

SCUE believes research should be accessible to every willing student in every course of study. SCUE believes the most effective way Penn can equip students to improve the world is through problem-solving learning initiatives. SCUE believes that new technologies can enable innovative styles of teaching and learning.

THE WHITE PAPER SCUE believes that Penn should champion OpenCourseWare. **on UNDERGRADUATE EDUCATION** SCUE believes that Penn should minimize the cross-disciplinary barriers that undergraduates face. SCUE believes Penn should embrace a virtual course-shopping system. **2009-2010** SCUE believes that experiences abroad are significant intellectual opportunities which should be made possible for all University of Pennsylvania students.

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Student Committee on Undergraduate Education

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To the University Community:

Founded in 1965, in a time when undergraduate students had little say in their educations, the Student Committee on Undergraduate Education sought to radically alter the academic foundations of this university. To this end, White Papers on Undergraduate Education were published every five years, espousing the most adventurous ideas to come out of the body in each cycle. Co-education, pass/fail grading, fall break and NSO all appeared in previous White Papers, championed by students who saw areas for improvement on this campus and spoke up.

It is with this illustrious history behind us that the current SCUE body presents its 2010 White Paper on Undergraduate Education. In this, the 10th edition in 45 years, we have attempted to address a wide range of undergraduate educational issues. In the following pages you will find our answers to issues as broad as advising and as narrow as syllabi online, as complex as OpenCourseWare and as simple as research accessibility analysis. You will read of our efforts past and present, but most of all of our visions for a future measured in months, years, or even decades.

Uniting all these visions is an anthology of SCUE beliefs, an enumeration of those tenets most essential to our recommendations. You will find “SCUE believes...” statements in each section that follows, signaling our most important thoughts on each issue.

Before I close, I would like to acknowledge those individuals without whom this paper would not have been possible. First, the SCUE General Body and Steering Committee whose visions and dreams appear in this paper and who dedicated countless hours to thinking and writing – this paper is by and for you. Secondly, to Rob Nelson in the Provost’s Office whose guidance and mentorship have inspired us all. Thirdly, to Administrators throughout the university who have listened to our ideas, however impractical and absurd with great patience. Fourthly, to those professors who prioritize undergraduate education above all else. Fifthly (a most important number when it comes to the White Paper), to those SCUE alumni who inspired much of the content herein.

And finally, to all of you, the readers, for delving into this daunting document and giving the enclosed ideas the consideration they deserve. Without you, this White Paper is no more than a relic of the thoughts of sixty or so undergraduates collected over five years. It will take the entire Penn community to put these ideas into action, to push for those changes that will propel the University forward into the next decade and beyond. I believe in the ability of a few (or 48) pages to inspire concrete change and I hope that this White Paper does just that. This is a call to action; it’s up to you to answer it.

Respectfully submitted,

Alexandra Berger
2009 SCUE Chair



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A NOTE: HOW TO READ THIS WHITE PAPER

The White Paper is divided into three sections as evidenced by the Table of Contents above. The first, In the Classroom, focuses on those issues that are particular to in-class learning experiences. The second, Campus Life, relates to those learning experiences that expand beyond the walls of traditional classroom learning. Finally, Beyond Penn reaches past the confines of Penn’s campus, explicating how the University can better relate to the outside world.

Throughout the White Paper are sidebar boxes that note specific issues related to each section. “In Focus” boxes elucidate our background information or recommendations in more detail. “What If?” boxes present more radical visionary ideas where they are relevant. “Spotlight” boxes provide examples that best exemplify recommendations or suggestions for improvement. There are also quote boxes which relay non-SCUE opinions or thoughts on some topics.

The White Paper was written to be read cover to cover, but each section stands alone such that you can (if you wish) read just those sections that you find most applicable or interesting to you. Each section contains a Status Quo section along with Recommendations and Vision statements that address specific aspects of the problems at hand.

Finally, this White Paper can also be accessed online at www.scue.org/whitepaper. Please feel free to peruse the digital copy there and to send comments and suggestions to scue@dolphin.upenn.edu.

