The Aims of a Stanford Education

Stanford's founding grant states the university's "object" succinctly: "to qualify its students for personal success, and direct usefulness in life." Today, more than a century later, we still subscribe to that goal. But we also hope for more. We want our students not simply to succeed but to flourish; we want them to live not only usefully but also creatively, responsibly, and reflectively.

No education, however well conceived and comprehensive, can ensure these outcomes. But there are (to quote our committee's charge) certain things that we "want our students to gain during their time on the Farm," things they will need to make their way in the world awaiting them. The committee's first task was to try to identify those essential elements, to establish what we want our students to learn in order to think more clearly about what, and how, we should teach them.

Mindful of the inadequacy of any short answer to such a vast question, we offer four broad elements that we believe represent the goals of a Stanford education.

Owning Knowledge

Anyone who has spent time at universities knows that discussions of undergraduate education frequently come to focus—and often to founder—on the question of curricular content. What are the specific texts or bodies of knowledge that every student—every educated individual—simply "needs to know"? Once the issue is posed in that way, the stage is set for an academic brawl, as those who lived through Stanford's Western Culture debate in the late 1980s will recall.

Much has changed since that debate. The SUES committee found few people on campus prepared to assert the existence of a single, definitive corpus of knowledge that every student was obliged to know, much less to specify what such a corpus might include. This diffidence does not mean, however, that we no longer believe that our students need to know things. Universities exist to produce and disseminate knowledge; students attend universities to share in that knowledge and, if they are fortunate, to become directly involved in the creation of new knowledge.

It is customary at Stanford, as elsewhere, to think of knowledge in two dimensions: depth, which students are presumed to acquire in their majors, and breadth, which is the province of "general education." Given the nature of its charge, the SUES committee was primarily concerned with the latter—with ensuring that every Stanford student receives not only specialized instruction within a major but also substantial introductions to the characteristic modes of thought of a broad range of disciplines and fields, including the natural and physical sciences, history and the social sciences, mathematics, engineering, the interpretive and analytical humanities, languages, and the arts. We believe that the recommendations we offer in this report serve that goal. Yet we have also come to believe that the conventional distinction between majors and general education—a distinction deeply entrenched in the culture of Stanford, among students and faculty alike—is itself misconceived. Properly understood, specialized and general education are not separate enterprises but elements of a single, reciprocal process, each providing dimension to the other. It is through that reciprocal process that students begin to understand the stakes not merely of studying physics or philosophy but of understanding and engaging the world as physicists or philosophers do. They become fully vested in the knowledge they have gathered, which ceases to be something external and becomes a part of who they are. This is one of the essential aims of a Stanford education.

Honing Skills and Capacities

In the aftermath of the curricular wars of the 1980s, it became the custom at many schools, including Stanford, to define the goals of general education in terms not of content but of capacities. If we could not specify what texts our students were required to read, we could at least specify the skills they needed to possess. In practice, enumerating essential skills proves only slightly less fraught than identifying essential knowledge, with any list susceptible to charges of arbitrariness and omission. Nevertheless, there are certain things that we believe all Stanford students should be able to do by the time they graduate.

Communication

First and foremost, they need to be able to communicate effectively, and to do so in a wide variety of circumstances, venues, and media. This obviously means writing clearly, but it also includes reading closely and critically. Similarly, it includes clear and effective oral communication, as well the ability to listen and genuinely to hear others, even when their ideas and arguments challenge strongly held opinions and beliefs. In a world rife with misunderstanding and riven by all manner of political and sectarian disputes, nothing is more important to responsible citizenship than the capacity to communicate.

Critical thinking et al.

We hope our students will also acquire other capacities during their years at Stanford: critical thinking; aesthetic and interpretive judgment; formal and quantitative reasoning skills; an ability to think historically; facility in both scientific and social scientific analysis, including the abilities to formulate and test hypotheses, assess data, and weigh competing theories; and, last but not least, a rich capacity for creative expression, in whatever domain or field. Most Stanford students enter the university with some semblance of most, if not all, of these abilities, but they need additional opportunities to practice and hone them in different settings and contexts.

As even this schematic description makes clear, there is no tidy line between knowledge and skills. The knowledge that students acquire in their studies becomes the platform on which they hone intellectual capacities; these capacities, in turn, become vehicles for the acquisition of new knowledge. If the student is well educated, the process becomes self-sustaining, setting the stage for lifelong learning. This too is an essential aim of a Stanford education.

Cultivating Personal and Social Responsibility

Students equipped with knowledge and a broad array of capacities and skills are well on their way to lives of "personal success" and "direct usefulness." Yet if the history of the modern world teaches us anything, it is that knowledgeable and skillful people are capable of doing great harm as well as great good.

Service

This points to the third essential aim of a Stanford education. If our graduates are to assume the responsibilities of local, national, and global citizenship, they need not only deep knowledge and well-honed skills but also a wider set of characteristics and competencies: a sense of personal and social responsibility; ethical and moral reasoning skills; an appreciation of cultural difference, as well as of human commonality; the ability to work collaboratively in diverse teams; tolerance, generosity, and a broad capacity for empathy. Some universities seek to instill such qualities by imposing a stand-alone "service" requirement. We are thinking much more broadly, imagining a Stanford that consciously fosters connections between the education that students receive in the classroom and the world in which they live, that affords students not only abundant opportunities for civic engagement, intercultural communication, and ethical decision making, but also settings in which to process and reflect upon those experiences. To paraphrase David Starr Jordan, Stanford's first president, our goal is to produce students who possess not only the knowledge and skills they need to accomplish things, but also the wisdom to recognize what needs doing.

Adaptive Learning

Howard Swearer, a former president of Brown University, once described liberal education as "preparation for appointments not yet made." This insight is more pertinent today than ever. Given the ever-accelerating pace of change in the world, there is simply no way to anticipate all of the challenges and perplexities that our students will face in the course of their lives. Just consider what we have seen in the eighteen years since the CUE filed its report: the attacks of 9/11 and the ensuing "War on Terror"; decade-long wars in Iraq and Afghanistan; mounting evidence of global climate change; a series of rapid economic booms and busts, leaving a legacy of chronic joblessness, widening

inequality, and global fiscal crisis; the collapse of comity in our political system; a continuing digital revolution that has transformed not only the ways in which we access, produce, and transmit information, but also the very nature of individual and communal identity. All of these changes and the questions they pose were beyond the imagining of the CUE. Doubtless authors of the next review of Stanford undergraduate education will say the same about us.

This observation has important implications for how we think about undergraduate education. As much as we might wish it, there is simply no way we can pack into our students' heads everything they will need in the years ahead. Many of the specific things we teach them, in fact, will quickly fall out of date. If our students are truly to flourish they need one final element, which we call adaptive learning. Just as the measure of a human brain is not its number of neurons but rather the density of interconnections between them, so is the long-term value of an education to be found not merely in the accumulation of knowledge or skills but in the capacity to forge fresh connections between them, to integrate different elements from one's education and experience and bring them to bear on new challenges and problems. We on the SUES committee believe that adaptive learning is the fourth essential aim of a Stanford education, and the one that in some ways encompasses the rest. It is this capacity to integrate new and old experience, to adapt knowledge and skills to novel circumstances, that protects our students from professional obsolescence and prepares them to face the unpredictable challenges awaiting them.

Scholars researching the nature of creativity have long recognized the importance of adaptive and integrative learning, and most of the rest of us understand it intuitively: who among us cannot recall such a moment of illumination, when elements from different books, courses, or corners of our lives came together to produce new insight? A number of programs at Stanford have already woven such learning into the fabric of their curricula. Yet we were struck by how little attention most departments and programs have given to cultivating this essential capacity. We were also surprised, and somewhat chagrined, to discover how infrequently some of our students exercise it. For all their extraordinary energy and range, many of the students we encountered lead curiously compartmentalized lives, with little integration between the different spheres of their experience. If there is a single motivating principle that ties together the various recommendations that follow, it is our determination to breach the silos of students' lives, to offer them an education that is more than the sum of its parts, an education equal to the unfathomable challenges and opportunities that await them.

Writing and Oral Communication

Stanford has maintained a writing requirement since its founding, and its historic commitment to writing and tradition of innovation have made its current writing requirement one of the strongest in the nation. The SUES committee agrees that writing is a foundational skill that enables the production of knowledge at all levels. We seek to maintain and build on the strengths of the current requirement while also integrating writing and communication more fully into the fabric of general education at Stanford, as well as into the work of the academic departments and programs. While maintaining the primary importance of academic writing as the production of argument-based texts, refined by attentive reading, drafting, and revision, we also recognize the expansiveness of written and communicative forms across the disciplines and in our rapidly changing world. We seek to incorporate these into our students' experience at Stanford with the aim of producing graduates who can communicate with clarity and confidence across a range of modes.

In light of these conclusions and goals, we offer several recommendations that will maintain but refine the current three-course writing requirement. In particular, we propose ways to integrate the writing program's efforts with those within the departments and programs and across students' overall educational experience, to strengthen writing in the majors, and to increase support for writing and oral communication instruction.

History

The current Program in Writing and Rhetoric (PWR) was developed in 2001 by Andrea Lunsford, with the support of the VPUE and the Writing Advisory Board, following recommendations made by the Committee on Undergraduate Studies (CUS) after the 1994 CUE report. That report confirmed Stanford's fundamental commitment to writing and communication as a central facet of undergraduate education in all disciplines. Further, it affirmed that writing ability is sharpened through regular practice across multiple levels, recommending that students be given opportunities to write often, across a range of disciplines and modes. It also stressed the importance of a multilevel writing requirement and recommended, in addition to freshman- and sophomore-year writing courses, a writing-intensive course delivered by each department or degree-granting program to its majors.

Further, CUE recommended "the creation of an advisory board for writing programs at Stanford" that would offer "means of coordinating the various components of Stanford's writing requirement." It also stressed the advisory board's role in determining appropriate and rigorous means of systematic assessment to keep Stanford's writing requirement effective and responsive to the needs of its students. Finally, CUE recommended the expansion of oral communication instruction.

Acting on these recommendations, CUS approved the creation of an enhanced writing program responsible for implementing a three-course requirement: Writing and Rhetoric 1 (now called PWR1), staffed by PWR; Writing and Rhetoric 2 (now PWR2), also staffed by PWR and emphasizing "oral and visual presentation along with further work on research and writing"; and a Writing in the Major (WIM) course designed by the student's major department or degree-granting program in consultation with the writing program. Furthermore, CUS recommended the creation of a new Writing and Rhetoric Requirement (WRR) Faculty Governance Board to "oversee the coherence of the program" and certify PWR1 and PWR2 courses, WIM courses, and SLE implementation. Finally, it recommended

that students be given additional support for oral presentation in their majors, "ending ideally in an opportunity for a significant oral presentation in the senior year."

