course, many students practice these skills in section and seminar discussions, as well as in their extracurricular activities. Some courses require students to make formal presentations, and more courses could do so by requiring frequent short, but polished, presentations, and by staging debates and mini-conferences. We provide little formal instruction and feedback on these skills, however, and whether through choice or happenstance, students may not find themselves in the formal academic settings in which these skills are reinforced.

In the interest of strengthening instruction in written and oral communication, **we recommend that there be a review of the Expository Writing Program.** Such a review should assess the effectiveness of writing instruction in Expository Writing courses; explore ways of better integrating writing instruction into general education, for example, through linkages with the proposed Harvard College Courses; determine whether introductory courses that are writing intensive and involve writing specialists could be designated as alternatives to Expository Writing 20; and investigate how the mission of Expository Writing can be expanded to include the teaching of oral presentation and communication.

Because even the most able writers and speakers can benefit from practice, reflection, and feedback, writing instruction and instruction in oral presentation should continue beyond the first year. **We recommend that concentrations make instruction and feedback on written and oral communication an integral part of the concentration program.** Tutorials might be appropriate venues for this instruction. Concentrations may wish to collaborate with specialists from the Harvard Writing Project or from the Bok Center.

C. Foreign language

The teaching of foreign languages, with its emphasis on cultural context, is an important part of the way we prepare students as global citizens. Harvard College offers instruction in a rich array of languages. An exact count would depend on how one reconciled dialects, or ancient and modern forms of a language, but it is fair to say that approximately 60 languages are taught on a regular basis. This year we expanded that number by inaugurating an African Languages Program in the Department of African and African American Studies. Students report that language instruction is among the best parts of their Harvard College educations. At the same time, we hear from alumni that they wish they had studied more foreign language in college.

Students may meet the current Harvard College language requirement by scoring 600 on a College Board SAT II Test that includes a reading component, by earning a passing score on a placement examination at Harvard, by earning a language examination score that would

normally count toward advanced standing, or by studying a language for one year at Harvard College. The language requirement is waived for students whose native language is not English and who have completed high school instruction in that language. Nearly two-thirds of Harvard College students meet the language requirement at matriculation each year, and the rest ordinarily enroll in language courses during the freshman year. Of course, many students study languages voluntarily: as the basis for their concentration; to earn a language citation; to prepare for a study, internship, or research experience abroad; to read texts in the original language; to connect with their ethnic heritage; or simply because it is useful and enjoyable. Over the past five years, enrollments in our language courses have increased by 20 percent.

Because knowledge of a foreign language forms the basis for the global competence that we consider essential for Harvard College graduates, all students who are not native speakers of another language should study a foreign language in college. Just as we expect students to supplement what they have already achieved before coming to Harvard College, through our other general education requirement—for example in science—we should expect students to increase their knowledge of foreign languages and the cultures that can thereby come alive for them. **We recommend that the language requirement be enhanced as follows: all students who meet the language requirement at matriculation under present rules will be required to take one term of a foreign language or a one-term course taught in a foreign language.** Students should be free to meet this requirement at any time during their four years in the College. They may choose to continue at an appropriate level a language that they have already studied or to begin a new language, perhaps as preparation for an international experience. They may prefer to satisfy the requirement as part of a study abroad program. However they choose to meet this requirement, they will be better prepared to enter different cultural settings in the future.

D. Quantitative skills

Since the inception of the Core Program, competence in quantitative reasoning has been a requirement in Harvard College. This requirement originally had two components, data analysis and computer programming, and students were able to satisfy each part either by taking a course

or by passing an examination in the freshman year. As computers with standard software packages became commonplace, the simple computer programming exercises seemed less relevant, and this portion of the requirement was dropped. In 1997, the Faculty voted to add Quantitative Reasoning as one of the regular areas of the Core Program, replacing the exam on data analysis. This greatly expanded the range of subjects that students could study in order to extend their quantitative skills. The program now includes courses in demography, number theory, deductive logic, the analysis of algorithms, causality and inference, the mathematics of investing, strategy in international politics, and the visual display of quantitative information. All students not in concentrations that include a quantitative component must take a course in this area. In many ways, the introduction of Quantitative Reasoning as a Core area is analogous to what we now propose in the area of foreign language study, moving from a requirement based on meeting a predefined standard to one that requires students to progress from where they begin as freshmen.

The importance of quantitative skills has increased steadily over time. High-speed computers enable the manipulation of huge amounts of data, expanding the range of applications of quantitative methods. Decisions once based on hunch and art are now made on the basis of rigorous analysis of numerical information. Informed citizens in the contemporary world must be comfortable with interpreting data and quantitative arguments. We remain committed to maintaining the study of quantitative reasoning as a part of the general education requirement for all students in Harvard College. **We recommend that special attention be paid to quantitative skills in the definition of the general education requirement and in the criteria for Harvard College Courses.** One possibility would be to require students to select one or two courses with a significant quantitative component among those chosen to satisfy requirements in other areas.

E. Basic science

The teaching of basic science poses a special set of pedagogical issues. First, introductory science courses must reach three different, but overlapping, audiences: students who take science courses to meet general education requirements, students who take science

courses as preparation for application to a professional (usually medical) school, and students who take these courses as preparation for concentration and more advanced work in the sciences. Second, because of the sequential nature of science education, basic courses need to be taught at levels appropriate to students' prior experience and mathematical background. Third, science has become increasingly interdisciplinary, as work that has traditionally fallen within one or another scientific discipline is brought together in exciting new ways.

While we have seen some curricular innovation in basic science courses, this is often limited by the departmental structures in which the courses are offered and by the requirements for admission to medical school, which are generally defined by a fixed number of courses in the traditional fields of mathematics, general chemistry, organic chemistry, physics, and biology. If we take a broader perspective, we have an opportunity to rethink basic science education. We should consider whether courses might be structured to serve overlapping groups of students, giving pre-professional students and those who do not concentrate in the sciences a genuine view of the excitement of research science, while providing the academic foundation required by the science concentrations. We should consider whether introductory courses might be designed in a more integrated way, perhaps as Harvard College Courses, so that topics in chemistry and biology, or mathematics and physics, would be combined. Courses of this type could also work well in preparing future scientists. More integrated introductory science courses have the potential of freeing up the time of pre-medical students so that they can pursue a larger range of concentrations while moving science concentrators more efficiently to upper-level courses. We also have the opportunity to introduce more hands-on pedagogy in the teaching of basic science.

We recommend that the Dean convene a working group of science faculty to plan the redesign of introductory science courses and to reassess the pre-medical curriculum.

This group should therefore include faculty from the Harvard Medical School, which is undergoing its own curricular review, including a reconsideration of admission requirements. Harvard College must also be an active participant in wider discussions of the preparation of college students for medical school.

F. Moral reasoning

Even as we seek a more flexible general education program, we remain cognizant of our responsibility to educate morally responsible citizens and leaders. There are a number of ways to meet that responsibility. One might be to encourage faculty to develop new moral reasoning courses while maintaining existing offerings. These courses would satisfy general education requirements in the humanities, or perhaps in some cases the social sciences. Another might be to incorporate a range of appropriate ethical questions into Harvard College Courses. Yet another might be to encourage departments to incorporate such questions, where appropriate, into their methodology courses or tutorials, or into their efforts to develop cross-disciplinary modules in their concentrations. Moral reasoning is an area that lends itself well to innovative instructional methods, such as using the case method to analyze an ethical dilemma. Although we are not prepared to propose a separate course requirement in moral reasoning at this stage, we should be committed to giving students the intellectual tools to address the challenges of applying practical ethics to their everyday lives. **We recommend that the Dean and the Faculty examine ways in which to incorporate the study of ethical and moral questions into the College's general education program.**

V. CONCENTRATION

All students in Harvard College must complete the requirements of a field of concentration. There are currently 40 concentrations, some of which offer multiple tracks focused on particular areas. Most concentrations offer both a basic program and an honors program generally requiring more courses, additional tutorial work, and a senior thesis or advanced seminar work at a similar level of sophistication. Some students find that their interests are better accommodated by pursuit of a joint concentration that integrates two concentrations into a coherent plan of study. Still other students find that they cannot pursue their academic interests within existing concentrations or joint concentrations and pursue a Special Concentration of their own design under the guidance of a faculty member.

Concentrations come in a variety of sizes and shapes, ranging in size from Germanic Languages and Literatures, with fewer than a dozen concentrators, to Economics, with more than seven hundred. Taken together, the six largest concentrations (Economics, Government, Psychology, Social Studies, History, and Biology) account for half of all upperclass students in the College. The number of courses required by a concentration varies from 9 in the basic track and 11 in the honors track in Germanic Languages and Literatures, to 16 in the basic track and 17 in the honors track in Environmental Science and Public Policy. The Bachelor of Science degree in Engineering Sciences requires 20 courses in order to meet accreditation requirements. A summary of this information for all concentrations is included in Appendix 3.

For some students, work in the field of concentration is an opportunity to focus on a special area of interest, though they plan careers that will take them in other directions. For others, it is preparation for graduate study in that or a related field. A number of students are able to soar academically in their concentrations, and even to produce publishable research in their senior honors theses. There should surely be room in our curriculum for students to pursue these goals. Harvard College should encourage students to follow their passions and undertake major research projects. Students should be advised how best to delve deeply into a field of study.

If there is to be a requirement that *every* student have a concentration, then we must ask: What is the purpose? This is an important question, for at Harvard and elsewhere a concentration has tended to be the largest part of an undergraduate's program, taking one-third, one-half, or more, of a student's courses. We have seen that the definition of a concentration can vary considerably. As recommended below, we believe that the purpose, structure and requirements of each concentration should be reviewed, and indeed recertified. If we nonetheless reaffirm the principle of requiring every undergraduate to pursue a field of concentration, this follows from the goals that we set out for a liberal arts and sciences education, particularly to educate students as independent, knowledgeable, rigorous, and creative thinkers. These habits of mind, we believe, can be encouraged by asking students to study a field in some depth, to learn how knowledge in a field is organized, and to understand how research is undertaken—what defines an interesting question, what constitutes evidence, how knowledge

grows by further inquiry. Whether students go on to further work and study in their chosen concentration or move on to something very different, they will be better prepared for having devoted a focused part of their course work to a single pursuit. At the same time, we believe that existing concentration requirements must be simplified and made more flexible.

A. Timing of concentration choice

Harvard College is unusual among its peer institutions in requiring students to choose a concentration at the end of the freshman year. While not in itself an argument for change, later concentration choice at many other institutions does not seem to prevent students from acquiring an excellent education overall and in their chosen field. **We recommend that concentration choice be moved to the end of the first term of the sophomore year.** An extra semester, with the pressures of the first year behind them and the opportunity to sample more courses and fields, should enable students to make better-informed choices.