SCUE believes that seminars are ideal for requirement fulfillment, especially in scientific disciplines. SCUE believes that seminar creation, particularly in the sciences, is essential to the diversification of courses within the sectors and to the broader improvement of students' learning experiences. SCUE believes the application and approval process for sector courses undermines the ability of the curriculum to function effectively. SCUE believes the existing Benjamin Franklin Scholars program should be transformed into a more structured, significant intellectual experience. SCUE believes the benefits of making available .5-credit and 1.5-credit courses strongly outweigh the costs. SCUE believes TAs should be required to participate in department-specific training, as different disciplines demand unique communication techniques. SCUE believes the most effective way Penn can equip students to improve the world is by orienting components of the undergraduate experience towards problem-solving.

CURRICULUM SCUE believes that both inside and outside the classroom, new technologies can enable innovative styles of teaching and learning. SCUE believes all rooms should be equipped with a minimum amount of hardware, specifically a technology cart including a computer and a projector. SCUE believes that Penn should champion OpenCourseWare for both current students and the global community. SCUE believes research should be accessible to every willing student in every course of study. SCUE believes that Penn should minimize the cross-disciplinary barriers that undergraduates face.

PEDAGOGY SCUE believes that students planning to double major should be given the opportunity to write an interdisciplinary thesis that bridges the research techniques and combines the resources of multiple departments. SCUE believes that increasing these school-wide minors will connect students to interdisciplinary opportunities. SCUE believes Penn's commitment to helping students make informed decisions can be enhanced through centralization and standardization of the formal advising system. SCUE believes Penn should establish one location to house a university-wide advising department. SCUE believes Penn should embrace a virtual course-shopping system. SCUE believes that certain technological advances could ease the inevitable burden associated with course registration.

TECHNOLOGY SCUE believes that posting syllabi online affords numerous benefits to faculty and students alike. SCUE believes freshmen in particular need to be given greater opportunity for smaller, academically focused residential programs. SCUE believes that the University should facilitate group work by increasing available spaces. SCUE believes that Penn should motivate and enable undergraduates to engage civically through academic partnerships. SCUE believes ABCS must not only tie civic engagement to course credits, but should immerse students in challenging learning atmospheres. SCUE believes that experiences abroad are significant intellectual opportunities which should be made possible for all Penn students. SCUE believes that Penn should emphasize research during study abroad preparations and cultivate ways for students to create academic opportunities while abroad. SCUE believes that Penn's central leadership should consult more broadly with schools and research centers in constructing a global vision for Penn that serves all its stakeholders, and enhances Penn's public profile.

In The Classroom

TOTAL
UNDERGRADUATE
MAJORS CURRENTLY
BEING PURSUED: 83

FALL 2008

STUDENT-FACULTY
RATIO: 6:1

FALL 2008

CURRICULUM

GENERAL EDUCATION REQUIREMENTS

PROBLEM: In practice, the curriculum falls short of its potential for encouraging exploration and balancing breadth with depth.

SOLUTION: Promote innovative course and grading formats while improving requirement review process.

STATUS QUO

Among Penn's decentralized, school-dependent curricula, the College of Arts & Sciences is most complex. Because of the College's size and centrality in undergraduate education, SCUE believes it is crucial to address its curricular weaknesses. The topic of curriculum can be approached from two angles: First, on a larger and more theoretical level, what are the goals of the curriculum? Second, does the curriculum fulfill these stated goals?

SCUE agrees with the general motivations and purposes of the College curriculum. A well-rounded liberal arts education should balance breadth with depth, as well as encourage exploration and a common experience for all College students. However, we believe there is a disconnect between what the curriculum is designed to achieve in theory and what it achieves in practice.

Majors allow students to explore a subject in depth. The General Education Curriculum equips students with intellectual tools through Foundational Requirements and a breadth of knowledge across fields through Sector Requirements. Fulfillment of the General Education Requirements (GERs) should emerge naturally from and serve as complements to a student's major course of study. Yet GERs, particularly the seven sectors, often burden rather than guide educational growth. They restrict the curriculum, limiting intellectual pursuits and one's ability to explore.