The overall strength of Stanford's current three-part writing requirement has been confirmed through multiple channels. The Capacity and Preparatory Review prepared for WASC in 2010 affirmed the importance of PWR's "systematic efforts to evaluate the quality and impact of its curriculum." These efforts included the Stanford Study of Writing, a longitudinal analysis conducted from 2001 to 2006, which allowed PWR to assess students' writing throughout their Stanford careers and adjust its offerings to meet their needs. This assessment showed (1) that PWR met its goals and succeeded in teaching students to improve their writing by revising drafts and using research-based sources to support an argument; (2) that a second writing course (PWR2) was necessary to maintain this improvement and to counter a slump previously observed in students' post-freshman writing; and (3) that the writing requirement delivered through the major remains "a positive part of our curricular requirements."

The report also identified areas for improvement. These included the need for better bridging between PWR and WIM courses in the departments: "We believe that a strong writing program spans the campus, linking instruction and writing support across the students' undergraduate experience." It further encouraged departments to develop writing-intensive courses to supplement their required WIM offerings, observing that "it is through the consistent practice of writing and re-writing that students are best able to hone their writing skills," while also noting the extra efforts that such courses require from faculty and TAs. It concluded by recommending regular assessment to evaluate the success of instructional methods and curriculum.

The George and Leslie Hume Writing Center (HWC) was established in 2001 to support these writing reforms and foster the culture of writing at Stanford. The HWC offers help to students with all stages of the writing process, including interpreting writing prompts or assignments, crafting a strong thesis, performing research and working with primary sources, revising, and editing for clarity and style. The center houses the Honors Writing Program, through which students working on honors theses can consult writing tutors and attend workshops and advanced writing courses. It offers a digital media consulting service, sponsors public lectures and offers space for student groups focused on writing. The HWC is staffed by professional writing instructors and trained student tutors.

SUES Deliberations

In addition to reviewing self-study materials from PWR and the WASC review, the SUES committee analyzed surveys of exiting seniors and recent alumni and conducted numerous interviews with students and faculty to determine the effectiveness of the current requirement. This experience revealed broad, campus-wide agreement across the disciplines, from economics and engineering to anthropology and philosophy, that good writing is inseparable from good thinking. PWR maintained high levels of support in Stanford's departments, programs, and schools, with strong majority support for the current amount of writing instruction and WIM.

However, there was equally strong agreement that current WIM offerings are uneven and that mounting WIM courses can be very challenging for some departments and programs—especially large majors, interdisciplinary programs, and majors featuring multiple tracks—that lack substantial resources and support. Faculty familiar with PWR shared some concern about non-specialists teaching "research-based" writing. Others expressed reluctance to refer their WIM students to the HWC because they perceive that writing specialists draw from overly narrow disciplinary backgrounds rather than representing a full array of cross-disciplinary approaches.

Having surveyed these materials and this input, the committee strongly supports the existing vertically integrated structure of three courses that introduces students to college-level writing in freshman-specific writing classes, reinforces and expands their developing skills with further writing practice in their second year, and solidifies their skills in support of specialized knowledge with a writing course in their major. This structure draws on extensive research and observation of student learning and practice, both at Stanford and outside, and careful assessment, as well as strong student and faculty support, confirms its effectiveness.

Committee members likewise agree with another major tenet of the existing requirement: that writing is an iterative process best improved through continuous exercise,

Ways of Thinking, Ways of Doing: Fostering Breadth

Stanford seeks to prepare students not only for "personal success and direct usefulness," but also to live creatively and responsibly in the world. Breadth is integral to this project. By venturing beyond their specialized fields of study, students develop knowledge and skills that are different from, but complementary to, those emphasized in their majors. As their minds broaden and deepen, they discover new possibilities for combining and creatively deploying their developing knowledge and skills, enabling them to transcend traditional fields and look beyond what is thought and taught today. Far from being merely an ancillary part of students' curriculum, breadth is essential to realizing the promise of a liberal—and liberating—education.

Few people today question the value of intellectual breadth. The question is how best to provide it. Ironically, the way that most universities answer that question—by requiring students to take certain courses—can feel anything but liberating to students. Students are quick to note the inconsistency in the university's preaching the virtues of freedom and exploration while simultaneously insisting that they take this many courses of type x and that many courses of type y. On the other hand, long experience at Stanford and many other universities suggests that most students need some guidance and direction to help them realize the promise of freedom. Among the revealing findings of the SUES alumni surveys was the number of respondents who expressed gratitude for having been directed into courses they would not have chosen on their own, courses whose value and relevance they only appreciated later in their lives.

The tension between freedom and guidance dominates any discussion of breadth requirements. But even if one resolves that conundrum, questions remain. Traditionally, breadth has been understood to mean exposure to a range of disciplines—in essence, a sampling of different bodies of knowledge, mirroring the way the university organizes itself. Such sampling certainly has value, but is this the optimal way of fostering true breadth in an age like ours, in which the boundaries of different fields are increasingly blurred? Should there be many breadth categories or few? Should students' exposure to different fields be more or less uniform, and thus necessarily shallow, or should breadth courses be clustered in hopes of fostering greater depth and coherence? Should the roster of requirements reflect the changing academic landscape, incorporating new and emerging fields, or should priority be given to the areas that have traditionally provided the foundation for liberal education? How much of students' curricula should be devoted to breadth?

General Education at Stanford: Past and Present

Over the years, Stanford has answered these questions in different ways. Between 1891 and 1920, the university prescribed no breadth requirements, aside from freshman writing, trusting each student to work out an appropriate program in consultation with his or her "major professor." From 1920 to 1957, students spent the bulk of their freshman and sophomore years in the "Lower Division," attending to general education requirements, before proceeding into their majors as juniors. In 1957, the Lower Division was replaced by a new general studies curriculum—essentially a roster of disciplinary breadth requirements that students were expected to complete before graduation. This is largely the system under which Stanford still operates today, though the number and specific content of requirements have changed many times over.

The two most recent undergraduate education review committees discussed the breadth issue at length. The 1968 Study of Education at Stanford recommended reducing the number of general education requirements, in the name of freeing students to take ownership of their own educations. The university responded by eliminating several requirements, though others soon emerged to take their place. The 1994 CUE report, concerned less with the size of the general education curriculum than with its superficiality and apparent arbitrariness, proposed two major reforms: a redefinition of social science and humanities breadth requirements "to enable students to focus on coherent sets of courses of their own choosing," and the creation of a three-quarter freshman science, mathematics, and engineering core for non-specialists, akin to the existing three-quarter Cultures, Ideas, and Values requirement (though the new core was to be optional). The first of these recommendations was never adopted by the Faculty Senate. The latter was enacted, but with disappointing results. Designed with great care and thoughtfulness by an interdisciplinary team of faculty members, the "SME Core" was suspended after only a few years due to low student enrollments.

The current system of general education requirements was developed in the late 1990s and early 2000s. It consists of five parts. We have already discussed two: every student is required to complete a trio of writing courses (PWR1, PWR2, and a departmentally based WIM course) and to demonstrate competence in a foreign language equivalent to three quarters of study (a standards-based requirement that does not necessarily entail coursework). Students also must complete a three-quarter freshman-year Introduction to the Humanities (IHUM) requirement, which we will discuss in the next chapter. Most important for our purposes, students face a "Disciplinary Breadth" requirement consisting of five courses and an "Education for Citizenship" requirement consisting of two courses. To fulfill the former, they take one course in each of five broad areas: Engineering and Applied Sciences, Humanities, Mathematics, Natural Sciences, and Social Sciences. For the latter, they take single courses in two of four designated areas: Ethical Reasoning, American Cultures, the Global Community, and Gender Studies. (Several of the colleagues we spoke to noted the irony of identifying four broad areas as essential to responsible citizenship and then asking students to choose from only two of these areas.)

In all, every Stanford student today is asked to complete the equivalent of sixteen general education courses. In practice, most students are able to reduce the actual number by testing out of their foreign language requirement or enrolling in courses that "double count" for both Disciplinary Breadth and Education for Citizenship requirements. Depending on the circumstances, a small number of general education courses might also count toward students' majors—WIM courses do so by definition—but most do not.

Given all the variables, it is impossible to say what proportion of a Stanford student's total curriculum consists of general education requirements. If a student set out with the sole goal of reducing total general education units—testing out of the foreign language requirement, double-counting general education courses, fulfilling as many requirements inside the major as possible, and taking all remaining requirements for only three units (the minimum required)—he or she might escape with as few as 34 units of required courses outside the major, about 19 percent of the total graduation requirement. (Given that most Stanford students graduate with substantially more than 180 units, the actual percentage might be even lower.) If a student determined to maximize the total number of general education units, the figure would be exactly double—68 units, or 38 percent of the required 180. In actual practice, most students today devote about a quarter of their total curricula to requirements outside their majors.

From the perspective of the SUES committee, the problem is not the size of the current general education "footprint"—which is similar to, if not slightly smaller than, the footprint at peer institutions—but the manner in which the system operates. With few exceptions, the students to whom we spoke described approaching their general education requirements in a purely instrumental way, seeking out classes that satisfied Disciplinary Breadth and Education for Citizenship requirements simultaneously while also meeting at convenient times. Stanford's online ExploreCourses makes it possible to search for courses using those parameters only. Many students reported cross-checking the resulting list with information about previous years' grade distributions, available from a third-party course information site, CourseRank, to find courses offering the largest percentages of A grades. Lest this be dismissed as student exaggeration, the aggregate data the

SUES committee collected on how current undergraduates satisfy different general education requirements suggested a very similar story.

It is characteristic of faculty, on hearing all this, to condemn students for their cynicism, but the fault is more ours than theirs. If students conceive intellectual breadth as a series of "hoops" or "tick boxes," it is because we have presented it in that way. If they choose general education courses with little thoughtfulness or purpose, it is because we have failed to communicate to them why we believe these courses are important, what we hope they will gain from them, and how they relate to the broader aims of a Stanford education.