Transition to college can be very stressful, and the pressure of entering an institution such as Harvard is daunting to all but the most self-confident students. The early attention to choosing a concentration adds further pressure. Moreover, many students are not adequately prepared to make an informed choice by the end of the freshman year. The freshman year curriculum is currently constrained by required courses (for example, Expository Writing, required language courses for many students, and the expectation that they take one or two courses to begin satisfying Core requirements). These leave little room for students to explore new areas or to test alternative fields of concentration. Given that students may have very limited exposure in secondary school to many of the 40 or more possible fields of concentration, they run the risk of staying with the familiar or else opting for the unknown with little opportunity to test it in advance. We have no reliable way to determine what percentage of graduating seniors wish they had chosen a different concentration, but we do know that about one-third of all students change their concentration at least once after the initial declaration. Even with the enhanced flexibility that many of the recommendations in this report would create, a longer period of exploration is still desirable to permit students to make their decisions under less pressure.

Why, then, do we not recommend postponement of concentration choice to the end of the sophomore year, as many of our peer institutions do? First, we are reluctant to sacrifice sophomore tutorials. Sophomore tutorials are often a highly successful means for providing an intensive introduction to a concentration in a small-group setting. These courses usually focus on methodology and academic skills, forming the backbone of later work in the concentration. While later concentration choice will move one-term sophomore tutorials to the spring and reduce full-year tutorials to one term, we do not wish to see them eliminated entirely. At the same time, we believe that the greater freedom to explore outweighs the loss of full-year sophomore tutorials, and that there are other formats that can make some of the content of sophomore tutorials available to a wider audience. Second, students should find in the concentration an important academic community within the College. As we expand opportunities for study abroad, growing numbers of students will be away for all or part of the junior year. The spring term of the sophomore year will be an important moment of community-building among new concentrators.

The courses chosen by students in their first three terms should lay the groundwork for at least one, and possibly several, potential concentrations. Preparation for success in certain concentrations, particularly those in the sciences, will require careful planning during the freshman year and first term of the sophomore year, but we note that this is already the case. Each concentration should identify several courses that are good points of entry into a field of study, information which will also be helpful for upperclass students using electives to explore new fields. Students and advisers should see the first few terms more clearly as a time for exploring in a variety of areas. If developed in connection with a more flexible general education requirement, introductory experiences in a number of different areas could count either for concentration requirements or toward the general education requirement. Some entry-level courses could work as preparation for and introductions to several fields. One could imagine a set of “divisional” entry courses in broad areas, Harvard College Courses perhaps, that would provide introductory experiences ultimately suitable to a number of different concentration paths.

Pre-concentration academic advising in the freshman and sophomore years will be of central importance in the effective use of electives and for keeping concentration opportunities open. A student implicitly narrows his or her possible concentration choices each time courses are chosen, independent of the time of concentration choice. It will be important to develop an advising system that is capable of providing students with good information about the several concentrations that they are considering. We will return to this topic in Section VI.

B. The structure of concentration requirements

As we examined requirements across the concentrations, our sense was that many concentrations are structured with a focus on comprehensive coverage of an academic field and, at least in the honors track, preparation for graduate study. Harvard College must provide opportunities and sound advising for students to better pursue these goals. Many of our students are not planning to continue in the discipline, however, and take a more limited view of their concentrations, preferring to explore multiple, perhaps unrelated, interests. We view the requirement of a concentration as part of a liberal education in arts and sciences rather than as certification of mastery of a field.

We recognize, of course, that no single number of course requirements would be appropriate to all concentrations, but our sense is that the goal of depth can be met in many areas with fewer courses than are currently required. **We recommend that each concentration review its requirements with an eye toward reducing them to a level appropriate to a liberal arts and sciences education for non-specialists, and that there be a presumptive cap of 12 on the number of concentration requirements.** While it may be appropriate for some concentrations to require more than 12 courses, there should be a special burden to justify such additional requirements. To be sure, students wishing to study a field more deeply or to prepare for study toward the Ph.D. should be advised how they might use their elective choices to these ends. Other students, however, should have the freedom to use a greater number of electives in other ways.

To promote a spirit of true intellectual inquiry common to all concentrators, and to avoid the invidious distinction between those students who pursue honors and those who do not (as if the latter signified mediocrity), **we recommend that each concentration, or field-specific track within a concentration, formulate a single set of requirements for all concentrators, in place of the existing basic and honors tracks.** This single track could include options for the completion of specific requirements, so that the experience of writing a thesis would remain available to students who desire it, but thesis tutorial would substitute for two other courses. Such a structure would continue to encourage students to prepare for and write senior theses. Although “honors-only” concentrations would no longer exist as such, concentrations could require the submission of a senior thesis as an essential part of its program for all its students, or leave it as an option. The writing of an honors thesis can be an important culminating experience for many students, and should remain as an opportunity. However, **we recommend the development, where appropriate, of alternative capstone experiences to the senior thesis.** Some of these might entail the collective effort of a group of seniors under faculty supervision, for example in the mounting of a conference or a performance. In each concentration, an honors recommendation would be based on the *quality*, not the *quantity*, of a student’s work within the concentration. What would be eliminated is the notion of choosing an honors track early on in the concentration, as well as the practice of adding requirements to the so-called “honors track.”

Tutorials are an important part of many concentrations, but what is meant by “tutorial” varies widely. In some cases these are small seminars, while in others they are independent sections bound together by a shared lecture series. In still others they are individually-guided reading and research programs. In some concentrations, professorial faculty members (that is, assistant, associate, or full professors) are very active in this manner of instruction; in others, lecturers and graduate students are largely responsible for much of the teaching in the tutorial setting. Some concentrations have very little in the way of tutorial instruction, or none at all apart from guidance for the senior thesis, while in the committee-led concentrations, and in some department-based concentrations, tutorial instruction provides the core of the undergraduate program. To some extent, this diversity of arrangements suits the varying pedagogical and intellectual needs of programs across the College, and we hesitate to recommend increased standardization of programs or uniformity of tutorial requirements across the curriculum. At the

same time, tutorial programs will often provide the best venue for the reinforcement of writing and speaking skills in the concentrations. In addition, we feel that two areas deserve highlighting as opportunities to pursue general principles of this review.

First, tutorial experiences offer an excellent opportunity for increasing student-faculty contact. Because tutorials can be such valuable parts of students' concentration experiences, it seems especially important to ensure that professorial faculty members are influential in shaping that part of the undergraduate program. It may be that in some cases direct tutorial instruction by professorial faculty is not the most efficient use of Harvard's scarce faculty resources, but **we recommend that all tutorial programs be headed by professorial faculty with responsibility for the oversight of syllabi and instruction.** Changes in this area could provide even stronger educational experiences for undergraduates and better guidance and training for graduate students and post-doctoral lecturers involved in teaching. They could also allow for a stronger sense of participation by the professorial faculty in the core areas of undergraduate instruction.

Second, junior tutorials seem to be in need of special consideration in some concentrations, since the structure and reach of these tutorials differ significantly. In some cases, it seems wiser to replace the current one-on-one tutorial system, staffed by lecturers and graduate students, with small seminars taught by professorial faculty. In particular, **we recommend that all concentrations introduce a junior seminar program of faculty-taught, small-group seminars, or otherwise ensure that all concentrators enroll in a small course taught by a faculty member.** While we recognize that large concentrations will not be able to provide the same degree of student-faculty interaction as is commonplace in many small concentrations, we think it is important that all students have the opportunity to grapple with disciplinary questions in small group settings, recognizing that this may mean that large courses will become larger. The Departments of Government and of English and American Literature and Language, among others, already offer very successful junior seminar programs that bring together concentrators and faculty in small-group settings.

As we think about the intellectual content of concentrations in light of our goals for a liberal education, we find it important to ensure that all students gain some command of a

discipline and also have the opportunity to do cross-disciplinary work in an area of application. Some concentrations focus on disciplines and others focus on multi-disciplinary areas of study, but both types would be strengthened by some motion in the opposite direction. **We recommend that all concentrations review their requirements to reassess the balance between disciplinary focus and opportunities for cross-disciplinary work, at both the introductory and advanced levels.** In some cases, it will make sense to give students a choice between additional discipline-based work and work that crosses disciplinary boundaries.

There are several models for facilitating cross-disciplinary work in discipline-based concentrations. One possibility would be the expansion of multi-disciplinary tracks within concentrations, along the lines of the current Mind, Brain, Behavior tracks in Biology, Computer Science, History and Science, Philosophy, and Psychology. These concentration tracks base students within a discipline, while also bringing them together with concentrators in other fields to study a topic of mutual interest. Other potential topics for concentration tracks within discipline-based concentrations are global health, development studies, urban studies, ethnic studies, and health policy. A second approach would be for concentrations to identify or create multi-disciplinary clusters of courses. For example, concentrators in Economics, Sociology, Government, Anthropology, Earth and Planetary Sciences, and Biology could combine their concentrations with multi-disciplinary work in health policy, global health, national security, or climate change. Yet a third approach would be to create senior seminars on applied topics combining students from several concentrations, perhaps to tackle a problem collaboratively, each bringing his or her expertise from a relevant discipline. This type of course could serve as a capstone experience different from the independent senior thesis. These cross-disciplinary experiences could provide an opportunity for significant intellectual collaboration between faculty and advanced students, and could also form the basis for smaller academic communities in larger concentrations.

C. Concentration advising

As students gain greater flexibility, both in concentrations and in the curriculum as a whole, and have more freedom to shape their education to suit their particular interests and

needs, the role of advising will become even more important. It is difficult to speak in general terms about concentration advising, as structures and experiences of advising vary so dramatically (if fairly consistently over time). This is hardly surprising, as it is impossible for very large concentrations to operate on the same model as the smaller concentrations; it is unreasonable to expect every faculty member to take on the responsibility for advising as many as twenty concentrators. Nevertheless, it is important to state a few principles.