It is important for students to have the opportunity to engage in different types of learning. However, limited course options for some requirements constrict how students can design their schedules and, by extension, access unique pedagogical models. Moreover, discrepancies in how sector requirements are administered mean the curriculum functions differently, and sometimes unfairly, for different students.

RECOMMENDATIONS

To achieve their curricular ends in a productive way, GERs must be administered in a more purposeful, flexible manner. This involves addressing both the availability of courses that fulfill sector aims and the process by which courses come to count for requirements.

In considering solutions, SCUE acknowledges a range of challenging questions. How do we encourage professors and departments to champion innovative courses that meet requirement missions? How can Penn compel students to take courses outside their comfort zones without overloading them with requirements? How do we encourage exploration without compromising academic rigor?

VISION: CREATE DIVERSE SCIENCE SEMINARS

SCUE believes that seminars are ideal for requirement fulfillment, especially in scientific disciplines. These courses typically allow greater student-faculty contact and more thorough analysis of topics, maintaining student interest and confidence in unfamiliar fields. While lectures are often effective for transmitting information to students on science tracks, they can be overwhelming for non-majors.

The issue of burdensome requirements is especially a problem in the sciences, with relatively few courses counting towards Sectors V through VII. A student seeking to fulfill the Society or Arts & Letters sectors enjoys a wider selection pool than one approaching Physical World or Natural Sciences & Mathematics. Though the bulk of Sector V through VII courses are large lectures that accommodate many students, individual courses do not always address student scheduling concerns and non-majors' intellectual strengths and interests.

In addition, in the science sectors, many options are either steps on a science major's trajectory, such as Introduction to Chemistry or Introduction to Physics, or are perceived as unchallenging. While this may be attributed to the nature of these disciplines, there is certainly room to expand what Penn students are offered in terms of sciences.

Non-majors should be given the option to explore challenging, expansive science courses without facing potentially disparaging curves set by those on science major tracks. Seminars can facilitate learning about scientific topics in ways that are accessible and relevant to non-majors. Examples of potential options include approaching climate change from the angles of all stakeholders or exploring how scientific debate shapes the healthcare industry.

The value of having more non-major science seminars is threatened by the challenge of creating and running them.

Of the many structural barriers, the most obvious is financial. On a per-student basis, it is more cost-efficient for a department to pay a professor to lecture to 300 students at once than to teach 15 students in a seminar. Another obstacle is academia's general focus on teaching as secondary to research, especially at a major scholarly institution. Because research is the priority in tenure decisions and professional stature, it is difficult for professors to find time to develop and run alternative seminars.

Despite these potential setbacks, SCUE believes that seminar creation, particularly in the sciences, is essential to the diversification of courses within the sectors and to the broader improvement of students' learning experiences. Making seminar development a priority at the departmental and university-wide levels will require all stakeholders to innovate. Administrators should introduce greater incentives for running these courses and explore untapped faculty resources towards this end.

One potential way to expand seminar options is through increased partnership with Penn schools currently underutilized at the undergraduate level, such as the School of Medicine. A handful of Freshman Seminars are currently taught by medical faculty on topics ranging from killer viruses to sleep. Broaden-

ing institutional support for and promotion of these opportunities can expand this list. Another avenue for increasing science seminars is widening collaboration with Penn's interdisciplinary centers. Professors associated with specific cross-field learning hubs could teach in their particular area of focus, which may be more attractive than teaching a generalized introductory course. Students would gain not only from an intimate learning environment, but also from exposure to interdisciplinary learning. [See page 29 for a discussion of incorporating undergraduates into interdisciplinary centers.]

VISION: DRIVE NON-TRADITIONAL COURSE ENROLLMENT

In pressing for innovative curricular opportunities, SCUE acknowledges that many such options already exist but are not being taken full advantage of by students. Highlights include Academically Based Community Service (ABCS) and Communication Within the Curriculum (CWIC) courses, which expose students to topics through unique learning methods.^{1,2} Although administrators say they are willing to invest more resources in non-traditional learning, increased expenditure is not justified without sufficient demand. SCUE therefore seeks to both understand why students are not enrolling in these classes and to present strategies for increasing interest.