Reconceiving the Meaning of Breadth: Ways of Thinking and Doing

The SUES committee, working in conjunction with a dedicated subcommittee on breadth, looked closely at the operation of Stanford's current general education system, as well as at the broader tensions and trade-offs inherent in any requirement regime. After considering a number of alternatives, we recommend moving to a new, non-disciplinary system of breadth requirements. Rather than prescribing courses in particular disciplinary areas, our new model promotes the acquisition and development of seven essential capacities, which we term "Ways of Thinking, Ways of Doing":

1. Aesthetic and interpretive inquiry (2 courses)
2. Social inquiry (2 courses)
3. Scientific analysis (2 courses)
4. Formal and quantitative reasoning (2 courses)
5. Engaging difference (1 course)
6. Moral and ethical reasoning (1 course)
7. Creative expression (1 course)

In conceiving breadth in a non-disciplinary way, we are not suggesting that disciplinary knowledge is unimportant. As we have already explained, we see knowledge and capacities as inextricable and reciprocal. We also believe that the framework proposed here will provide our students with abundant opportunities to engage substantially with a wide variety of disciplines—more substantially, in fact, than most do under the current regime. At the same time, we are convinced that by focusing less on the specific content of courses and more on the purposes and goals that such courses are designed to serve, we can create a system far better than the current one—more coherent, more transparent in its rationale and learning goals, and more responsive to the needs, interests, and aspirations of individual students.

In order for our colleagues to evaluate the new model—and for our students to engage with it thoughtfully—it is essential that we clearly articulate what we propose to require and why. In the section that follows, we describe each Ways of Thinking and Doing category, including its rationale, a list of learning outcomes, and some suggestions about how students might go about fulfilling it. Before turning to this discussion, however, let us make three broad points about our approach.

Perhaps the most obvious advantage of the proposed model is the way that it bridges the conventional divide between majors and general education. Many of the essential capacities we have identified are present in students' majors and may, in fact, be most effectively developed in those contexts. It follows that the general education footprint, while at first glance slightly larger than at present, will for most students remain essentially the same. Students in interdisciplinary majors may well see some reduction in their general education requirements, or at least in those that do not also count toward their majors. (We also anticipate that revised freshman year requirements, discussed in the next chapter, will normally fulfill Ways of Thinking and Doing requirements, adding still more flexibility to the system.) Beyond the question of relative size, the new approach reinforces the SUES committee's overall message about integrative learning, signaling to students and faculty alike that general education and majors are not separate enterprises vying for scarce time and curricular space, but rather reciprocal and mutually reinforcing aspects of a broad liberal education.

In the same way, our model bridges the division between Disciplinary Breadth and Education for Citizenship, a division that we believe communicates a highly misleading message to students. The suggestion that taking single courses from two of four possible categories equips students for citizenship is absurd on its face. One of the premises of the system proposed here is that all of the enumerated capacities—the ability critically to analyze societies, to understand and evaluate scientific and statistical arguments, to interpret cultural products in a wide variety of domains, and the rest—are essential to responsible citizenship. This is not to say, we hasten to add, that the specific concerns

embodied in the existing Education for Citizenship requirement are no longer important. On the contrary, the approach described here is intended to elevate the importance of such issues to students, presenting these courses not as boxes to be ticked while satisfying some other requirement but as paths to developing capacities that are essential in their own right, capacities they will need to live responsibly in the complex world awaiting them.

In discussing our proposal, colleagues continually asked about the logistics of the new system. What courses will count for which requirement? How will such decisions be made, and who will make them? These are indeed crucial questions, which are discussed in detail below. Here, let us just say that we imagine a flexible and inclusive system. We assume that every course that fulfills a requirement will be fully aligned with the rationale for that requirement, but we certainly do not expect it to satisfy every specified learning outcome; given the capaciousness of the categories, as well as the variety of learning goals, it is hard to imagine that many courses could. We also recognize that particular requirements might be satisfied in very different ways. For example, a newly designed science course intended to provide non-specialists with a substantial introduction to a particular discipline would surely count as fulfilling the Scientific Analysis requirement, but so too would a foundational science course designed for disciplinary majors. Both courses teach essential ways of thinking and doing.

Possible to include art faculty? http://humanexperience.stanford.edu/risingtide

1. Aesthetic and Interpretive Inquiry

Rationale: Cultural products exist across a vast array of domains, including art, literature, philosophy, religion, and many other areas of human endeavor. They also take a wide variety of forms—not only works of artistic creation but also theories, ritual practices, and intellectual, cultural, and expressive traditions. Though infinitely various in conception, content, and form, these enterprises all represent fundamental human efforts to understand ourselves, the world, and our place within it. Every reflective citizen faces the task of developing a satisfying orientation toward the world through such cultural products, and that process begins with the effort to understand and reason critically about them. Providing students with the interpretive and analytical techniques they need to do this essential work is the task of courses in our first category, which we call Aesthetic and Interpretive Inquiry.

Requirement: Two courses.

Learning outcomes: Students should:

- develop skills for the study, analysis, and interpretation of expressive works and other meaningful cultural products.
- demonstrate facility with close reading techniques, recognizing the key features of a text or artwork and understanding how these features contribute to its (intended) effect on an audience.
- develop abilities to analyze interpretations, theories, and arguments, as well as broader frameworks for thought and action; to identify their assumptions; and to assess those assumptions rationally.
- understand diverse artistic, literary, and theoretical traditions, their characteristic forms of production, and their development across historical time.

How students might fulfill this requirement: We expect that students would fulfill this requirement by taking courses in the arts and humanities, including such fields as music, literature, philosophy, and art history, and drama. Such courses would typically focus on the interpretation of cultural practices and products, rather than analysis of the social structures from which they emerge; thus a course devoted to the analysis of literary texts or artistic works would belong here, whereas a course on the publishing industry or the economics of the art market would fit better in Social Inquiry. Courses offering distinctively interpretive explanations of cultural products and practices in such fields as religious studies, cultural anthropology, philosophy, history, and the history of science would also be appropriate.

2. Social Inquiry

Rationale: Human beings create societies, and those societies, in turn, create them. To exercise responsible citizenship, students need to be able to think critically about societies, their own as well as others, and to recognize and analyze their distinctive forms of social and economic organization, political institutions and ideologies, patterns of social differentiation and stratification, linguistic practices, and characteristic mentalités. At a still deeper level, they need tools for understanding the behaviors and propensities at the root of human sociality, as well as the complex ways in which those behaviors and propensities vary and change across space, time, and individual circumstance.

Equipping students with the skills to do this work is the task of courses in our second category, which we call Social Inquiry.

Requirement: Two courses.

Learning outcomes: Students should:

- be able to apply the methods of research and inquiry from at least one social science discipline to the study of human experience.
- understand what makes a question about human behavior empirically tractable and significant.
- exhibit a capacity to think historically, recognizing the reciprocal relationship of social context and individual action and the reality of change over time.
- possess the capacity to critically evaluate primary and secondary source materials, and to use both to fashion explanations for social and historical phenomena.

How students might fulfill this requirement: Students will typically fulfill this requirement by taking courses in history and the social sciences. Departments and programs such as Political Science, Sociology, Economics, Anthropology, History, International Relations, and Religious Studies all offer a multitude of appropriate courses. Many, though perhaps not all, courses in departments such as Psychology and Linguistics would also be appropriate for fulfilling this requirement.

3. Scientific Analysis

Rationale: Today, more than ever, scientific literacy is essential to responsible citizenship. Many of the most pressing decisions that await our students, from public policy on climate change to personal decisions about their health and the health of loved ones, require the abilities to understand and synthesize scientific information, recognize the limitations and strengths of existing theories, assess evidence, and evaluate competing claims. Engaging in scientific analysis at a university level (whether through advanced or introductory coursework, as a researcher or consumer of the research of others, as a prospective scientist, or as a non-specialist seeking broad insight into the state of a particular scientific discipline) equips students with these essential capacities. Thus equipped, students are prepared not only to share in humans' ever-expanding knowledge of the universe, but also to grapple with the complex technological, political, and ethical implications of that knowledge. Courses that hone these essential capacities fulfill the rationale of our third category, which we call Scientific Analysis.

Requirement: Two courses.

Learning outcomes: Students should:

- be able to understand and evaluate scientific concepts, theories, and evidence.
- understand and utilize both inductive and deductive reasoning and understand the role of each in scientific inquiry.
- be able to formulate hypotheses, to undertake careful and disciplined empirical observation, and to interpret experimental data.
- exhibit a broad curiosity about the natural world, and about the ways in which knowledge about that world is obtained, analyzed, and interpreted.

How students might fulfill this requirement: This requirement might be fulfilled by courses in a wide variety of departments and programs. Some students will satisfy it through traditional introductory courses in scientific disciplines. Others might do so in newly designed courses specifically intended for non-scientists. We expect that many students will choose to take courses in two different scientific fields, thus gaining exposure to different disciplines, but we are open to the possibility of their fulfilling the requirement with two courses from a single field. Laboratory experience, while highly desirable, is not required.

4. Formal and Quantitative Reasoning

Rationale: Many decisions and judgments are made on the basis of large amounts of data—data that can be imperfect, incomplete, or in other ways intractable. If we wish our students to make good decisions and wise judgments in such circumstances, we need to equip them with two distinct but related capacities. The first, which we call formal reasoning, involves precise deductive thinking and is epitomized by pure mathematics, logic, and the algorithmic sciences. The second, which we call quantitative reasoning, is more inductive in nature and, in a deep sense, more applied. In broad terms, it involves the process of bringing formal and technical capacities to bear on large, complex problems, often problems involving imperfect information, through such techniques as modeling, statistical analysis,

and probabilistic thinking. While formal reasoning is taught in a somewhat restricted number of venues in the university—courses in mathematics, statistics, philosophy, computer science, and symbolic systems being the most obvious examples—quantitative reasoning is learned, taught, and used in a host of different fields and contexts, including engineering and design, public policy, education, law, economics, management science, medicine, and the social and natural sciences. Both capacities are essential to living an informed, responsible, and creative life in today's world. Both are represented in our fourth category, Formal and Quantitative Reasoning.

Requirement: Two courses (one each in Formal Reasoning and Quantitative Reasoning).

Learning outcomes: Students should:

- hone formal and deductive reasoning skills through sustained engagement with problems in which the system of formal reasoning is itself the object of study.
- be able to set and solve optimization problems (broadly construed), model complex processes, evaluate data, think probabilistically, and assess risk.
- have the ability to distinguish between causal and correlational evidence, as well as the ability to recognize when the available evidence is too weak to decide a matter.
- be comfortable not only with abstract principles of probability theory, statistics, decision theory, logic, and mathematics, but also with the application of empirical methods to concrete problems and questions.
- model complex processes or systems so as to be able to predict (or change) their outcomes.
- recognize common mistakes that human beings make in empirical reasoning and problem solving.

How students might fulfill this requirement: Many students will fulfill the Formal Reasoning portion of this requirement through courses in mathematics or computer science, while others may do so through courses in philosophy, statistics, or symbolic systems. Students may fulfill the Quantitative Reasoning requirement through courses across the university, from engineering to economics, public policy to product design. Many, perhaps most, students will routinely encounter such courses in the context of their majors.