First, senior faculty should have responsibility for participating in and coordinating concentration advising. **We recommend that the Head Tutor or Director of Undergraduate Studies in each concentration (with a preference for the latter title because of its clarity) be a senior faculty member charged with oversight of concentration advising and monitoring of students' academic progress within the concentration.** In addition, concentrations should ensure that faculty members are participating in advising; as a corollary, faculty time devoted to advising should be acknowledged, perhaps as equivalent to a major committee assignment. **We recommend that concentrations, particularly the larger concentrations, increase faculty participation in concentration advising.** One model, already in place in the Department of English and American Literature and Language, is to assign several faculty members to be available to students for regular office hours in the Office of the Director of Undergraduate Studies. Large concentrations may also wish to include well-qualified graduate students as advisers, and while the primary responsibility for concentration advising lies within the concentrations, concentrations may wish to have House tutors serve as advisers. Regardless of how concentration advising is organized, **we recommend that each student be assigned a concentration adviser.** In addition, **we recommend that students be required to meet with an adviser for a substantial discussion at least twice per year.**

One special subcategory of advising is the advising of senior honors theses. Students often report difficulty in identifying a faculty member who is willing to advise their theses. While there is considerable variation across the concentrations, on the Class of 2003 senior survey, 69 percent of respondents reported that they planned to do a senior thesis or project when they entered their concentration, 57 percent began a thesis or a project, and 48 percent completed a thesis or project. Of those who did not complete a senior thesis or project (whether or not they

began one), 16 percent reported that the main reason was that they were unable to find a suitable adviser. Of those who began a thesis or project, 33 percent reported that it was “difficult” or “very difficult” to find an adviser. We consider this situation to be unacceptable. **We recommend that each concentration ensure that every student who wishes to pursue a senior thesis is matched with a thesis adviser.** A system of this type is already in place in the Philosophy concentration, in which students prepare summaries of their proposed topics and the department matches them with appropriate advisers. Of course, our intent here is not to preclude students from identifying their own advisers if they wish to; it is rather to assert that the ultimate responsibility for matching students with thesis advisers rests with the concentration. We remind colleagues that legislation adopted by the Faculty in 1979 already requires all faculty to advise at least one undergraduate thesis or tutorial.

Student feedback on advising and other aspects of the concentration program, including suggestions of new courses that they would like to see offered, can be very valuable in the improvement of concentrations. **We recommend that each concentration establish an Undergraduate Studies Committee, composed of concentrators, to provide systematic feedback and suggestions for improvements in the course offerings and structure of the concentration.**

D. Concentration reviews

In spring 1992, Dean Knowles established the Educational Policy Committee (EPC) as an advisory committee to the Dean. Dean Knowles’s charge to the committee was fourfold: (1) to review issues of broad educational importance; (2) to review all aspects of the curriculum outside the Core Program; (3) to review proposed new concentrations and programs, as well as changes to existing ones, making recommendations to the Faculty Council as appropriate; and (4) to advise the Dean on the allocation of academic resources. While the EPC has taken up a number of topics over the past 12 years, its major focus has been on the concentrations.

We have made a number of recommendations in this report that will require each department and concentration committee to reassess its mission, to review and restructure its

concentration program, and to revise concentration requirements. As part of this process, **we recommend that the Educational Policy Committee engage each concentration in a review of its purpose and structure as part of a recertification of all concentrations.**

VI. INTRODUCING STUDENTS TO THE COLLEGE: THE FIRST-YEAR EXPERIENCE

Each year, Harvard College welcomes an entering class of approximately 1,650 students, who bring to the College a wide range of experiences and aspirations, great vitality, and an extraordinary range of talents and abilities. Harvard College must help them assimilate into a residential academic community. While many resources address the social transition of attending college, we focus below on the academic and curricular transition. We seek in the freshman year to give students a set of academic tools and an opportunity for intellectual exploration and growth that will initiate them into a scholarly community and form the foundation of their four years in the College. This requires careful attention to the range of experiences we offer to students in their first year and to the advising resources we make available to them as they make choices.

A. The freshman year curriculum

Freshman year should be a time for students to explore broadly, to sample college-level work in both familiar and unfamiliar fields, and to discover new academic passions. It should also be a time to experience small faculty-led seminars that foster intellectual engagement, inquiry, and debate. In many ways, our current curriculum offers too few opportunities for this kind of exploration. All students take a term of Expository Writing. Between 35 and 40 percent of first-year students enroll in two terms of foreign language instruction. Students are advised to begin taking Core courses, and, because of the relationship between the Core requirement and a student's choice of concentration, they are advised to choose courses from those Core areas most distant from their likely concentration choice. Some students enroll in math and science as a first step toward meeting pre-medical requirements. With an eye toward choosing a concentration in May, students begin to sample one or more potential concentrations. All of these elements can

constrain a student's ability to make a truly informed concentration decision that is based on wide and varied academic experimentation.

Many of the recommendations that we have already presented aim to provide students with greater flexibility. A general education requirement that offers students a wider range of options will remove many of the distinctions among general education, concentration, and elective choices. We have suggested a review of the freshman writing requirement to see whether instruction in this area might be linked to Harvard College Courses or other writing-intensive courses. The postponement of formal declaration of concentration until the fall term of sophomore year will allow students to explore in a purposeful but more relaxed way. In addition to these changes, **we recommend that students no longer be required to meet the foreign language requirement in the freshman year.** Students who have not met the language requirement at matriculation have been expected to enroll in a full year of language instruction during the freshman year. With the greater emphasis on language study implicit in our focus on international experience, the opportunity to earn a foreign language citation, and the requirement that all students study a foreign language, we believe that there would be sufficient incentives for language study that this need not be required in the first year, and that it is better to permit greater choice and exploration during the first year of college. Students who have studied but not yet mastered a foreign language, however, should be strongly advised to continue their language instruction during the freshman year, in order to avoid the loss of skills that could otherwise occur.

In the past several years, the growth of the Freshman Seminar Program has greatly expanded the opportunities for first-year students to enroll in small, interactive courses taught by faculty. Students describe their experiences in Freshman Seminars in very positive terms. They enjoy the opportunity to interact with a faculty member and with fellow students on an academic topic of mutual interest. The facts that enrollment is limited to freshmen, and that letter grades are not assigned, add to their attraction. Demand has grown as the range of offerings has expanded, and the reduction of Core requirements has created more curricular space for students. This will increase further if we replace the Core Program with more flexible general education requirements for which some, if not all, Freshman Seminars will count, and as more

concentrations have agreed to count Freshman Seminars toward concentration requirements. Faculty who have taught Freshman Seminars have also been enthusiastic about the experience, praising the energy and engagement that students bring to these classes. **We recommend that the FAS continue to expand the Freshman Seminar Program with the goal of offering enough seminars to accommodate the entire freshman class by academic year 2006-2007.** Moreover, because of the special value that we place on such instruction for integrating students into an academic community, **we recommend that all freshmen be required to enroll in a small-group, faculty-led seminar, such as a Freshman Seminar or its equivalent, in the freshman year.**

Courses in which students are “tracked” based on different levels of preparation (languages, math, sciences) pose a special challenge because, in many cases, placement is more an art than a science. The goal of faculty and students alike is enrollment of students in courses at an appropriately challenging level, but with new material that will force them to stretch. We wish to avoid situations in which students hold themselves back, fearful of taking a risk, and also those in which students find themselves in courses in which they cannot succeed, and face the prospect of dropping the course and falling behind in progress toward the degree. **We recommend that departments in which courses are tracked have clear provisions for correcting a student’s placement during the semester.** This will likely mean greater coordination early in the term among the courses at different levels so that students who move between them are not greatly disadvantaged, and also clear decision points at which faculty advise students to make changes.

As part of our emphasis on exploration, we also believe that students should be encouraged to take academic risks and to challenge themselves by sampling areas of interest in which they feel less prepared. At this early stage of their college studies, options to take courses free of the burden of a letter grade on their transcripts should be expanded. This should be a time when the possibility of low grades is not a constraint on intellectual exploration. Under our current rules, freshmen must ordinarily take at least three letter-graded courses in any term, and may not take both a Freshman Seminar (graded SAT/UNS) and another non-letter-graded course in a term. Rather than limiting options for exploration through such policies, we would like to

mandate a *minimum* number of non-letter-graded courses and encourage students to take a larger number. **We recommend that students be required to take at least two courses during the freshman year that are not letter-graded, and be allowed to take up to four.** These courses should have “shadow” grades available to the student and his or her adviser so that they know the student’s status in the course, but these grades should not be recorded on the transcript. As faculty work through the implementation of this proposal, it will be important to think carefully about how this will interact with grade requirements in general education courses taken at any time in a student’s college career, to be certain that the option of taking courses without letter grades in the freshman year does not create incentives to take certain courses earlier.

Before leaving the topic of the first-year curriculum, we wish to note a countervailing consideration. Initiation into a scholarly community is not only about curricular exploration and discovery. It is also about encouraging academic conversation and debate outside the classroom, and this can be facilitated by common curricular experiences. We already have a number of courses in which many freshmen are enrolled and provide this opportunity: Biological Sciences 50: Genetics and Genomics; Chemistry 5: Introduction to Principles of Chemistry; Moral Reasoning 22: Justice; Science B-62: The Human Mind; and Social Analysis 10: Principles of Economics come to mind as some examples. As we look to the future, Harvard College Courses may also play this role.

B. Pre-concentration advising

Freshmen arriving at college need considerable guidance as to how best to make their way in an academic community. All colleges struggle with this and there are no simple answers. Advising systems being abandoned at one institution are often simultaneously adopted elsewhere in an effort to improve what is seen to be an inadequate system. Given the complexity of the FAS and the wider University, we face particular challenges, which will become greater with later concentration choice. No one individual can know the details of the many courses offered or all of the options available to students. Nor should students expect that all advisers would give the same advice. Each student needs to sort through advice given by several individuals, each from a different perspective, to determine what choices to make and which course of action

is best for him or her. At a minimum, students should be able to expect clarity about requirements, and helpful guidance about where to turn for more specific information. The principles that should guide our advising system are clarity, coordination, and faculty participation.

Because the advice given to freshmen and others prior to choosing their concentrations must be consistent with the concentration and general academic advice given to upperclass students, **we recommend that the Dean of Harvard College create an office to coordinate all aspects of academic advising.** The office would focus particularly on pre-concentration and general curricular advising, but it should create materials and design training programs for all aspects of academic advising. The office would work closely with concentrations to evaluate and improve their advising systems. In addition to its work with advisers and concentrations, the advising office should prepare materials, both printed and electronic, to provide an integrated framework for advising at Harvard College. Advisers and students could both benefit from current information technology. By drawing on a database of the requirements of all concentrations, a web site could lay out the consequences of any particular academic plan, especially the avenues for specialization that it either provides or precludes. Such a tool would assist advisers in providing sound counsel across a great breadth of disciplines. The staff of the advising office, along with other College administrators and some faculty, should hold periodic group sessions and also be available for appointments and on a walk-in basis. We do not envisage that an adviser from such an office would function as the primary adviser, but rather would provide backup and triage to help point students to appropriate sources of advice and information.