Given that ABCS and CWIC courses are already promoted on campus, it is clear that lack of publicity is not the entire reason behind underwhelming student participation. SCUE observes lack of curricular relevance as a major barrier to enrollment. Because these options often do not count toward sectors, students facing a daunting list of requirements lack incentives to fit these types of classes into their busy schedules. This flaw reflects the challenge of encouraging exploration without adding additional curricular requirements, particularly when the aim is ideal but not crucial to overall curricular aims.

ABCS courses represent the type of exploration an effective

liberal arts education should encourage. SCUE advocates that more students take advantage of these experiences, but agrees with administrators that such classes should not be explicitly mandated through a community service requirement. This raises concerns of begrudged and unmotivated participation, which would undermine the ultimate aims of civic engagement and risk rupturing Penn's strong relationships with the community. Moreover, SCUE is reluctant to tack on additional requirements given students' already heavy course loads. Thus, a strategic way to encourage students to take ABCS courses is to allow them count such courses toward relevant sector requirements. [See page 40 for how to integrate ABCS courses into the existing curriculum.]

VISION: REDUCE EMPHASIS ON GRADES

The perception of GERs as burdensome creates a culture of students taking easy courses, rather than exploring topics they find interesting, challenging and fulfilling. Students are not truly encouraged to step outside their comfort zones, viewing College requirements as something to get through rather than as an opportunity to expand their horizons.

Minimizing focus on grades, especially in Penn's competitive environment, would motivate students to seek out intellectual challenges. A logical approach is to allow students to take a limited number of requirement courses with pass-fail grading. Given that the stated purpose of sector requirements is to expose students to broad knowledge and ways of thinking, this is not at odds with the simultaneous goal of academic integrity.

SCUE recognizes that reduced grade pressure may compel students to commit less effort to course participation and mastery of material. However, we believe this possibility must be viewed within the context of the current system. Many students already treat courses they take to fulfill sectors as pass-fail, deliberately choosing courses considered easy by Penn Course Review rank-

In Focus: Development of Current College General Education Curriculum

Before 1987, the College curriculum centered on a distributional model. Every course fell under a particular category of study and students took three courses in each distributional group. In short, every course fulfilled some requirement. This system was low-maintenance for students and administrators and allowed freedom in course selection. However, it also created room for students to manipulate the system. Without frequent review of distributional courses, it was difficult to regulate course rigor. The fact that all courses filled a requirement implied relatively low expectations on the part of both faculty and students for a curriculum that purported to promote educational breadth.

In the 1980s, Penn's College of Arts and Sciences brought faculty members together to think about and give shape to a new general education curriculum. The purpose of these discussions was to give voice to faculty concepts of a liberal arts education, assessing how faculty perceived a general education should look. This process allowed professors to gain insight into their roles in promoting educational breadth and cultivating a variety of educational competencies.

Thus, the current general education curriculum was born out of a faculty interest in having more explicit expectations for what individuals and departments should teach in a general education curriculum and how they should teach it. If the primary focus of the ensuing reforms was on the faculty and what they teach, the secondary focus was on the constellation of courses students select as they construct their educational programs.

Sectors, groups of courses defined by specific intellectual interests that span disciplines, were introduced in 1987. Gradually, other components were added including a Writing Requirement, the Quantitative Data Analysis Requirement and the Cross-Cultural Analysis and Cultural Diversity in the U.S. requirements. Other potential requirements that were discussed by stakeholders but were never added included requirements for research, community service, and ethics.³

ings or peer opinions. Moreover, mechanisms for accountability and frequent evaluation of pass-fail trends will ensure the system is not producing unintended negative consequences.

VISION: IMPROVE SECTOR APPROVAL AND REVIEW PROCESS
SCUE believes the application and approval process for sector courses undermines the ability of the curriculum to function effectively. The College must ensure that students who take classes that align with sector missions are in fact earning credit for them.