5. Engaging Difference

Rationale: In our increasingly complex and interdependent world, it is crucial that students develop abilities to live, work, and communicate with people whose experiences and perspectives are different from their own. More broadly, they need to be able to think critically about human variety and to understand the different ways in which societies construct and construe human difference. In the society in which we live, certain categories of difference are particularly salient, including race, ethnicity, gender, sexual orientation, religion, and social class, but the capacity for thinking critically and reflectively about human difference has applications far beyond these categories. Courses that equip students with this essential capacity fulfill our fifth requirement, which we call Engaging Difference.

Requirement: One course.

Learning outcomes: Students should:

- attain an understanding of the histories, cultures, and social experience of diverse groups of people.
- grapple with the challenges that surface in interactions between people with diverse backgrounds and worldviews.
- recognize the power relationships that structure interactions between people in different historical, social, and cultural contexts.
- develop a rich appreciation for both human commonality and the diversity of human experience.

How students might fulfill this requirement: Students might fulfill this requirement with courses in a host of Stanford departments and programs, including Anthropology, History, Sociology, Psychology, Religious Studies, International Relations, Feminist Studies, African and African American Studies, and the Center for Comparative Studies in Race and Ethnicity (which includes Asian American Studies, Chicano Studies, Jewish Studies, Native American Studies, and Comparative Studies in Race and Ethnicity). Courses currently certified as fulfilling the Education for Citizenship requirements in American Cultures, Gender Studies, or the Global Community would also fulfill this requirement.

6. Moral and Ethical Reasoning

Rationale: Moral and ethical judgments are inescapable in human life. Every individual and citizen must be able to think critically about ethical and moral questions, to draw defensible conclusions, and to assess competing values and claims. To develop these capacities, students need to be introduced to the pervasiveness, complexity, and diversity of normative concepts and judgments, as well as to some of the diverse ethical traditions and perspectives available for thinking about them. In defining such capacities as essential ways of thinking and doing, we are obviously not suggesting that the university should seek to inculcate any particular values or commitments in its students, but we believe that it does have a responsibility to equip them with the critical tools they need to forge values and commitments of their own. In keeping with this perspective, we believe that this requirement should be understood broadly, to include not only courses in formal ethical reasoning but also courses that enable students to grapple with ethical and moral questions in the contexts of their particular fields and interests. Such courses meet the rationale of our sixth category, which we call Moral and Ethical Reasoning.

Requirement: One course.

Learning outcomes: Students should:

- understand the nature of normative claims and recognize diverse normative concepts and arguments.
- evaluate competing ethical and moral perspectives and claims.
- possess a capacity to reason critically about ethical and moral questions, as well as an ability to make ethical and moral judgments about issues that they face in their lives.
- be broadly and continuously reflective about the ethical and moral dimensions of their own conduct.

How students might fulfill this requirement: All of the courses certified as completing the existing Ethical Reasoning requirement would fulfill this requirement, as would a number of courses in fields such as philosophy, political philosophy, and religious studies that are not currently certified. At the same time, we see the new category as opening up fresh opportunities for students to engage moral and ethical questions in the context of a wide variety of departments and disciplines, including their own major fields. We also hope that a more capacious moral and ethical reasoning requirement might inspire departments and programs to incorporate these essential capacities more fully into their majors, increasing the supply of such courses across the university and providing our students with a richer, more integrated education.

7. Creative Expression

Rationale: Since its founding, Stanford has attempted to balance the teaching of high-order knowledge with that of hands-on application. The excellence of its current programs in design, creative writing, art, music, and the performing arts attests to the continuing vitality of that tradition, as does the legendary inventiveness of its students and alumni. Creativity is a foundational capacity in virtually every field of human endeavor, including not only the creative arts, but also the physical, natural, and social sciences, the humanities, and engineering. It is also a transferable skill that can stimulate innovation and problem solving in unexpected realms. Every student should have the opportunity to experience and develop his or her capacity to create. Courses that foster that capacity fulfill our final requirement, Creative Expression.

Requirement: One course.

Learning outcomes: Students should:

- explore their own potential to produce original creative projects, in whatever fields of endeavor they choose.
- discover new capacities for self-expression.
- learn to take creative risks, stepping outside of their comfort zones and accepting the possibility of failure.
- experience design thinking, posing new questions, identifying obstacles (whether technical, social, or artistic), and devising creative solutions to them.

How students might fulfill this requirement: Students at Stanford have a rich choice of available fields in which to express and develop their capacities for originality and creative self-expression. Many students will satisfy this requirement in fields such as art, music, creative writing, dance, drama, or film. Others will find opportunities for creation in such fields as product design and architecture. Courses in this area should focus on creative practice; courses devoted primarily to the *interpretation* of creative works belong under Aesthetic and Interpretive Inquiry.

Managing the System

Like any other system of course requirements, the Ways of Thinking, Ways of Doing model raises questions about how courses will be classified and counted. Some of these questions are easily answered. Given the capaciousness of the categories (and the wealth of interdisciplinary courses offered at Stanford), it is likely that many courses will fulfill the rationales and learning outcomes of more than one requirement. Such courses would be so identified in the *Bulletin*, and students would be free to count them as they chose. We do not believe, however, that students should be able to satisfy two requirements with a single course; we have no wish to reproduce the instrumental mentality fostered by the current system. The ability of students to satisfy Ways of Thinking and Doing requirements within their majors, as well as through freshman-year requirements, provides such flexibility that there is no reason to allow additional "double counting."

Several colleagues have asked us whether any of the new requirements might be fulfilled in noncurricular ways—through an internship, say, or some kind of community service project. Our answer is yes and no. In describing our categories as "Ways of Thinking, Ways of Doing," we mean to highlight the fact that essential capacities grow not in a vacuum but through active engagement with the world. The best way to develop capacities for engaging difference, to take an obvious example, is by engaging with people whose experiences and ideas are different from one's own. To that end, we hope and expect that many of the courses that students take to satisfy requirements will include an engaged or experiential dimension—a group project, a laboratory component, community-based research, or the like. At the same time, we feel strongly that the capacities we wish to instill in our students are not simply practical but also intellectual, and as such need to be honed through analysis and reflection. It follows that all Ways of Thinking and Doing courses must have a substantial academic component.

The issue of what specific courses will count for what particular requirements is more complicated, raising as it does broader questions about governance and the relative flexibility or restrictiveness of the new system. The trade-offs are familiar. Tightly governed systems, in which courses are centrally vetted to ensure that they conform to the specified goals of a particular requirement, offer the advantages of coherence and consistency, but at the cost of flexibility, particularly for students, who can find themselves forced through requirement bottlenecks. Such systems also impose a burden on faculty time, particularly for members of the committee tasked with vetting courses but also for individual professors, who typically have to go through some process to have their courses certified. Loosely administered systems, in which the default decision is to include rather than exclude courses, are more flexible for students and less laborious for faculty, but they sometimes lack consistency and clarity of purpose.

In weighing this question, the SUES committee looked at peer institutions, which offer examples of both approaches, as well as the experience of Stanford, which in recent years has tried both. The current Disciplinary Breadth system, for example, began as an "opt-in" program, but that system proved burdensome for the faculty charged with approving courses and was soon abolished. The difficulties were compounded by the failure of many professors to submit their courses for certification, producing confusion among students and a raft of student petitions to the registrar seeking retroactive approval of uncertified courses as fulfilling breadth requirements. Since 2005, Stanford has employed an "opt-out" approach, presuming that courses fulfill their most logically related Disciplinary Breadth requirements unless instructors say otherwise. Education for Citizenship requirements are governed somewhat differently, but here too Stanford in recent years has tended toward inclusiveness, save in the case of the Ethical Reasoning category, where an ad hoc advisory board carefully scrutinizes courses before certifying them. Because the Education for Citizenship requirement asks students to select courses from only two of four categories, the relative dearth of Ethical Reasoning courses has not created a significant bottleneck, but it has significantly reduced student enrollments in that category. Currently fewer than 10 percent of students fulfill one of their Education for Citizenship requirements with an Ethical Reasoning course.

Having weighed the alternatives, the SUES committee favors an approach that provides sufficient administrative oversight to keep the Ways of Thinking, Ways of Doing system fresh and vital, but that is otherwise open and inclusive, minimizing the burden on faculty and students alike. We do not imagine some large faculty committee poring over stacks of syllabi to select the few courses that meet the standards for certification as satisfying requirements. We do

not foresee asking our colleagues to redesign their courses, though we hope that our emphasis on student learning over disciplinary content will inspire greater clarity between students and faculty about course objectives. Our operating assumption is that the vast majority of courses currently taught at Stanford teach essential capacities and achieve many of the learning outcomes described above.

If we have done our work well—if we have devised a system that is at once sufficiently inclusive and sufficiently precise—then identifying classes appropriate for different requirements should be a fairly straightforward task, one that can largely be handled at the level of individual departments and programs. Most academic units already have curriculum committees, which oversee course offerings and decide what courses satisfy major requirements. Such committees, having been introduced to the letter and spirit of the Ways of Thinking, Ways of Doing system, are ideally placed to identify courses that suit the rationales of different requirements. Equally importantly, they are well positioned to determine what courses ought not be used to fulfill breadth requirements. The obvious examples are courses that have substantial prerequisites or are intended to be parts of major sequences, as well as courses that are heavily oversubscribed (as some laboratory, project-based, and studio art courses currently are). In addition, some classes simply may not align with the rationales and learning outcomes of any of the seven categories (though we hope that such courses will be few), and some instructors may choose not to have their courses counted as fulfilling any of the requirements. Maintaining a flexible and inclusive system does not mean that every course should or must count for something.

While we envision a relatively decentralized process for classifying new and existing courses for purposes of breadth, we also believe that the Ways of Thinking, Ways of Doing system will require a vigorous faculty governance board. Or perhaps governance is the wrong word, for what we imagine is not a rule-bound committee policing colleagues' course offerings but rather a group of committed faculty members, supported by administrative staff from VPUE, working together to manage, monitor, and, where necessary, refresh the system. This group will liaise with departmental curriculum committees, identify new opportunities and potential bottlenecks, and generally ensure that the roster of Ways of Thinking and Doing course offerings remains well populated, balanced, and true to the spirit of the program. To help gauge the effectiveness of the system, the committee should periodically receive statistical summaries of student evaluations, including data on how well courses are meeting their stated rationales and learning outcomes. In certain cases, it might have to consider decertifying courses that no longer meet the criteria for a Ways of Thinking and Doing course, but we anticipate such situations arising very rarely.

To illustrate both the necessity and the nature of our proposed governance board, let us close with an example of an issue that such a board would need promptly to address. Every year, Stanford admits a number of exceptional transfer students from community colleges. Such students typically try to fulfill as many general education requirements as possible in their two-year institutions, in order to complete their majors at Stanford on an accelerated schedule. We certainly do not wish the Ways of Thinking and Doing model to make Stanford less accessible to them. Therefore, one of the first tasks of the new governance board will be to establish and communicate clearly the university's expectations and standards for general education requirements for transfer students. In this way, as in every other, we hope that the new system will operate flexibly and inclusively.