In our current freshman advising system, each student is assigned to a proctor—usually a graduate or professional school student or an administrator—in his or her dormitory entry, who is responsible for dealing with personal, social, and community issues and for communicating and enforcing the standards of the College. An academic adviser is also assigned to guide the student as he or she considers course and concentration choices and faces the challenges and opportunities of college-level work. For almost 70 percent of the freshman class, the proctor and academic adviser are the same person. The remainder of the class is assigned to non-resident

advisers drawn from the faculty or administration. While the number of faculty members participating in freshman advising has grown over the last several years, it remains very small.

Freshman year is a time in which students should consider their educations broadly, and when advisers should challenge preconceptions about areas of focus, and urge students to consider their options. Students must also be able to obtain the specific advice needed to prepare for the more advanced course work they hope to do. **We recommend that pre-concentration academic advising be separated from proctoring, and that each freshman be assigned to an adviser with related academic interests.** Students need not be assigned an adviser from their intended field of concentration (which might serve to limit rather than to encourage exploration), but they should have an adviser with interests that broadly coincide with theirs. One possibility would be to match students on the basis of the academic division within which their interests fall. In most cases, pre-concentration academic advisers should be faculty members or arts and sciences graduate students, though administrators with appropriate academic backgrounds might also serve as advisers. **We recommend that the Dean of Harvard College work with departments to encourage more faculty to serve as pre-concentration advisers.** Currently, many faculty seem not even to be aware that this is an option. With a more flexible and open curricular structure, we believe that it will be both less onerous and more interesting to be an adviser as the task becomes increasingly focused on helping a student explore his or her interests and less about the minutiae of requirements and rules. Faculty and graduate students who take on a substantial pre-concentration advising load should be compensated appropriately for their time.

Much informal advising occurs, of course, whenever students and faculty talk with one another, and less formal conversations often facilitate more focused advising sessions. Regardless of whether a student's adviser is a faculty member or another member of the community, we believe it would be beneficial to create settings that break down some of the barriers to student-faculty interaction during the freshman year. **We recommend that the advising office organize a series of dinners for 15 freshmen with a faculty member, the students and faculty member matched by broad areas of academic interest.** It will be valuable to have these events early in the freshman year, perhaps as early as Freshman Week.

For many aspects of advising, students will need to be directed to the concentrations, and concentrations will wish to reach out to potential concentrators. **We recommend that, building upon existing procedures by which students indicate possible areas of concentration, the concentrations take responsibility for sharing important advising information with prospective concentrators.** This is particularly important in the sciences and other fields in which students may close off opportunities if they postpone introductory courses. Concentrations will also be able to use information about possible concentration choices to reach out to and welcome potential concentrators.

Students also receive a great deal of advice from one another, particularly from older students who can tell them about the experience of being in particular courses or concentrations. Freshmen encounter upperclassmen in formal classroom settings and in their extracurricular activities. More can be done to bring first-year and upperclass students together through the House system. **We recommend that freshmen be assigned to a House before the start of freshman year and be housed together in dormitory entries affiliated with their House.** While we do not expect freshmen to take their meals in House dining halls on a regular basis, we hope that they will be included in other House events and made aware of House resources. For example, freshmen sometimes find themselves in courses taken mostly by upperclassmen and are unaware of the study groups and help sessions provided by resident tutors in the Houses. The opportunity to interact with students who are already in various concentrations will help freshmen begin to think about which concentration will best suit them. It might also be possible to organize pre-concentration advising within the House framework, provided that the Houses are given additional resources to undertake this, and to match each freshman with an upperclass student who has related interests for less formal peer advising. We suggest that the Dean of Harvard College convene a group of students and House Masters to engage in a broad discussion of this recommendation.

VII. EXPANDING OPPORTUNITIES

A college academic experience is defined by more than a number of courses and a set of requirements. It is also defined by the range of options from which students may choose. As we reviewed the current undergraduate program in Harvard College in the context of the several themes of this review, we noted a number of areas in which we believe that the FAS should expand the range of courses and experiences that it provides to students.

A. International experience

We do a great deal in Cambridge to foster international education and understanding. The College and the Graduate School of Arts and Sciences are themselves international communities with over 10 percent of undergraduates and over 30 percent of graduate students (many of whom will interact with undergraduates as House tutors, teaching fellows, and advisers) coming from outside the United States. The FAS offers instruction in roughly 60 languages, as well as courses dealing with almost every part of the world. Departments and area centers bring speakers and visitors from around the globe, and sponsor many activities for undergraduates. There are limits, however, to what we can do locally to help students develop global competence, an empathetic appreciation of another culture, and the ability to work as part of a team across cultural boundaries. This requires a significant firsthand encounter with another culture, in order to develop a set of skills that can later be transferred to other cultural contexts.

Many Harvard College students include an international experience as part of their education. From the Class of 2003 senior survey, we know that about 59 percent of graduating seniors had gone abroad during their tenure at Harvard College for formal study, an internship or fellowship, or employment. Most of this international activity took place during a summer, rather than during an academic term. Because of the many ways in which Harvard College students pursue international experiences, it is difficult to determine the precise number of students who study, research, or work abroad in a given year, but we believe that 700 is probably a minimum estimate of the number of students who pursued purposeful international experiences last year. We also know, from the Class of 2006 freshman survey administered in May 2003, that the vast majority of students—84 percent—were planning an international experience during

their time in the College. Nearly 81 percent were considering study abroad for degree credit, almost evenly divided between term-time and summer.

Because of the important contribution that an international experience can play in the education of Harvard College students, **we recommend there be an expectation that all Harvard College students pursue a significant international experience during their time in the College, and that completion of such an experience be noted on the transcript.** We stop short of recommending a formal requirement, recognizing that there may be personal or academic circumstances that make it difficult for a student to spend a significant period of time abroad, and that world events may interfere at the last minute with even the most carefully-conceived plans. Even in the absence of a requirement, this expectation would represent a commitment by the FAS to develop opportunities and to provide financial support to enable all students to take part in international programs. **We recommend that the FAS expand its allocation of financial support, including summer grants, salaries, stipends, and loans, in order to make it possible for all students to pursue at least one international experience.**

Our conception of a significant international experience is broad. We seek to recognize any experience that would instill global competency. While specific details remain to be determined, a significant experience would seem to require immersion in another culture for an extended period of time, ideally two months or more, though we can imagine shorter experiences, including those that might be organized during a January term, if they are sufficiently intensive. We would expect that study abroad for a summer, term, or year, as well as international internships, independent research, volunteer work, or employment abroad would qualify, but that travel for tourism or recreation would not. While we presume that a purposeful mission in a non-Anglophone culture or third-world society would instill a higher level of global competency than would a similar experience in England or Australia, we also accept that experiences in any country are potentially significant.

Much will need to be done to expand the menu of opportunities available to Harvard College students. For example, we should explore the prospect of working with networks of alumni abroad to identify opportunities for summer work and internships. We may wish to

establish additional Harvard offices abroad to identify such opportunities and facilitate direct enrollment in foreign universities. The David Rockefeller Center for Latin American Studies' office in Santiago, Chile, provides a useful model for how such an office abroad can serve our students.

Study abroad for Harvard College degree credit will form a substantial subset of students' international experiences. Last year, the FAS made significant changes to its policies regarding study abroad, and established a new Office of International Programs. Credit for study abroad now seems more straightforward: credit for up to eight courses in a year, four courses in a term, and two courses in a summer may be granted for participation in an approved international study program. There are many approved programs available to students, information about them is readily available on the Office's web site, and the application process for Harvard credit has been greatly simplified. Core requirements have been adjusted for those students who pursue a full term or year of study abroad for degree credit, and many concentrations have begun to identify programs abroad that are appropriate for their concentrators, some even making adjustments in their curricula to accommodate study abroad. The History concentration, for example, has made changes in its tutorial program to facilitate participation in term-time study abroad. **We recommend that the Office of International Programs, in consultation with the concentrations, identify study abroad programs in which Harvard College students may enroll for degree and concentration credit, and that all concentrations plan requirements and course sequences to accommodate one term of study abroad.**

Making international experience—particularly term-time international experience—a more commonplace part of the Harvard College experience will require other changes in our ways of doing business. More will need to be done to prepare students for spending an extended period of time abroad, and more done to support their reentry to their House and the College community. Houses and concentrations will want to stay in touch with their students who are abroad, so that an international experience will seem less like a leave of absence from the College and more like an aspect of an extended Harvard College experience. Houses may wish to rethink housing policies as more students take a term abroad. Extracurricular organizations may also wish to rethink the path to leadership positions, so that students may feel freer to spend

time away from Cambridge. We encourage the Office of International Programs, the Office of Career Services, the Houses, and the College staff to work collaboratively toward better accommodating a larger number of students taking a semester to work or study abroad.

B. Undergraduate research

For many students, the opportunity to carry out a sustained research project under faculty supervision is one of the highlights of their undergraduate educational experience and a complement to the type of learning that takes place in the classroom. Indeed, many students ask about research opportunities even before deciding whether or not to attend Harvard College. Research represents the kind of close work with faculty that is particularly well suited to Harvard as a research university. Our outstanding library system provides a unique resource that should be central to the education of undergraduates. We should aim to introduce our students to libraries and laboratories as early as possible. As has been noted, many of our concentrations build toward a senior honors thesis or project as the capstone of concentration work. Roughly 50 percent of Harvard College seniors write a thesis or complete a senior project. Many students are ready to engage in research at an earlier stage, often as early as the summer after the freshman or sophomore year. Some students pursue research for course credit as part of a tutorial or supervised reading and research course; others participate as research assistants in a faculty research project; still others pursue their own research in place of term-time and summer jobs, though this can raise questions of financial support.

Considerable support for undergraduate research at Harvard exists already. Opportunities can be found among departments, centers, outside agencies, and individual faculty members who support undergraduates from their grants and research accounts. Centralized support for undergraduate research falls under the rubric of Undergraduate Research Programs, administered by the Student Employment Office. Our undergraduate research programs have three components: The Faculty Aide Program encourages professors to hire undergraduate research assistants by providing half of the student's wages, the Harvard College Research Program supports student-initiated research undertaken with the guidance of a faculty mentor, and the Dean's Summer Research Awards Program provides students who have already received a

research grant with an additional grant to cover the summer savings requirement of their financial aid package.

In recent years, almost all requests from FAS faculty to support undergraduates through the Faculty Aide Program have been met. The Harvard College Research Program has been able to fund most student applicants who submit worthy proposals and who have the endorsement of a faculty sponsor for support during the academic year. But there is a considerable shortfall in funding for summer research. During the summer, students hope to be able to cover the costs of living in or near Cambridge, pocket money, and, for those on financial aid, the expected summer savings toward College expenses. Some projects can require domestic or international travel. For summer 2004, there are more than 500 applications for research funding; only a small number of these can be fully funded. The need for additional resources in this area is clear.