As part of a mandated review process, College administrators evaluate two of the first four sectors and two of the last three sectors yearly to determine the status of courses that count toward each requirement. Professors can also apply to have their courses fulfill sectors. However, biennial review of sectors does not conform to the dynamic nature of course creation and evolution. The process does not occur frequently enough to ensure that requirement lists accurately reflect course offerings.

In addition, many professors are unaware that existing courses must be approved or do not recognize the benefit of having their courses fulfill requirements, and thus never go through this process. As a result, courses that clearly align with sector missions sometimes do not count toward them merely because they have never been brought for approval. Also, classes listed in registration materials as fulfilling certain sectors are sometimes retroactively denied their designation, creating further challenges for students who enrolled in order to meet requirement needs.

The appeal process for having a course fulfill a sector is unfair and unpredictable. A minority of students are able to get non-approved courses counted for requirements a posteriori by lenient advisers, giving them more flexibility. The system, however, needs to proactively work well for all students, not a portion of them.

SCUE proposes more frequent reviews of each sector. This will ensure that changes in faculty or course content do not alter adherence to requirement missions and that all eligible courses are being considered for sectors. Recognizing the financial and time constraints of increasing curricular committee meetings, SCUE in the short term advocates making the course and credit-approval processes more transparent, standardized and understood.

Until more fundamental changes to the curriculum are achieved, improving the approval process is crucial to ensuring a less burdensome system. It should be easier for students to appeal to have courses count for requirements, and successful appeals should be made universal precedents. This effort should be coupled with better publicizing of the approval process to faculty. Together, these solutions will ensure that existing courses that meet sector goals do count for these sectors.

The student voice is often missing from curriculum discussions, reflecting a broader lack of transparency throughout curricular policy. Though it is understandable that the brief undergraduate life cycle is not a priority for administrators evaluating curricu-

lar issues, the centrality of course requirements to shaping the Penn experience signals the need for increased student involvement.

CONCLUSION

Though SCUE agrees with the philosophy behind the College's General Education Requirements, in practice, these requirements fail to meet their stated missions. Through expanding seminars in the sciences, encouraging enrollment in non-traditional learning courses, promoting exploration through pass-fail grading and improving the sector review and appeal processes, Penn can allow College students to create more meaningful academic paths.

INNOVATIVE APPROACHES

PROBLEM: Curriculum standards constrain individualized and non-traditional learning experiences.

SOLUTION: Advance opportunities and support for alternative tracks and credit models.

STATUS QUO

Although Penn often supports students' individual academic goals, the most motivated students may be more constrained by the curriculum structure than helped by it. The rigidity of a standard curriculum presents formidable challenges to qualified, motivated students seeking to shape their own curricula. The University has installed a number of checks and balances—such as paperwork and multiple approval points—in order to prevent students from reducing the academic rigor of their educations. However, such stringent requirements may stifle the intellectual freedom of students who wish to be inventive in their educational approaches.

RECOMMENDATIONS

To counteract this restrictive atmosphere, the University should promote ways for highly motivated students to explore, supplement and challenge their notions of an education. SCUE recognizes such options would not be ideal for all Penn students; rather, we believe a select subset of students would benefit greatly from experiencing a unique four-year experience. At the same time, innovating on the individual course level, with classes that carry different credit weights and commitments, would enable a much wider base of students to increase their educations' flexibility.

VISION: CREATE INDIVIDUALIZED CURRICULUM TRACKS

Penn can promote educational innovation by removing standard degree requirements for students with the vision, skills and motivation to design their own curricula. One approach is reducing the General Education Requirements, leaving more room for student-driven exploration. A resulting curriculum would provide a more flexible, multifaceted structure that would enable exploration of knowledge in a manner not currently possible. The College's Pilot curriculum showed promise in this sphere by creating fewer but broader requirement categories; SCUE suggests its successful elements be reworked into future curricular models.

What If? The College Adapted A New Curriculum Model

With the next major review of the College curriculum a few years away, SCUE urges administrators to push the envelope and radically rethink curricular elements.