Recommendations

1. Replace the existing system of breadth requirements with the Ways of Thinking, Ways of Doing model described above.

2. Establish oversight procedures, also described above, to ensure that the proposed system of requirements operates in a flexible yet meaningful way, designed to minimize burdens on faculty while offering students great latitude to navigate the requirements in a manner suited to their own interests, aspirations, and needs.

3. Produce formal guidelines for transfer students that detail the kinds of courses that Stanford will accept for general education credit. Helping community college students navigate the transfer process and meet Stanford's general education requirements should be a high priority for any general education governing body.

The Freshman Year

As the previous chapter made clear, one of the primary aspirations of the SUES committee is to bridge the gulf between students' major and non-major curricula. "General education," in our view, is not a set of extraneous hurdles to be cleared en route to the major, but an integral part of a liberal education stretching across all four years. In making this claim, however, we do not mean to suggest that the undergraduate years are an undifferentiated block of time. Students change during their years on the Farm, and their needs and possibilities change with them. In the chapters that follow, we turn to this issue, tracing an educational arc from the exploration and discovery of the freshman year, through exercises of increasing complexity and sophistication in the sophomore and junior years, to the synthesis and mature reflection of the senior year. We begin with the all-important freshman year.

The Challenge of Freshman Curricula

Though Stanford has never delivered a traditional "core" curriculum, it has long delivered courses specifically intended for—and required of—freshmen. Beginning in 1920, all freshmen were required to complete a year-long course called "The Problems of Citizenship," a course prompted, in part, by passage of the Nineteenth Amendment, allowing women to vote. Plagued by uneven faculty support and dwindling student interest, the course was abolished in 1934. Its replacement, "The History of Western Civilization," a three-quarter survey course taught out of the History Department, ran through the mid-1960s. After a twelve-year hiatus, Western Civ was replaced by Western Culture, a requirement whose abolition, less than a decade after its creation, became a national cause célèbre. Its successor, Culture, Ideas, and Values, lasted only a few years. The current Introduction to the Humanities (IHUM) program began in 1996.

For all the differences in form and content, all these programs shared certain broad aims: to introduce students to college-level learning; to orient them toward a cultural tradition; to provide a foundation of common intellectual experience. While subject to a variety of criticisms, both today and in their own time, they also embodied a piece of real wisdom. Students arrive at college full of eagerness and enthusiasm, yet also intellectually unformed. Entranced by intellectual possibilities yet uncertain about how to pursue them, they will never be more receptive to or needful of the kind of instruction promised by a dedicated freshman curriculum. Unfortunately, freshman curricula at Stanford have also tended to share certain problems, as their rapid demises suggest. Leaving aside the inevitable controversies over what subjects should be required, such courses have encountered resistance from faculty, who have often needed to be cajoled to teach them, and even greater resistance from students, who have all too often treated them not as opportunities but as burdensome obligations to be completed as expeditiously as possible. Here is the problem of freshman education at Stanford in a nutshell: how to design a curriculum that responds to the unique possibilities and needs of the freshman year without devolving into an empty, inherently self-defeating exercise.

The IHUM Program

IHUM represents Stanford's most recent attempt to solve this conundrum. Few topics elicited as much discussion within the SUES committee, and fewer still provoked such ambivalent feelings. By most measures, IHUM is a model program. Painstakingly designed by faculty members following the CUE report, it has consistently delivered rigorous courses, organized around compelling themes and taught by some of Stanford's premier teachers. The

university has devoted substantial resources to the program, most notably by hiring talented postdoctoral fellows to run the twice-weekly discussion sections. An active faculty governance board meets regularly with instructors to assess the success of courses and identify possibilities for improvement. Indeed, IHUM's sustained attention to student learning and effective pedagogy makes it a model not only for future freshman programs but also for other units in the university.

All these distinctions only make the response of students more disappointing. We found a troubling pattern of student alienation from IHUM, manifested in (relatively) low course evaluations, poor attendance at lectures, and a widespread failure to engage deeply with course materials. A drumbeat of disaffection pervaded our focus groups, town hall meetings, and dorm dinners. Even those students who appreciated their IHUM courses—and there are more of them than campus lore suggests—expressed frustration at their inability to find intellectual community in them due to their peers' disengagement. Many described being called "IHUM kid," a term of derision for students who introduce topics from their IHUM courses in casual conversation. Paradoxically, the very program we intend to fire students' imaginations and awaken them to the possibilities of university-level learning has become the paradigmatic "tick box" requirement. Worse still, the IHUM experience has become emblematic of humanistic inquiry for many students, diminishing the likelihood that they will take humanities courses in subsequent years.

The administrators, faculty, and students with whom the SUES committee spoke offered any number of explanations for IHUM's difficulties, most of which seem to have some basis in fact. Dissatisfaction with the program clearly reflects students' characteristic resentment of required courses, but it also bespeaks the university's failure to communicate a clear and compelling rationale for the requirement. PWR courses are also obligatory, but they do not encounter the same resistance as IHUM courses, largely because students understand their purpose and recognize the value of the skills they teach. IHUM has also been ill served by the size of its classes—typically around 150—which precludes substantial contact with faculty (and also makes classes easier for students to skip). While many students spoke of the strong bonds they had established with their postdoctoral teaching fellows, we only met a few who had attended an IHUM professor's office hours. Others noted the poor quality of the lecture halls in which IHUM courses were taught; the severity and seeming arbitrariness of the grading system (many students referred to the program as "B-HUM"); and the fact that IHUM courses did not "count" toward fulfilling other general education requirements or, in most cases, toward their majors.

The final criticism is especially revealing, not simply for its frank instrumentalism but also for what it says about students' experience of the freshman year. Traditionally and properly presented as a time for exploration, the freshman year has become a highly impacted affair for many Stanford students. Between a three-quarter IHUM sequence, a required PWR class, and the need to complete prerequisites for prospective majors, many students find themselves with little if any opportunity to take courses purely for interest's sake. Some students, trying to keep open options for more than one major, reported having zero space for exploration in their entire freshman year. Rightly or wrongly, such students often blame IHUM for their predicament.

Reimagining the Freshman Year

Mindful of the pitfalls, yet persuaded of the value of a dedicated curriculum suited to the distinctive character and needs of freshman learners, the SUES committee proposes a revised first-year curriculum. Two broad goals underlie our proposal. First, we wish to make arriving students immediate and full partners in the intellectual life of the university by teaching them what it means to think in a serious, sustained way about significant ideas, questions, and problems. Second, we wish to deliver a curriculum that thoughtfully and intentionally addresses the distinctive needs of freshman learners, helping them to develop not only the skills but also the qualities of temperament—inquisitiveness, self-reflection, intellectual openness—they need to make the most of their time at Stanford.

To accomplish these goals, we propose several significant changes to time-honored Stanford tradition. For all the differences between programs, freshman curricula at Stanford have always been organized around yearlong, lecture-based sequences. We do not believe that this is necessary or, in the current circumstances, desirable. By reducing the total number of units required of freshmen, we believe we can alleviate the problem of impaction, encourage student exploration, and deliver a curriculum more flexible and responsive to students' individual needs and aspirations. At

the same time, by shifting the center of gravity of freshman instruction away from large lectures to small seminars, we can ensure that all students have the opportunity, at the very outset of their undergraduate careers, to know and work closely with a professor. Finally, and in what is perhaps our greatest departure from Stanford precedent, we do not believe that the humanities provide the sole or necessary vehicle for freshman learning. Every discipline asks profound questions about the world and our place within it, and each offers distinctive methods and protocols for answering them. All offer students fruitful pathways into the university, and all should be welcome in the freshman curriculum.

The specific curriculum we propose consists of three quarter-long courses: a writing course, a "Thinking Matters" course, and a freshman seminar. Having previously discussed the writing requirement, we dedicate the balance of this chapter to Thinking Matters courses and freshman seminars, describing their distinct rationales, their pedagogical purposes, and their relationship to the Ways of Thinking, Ways of Doing breadth system. We also offer some thoughts about how these courses might be structured, staffed, and governed. At the end of the chapter, we briefly describe an optional program, "Education as Self-Fashioning," which we offer not only as an exciting opportunity in its own right but also as a model for how different elements in our proposed curriculum might be creatively combined.

In addition to the curriculum proposed here, the SUES committee recommends that Stanford develop a series of optional, residentially based learning communities for freshmen, broadly on the model of the highly successful Structured Liberal Education (SLE) program. Our later chapter on residential learning discusses this proposal in detail.

Thinking Matters

Thinking Matters courses are meant to bring students immediately into university-level thinking by engaging them in rigorous consideration of large or enduring questions. Course topics should be both captivating to a student audience and broadly accessible, assuming little prior specialized knowledge. Rather than surveying a discipline in an introductory way, such courses will normally be organized around specific ideas, questions, or problems, enabling students to see and experience how university-based knowledge is brought to bear on large issues. Every freshman will be required to take one such course, though we hope and expect that some students will choose to take more.

Responsibility for developing and overseeing the Thinking Matters curriculum will rest with a governance board composed of faculty from across the university, working in close conjunction with the Stanford Introductory Studies (SIS) program. Like the current IHUM board, this governing group will have the tasks of recruiting dynamic faculty; working with them to develop and deliver courses on topics of compelling interest, designed with the specific learning needs of first-year undergraduates explicitly in mind; and assessing the effectiveness of those courses in an ongoing way.

To test the feasibility of our proposal, members of the SUES committee have spent the last several months acting as a kind of proto–governance board, approaching faculty colleagues to determine their interest in teaching Thinking Matters courses, as well as the kinds of courses they might be inclined to offer. The response has been extremely gratifying, with innovative course themes coming in from every corner of the university: "Energy," "Evil," "Brain, Behavior, and Evolution," "Sustainability and Collapse," and "The Poet Remaking the World," to mention only a few. In Appendix 8, we offer a list of over two dozen such proposals by current Stanford faculty. Needless to say, this list is intended to be illustrative rather than definitive, but it does suggest something of the potential range and vitality of the Thinking Matters curriculum.

As the list suggests, Thinking Matters courses will vary not only in discipline but also in structure and approach. Some courses will be taught by individual professors; others will be team taught. Some may confine themselves to a single field, but we expect that most will incorporate multiple disciplines, thus providing students with insight into the different ways in which university-based knowledge is created, organized, and deployed. We anticipate that most courses will follow the standard lecture / discussion section format used within IHUM, but we are certainly not wedded to that model. On the contrary, we hope that Thinking Matters, by bringing together committed teachers from across the university, will become a seedbed of pedagogical innovation.