We endorse an increase in the opportunities for undergraduates to engage in research projects, either their own or as research assistants, with special attention to enhancing opportunities for underclassmen who are eager to commence doing research and are often hampered by inadequate funding and a lack of information and advice. **We recommend an increase in funding for undergraduates to engage in faculty-supervised research projects over the summer.** Ideally, every student would have the opportunity to devote a summer to research. Also, **we recommend that the College provide to all students comprehensive information and advice about faculty-supervised research projects and funding sources.** The Faculty's various research centers should be a rich source of undergraduate research opportunities, and centers should explore how to involve undergraduates in research. We urge the College to work with the centers to develop and publicize opportunities.

C. A college within a university

Given its place at the center of the University, Harvard College is in a position to offer its students academic opportunities that go beyond the confines of the FAS and take advantage of the resources available at the graduate and professional schools. Much of this is already happening. During the last academic year, there were 307 undergraduate enrollments by cross-

registration in other Faculties of the University, half of these at the Kennedy School of Government.⁶ This number does not include enrollments into courses jointly offered by the FAS and another Faculty of the University, in which cases each Faculty lists the course in its own catalog with its own course number; the FAS is offering 186 such courses this year, 90 of which are at the undergraduate level and 59 of which are taught or co-taught by members of other Faculties of the University. Even this number fails to include courses specifically designed for undergraduates and offered only in the FAS, such as the Freshman Seminars offered this year or last by members of the Faculties of Design, Education, Law, Medicine, and Public Health, courses in Statistics taught by faculty members from the School of Public Health, and other courses in the Core Program and scattered throughout the catalog. Two of our undergraduate concentrations, The Study of Religion and Environmental Science and Public Policy, were designed with the explicit expectation that they would draw extensively on faculty and course offerings from other parts of the University. Beyond this, undergraduates turn to members of other Faculties for thesis and other advising and to work on research projects.

Although the undergraduate experience already takes some advantage of opportunities in our sister Faculties, we believe that expansion of such opportunities is consistent with our primary commitment to a liberal education in the arts and sciences. The professional schools now often appoint faculty with academic backgrounds and research agendas similar to those of FAS faculty, and who teach courses that could be offered in the FAS. While we do not think it appropriate for undergraduates to enroll in courses aimed directly at professional training—and our understanding is that the professional schools would not want undergraduates to enroll in such courses—there are courses in the graduate and professional schools that are entirely appropriate as components of a Harvard College education, either as part of a concentration or as elective choices.

While not all courses offered by the graduate and professional schools may be appropriate for a liberal education, a large number of faculty members from other parts of the University can teach courses directed at undergraduates and are apparently interested in doing so. The FAS should welcome courses appropriate to the undergraduate curriculum that are taught by

⁶ In addition, there were 172 undergraduate enrollments in courses offered by M.I.T.

members of other Faculties of the University, and **we recommend that the Dean, working with the President, Provost, and the deans of other Faculties, develop policies to reduce the financial and administrative barriers that impede faculty from one part of the University teaching in another.** Coordination of calendars across the University is one step in this direction in that professors who simultaneously teach courses in two Faculties would have the same academic calendar in both. **We endorse the proposal of the University Committee on Calendar Reform to synchronize the calendars of the several Faculties of the University.**

We have not explored fully all possible opportunities for enhancement of the undergraduate curriculum through collaboration with the graduate and professional schools. We believe, however, that there are other models worthy of serious consideration and perhaps development. These might include interdisciplinary course clusters or concentrations or tracks within concentrations that draw on faculty resources outside the FAS, special programs in the fourth year for students eligible for advanced standing or perhaps for all students, and joint undergraduate and graduate degree programs. We note with interest the new program that will allow undergraduates to enroll simultaneously in the College and the New England Conservatory of Music to receive the Master of Music degree from the Conservatory in one year, rather than two, after earning an undergraduate degree in the ordinary manner from Harvard College. Similar possibilities may exist within the University.

D. January term

We recommend the creation of a January term in conjunction with the proposed University-wide calendar. Even before the University Committee on Calendar Reform began its work, participants in the curricular review had begun to consider changes to the FAS academic calendar. We were motivated both by a desire to complete fall term exams before the Winter Recess, thereby giving students a true break during the holiday season, and by the possibilities for creative use of a January term. Adoption of the proposed calendar with full synchronization of the fall and spring terms across the University provides an opportunity for developing exciting credit and non-credit educational experiences for our students.

A variety of models exist at other colleges and universities. Some institutions offer regular academic courses. An extreme version of this model is Colorado College, where the overall academic schedule is one in which students take the same eight courses per academic year as we require in Harvard College, but they take them one at a time, each for a three-and-a-half week period; this suggests that a full range of subject matter can be taught in this manner. At the other extreme, some schools have January programs that focus almost entirely on extracurricular and student- and faculty-initiated non-credit activities. We propose neither of these, but rather suggest a hybrid model built around innovative academic and non-academic experiences that are either difficult to accommodate within our regular fall and spring term structures, or that can be better accomplished if students are able to focus on only one activity. It can provide an opportunity for students to slow down, to take stock, and to focus their energy on a single endeavor of their choice. Participation in a for-credit activity would also allow them to lighten their course load during another term.

During such a January term, our own faculty, and faculty from other parts of the University, might offer innovative courses that require a schedule that would be incompatible with student and faculty obligations to other courses, courses that meet away from Cambridge for part or all of the term, or courses that meet for extended blocks of time. A biology professor might include a trip to the Galapagos archipelago as part of a course on Darwin and *The Voyage of the Beagle*. A geology or archaeology class could include fieldwork away from Cambridge. A professor of art and architecture may wish to teach a class on-site in Venice. In Cambridge, students could study Spanish or Portuguese intensively to prepare for a spring term study abroad experience in South America, where the fall term begins in March. A molecular biologist might organize a team of undergraduates to tackle a research problem in an all-day laboratory format. A professor of literature may wish to create a course that combines study of Shakespeare with a live performance. A historian might teach a course on the history of Boston that involves on-site fieldwork and research in the public records. A faculty member from the School of Public Health could teach a course on HIV, tuberculosis, or mad cow disease. January might be a time for special courses taught by distinguished visitors who can come to Cambridge for one month but who would be unavailable for a full term. Students might also use this time to undertake

their own research projects, including thesis research, or to participate in an internship in or away from Cambridge.

This could also be a time during which students could take part in an intensive public service project, either in Cambridge or elsewhere. For example, a Harvard College team could participate in Habitat for Humanity. This could also be a time for focused projects in the arts, particularly for those students who find themselves unable to participate during a regular term because of other obligations. Visiting directors, conductors, and choreographers might work with student groups. Students have suggested that this would provide a time for leadership and financial training for those beginning their terms as officers of student organizations. There might also be other student-initiated activities. Some students suggested this as a time to learn a new sport. In short, January has the potential to be a very lively time both in, and away from, Harvard College.

How would these programs be administered? **We recommend that there be an office within Harvard College to work with students, faculty, and the directors of arts, athletic, and public service programs to coordinate and administer a set of offerings in January.** Should January term activities be purely voluntary or should there be a minimum expectation that students will participate, perhaps at least twice? Under what circumstances would students earn academic credit for their January activities? Surely, a student should earn credit when working with a faculty member in a course setting to cover a body of material that is equivalent—though by design not identical—to a course during a regular fall or spring term. But academic activities will fall along a spectrum and there will need to be a process for determining credit-worthiness. Similar questions arise for faculty. We would not expect that faculty would be required to teach during this period, but if they did choose to offer a course for credit, this should properly be counted toward their teaching responsibilities. There are also issues related to how tuition, room and board fees would be structured. We would expect financial aid to make it possible for any student to be able to participate in any of the January term programs offered. We do not mean to minimize the administrative and financial aspects of instituting a January term, but in sum we believe that there are innovative opportunities both for Harvard College

students to explore their interests and for faculty to teach in creative new ways. This could be a moment for different kinds of teaching and learning.

E. Arts in the curriculum

Harvard College is a community rich in artistic creation and performance. Much of this activity falls outside of the curriculum. Without our attempting to be comprehensive, we note that, among student organizations, there are 12 *a cappella* groups, two jazz bands and five orchestras, 19 dance troupes, and 16 theater groups. Last year, some 70 plays and 450 concerts—more than one per day!—were performed. For twelve years, the Harvard community has devoted the start of May to its *Arts First!* celebration of the arts at Harvard. Many Harvard College students go on to distinguished careers in the creative arts, despite having studied more traditional academic subjects in the arts and sciences as undergraduates.

Against this level of extracurricular activity, it is easy to forget the multiple curricular opportunities in the practice and performance of the arts at Harvard College. The FAS recognizes the value of artistic expression as part of a liberal education. To quote “The Practice of the Arts at Harvard,” a 1973 statement by The President’s Committee on the Practice of the Arts, chaired by Professor James S. Ackerman, “[T]he function of arts instruction in a liberal arts curriculum ... is to introduce students to forms of learning and communication which have their own power, validity, and application, and which offer alternatives to the symbolic modes of words and figures and to the ways of knowing and feeling that they can convey.” The statement goes on to note that “performing a comedy or tragedy by Shakespeare or a trio by Beethoven can be a means of discovering and measuring dimensions in the work that some students would miss in reading the play or analyzing the trio in class. Likewise, making a sculpture or a film can generate a sensitivity to the problems of genre for which there is no substitute.”⁷

The Department of Visual and Environmental Studies offers instruction in painting, drawing, sculpture, printmaking, design, conceptual practice, film, video, and photography. Concentration requirements include progression in one medium and exposure to at least one

⁷ “The Practice of the Arts at Harvard,” *Harvard University Gazette*, June 1, 1973.

additional medium. The Department of Music introduces concentrators to composition, and offers several courses in performance. As noted earlier, the Faculty voted in April to formalize a relationship with the New England Conservatory of Music to allow a small number of students to enroll simultaneously at the Conservatory and Harvard College. The English Department offers a variety of courses in creative writing, and about 20 percent of its concentrators complete creative writing theses. Courses in acting, directing, dance, and stage design are offered by the Committee on Dramatics. In many cases, student demand for spaces in these courses far exceeds the number that can be accommodated.