A more radical approach to the College curriculum's shortcomings is a return to the pre-1987 distributional model. This would replace the sectors with broad buckets in which courses are classified. Mirroring successful aspects of Wharton requirements, the College could have three general requirement groups: Social Structures; Language, Arts, & Culture; and Science & Technology. Students would take two courses each. Allowing every course to count for some requirement follows the logic that every class taught at Penn should contribute in some way to the curriculum's stated goals— whether students develop general skills or approaches to knowledge or engage intellectually in a variety of disciplines. If a course fails to achieve this, it should not exist.

Another approach is stipulating that some of the requirement courses students take must be seminars. Encouraging a diversity of educational models is as important as a diversity of disciplines. This requisite exposes students who might not otherwise gravitate toward seminars to the benefits of close faculty interaction and in depth, peer-driven learning.

Another approach to an individualized curriculum is dismantling restrictions of traditional departments and allowing students to specialize in theme clusters rather than discrete majors and minors. The current system of double-major and interdisciplinary-major studies is at times very rigid and discouraging of intellectual pursuit. Segregated departments standardize students' experiences, preventing them from studying broad, multi-dimensional approaches to problems. [See page 26 for a discussion of the importance of interdisciplinary learning.]

While SCUE commends the growing interdisciplinary majors, minors and programs Penn offers, we also emphasize the need to accommodate students whose academic interests do not align with what already exists. Many existing programs, including Philosophy, Politics and Economics, grew out of student initiative, but the time-consuming and unpredictable process of creating new majors means students are not able to reap benefits in the present. With mechanisms for individualized study in place, students are given the responsibility as well as the tools for identifying and carrying out their visions. Through creating an individualized curricular track program, Penn can institutionalize and streamline its support for such academic inventiveness.

The nature of such programs means participating students need to be self-motivated and extremely engaged. A rigorous review process would assess necessary personal qualities as well as the

feasibility of their academic plans. Determining course of study, from what classes are to be used to what the cumulative product would be, should be facilitated by a specialized adviser. This point person would uphold the academic rigor and overarching unity of the individualized curriculum, as well as ensure that the student does not fall through the cracks without a traditional major structure to provide guidance.

VISION: REVITALIZE BEN FRANKLIN SCHOLARS PROGRAM
SCUE believes the existing Benjamin Franklin Scholars (BFS) program should be transformed into a more structured, significant intellectual experience. This program is ideal for promoting individualized curricular tracks.

Our vision for the BFS program mandates that its students experience the excitement of exploring new intellectual territory. In its current state, the BFS program augments, but does not define, the academic experiences of its scholars. Through its previous work with the Center for Undergraduate Research and Fellowships (CURF), SCUE has identified shortcomings in the BFS structure and expectations. We advocate channeling these resources more productively by transforming BFS into an alternative curricular program. [See page 25 for an outline of SCUE's other work with CURF.]

BFS has long been considered an honors program by much of the Penn community. However, the largely decentralized and ambiguous nature of the program is problematic for many students involved as well as for its managing administrators. BFS's honors designation shifts focus from student pursuit of unique intellectual possibilities. Therefore, SCUE believes the program should be revitalized to focus on particular scholarly opportunities that could be unique to BFS. Towards this end, the following priorities should be maintained: unified course components, interdisciplinary focus, discovery process, rigorous admissions and strong advising.

In terms of unified pedagogy, BFS courses must include both a writing and discussion component. Each of these pieces must be specifically geared to assist students with developing key research and analytical skills that they will utilize throughout their college careers.

In addition, SCUE hopes BFS will define a new content-based curriculum unique to each member of the program. We envision this curriculum to be interdisciplinary, enabling students to chart academic courses involving elements of multiple Penn schools. BFS members would prepare and follow an individualized curricular path, meeting with specialized advisers who would track their progress and ensure academic rigor.