We also anticipate that Thinking Matters courses will vary in size. While some may be as large as existing IHUM courses, we expect that most will be smaller, in some cases substantially so. Because the total number of student placements will be substantially less for the one-quarter Thinking Matters requirement than for the three-quarter IHUM sequence, this decrease in average class size can be accomplished with no additional cost to the university. At present, IHUM must provide nearly five thousand student seats per year (three for every freshman, minus those enrolled in SLE). The SUES committee projects that the Thinking Matters curriculum will need something between 2,600 and 3,000 seats—that is, between 1.7 and 1.9 placements per student, a ratio designed to provide flexibility in the system, as well as ample space for students who choose to enroll in more than one course. Assuming, conservatively, that the university mounted ten such courses per quarter, or thirty per year, the average class size would be less than a hundred, even if almost all students chose to take two classes. In practice, average class size would likely be somewhere around sixty or seventy, less than half the size of IHUM courses. As in IHUM, students in Thinking Matters would also meet regularly in smaller groups for discussions or any other activities (e.g., labs, writing workshops) appropriate for the particular course.

This is basically what the 10 min presentation 3x per semester should look like, just oriented to the program topic

Two other innovations are important to mention. First, we believe that, in contrast to previous freshman requirements at Stanford, Thinking Matters courses will and should routinely satisfy breadth requirements. Given the robustly interdisciplinary nature of the courses proposed already, we expect that many courses will potentially satisfy more than one requirement. Second, we expect that many will count for major credit, pending the approval of individual programs and departments. These innovations alone should go some way toward reducing the frustration and narrow instrumentalism that pervade the current freshman experience. With greater choice and less impacted schedules, students will be free to navigate the Thinking Matters system in different ways. Some may use the opportunity to explore possible majors, while others will seek to acquire breadth. Others may choose a Thinking Matters course on no other basis than curiosity. It is for the student to choose.

Learning Goals

Because the Thinking Matters curriculum involves a relatively limited number of lecture courses, it offers a privileged venue for developing reflective, intentional freshman pedagogy. Recent years have seen considerable progress on this front at Stanford, with agencies such as IHUM, IntroSems, PWR, and CTL all developing programs and practices to facilitate entering students' transition from secondary to university learning and to develop the skills they need to prosper at Stanford. To build on this success, Thinking Matters courses should be oriented not simply around content delivery but also around a set of shared learning goals keyed to the distinctive (and often quite diverse) needs of freshman learners. We are aware that any centralized set of learning goals must be understood and applied flexibly, particularly in a program that aims to include courses from across the university. Nonetheless, we venture the following list, to convey our understanding of what Thinking Matters courses should aspire to accomplish. Our assumption is that every course will fulfill the first learning goal, as well as most, if not all, of the outcomes included under the second goal (though different courses may rank them in different orders of importance). Under the third goal, courses will be expected to pursue the outcomes appropriate to their particular concerns and subject matter.

Students in Thinking Matters courses should:

1. Develop a sense for what a genuine question or problem is, and what it means to think about an important idea with the sort of disciplined, creative, and critical reasoning characteristic of a university-trained mind.
2. Develop broad, transportable skills that are required in (almost) any branch of university work, including:
   a) Analytical expository writing.
   b) Careful, critical reading.
   c) Analytical and critical reasoning.
   d) Capacities for effective oral communication, including active listening and responsive discussion.
3. Develop a subset of more specific, but still transportable, intellectual skills and capacities, including (but not limited to):
   a) Close reading of texts.
   b) Cultural interpretation.
   c) Historical thinking.
   d) Evaluative reasoning and judgment (e.g., ethical reasoning, aesthetic judgment).
   e) Argument analysis.
   f) Social analysis.

g) Meta-level assessment of the sources and validity of cognition (and symbolic systems for cognition) considered as such.

h) Scientific analysis, including the ability to formulate hypotheses and to develop experimental means to test them.

i) Assessment of the probative value of evidence.

j) Statistical reasoning.

k) Quantitative reasoning.

Staffing

Developing effective pedagogy is inseparable from the question of staffing. If Thinking Matters courses are to do all that we ask of them, it is crucial that they provide students with substantial contact time with trained, professional teaching staff. Here again IHUM offers a useful model. While IHUM lectures are delivered by professors, the twice-weekly discussion sections are run by a cohort of distinguished postdoctoral teaching fellows, recruited in national searches and hired on three-year contracts. Having looked carefully at the matter, we are convinced that both practices—convening two weekly discussion sections rather than the single section used in traditional lecture courses, and relying on postdoctoral instructors rather than graduate students to teach them—significantly enhance freshman learning, particularly in the crucial area of skill development. (Students in the IHUM program appear to agree, consistently offering teaching fellows higher marks than professors in their course evaluations.)

Given the demonstrated success of the IHUM model, we hope and expect that it will be carried over into the Thinking Matters curriculum. At the same time, we recognize that this approach may not be replicable in fields outside the humanities, which do not necessarily offer the same supply of high-quality postdoctoral teachers and scholars and where the arrangement of small- group meeting times into two fifty-minute sections per week may not be optimal. In such cases, the governance board, working in conjunction with relevant faculty and the SIS office, will need to devise effective solutions consistent with the broad goals of the program. Deploying graduate students in Thinking Matters courses offers a possible solution, but one that would need to be carefully thought through. There is simply no way that graduate students can or should be asked to carry the same workload as full-time postdoctoral teaching fellows.

However staffing matters are resolved in particular cases, it is vital to ensure that every Thinking Matters course is exceedingly well taught, with engaging professors and dynamic, well-trained instructors grounded in relevant fields but also attuned to the needs of freshman learners. The program as a whole should be generously resourced, maintaining (or preferably reducing) the current student / staff ratio of IHUM. Both faculty and instructors should have ample resources for cocurricular programming, as well as ready access to the services of entities such as the Hume Writing Center and the Center for Teaching and Learning, which offer specialized pedagogical training relevant to freshman learning. Given its smaller size, the Thinking Matters program will almost certainly cost less to run than the IHUM program it replaces, but we emphasize that the university should approach the transition not as an exercise in cost cutting but rather as an opportunity to create a national model of effective freshman teaching and learning.

Freshman Seminars

Introductory Seminars Today

Surveying the state of undergraduate education a generation ago, the CUE detected a disturbing lack of student contact with faculty, especially during students' early years on the Farm. That observation provoked a substantial institutional response, leading directly to the creation of Stanford's current Introductory Seminar program. Today, eighteen years after the CUE report, Stanford offers more than two hundred IntroSems annually, full of topics certain to stir the imagination of any curious person. While some seminars give preference to sophomores, a substantial majority—120 of the 200—are dedicated freshman seminars, virtually all of which are taught by Academic Council faculty. Given the sheer number of offerings, there is doubtless some variation in the quality of courses, but, taken as a whole, the IntroSem program represents one of the jewels of Stanford.

Our conversations with students revealed at least two crucial benefits they gain from freshman seminars. First, they receive an immediate introduction to university-level thinking as they grapple with compelling questions and problems in a small-group setting. Second, they have the opportunity to establish a personal relationship with a faculty member, an experience that not only introduces them in an irreplaceable way to the intellectual mission of

the university, but also has high-value downstream consequences. Faculty members met in freshman seminars often become students' advisors, their research supervisors, or the directors of their senior theses, roles that PWR lecturers and IHUM teaching fellows are not ordinarily able to play.

Judging from course evaluations, students who take IntroSems rate the experience very highly. Some take more than one. Faculty members who teach IntroSems also speak positively of the experience, appreciating the small and relatively informal setting, the chance to get to know students as individuals, and the opportunity to choose whom to admit to the courses. (Under current practice, students submit short applications to seminars, which faculty instructors are allowed to vet.) Several of our colleagues described IntroSems as their favorite classes to teach, though their enthusiasm was in some cases tempered by worries about the burden that the seminars placed on departmental teaching resources.

Members of the SUES committee quickly and unanimously agreed on the value of IntroSems, particularly those directed at freshmen. Our only significant concern was that not enough students take them. In recent years, about 65 percent of freshmen have taken IntroSems. That proportion grows slightly, to just under 75 percent, by the end of the sophomore year. While these numbers are impressive, they still mean that close to six hundred students per class do not take a seminar during their freshman year and that more than four hundred do not take one at all. While we did not study the matter exhaustively, it appears from the data we saw that these students come disproportionately from certain groups, including athletes (who generally have practice in the afternoons, when most seminars are currently scheduled), students pursuing degrees in engineering and other high-unit majors, and, most worrisome, so-called "at risk" students—students entering Stanford with relatively weak academic preparations. In speaking with students who did not take seminars, the most common explanation we heard was that they could not find time for them in their schedules, though we also met some students who had applied to seminars and been rejected.

Requiring Seminars: Pro and Con

Everyone on the SUES committee agreed on the value of increasing student participation in freshman seminars. We did not agree, however, on how best to achieve this result. After lengthy debate, a majority of the committee concluded that all freshmen should be required to take a seminar. A significant minority disagreed. Let us briefly rehearse the debate.

Those who opposed the requirement warned of destroying the very qualities that have made freshman seminars special, of turning a successful program into just one more requirement for students to tick off. They questioned the university's ability to sustain an adequate number of seminars and, equally important, to match courses to student demand. Without such a match, they warned, students would be channeled into courses they did not want to take, diminishing the significance of the experience for them and, potentially, for their classmates.

Those advocating the requirement countered that Stanford, with over two hundred IntroSems already on the books, has sufficient capacity to meet demand, that peer institutions have implemented such programs with great success, and that the wide array of choices and small-group context of instruction would significantly reduce the danger of student disaffection. (Several cited the example of PWR, which provokes little resentment despite requiring two courses and offering substantially less choice.) Supporters also noted the wider context of the proposed reform, which includes the introduction of more flexible breadth requirements and the replacement of the three-quarter IHUM curriculum with a one-quarter Thinking Matters course. In those circumstances, they argued, asking students to choose— unrestricted by topic or field—a seminar from a list of 120 or more, all taught by Academic Council faculty, would be experienced not as a conventional "requirement" at all but as an institutional license to explore.

In the end, the committee concluded that the great benefits of introductory seminars justified making them a required component of the freshman curriculum. Yet we also believe that the new program should be administered and monitored carefully, to guard against the dangers and unintended consequences described above. It will be crucial, for example, to attend not only to the total number of seminars, but also to when they are scheduled (not every seminar can meet in the afternoon) and to their distribution across fields. With the absence of IHUM and an altered system of breadth requirements, the pattern of student demand may change, but it will still be necessary to develop additional seminars in fields such as engineering and the social

sciences, where student demand has long outstripped supply. The university will also need to be very thoughtful in designing a system for assigning students to particular classes, maximizing student choice but also preserving some process of faculty selection for those instructors who want it.