All of this curricular activity in the practice and performance of the arts often falls in the shadow of extracurricular activities. We believe that there is room for greater curricular activity and curricular innovation in the arts. We can imagine courses co-taught by critics and creators that bridge the gap between analysis and practice. A January term could be a time to both analyze and produce, direct, or perform a play. We can imagine that there might be greater space for artistic practice in the requirements of some concentrations. We endorse granting degree credit not for performance or other artistic endeavors themselves, but rather as components of courses with formal instruction. The type of courses that we have in mind can only exist with faculty support. **We recommend that the Dean for the Humanities work to expand curricular opportunities for performance and the creative arts in Harvard College, and that the Faculty be receptive toward proposals for new tracks and new concentrations that focus on the practice and performance of the arts.**

F. Public service in the curriculum

Harvard College seeks to instill in students a sense of social responsibility, and students have demonstrated their great interest through public service activities. During the 2003 academic year, 47 percent of all Harvard College students responding to a survey of enrolled students reported that they volunteered in the community. This year, 1,800 students participate in Phillips Brooks House Association activities alone, and many more participate through the Houses and Neighborhood Development program and other programs. In recent years, there has been a significant increase in interest in public service careers. Comparing the senior survey

responses of the Class of 2003 with its 2001 counterpart, we found a 45 percent increase in the number of students considering or planning to pursue a career in public service; this number accounted for 32 percent of the Class of 2003. A similar pattern emerged on the freshman surveys completed over the same time period.

In contrast with the vitality of these service programs, there are relatively few opportunities for integration of students' public service activities with their course work. Students seek opportunities to contextualize and reflect upon their public service activities through courses on topics that inform their public service work, courses that include a public service component, and courses in which they can draw on their service activities for papers and projects. There are a few courses in the FAS—Social Analysis 54: American Society and Public Policy; Spanish 40: Spanish and the Community; Portuguese 40: Portuguese and the Community; and Chinese Literature 132: Chinatowns, being some examples—that include a public service component or option as part of the course. Several classes in other parts of the University—the Graduate School of Education, the Medical School, and the Kennedy School of Government, for example—have well-developed public service components as part of their course work. Facilitating cross-registration can thereby increase opportunities for undergraduates.

We do not endorse the idea of granting academic credit for student public service *per se*, but we believe that there are opportunities for building stronger ties between public service and the curriculum, and for enhancing curricular support for public service activities. For example, a course on poverty or on housing policy might include a component in which students participate in a program in a public housing project. One of the greatest benefits of incorporating public service into an academic agenda is the opportunity for students to have their service activities evaluated by faculty or teaching staff; such evaluation is most feasible when the activities take place in the context of regular coursework.

Our sense is that there are faculty members who would like to include a public service component in their courses, but find that the logistics of doing this responsibly present significant obstacles. There is considerable work involved in establishing sites for public service

activities, training section leaders to work with students in these settings, and supervising the students' work. **We recommend that the College work with Phillips Brooks House and other organizations to assist faculty who would like to include a public service component in a course.** Courses with a public service component may require greater supervision of students than other courses generally do, so **we recommend that sections in courses that include a formal public service component normally be limited to 12 students.** The Bok Center, in collaboration with Phillips Brooks House, might be able to design programs to train section leaders on how best to incorporate public service into courses and to supervise students.

VIII. FOSTERING PEDAGOGICAL IMPROVEMENT AND INNOVATION

Harvard College, as part of the FAS and the wider University, is known for its commitment to outstanding research and for providing the opportunity for students to learn from scholars who have made or will soon make important advances in knowledge. We should also be regarded as a place committed to outstanding and innovative pedagogy to foster a strong learning environment for our students. As one colleague wrote in a letter at the outset of the review, "Being a newly hired professor at Harvard, I often receive compliments when being introduced as such. All compliments have been along the lines of 'you must be really smart' or 'you must be a great scholar.' My dream is that someday when I am being introduced as a Harvard professor, the complimentary line will be 'you must be a great scholar and a great teacher!'" In this spirit, we reviewed the resources already in place to support strong pedagogy in the College, and we offer several recommendations to strengthen this commitment.

A. Improving the classroom experience

A number of steps can be taken to improve the quality of instruction in the College. First, given the emphasis that we place on small group instruction, **we recommend that resources be developed to increase the number of seminar rooms and small classrooms with flexible layouts to facilitate group discussion and with appropriate instructional media equipment.** In order to take full advantage of the opportunities for student-faculty and student-student interaction that we seek by providing more opportunities for students to be in smaller

classes, these classes must take place in rooms of appropriate size and design. If classes are small, but nevertheless must meet in classrooms designed for a lecture format, we will not have achieved all of our goals.

While we seek to increase the opportunities for students to take small classes, we will surely continue to have larger courses, if only because of students' common interest in studying particular subjects, our desire to permit students to study the subjects that interest them most, and the extraordinary talent of many faculty in providing outstanding and attractive courses. But even within these larger instructional settings, there are ways to enhance pedagogy and promote more active learning in the classroom. **We recommend that lecture halls be designed to facilitate more interactive instruction, and to be equipped to enable the use of the widest range of technologies.** As we renovate existing classrooms and build new ones, more should be designed in a “bowl” format in which students can see and interact with one another rather than sit in fixed rows focused only on the professor. This format would facilitate and encourage debate and exchange among students and between students and instructor, for more active participation in class. Professor Eric Mazur, of the Division of Engineering and Applied Sciences and the Department of Physics, along with others, has demonstrated how wireless technologies can be used in ways that enable students to participate and respond to questions in large classes. FAS lecture halls should be equipped to accommodate media presentations and these sorts of innovative teaching techniques so that lectures can achieve their full potential, which is ideally beyond what could be provided in a textbook or on a computer screen.

In many larger courses, even those that employ the most cutting-edge technologies to support active learning by students, subdividing the class into smaller sections for more “hands-on” grappling with the subject matter of the course will still be valuable. To increase the opportunities for all students to participate in discussions and have practice in making oral presentations, and so that section instructors can work more intensively with individual students, **we recommend that the Dean explore the possibility of reducing section size from 18 to 15 in those courses large enough to subdivide into two or more sections (ordinarily those that enroll more than 22 students).** We recognize, however, that in many cases larger sections (or no sections at all) will be preferable to hiring less qualified section leaders or limiting course

enrollment. So that section leaders are well qualified not only in terms of their knowledge of the course material, but also in terms of pedagogical techniques to enhance learning in the course, **we recommend that pedagogical training be required of all new section leaders, including instruction in guiding and evaluating student writing and oral presentation.** The FAS already has this expectation,⁸ but more remains to be done to ensure its implementation. This kind of training should be an important component of the training that we provide all Ph.D. candidates. Recognizing the great commitment that many graduate students make to their teaching, **we recommend that the Graduate School of Arts and Sciences create a new fellowship to recognize outstanding teachers.** Just as Harvard College Professorships and Abramson Prizes recognize outstanding faculty contributions to undergraduate teaching by supporting their research, this fellowship can similarly recognize contributions made by graduate students.

We recommend that concentrations and individual courses create more opportunities for students to engage in collaborative, small-group work, and that support be provided for introducing these opportunities. Several considerations come together in our making this recommendation. We know from the surveys that undergraduates complete that many of them claim to find greater satisfaction in their extracurricular activities than they find in their course work. A possible explanation for this is that most extracurricular activities—whether playing on an athletic team, performing in a dance company, or producing a publication—involve working as part of a team. This kind of activity promotes active learning. Our academic program by contrast, with notable exceptions in engineering and computer science, is focused almost exclusively on individual work. As we seek to increase our students' level of engagement and satisfaction with their academic work, we should learn from our own success in achieving these goals in other areas of College life. Collaborative work is also an effective pedagogical tool, as students find themselves playing the dual role of teacher and learner with their peers. We also note the increasingly collaborative nature of research and of projects in the working world. If we are to prepare our students well, it will be important that we provide them curricular opportunities to work as part of a team. Our sense is that many faculty avoid team projects because of what they perceive to be the difficulty of providing individual

⁸ *Information for Faculty Offering Instruction in Arts and Sciences, 2003-2004*, p. 39-40.

evaluations. We note, however, that such assignments are more common in the professional schools, where faculty do manage to assign individual grades, and employers regularly recognize differentially the contributions made by members of a team.

As students confront new materials, they may be uncertain about how to judge their progress. **We recommend that courses include several written assignments during the term, including at least one graded assignment before mid-semester, so that students may calibrate their progress.** Although grades on papers and examinations provide some information for students, written comments or individual conferences are often more valuable in guiding students in their learning.

Faculty should seek and welcome evaluations from students to identify what is working well in their courses, and where there is need for improvement. **We recommend that all courses be evaluated both at mid-term and at the end of the term, and that these evaluations be completed in an online format with the ability to customize questions for the specific course.** Completing course evaluations electronically preserves valuable class time and allows more thoughtful responses from students. Including several standard questions across courses and the further capacity to add questions specific to the structure and content of the course would allow more focused and useful feedback from students. Some of this information might be purely for the instructor's use and not for publication in the *CUE Guide*. We understand that the Committee on Undergraduate Education has already begun discussions of moving the end-of-term course evaluation process from paper to an online format. They hope to implement a pilot project next year.

B. Coordinating resources to improve pedagogy

The FAS has exceptional pedagogical resources in the Derek Bok Center for Teaching and Learning, the Harvard Writing Project, and the Instructional Computing Group. The Bok Center offers a variety of programs to help new and experienced teachers, both faculty and section leaders, improve and perfect their craft. These include fall and winter teaching conferences, individual and group consultations, work with individual courses, videotaped and

critiqued practice and actual teaching sessions, programs on teaching in the American classroom, and “master classes” for experienced instructors that focus on such topics as lecturing, discussion-leading skills, and grading. The Harvard Writing Project, a part of the Expository Writing Program, works with individual courses and entire concentrations to train instructors on how to respond to and evaluate student writing. The Instructional Computing Group (ICG), an arm of FAS Computer Services, offers a custom-designed platform for developing and administering course web sites, as well as training and consultation on using computers and the Web in teaching.

We found, however, that the effectiveness of these resources is hampered by too little coordination, by limited links to departments, instructional committees, and concentrations, and by insufficient visibility. To address these issues and to enhance the stature of pedagogy within the FAS, **we recommend that the Dean of Harvard College more closely coordinate the activities of pedagogical support programs.** In addition to the Bok Center, the Writing Project, and ICG, this coordination should include the Office of Instructional Research and Evaluation, so that appropriate data are collected and analyzed in support of improving pedagogy in the College. We seek to create an environment that encourages thoughtful experimentation and greater reflection about teaching approaches, an environment in which outstanding instruction, pedagogical improvement, and pedagogical innovation and assessment are celebrated. The pedagogical centers should circulate research on teaching and learning and on best pedagogical practices at Harvard and at other colleges and universities. They should make grants to encourage innovation and experimentation, and should coordinate assessment of new and effective approaches.