Currently, students are invited to join BFS upon admission to Penn, based on undisclosed aspects of their applications. They may also apply during their first two years of study with an application based on previous coursework, GPA, essays and faculty recommendations. SCUE proposes that BFS not be offered upon admission; rather, interested students should apply once they have matriculated. In order to help students identify their interest in the program, freshmen should be strongly encouraged to take a BFS course in their first semester and should be

educated about BFS by their advisers. Interested students would apply to BFS between their second and fourth semesters. Because this vision of the program grants significant academic freedom to each scholar, the admissions process must be sufficiently rigorous to ensure each course of study is properly defined. For this reason, the main criterion for admission should be a comprehensive proposal followed by a thorough interview, forcing applicants to defend their plans. In this way, BFS would become a program that motivated students discover and take time to understand.

Upon acceptance to the program, scholars will need significant advising to ensure their unique courses of study are fulfilled. Because the only unique BFS curricular requirements will be active participation in BFS seminars, similar to the current system, each scholar will need constant advising to refine his unique course of study. As the BFS program currently has a strong advising system in place, this requirement fits well within the existing program.⁴

VISION: CHAMPION ALTERNATIVE CREDIT MODELS

The current convention at Penn is the one-credit unit course. These courses range from two hours of class time per week to as many as eight hours of class time per week. Presently, there is some variation in course credit units; some classes are worth .5-, 1.5-, or 2-credit units per semester. The most robust example of .5-credit courses exists in the Marketing Department in Wharton. Existing 1.5-credit unit courses consist of a science lecture course combined with a co-requisite laboratory course. The majority of these courses are taught through the College departments of Biology, Chemistry, and Physics; within these departments, a variety of models are utilized.

SCUE recognizes the challenges of implementing new course models, including complications in the credit-counting process and a monopolizing of departmental time and funding. However, SCUE believes the benefits of making available .5-credit and 1.5-credit courses strongly outweigh the costs. These courses could provide unique learning environments for Penn stu-

Spotlight: Cornell's College Scholars Program

Cornell's College Scholars Program follows the philosophy that some students do not need usual degree requirements as guidelines for selecting courses and would benefit from creating an individualized curriculum. Involving up to 40 students in each class, the program frees students from all degree requirements. Instead, these students complete a senior project and participate in seminars each semester which investigate basic problems and texts. The admissions committee does not expect students to have a concrete path set for their education when they apply; rather, the committee looks for those who have ideas of their academic direction and the skills to carry out the program successfully. Examples of participants' research ranges from "The Role of Music and Art on Cultural Development" to "Politics Behind Science: Producing Ethical Legislation in the 21st Century."⁵

dents, diversifying course offerings, making credit increasingly proportional to workload, and enabling focus on specific topics and skills.

Half-Semester Seminars

Based upon the model that currently exists in the Marketing Department, SCUE proposes the creation of other courses worth .5-credits that meet for half of a semester. Students would be able to explore specialized topics either outside or within their majors. Because of the lowered .5-credit burden, students would be encouraged to explore unfamiliar and challenging topics with reduced threat to their GPAs. Additionally, students who intend to specialize in that area would reap the benefits of exploring a particular topic in depth. Although the broad lecture course provides a means for surveying a wide swath of material, .5-credit courses would allow for the exploration of specific topics closely. This close study provides an exceptional way in which undergraduate students can experience graduate-level study.

On the faculty level, professors would gain more flexibility and range in their schedules. For example, if a professor needs to travel for research, she can teach for half a semester and then leave, giving her two extra months for on-site scholarship. In addition, professors would be able to interact with students with an interest in exploring their topics of research more specifically. In contrast to the survey lecture, which often forces professors to teach subjects that are not in their direct purview, .5-credit lecture courses will allow professors to teach on their particular areas of expertise and interest. Departments and programs could also encourage their graduate students to teach courses worth .5 credits, highlighting incentives such as stipends or the opportunity for valuable teaching experience.

In order to ensure that these classes contain sufficient academic rigor, the work required must be equivalent to that required in half of a typical one-credit course. This could include, as is utilized in the Marketing Department, a paper and exam or two papers, depending on the subject matter. The host department or program would ensure that academic rigor is maintained. These courses should be seamlessly integrated into the departmental or program major and minors, generating higher levels of student interest that allows for their success and sustainability.