In contrast to Thinking Matters courses, which exemplify Ways of Thinking and Doing by definition, not every freshman seminar will automatically satisfy a breadth requirement. We hope and expect, however, that most will, subject to the same principles and procedures as other courses. Last but far from least, the university should undertake an early and rigorous assessment of the revised IntroSem program to identify and mitigate any negative consequences. If the program proves more fragile than we suppose, the seminar requirement should be abolished and the program returned to its previous form.

Connecting the Elements: Education as Self-Fashioning

In the course of discussing our proposal with colleagues, we were often asked two related questions. Would students complete the three requirements—writing, Thinking Matters, and a freshman seminar—in a particular order? Were the classes intended as discrete entities, or might there be thematic links between them? To the first question, we have no sure answer; one can imagine advantages to different sequences. In fact, there is no intrinsic need to spread the three requirements across three quarters. Our only recommendation is that students be allowed the freedom to find the courses that best fulfill their needs and interests. To that end, we urge the university to offer a generous array of all three kinds of courses every quarter. If evidence emerges that students benefit from completing the courses in a particular sequence, the governance board should adjust the program accordingly.

As to whether different freshman courses might be thematically connected, our answer is yes, so long as the resulting combinations respect the broad spirit and learning goals of their components. One could imagine, for example, students proceeding from a particular Thinking Matters course into related freshman seminars, allowing them to pursue particular issues in depth. (The IHUM program is currently piloting precisely such a sequence.) One could likewise imagine writing courses that were thematically linked to seminars or Thinking Matters courses. The program's governance board should have broad latitude to explore such options.

Let us close by describing one possible such offering, developed by a group of faculty members working in conjunction with the SUES committee. Called Education as Self-Fashioning (ESF), this course would enable a subset of the freshman class to pursue an integrated program of study while fulfilling their freshman seminar and writing requirements. It would also include a public component, open to broader enrollment and designed to foster campus-wide discussion about the nature and purposes of liberal education.

ESF's premise is that the rich literature about education itself—works in the philosophy and history of higher education, empirical studies of the state of American colleges and universities today, memoirs by prominent intellectuals describing their own educational journeys—forms an ideal vehicle for engaging freshmen in a reflective dialogue about their own educational aspirations, as well as the broader significance of liberal education in the world in which they live. Wedding this process of reflection to the writing requirement allows students to hone their writing skills while working on themes in which they have a strong personal investment.

The ESF curriculum would consist of a small number of linked seminars, each taught by a faculty member working in collaboration with a dedicated writing instructor, either a specially trained graduate student or a professional member of the Writing Program staff. Each seminar would have its own syllabus and intensive writing program, reflecting the personal and disciplinary interests of faculty, but all would be connected by their shared concern with the role of education in fashioning a meaningful life. Building on the success of the recently introduced "First Lecture" component of New Student Orientation, ESF would also sponsor a lecture series in which prominent figures, some from Stanford and others from outside, would speak on some aspect of liberal education, broadly understood. Lectures would be supplemented by discussions and follow-up panels, with a goal of sustaining an ongoing, campus-wide conversation about the aims of liberal education. These lectures and discussions would be an integral part of the ESF curriculum, required for students enrolled in the program

but also open to the public. Freshmen, in particular, would be encouraged to attend, with the option of enrolling in the lecture series alone for one unit of credit.

Though the ESF proposal represents only one possible way of combining the elements of the freshman curriculum, we believe that it satisfies our vision for freshman-year learning in uniquely powerful ways. Students would be brought immediately into serious university-level thinking, with the university itself as the subject of exploration. They would work closely with faculty members and writing instructors, who would assist them in formulating and writing their own thoughts about the educational enterprise. In the process, the ESF program would help students chart more thoughtful, intentional pathways through the university, while simultaneously engendering a campus-wide conversation about the aims of a Stanford education. We believe that it has the potential to become a signature Stanford program, and we already have an enthusiastic cohort of teachers ready to design and teach it.

Recommendations

1. Replace the current three-quarter IHUM requirement with a one-quarter "Thinking Matters" curriculum, with appropriate faculty governance structures, generous staffing, and deep, consistent attention to the distinctive needs of freshman learners. Courses should be piloted in 2012–13, with a goal of rolling out the new requirement in the fall of 2013.

2. Require every freshman to take an introductory seminar with an Academic Council faculty member, subject to the provisions described above, including an early and thorough program review to assess the effect of the new requirement. Assuming the recommendation is implemented beginning in the fall of 2013, this review should be launched no later than the fall of 2016.

3. Develop the Education as Self-Fashioning curriculum and other such initiatives designed to foster integrative learning within the freshman curriculum.

encourage them to reevaluate their goals for the remainder of their time at Stanford." Anticipating one possible pitfall, the report stressed the need for substantial institutional support enabling students to participate without depleting their financial aid.

From that modest suggestion has grown one of Stanford's signature programs. In September 2011, Sophomore College—SoCo, in student parlance—completed its seventeenth year, delivering nineteen seminars to over 250 rising sophomores, all of whom attended for a nominal fee. With no other classes or activities competing for their attention, students were able to conduct research, complete collaborative projects, and create deep relationships with instructors and one another. As in previous years, the range and richness of the seminars were extraordinary, reflecting the diverse interests of participating faculty and also the great generosity of Stanford donors, who have given VPUE a substantial endowment with which it supports this program and others. While most seminars met on campus, others carried students out into the world—to historic battlefields and to the Oregon Shakespeare festival, to the Wind River Mountains of Wyoming for a seminar on geological process and to the Serengeti plains of Tanzania for one on the ecological and human dimensions of protected area conservation. One group of sophomores paddled the Colorado River in rafts, reflecting on the many meanings of water in the West in the company of faculty members with expertise in history, environmental studies, and environmental law. If past experience is any guide, the interests and relationships forged during these intense three-week seminars will significantly shape participants' futures, at Stanford and beyond.

So successful has the model proved that Stanford has expanded it. "September Studies" now includes not only SoCo and Bing Honors College but also Arts Intensive. Launched in 2009, Arts Intensive allows small groups of students—sophomores, juniors, and seniors—to immerse themselves in the arts. In 2011, over one hundred students participated in eight different courses, intensive immersions in acting, sound art, fiction writing, filmmaking, ballet, design thinking, photography, and digital arts. The Bing Overseas Studies Program also adopted the September Studies model in sponsoring faculty-led Overseas Seminars, a subject to which we will return in a later chapter.

The SUES committee heartily endorses Sophomore College and the other September Studies programs, which epitomize many of the values that this report is trying to promote: intellectual community, faculty mentoring, deep learning, and structured reflection. Our only question is whether the programs might be expanded so that more students can share in these benefits. Sophomore College, for example, has historically been able to admit less than 40 percent of students who apply, suggesting a substantial unmet demand. (The admission rate has now crept above 50 percent.) We recognize that expansion should not be undertaken lightly. Leaving aside the great cost of September programs, there is danger of compromising the very qualities that make them successful. As the authors of the CUE report noted, one of the strengths of September classes is their "relative isolation" from the rest of campus life; removed from their regular social networks, students spend three weeks in small communities united only by a shared intellectual interest. This quality would obviously be lost if the sophomore class returned to campus en masse. But some judicious expansion may be possible.

The SUES committee also wondered about creating additional September programs, broadly on the model of SoCo and Arts Intensive but serving different constituencies and needs. Among the ideas mooted were seminars dedicated not so much to specific topics as to capacities—such as leadership, civic engagement, and innovation—that are ideally developed in the kind of focused, reflective setting that September term affords. Committee members were particularly interested in the possibility of developing programs specifically for rising juniors, most of whom have declared majors but few of whom have thought carefully about what they hope to accomplish in the remainder of their time at Stanford. One could imagine introducing a system of "junior retreats"—we avoid the term "junior college," for obvious reasons—enabling small groups of juniors to work together with a faculty member in their chosen major on some topic or project, and using the occasion to reflect broadly on the meaning and possibilities of their shared vocation. Clearly September term offers possibilities worth exploring.

Creating Greater Cohesion among Courses

A generation ago, the CUE was struck by the incoherence of many undergraduates' academic programs. While majors afforded some structure and progression, courses outside the major seemed thrown together with little intellectual purpose or design. The commission offered several recommendations to address this problem, but its proposals failed to take root.

The SUES committee also talked about the lack of purposefulness in students' programs, which appears to be even more pronounced today, and what we might do to combat it. The simplest solution is to provide signposts to help students find potentially rewarding curricular pathways. To some extent this is the work of the advising system, a subject to which we will soon turn, but the university can do more. Online registration tools should include links between related courses in different fields, whether preset or produced by filtering algorithms. (Such algorithms—"If you like this, you might also be interested in . . ."—have been a ubiquitous feature of the digital world for more than a decade now, and some of Stanford's peer institutions have successfully incorporated them in online catalogues.) Individual instructors can achieve the same end by including lists of related courses in their syllabi, discussing possible pathways in class, and inviting colleagues from related fields to deliver guest lectures in their classes.

Fostering curricular coherence does not just mean making students better consumers, however; it also includes delivering a better-designed product. If students tend to see classes as separate silos, it is at least partly because we present them that way—as relatively self-contained units, sometimes building on prior instruction in a field but rarely connected to learning outside the field. The SUES committee and its dedicated "beyond the freshman year" subcommittee spent considerable time on this matter, discussing ways in which faculty in different fields might assemble clusters of courses for students who want to pursue interests across disciplinary or field boundaries. Two particular models attracted our interest: what we came to call "helices," intellectual strands that individual students might follow over several quarters, and "blocks," related courses that a cohort of students might take together during a single quarter, each offered on the intensive three-week block schedule of Sophomore College.

The Stanford Helix

Helix courses would focus on questions and concerns that influence and are influenced by multiple disciplines. Although the courses would be offered separately, they would be conceptually intertwined, providing both a structure and a heuristic for student learning. Viable as standalone courses yet united by shared overarching themes, helix courses would encourage high-order perspective and reflection, intellectual continuity across quarters, and broader interdisciplinary approaches to problem solving. In effect, they would do some of the work that IDPs do, but in a much more nimble way.

Helices would consist of three or more courses, intended by faculty to speak to one another and so identified to students. They would be flexibly administered. Taking all courses in a helix would not be mandatory, nor would taking them in a particular sequence, though students, depending on their background and interests, might find certain orders useful. Some students might use a helix to develop interests arising from their majors; others might employ them to further coherence within their breadth requirements.