The world should view Harvard College as an institution committed to outstanding instruction within a research environment. We cannot overstate the importance of mentoring graduate students and faculty with respect to teaching, and of creating a culture in which everyone teaching in Harvard College is committed to pedagogical excellence, improvement, and innovation. More attention should be paid to the dissemination of information about the important role that excellent teaching plays in the appointment and promotion of faculty. We note that the recent review of FAS’s procedures for faculty searches, appointments, and

promotions provides for early advice and assistance to new colleagues that pays careful attention to teaching.

IX. CONCLUSION

This report marks the end of the first phase of a curricular renewal process. It frames a set of proposals for discussion among faculty, students, and the wider Harvard community. By design, we have stopped short of actual legislation and specific plans for implementation, recognizing that the recommendations we have made must be scrutinized and debated. We understand that many proposals will need further elaboration before Faculty legislation can be proposed.

The curriculum outlined in this document represents a reaffirmation of this Faculty's commitment to offering an outstanding education in the arts and sciences as a firm foundation for Harvard College graduates as they go out into a world of uncertainty and change. It recognizes that we bring together in Harvard College exceptionally talented students and faculty, it grants students greater freedom to explore their interests, and it challenges faculty to expand the available range of opportunities for learning and teaching. It marks a step back from specialization as the hallmark of excellence in undergraduate education, and instead asks faculty to focus on the broad education of our undergraduates. It calls for a curriculum that is simpler than the one we have today, and that provides greater opportunity for students to explore and discover new passions and to shape their educations in consultation with faculty mentors. It offers enough elective choices so that students can go deeply into one area, build on a variety of interests, or sample broadly. In all of this, it remains true to our mission as a college of arts and sciences in the liberal tradition: to educate students to be independent, knowledgeable, rigorous, and creative thinkers, with a sense of social responsibility, so that they may lead productive lives in national and global communities.

As we reaffirm these principles of liberal education, we recognize that different times call for different emphases in the curriculum, and we seek to expand our offerings in the realms of international studies, the sciences, and in cross-disciplinary work. We call for making a

significant international experience an expectation of all students, while committing ourselves to identifying and creating a set of study, internship, and research opportunities abroad and to providing resources so that all students can benefit from these opportunities. We seek to prepare students for these experiences before they go, and to build on these experiences once they have returned, through foreign language and other course work and opportunities through our international centers. We propose making science a larger portion of our general education requirement, creating pathways that permit students to extend their work in the sciences beyond what is required of them. An introductory science course should not be intentionally *designed* to be the last science course a student will take. Our emphasis on graduating broadly educated individuals underscores the importance we place on lowering the boundaries between academic disciplines, by creating Harvard College Courses that introduce students to important areas of knowledge in an integrated way, by allowing students to include a cluster of work that crosses disciplinary boundaries as part of their concentration programs, and by introducing senior seminars that bring together students with different disciplinary training to tackle a problem. We also seek to expand curricular opportunities in the arts and to facilitate connections between courses and public service activities. At the same time, we call for changes that will strengthen students' basic writing, speaking, and quantitative skills, and provide arenas in which they can work collaboratively.

By expanding the Freshman Seminar Program and directing students to these and other small courses early in their time in the College, we seek to create an environment in which students recognize that faculty are prepared to work closely with undergraduates. Although the experience for students in large concentrations may never replicate that of students in smaller concentrations, we must organize our resources to ensure that all students find themselves in small upper-level courses taught by faculty in their concentrations and beyond. The framework we outline also seeks to build on our strengths as a research university by bringing more students into the research enterprise, engaging students as research assistants, and enabling them, indeed encouraging them, to undertake their own research projects. We also hope to increase the benefits that we draw from Harvard College's place at the center of the University by reducing the barriers that stand between undergraduates and the intellectual resources of the graduate and professional schools, making it easier for students and faculty to cross those borders to take and

teach appropriate courses. When implemented, our proposals regarding freshman seminars, tutorials, junior seminars, capstone experiences, advising, and undergraduate research will ensure that students interact closely with several faculty members during their time in the College. We seek to create an environment that is known for the outstanding teaching of undergraduates and in which pedagogical experimentation and innovation are encouraged and supported.

In closing, we share an observation made by Professor Charles E. Rosenberg of the Department of the History of Science and then echoed by others at a symposium that we held in November for participants in the review process. Professor Rosenberg noted that all curricula are defined by the degree of trust that they place in students and faculty. As we move forward, we seek to increase the trust we place in faculty to develop innovative courses and other opportunities in the mission of educating Harvard College students broadly in the arts and sciences, and we seek to increase the trust we place in students that they will choose wisely. We believe we can create a stronger community of learning in which students and faculty work together in a common enterprise.

Appendix I
PARTICIPANTS IN THE CURRICULAR REVIEW

Steering Committee: Benedict H. Gross (co-chair), William C. Kirby (co-chair), Peter K. Bol, Lizabeth Cohen, Jay M. Harris, Eric N. Jacobsen, Lawrence F. Katz, Richard M. Losick, Lisa L. Martin, Diana Sorensen, Carol J. Thompson, Jeffrey Wolcowitz

Students' Overall Academic Experience: Jay M. Harris (co-chair), Lisa L. Martin (co-chair), Kathleen Donohue, Göran Ekström, James Engell, Georgene B. Herschbach, Daniel E. Lieberman, Robb Moss, Judith S. Palfrey, Zachary S. Podolsky '04, Victoria L. Sprow '06, Martin R. West G4

Pedagogy: Lizabeth Cohen (co-chair), Richard M. Losick (co-chair), Aaron Allen G5, Julie A. Buckler, Gary J. Feldman, Lynn Mary Festa, David B. Fithian, Mary Gaylord, Joseph K. Green '05, Sheila Lopez '04, Scot T. Martin, Joel Podolny

General Education: Peter K. Bol (co-chair), Eric N. Jacobsen (co-chair), Emmanuel K. Akyeampong, Michael P. Brenner, Elizabeth M. Doherty, Jason A. Kaufman, Sandra Naddaff, Stefan T. Patrikis '06, Ann Pearson, Michael J. Sandel, Carol Steiker, Ryan Taliaferro G4, Rosalie C. Thede '06

Concentrations: Lawrence F. Katz (co-chair), Diana Sorensen (co-chair), Mahzarin R. Banaji, Eileen C. Chow, Kathleen M. Coleman, Nicholas Josefowitz '05, John T. O'Keefe, Michael B. McElroy, Curtis T. McMullen, Tommie Shelby, Colette J. Shen '04, Priscilla P. Song G3, Stephen M. Walt

Appendix 2

THE UNDERGRADUATE ACADEMIC PROGRAM FOR THE CLASS OF 2007

General Structure of the Curriculum

32 semester courses with passing grades required to graduate.

Students generally take 4 courses per term for 8 terms.

Concentration Requirements: up to 1/2 of the student's courses, with a small number of exceptions

Other Requirements: at least 1/4 of the student's courses

Electives: roughly 1/4 of the student's courses

Expository Writing

All students must earn a passing letter-grade in Expos 20; some are advised to take Expos 10 first. Expos 20 is a requirement of the first year.

Foreign Language

Satisfied by a score of 600 on a College Board SAT II Test, a score of 5 on an AP test, a score of 7 on an International Baccalaureate Higher Level test, a sufficient score on a Harvard placement test, or a passing letter-grade in a full year of a language at Harvard. Students are expected to meet this requirement during the first year.

Core Curriculum

11 areas:	Foreign Cultures	Literature and Arts B	Science A
	Historical Study A	Literature and Arts C	Science B
	Historical Study B	Moral Reasoning	Social Analysis
	Literature and Arts A	Quantitative Reasoning	

Students are exempt from 4 areas on the basis of their concentration, with the goal of requiring the 7 areas that would ensure the greatest breadth of education in combination with work in concentration. Students must earn a passing letter grade in one course in each of the required areas. Department courses do not count for Core credit except for those designated as department alternates and listed in the *Handbook for Students* and in *Courses of Instruction*. Alterations to the Core Requirement for a student may only be granted by petition to the Standing Committee on the Core Program.

Field of Concentration

All students must meet the requirements of a field of concentration, or a joint concentration combining aspects of two concentrations into a coherent whole, or a special concentration of one's own design approved by a faculty committee. Most concentrations offer "basic" and "honors" tracks. Several are "honors only" and some of these require that students apply to be admitted.

Students choose their concentrations at the end of the first year. A faculty member designated as Head Tutor or Director of Undergraduate Studies oversees advising in each concentration.

Other Curricular Opportunities

Freshman Seminars: First-year students may enroll in small-group courses, ordinarily limited to 12 students, to work closely with a faculty member on a subject of shared interest. These settings also provide an opportunity for students to work collaboratively with their peers, to participate actively in their own learning, and to develop and refine their analytical skills. Freshman Seminars are offered on a wide range of topics, with representation from virtually every academic discipline. The program has expanded its offerings in recent years, with 102 Freshman Seminars offered in 2003-2004.

Study Abroad: Students may petition through the Office of International Programs for up to eight half-courses of study abroad. Students studying in non-Anglophone countries are encouraged to have studied a language of the host country for at least one year before the start of the program. As part of their academic programs during each term abroad, students in non-Anglophone countries will ordinarily be expected to take either an appropriate language course or a course taught entirely in a language of the host country. A student who earns one or two full (four half-course) terms of degree credit for an approved program of study abroad may reduce his or her Core requirement by one area for each full term of credit; a student who studies abroad for a summer or who receives partial credit for a term may petition to meet the Foreign Cultures requirement on the basis of the work completed abroad.

Foreign Language Citations: Students may earn a citation in a wide variety of languages by completing four half-courses of language instruction beyond the first-year level and/or courses taught primarily in the foreign language; at least two must be at the third-year level or beyond. Students must complete these courses with grades of B- or better. A citation in a modern language may be used to satisfy the Foreign Cultures requirement; students earning citations in classical languages may satisfy the Foreign Cultures requirement by taking an additional half-course that places the citation language substantially in a modern context. Concentrators in language departments whose concentration work is built on a particular language or set of languages may not also earn citations in those languages.

Undergraduate Teacher Education Program: By combining work in the Faculty of Arts and Sciences with work at the Graduate School of Education, students may complete the requirements for certification to teach in middle or secondary public schools in Massachusetts and states with which Massachusetts has reciprocity.

Cross-Registration: Students may cross-register to take courses at MIT or in other Harvard Faculties. Also, in certain cases, students may make arrangements to enroll for one or two courses at other Boston-area institutions with which we do not have cross-registration agreements, while remaining enrolled in the College.