Conversations with colleagues about the model elicited a host of exciting themes, all likely to be of deep interest to students. An international human rights helix could bring together courses in history, philosophy, law, and international relations to explore ongoing efforts to create norms of international humanitarian conduct in a world scarred by mass violence; a helix on water could bring together courses in environmental studies, public policy, engineering, history, and law. Some helices might focus on particular historical periods or processes—the Renaissance, the Enlightenment, the European colonization of the Americas—bringing together courses in history, literature, art, and philosophy. The digital age; sustainability and the environment; faith, self, and society—the possibilities are limitless.

The Block Quarter

The experience of Sophomore College clearly shows that students learn well when given the opportunity to devote their full attention to things, and that they learn even better in the context of small communities working together on shared concerns. Block courses are designed to reproduce that context within the regular academic year. The idea, in

in SUES parlance, to wed ways of thinking with ways of doing. These include "off the Farm" opportunities—classes and programs enabling students to carry the knowledge, skills, and values they are developing out into the world. Within this last category, we are particularly interested in "community-based learning" (sometimes called "service learning"), which we see as uniquely powerful in advancing the fundamental aims of a Stanford education and preparing our students for responsible citizenship.

Engaged Education

The CUE report discussed student engagement at length. Examining the results of its extensive student survey, the CUE concluded that Stanford provided a superb education to students who were already highly motivated—those who chose their courses thoughtfully and actively sought out faculty mentorship and research opportunities—but that it was less successful reaching other students. Many of the CUE's specific recommendations, from the expansion of introductory seminars to the appointment of a vice provost for undergraduate education, were designed with the needs of those latter students in mind—students with less initiative and energy than the very best students but still capable of serious "intellectual engagement."

A generation later, the undergraduate landscape offers the authors of the CUE report considerable reason for pride. As we have seen, Stanford today offers more than two hundred IntroSems per year, including over 120 faculty-taught freshman seminars. The number of undergraduates doing university-funded research has more than tripled, from just over three hundred per year in 1992–93 to well over a thousand today. Sophomore College has been a spectacular success, and the recently launched Arts Intensive shows equal promise.

Programs not directly inspired by the CUE are also providing students with a wealth of opportunities to engage with the world and, in the process, to engage more thoughtfully with their own educations. The proportion of students studying abroad on a BOSP campus has grown from less than one-quarter a decade ago to nearly one-half today. Stanford in Washington, whose roots trace back to a previous review of undergraduate education, is thriving. Like overseas study, Stanford in Washington offers a compelling model for integrating academic and experiential learning, with students spending their days working as interns in government agencies and then gathering together in the evening for seminars, cocurricular programs, and structured reflection opportunities.

Given the nature of our charge, the SUES committee was particularly interested in programs like SoCo, BOSP, and Stanford in Washington, which are administered centrally and open to undergraduates across the university. But we were also gratified to discover how many departments and IDPs have incorporated principles of engaged learning into their curricula. Departments and programs such as Archaeology and Geology include substantial field studies as a degree requirement; IDPs such as Human Biology, Urban Studies, Earth Systems, and Comparative Studies in Race and Ethnicity (CSRE) require their majors to complete internships. Students interested in marine biology can take classes and conduct research at Hopkins Marine Station on Monterey Bay. Students in Earth Systems and other fields have the option of participating in the Wrigley Field Program in Hawaii, a ten-week interdisciplinary program that brings to bear earth sciences, life sciences, and cultural anthropology to understand the complex issues arising from the interactions of humans and nature in Hawaii's diverse terrestrial and marine ecosystems.

All of these programs involve students venturing off the Stanford campus, usually for a substantial period. But many departments and programs have devised innovative courses and assignments that powerfully engage students without their having to venture far from the Farm. Students studying music, drama, and the studio arts routinely stage performances and exhibitions. Engineers work in teams to design, fabricate, and test products, working with actual clients. Students studying child development observe children at the Bing Nursery School, while students studying biology take courses at Jasper Ridge Biological Preserve, where many become docents. While relatively simple and inexpensive to administer, such exercises pay large educational dividends. They offer students a literal and figurative change of scenery, an opportunity to relate what they are learning in the classroom to the wider world.

Whether they last for a quarter or a single class period, the various programs, courses, and opportunities discussed here share one fundamental property: they all blend deep academic learning with hands-on application, in ways that enrich both. One of the committee's overarching goals is

to foster these kinds of experiences and opportunities across the campus and all four undergraduate years. We are hopeful that many of our recommendations—not only our reconceptualization of the meaning and purposes of academic breadth but also our proposals about residential learning environments, helix and block courses, and expanded capstone opportunities—can help to make Stanford an even more engaged campus than it is today.

Community-Based Learning

Let us turn now to one particular species of "off the Farm" engaged education. Over the last generation, community-based learning has emerged as one of the most exciting fields in American higher education, a field that promises not only to deepen students' education but also to reshape universities' relationship to the wider world. Few if any enterprises hold more promise for building the essential capacities that our students need to function as responsible, reflective citizens at the local, national, and global levels. And few if any universities in the world have a greater opportunity to promote ethical, effective community-based learning than Stanford.

The SUES committee distinguishes "community-based learning" from what is commonly called "community service." We certainly approve of the latter and honor those who perform it. At Stanford, as at many other highly selective universities, community service is now a virtual requirement for admission, and most of our students have done a considerable amount of it before they arrive on campus. Many continue to engage in service at Stanford, sometimes under university auspices, sometimes in independent organizations (some founded by students themselves). For a few, community service is the defining feature of their undergraduate educations.

Here, however, we wish to highlight something different—not service per se, but rather a specific kind of university-based learning. We are interested in particular in educational experiences that thoughtfully and purposefully connect students' service in the community with their academic work. Like other forms of educational engagement, community-based learning provides opportunities for students to apply the knowledge and skills they are developing to the wider world, but it does so in a very particular context, with significant ethical and political implications. In the process, it poses profound questions about the nature of knowledge and skill, who owns them, and who decides how they should be applied.

In emphasizing the value of community-based learning, we do not wish to demean more traditional kinds of service, still less to suggest that students need to run some kind of academic gauntlet before being allowed to volunteer with a community group or tutor children. At the same time, we believe that teaching students to think reflectively about the nature of their service work, to approach communities not just as beneficiaries of their aid but as partners in a common enterprise, will make the work more effective, ethical, enduring, and educational.

Department, IDP, and Student Initiatives

A few departments and IDPs have recognized the significance of community-based learning and begun to incorporate it into their curricula. The *Stanford Bulletin* currently lists some fifty undergraduate courses that devote explicit and substantial attention to community-based or public-service learning. The largest number of courses come from within the School of Engineering, which offers classes on such topics as public service engineering, the ethics and politics of large-scale public works projects, and social innovation and entrepreneurship; in the last of these, student teams design, develop, and produce business plans for technological innovations intended for the public good. Other courses with community-based or public-service learning components are scattered across the School of Education and several units within the School of Humanities and Sciences, notably Political Science, Philosophy, CSRE, and Ethics in Society. One course, "The Ethics and Politics of Public Service," is cross-listed by CSRE, Ethics in Society, Human Biology, Philosophy, Public Policy, and Urban Studies.

Creating effective community-based learning requires not only mounting courses but also developing partnerships with community-based organizations where students might work and learn. Traditionally, finding such placements has been the responsibility of the Haas Center for Public Service or of individual students themselves, sometimes helped by faculty members. In recent years, however, a few departments and programs have hired community engagement coordinators, specialized professionals with expertise in both service-based education and relevant

disciplines, to oversee this vital work. This is an obvious and cost-effective innovation that helps to build and sustain community partnerships while sparing every student who wishes to engage in a community-based learning project the necessity of reinventing the wheel.

While student-initiated organizations typically focus on noncurricular community service, a few have begun to move in the direction of community-based learning. Probably the most conspicuous example—certainly the most enduring—is Alternative Spring Break (ASB). Established a quarter-century ago, ASB seeks (in its own words) to introduce students "to complex social and cultural issues through community visits, experiential learning, direct service, group discussions, readings, and reflective activities." Each spring, small groups of students undertake weeklong learning expeditions organized and led by pairs of specially trained students, working in conjunction with faculty sponsors. This spring, for example, some two hundred students will choose among eighteen different journeys, examining at first hand issues ranging from juvenile justice in California to health disparities among native peoples in South Dakota. Students must complete an academic course on the subject in the preceding winter quarter, and they are expected to participate in structured reflection after their return. While the trips themselves last only a week, many students discover in ASB lifelong commitments and vocations.

The Haas Center

Most of the community-based education currently occurring on campus is connected in some fashion to the Haas Center for Public Service. Founded in 1985, the Haas Center functions not only as a clearinghouse for students seeking public-service outlets and opportunities but also as an important center for teaching and learning in its own right.

The Haas Center's basic premise (to quote its 2010 strategic action plan) is that "civic leadership competencies can be taught and learned" in a university setting. To that end, the center offers an array of academic classes, cocurricular programs, and workshops, ranging from a service-learning practicum required of ASB trip leaders to a five-quarter Public Service Leadership Program, which provides coursework, faculty and peer mentoring, and placements with community partners to support students interested in developing their capacities for leadership and responsible civic engagement in a sustained, intentional way. The center also offers a wide variety of fellowships, internships, and research grants to support students' development as civic leaders. Community-Based Research Fellowships, for example, allow student-faculty teams to conduct research on community-identified needs, while the Public Service Scholars Program conducts a yearlong seminar for students across the university whose senior honors projects have an explicit community dimension. At the same time, the center continues to help students find internship, work-study, research, and service opportunities with community-based organizations. It is currently creating a comprehensive database of community partners, a resource that will help not only in finding appropriate placements for students but also in ensuring that different programs at Stanford are not duplicating efforts or working at cross-purposes.

This last point speaks to a second characteristic of the Haas Center's approach. Put simply, good intentions are not enough. Service undertaken without reflection or an informed sense of responsibility risks not only inefficiency and duplication but also real harm, "breaches of community trust and respect" that may be difficult to repair. This insight is embodied in the Haas Center's "Principles on Ethical and Effective Service," a 2002 statement that has become a national model. The statement lays out specific principles of reciprocity and accountability for public-service initiatives, grounded in the recognition that partner communities have knowledge and skills of their own, as well as the ability and right to define their own needs and priorities. Responsible community service, seen in this light, is as much a task of listening and learning as of speaking and teaching.

Faculty and staff associated with the Haas Center have played a central role in the effort to increase the representation of community-based learning courses in undergraduate curricula, working with individual faculty members and, more recently, with community engagement coordinators in departments and programs. The center offers grants to help develop new courses or to refine courses that already exist. Recently, it introduced a system of certifying all classes that include an explicit service-learning component and do so in an effective and ethical way. Students interested in such courses can now readily find them in Stanford's online registration system without the need to search the listings of each individual department.