Appendix 3

THE UNDERGRADUATE CONCENTRATIONS:
NUMBERS OF CONCENTRATORS AND COURSE REQUIREMENTS, 2003-2004

CONCENTRATION	Number of Concentrators			Number of Requirements	
	Full	Joint/ Primary	Joint/ Secondary	Basic	Honors
Afro-American Studies	8	3	11	14	16
Anthropology	126	10	7	10	13
Applied Math	104	0	0	NA	16
Astronomy and Astrophysics	8	7	7	12	16
Biochemical Sciences	234	1	1	12	16
Biology	290	2	1	13	16
Chemistry	89	1	2	12-14	14-16
Chemistry and Physics	39	5	1	NA	13-16
Classics	44	4	9	10-12	12-14
Computer Science	98	8	9	10-12	12-14
Earth and Planetary Sciences	24	0	2	12-14	15-16
East Asian Studies	32	5	28	15-16	16
Economics	643	30	35	13	15
Engineering Sciences	85	2	1	NA	14-16/20 for SB
English and American Lit & Lang	270	20	6	13	15
Environmental Sci and Pub Policy	56	8	2	16	17
Folklore and Mythology	17	0	2	NA	14
Germanic Language and Lit	3	2	1	9-10	11-12
Government	552	6	3	12	14
History	293	11	7	12	14
History and Literature	192	5	0	NA	16
History and Science	100	5	4	NA	15
History of Art and Architecture	57	5	10	13	15
Linguistics	27	5	4	14	16
Literature	55	1	1	NA	16
Mathematics	73	18	36	12	12 + thesis
Music	31	13	7	14 -15	16
Near East Languages and Civ	6	3	5	13	14
Philosophy	64	6	10	12	13-15
Physics	88	37	12	12	13-15
Psychology	338	7	5	12	14-15
Religion	41	11	11	NA	14
Romance Languages and Lit	46	4	16	12	14
Sanskrit and Indian Studies	7	0	3	13	14
Slavic Languages and Literatures	9	2	1	12	14
Social Studies	298	11	0	NA	16
Sociology	75	17	7	12	12
Special Concentrations	15	0	0	14	16
Statistics	8	1	2	12	14
Visual & Environ Studies	82	7	7	NA	14
Women's Studies	9	4	11	NA	13

Appendix 4

LIST OF RECOMMENDATIONS

GENERAL EDUCATION

1. We recommend that the Core Program be succeeded by a general education requirement that will enhance curricular choice, educate students in a set of areas that are defined broadly, include a wide range of courses, and provide for the development of a new set of integrative, foundational courses. (p. 13)
2. We recommend that the FAS develop a new set of courses, to be known as “Harvard College Courses,” that will serve as a central component of a new general education requirement. (p. 14)
3. We recommend that Harvard College Courses provide one means to fulfill a general education requirement. Students should also have the opportunity to meet the requirement by selecting courses drawn from departmental and other offerings and representing work across broad areas of knowledge. (p. 15)
4. We recommend that the Dean, in consultation with the Faculty, set out the specific criteria for Harvard College Courses, and define the structure of requirements for general education. (p. 16)
5. We recommend that the international and science components of the general education requirement be significantly strengthened. (p. 16)
6. We recommend that there be a review of the Expository Writing Program. (p. 18)
7. We recommend that concentrations make instruction and feedback on written and oral communication an integral part of the concentration program. (p. 18)
8. We recommend that the language requirement be enhanced as follows: all students who meet the language requirement at matriculation under present rules will be required to take one term of a foreign language or a one-term course taught in a foreign language. (p. 19)
9. We recommend that special attention be paid to quantitative skills in the definition of the general education requirement and in the criteria for Harvard College Courses. (p. 20)
10. We recommend that the Dean convene a working group of science faculty to plan the redesign of introductory science courses and to reassess the pre-medical curriculum. (p. 21)
11. We recommend that the Dean and the Faculty examine ways in which to incorporate the study of ethical and moral questions into the College’s general education program. (p. 22)

CONCENTRATION

12. We recommend that concentration choice be moved to the end of the first term of the sophomore year. (p. 24)

13. We recommend that each concentration review its requirements with an eye toward reducing them to a level appropriate to a liberal arts and sciences education for non-specialists, and that there be a presumptive cap of 12 on the number of concentration requirements. (p. 26)
14. We recommend that each concentration, or field-specific track within a concentration, formulate a single set of requirements for all concentrators, in place of the existing basic and honors tracks. (p. 27)
15. We recommend the development, where appropriate, of alternative capstone experiences to the senior thesis. (p. 27)
16. We recommend that all tutorial programs be headed by professorial faculty with responsibility for the oversight of syllabi and instruction. (p. 28)
17. We recommend that all concentrations introduce a junior seminar program of faculty-taught, small-group seminars, or otherwise ensure that all concentrators enroll in a small course taught by a faculty member. (p. 28)
18. We recommend that all concentrations review their requirements to reassess the balance between disciplinary focus and opportunities for cross-disciplinary work, at both the introductory and advanced levels. (p. 29)
19. We recommend that the Head Tutor or Director of Undergraduate Studies in each concentration (with a preference for the latter title because of its clarity) be a senior faculty member charged with oversight of concentration advising and monitoring of students' academic progress within the concentration. (p. 30)
20. We recommend that concentrations, particularly the large concentrations, increase faculty participation in concentration advising. (p. 30)
21. We recommend that each student be assigned a concentration adviser. (p. 30)
22. We recommend that students be required to meet with an adviser for a substantial discussion at least twice per year. (p. 30)
23. We recommend that each concentration ensure that every student who wishes to pursue a senior thesis is matched with a thesis adviser. (p. 31)
24. We recommend that each concentration establish an Undergraduate Studies Committee, composed of concentrators, to provide systematic feedback and suggestions for improvements in the course offerings and structure of the concentration. (p. 31)
25. We recommend that the Educational Policy Committee engage each concentration in a review of its purpose and structure as part of a recertification of all concentrations. (p. 32)

INTRODUCING STUDENTS TO THE COLLEGE: THE FIRST-YEAR EXPERIENCE

26. We recommend that students no longer be required to meet the foreign language requirement in the freshman year. (p. 33)

27. We recommend that the FAS continue to expand the Freshman Seminar Program with the goal of offering enough seminars to accommodate the entire freshman class by academic year 2006-2007. (p. 34)
28. We recommend that all freshmen be required to enroll in a small-group, faculty-led seminar, such as a Freshman Seminar or its equivalent, in the freshman year. (p. 34)
29. We recommend that departments in which courses are tracked have clear provisions for correcting a student's placement during the semester. (p. 34)
30. We recommend that students be required to take at least two courses during the freshman year that are not letter-graded, and be allowed to take up to four. (p. 35)
31. We recommend that the Dean of Harvard College create an office to coordinate all aspects of academic advising. (p. 36)
32. We recommend that pre-concentration academic advising be separated from proctoring, and that each freshman be assigned to an adviser with related academic interests. (p. 37)
33. We recommend that the Dean of Harvard College work with departments to encourage more faculty to serve as pre-concentration advisers. (p. 37)
34. We recommend that the advising office organize a series of dinners for 15 freshmen with a faculty member, the students and faculty member matched by broad areas of academic interest. (p. 37)
35. We recommend that, building upon existing procedures by which students indicate possible areas of concentration, the concentrations take responsibility for sharing important advising information with prospective concentrators. (p. 38)
36. We recommend that freshmen be assigned to a House before the start of freshman year and be housed together in dormitory entries affiliated with their House. (p. 38)

EXPANDING OPPORTUNITIES

37. We recommend there be an expectation that all Harvard College students pursue a significant international experience during their time in the College, and that completion of such an experience be noted on the transcript. (p. 40)
38. We recommend that the FAS expand its allocation of financial support, including summer grants, salaries, stipends, and loans, in order to make it possible for all students to pursue at least one international experience. (p. 40)
39. We recommend that the Office of International Programs, in consultation with the concentrations, identify study abroad programs in which Harvard College students may enroll for degree and concentration credit, and that all concentrations plan requirements and course sequences to accommodate one term of study abroad. (p. 41)
40. We recommend an increase in funding for undergraduates to engage in faculty-supervised research projects over the summer. (p. 43)

41. We recommend that the College provide to all students comprehensive information and advice about faculty-supervised research projects and funding sources. (p. 43)
42. We recommend that the Dean, working with the President, Provost, and the deans of other Faculties, develop policies to reduce the financial and administrative barriers that impede faculty from one part of the University teaching in another. (p. 45)
43. We endorse the proposal of the University Committee on Calendar Reform to synchronize the calendars of the several Faculties of the University. (p. 45)
44. We recommend the creation of a January term in conjunction with the proposed University-wide calendar. (p. 45)
45. We recommend that there be an office within Harvard College to work with students, faculty, and directors of arts, athletic, and public service programs to coordinate and administer a set of offerings in January. (p. 47)
46. We recommend that the Dean for the Humanities work to expand curricular opportunities for performance and the creative arts in Harvard College, and that the Faculty be receptive toward proposals for new tracks and new concentrations that focus on the practice and performance of the arts. (p. 49)
47. We recommend that the College work with Phillips Brooks House and other organizations to assist faculty who would like to include a public service component in a course. (p. 51)
48. We recommend that sections in courses that include a formal public service component normally be limited to 12 students. (p. 51)

FOSTERING PEDAGOGICAL IMPROVEMENT AND INNOVATION

49. We recommend that resources be developed to increase the number of seminar rooms and small classrooms with flexible layouts to facilitate group discussion and with appropriate instructional media equipment. (p. 51)
50. We recommend that lecture halls be designed to facilitate more interactive instruction, and to be equipped to enable the use of the widest range of technologies. (p. 52)
51. We recommend that the Dean explore the possibility of reducing section size from 18 to 15 in those courses large enough to subdivide into two or more sections (ordinarily those that enroll more than 22 students). (p. 52)
52. We recommend that pedagogical training be required of all new section leaders, including instruction in guiding and evaluating student writing and oral presentation. (p. 53)
53. We recommend that the Graduate School of Arts and Sciences create a new fellowship to recognize outstanding teachers. (p. 53)
54. We recommend that concentrations and individual courses create more opportunities for students to engage in collaborative, small-group work, and that support be provided for introducing these opportunities. (p. 53)

55. We recommend that courses include several written assignments during the term, including at least one graded assignment before mid-semester, so that students may calibrate their progress. (p. 54)
56. We recommend that all courses be evaluated both at mid-term and at the end of the term, and that these evaluations be completed in an online format with the ability to customize questions for the specific course. (p. 54)
57. We recommend that the Dean of Harvard College more closely coordinate the activities of pedagogical support programs. (p. 55)