Mini-Research Seminars

A second model for the .5-credit course is a research-based class, meeting once a week for an entire semester. Such a course, similar to the year-long thesis course required for some majors, would allow underclassmen to explore the research process on a smaller scale before engaging in a major research project. Mini-Research Seminars would include a once-a-week lecture, meant to provide background material on the topics about which enrolled students would be writing, as well as to guide the research and writing processes.

This course model is ideal for sophomores and juniors with interests in research. The setting can provide an excellent introduction to writing a specialized research paper or studying a topic with a particular set of skills. In addition, it would help

Spotlight: A Sample of Existing Alternative Credit Models

Marketing Department

Within Wharton's Marketing concentration, a variety of .5-credit courses may be taken for elective credit, including "New Product Management," "Pricing Policy," and "Channel Management." According to the Wharton Academic Advising Office, the purpose of these courses is to expose students to more specific topics that do not merit an entire credit of work but that are important to the study of marketing.⁶ The courses are taken for half a semester and are taught by Wharton professors, meeting for a regular number of course hours within that time period. Students are thus able to take one or multiple .5-credit courses for the first part of the semester, and a different set for the second part of the semester. Additionally, they may take one .5-credit course one semester, and another .5-credit course another semester. Wharton Marketing Concentration students must take two credit units of these elective courses, which can be made up of any mix of half credit and full credit courses from a pre-approved list.

Physics Department

In the Physics department, introductory Physics courses (101-102, 150-151, and 170-171) are taught with a lecture and co-requisite .5-credit lab. The grades received in each of these course parts are averaged together to make up a final grade. Biology's first semester .5-credit lab (123) must be taken at the same time as an introductory Biology lecture course (101, 121). If one opts to take the second semester introductory biology course (102), he must also enroll in the co-requisite lab (124), or may take this lab separately for .5-credits. In the Chemistry Department, the introductory lectures (101, 102) must be taken with a co-requisite lab; grades are recorded separately for the two courses (053, 054).

enrolled undergraduates build an academic relationship with a professor in their field of interest, who might become their mentor or help them seek out other mentors in related fields. Research projects completed in the context of the course could also lay the foundations for senior theses or senior design projects.

SCUE imagines such courses would be run through departments and programs, but envisions possible partnerships with CURF and associated research programs. As the Mini-Research Seminar provides the possibility for interdisciplinary study, courses within this program could be co-taught by professors from different fields.

1.5-Credit Courses

Currently, the only models for 1.5-credit courses exist in the sciences. Translating this structure to fit more departments, expanded 1.5-credit courses would be made up of an introductory lecture combined with an additional .5-credit specialized recitation taught by a teaching assistant. Thus, students enrolled in a broad survey course would have the option of additionally enrolling in a supplementary, specialized recitation section simultaneously.

This structure would work best in the largest and most popular lecture courses, such as Psychology 001 and Economics 001. Major introductory courses are ideal 1.5-credit course options because they usually require the employment of many TAs and thus have graduate students already available and interested in teaching. In addition, these introductory lectures are extremely broad and would provide ample opportunity for a diverse group of students interested in a variety of related topics.

Often, professors must be extremely selective with the material they cover in broad survey courses. It is impossible for such teachers to go into a large amount of depth on each topic. An

additional recitation would allow students who are interested in topics covered in the course to learn about one part in great depth. These recitations would be offered on different pieces of course material, allowing students to gain increased expertise on one aspect of the subject. Students would choose to enroll in these "mini-courses" during the Advanced Registration or Add/Drop periods on Penn InTouch, just as they do with the remainder of their course selections. Enrollment in these additional .5-credit recitations would be managed similarly to honors recitations and would not be a required co-requisite but would be encouraged by the professor teaching the course.

.5-credit recitations could be research-based, allowing students to spend their semesters working towards a final paper. Supplementary material would be covered by the TA who would design a syllabus for the course and assign extra reading materials and assignments. Each department and program would be responsible for ensuring additional .5-credit units are academically rigorous.

Professors of courses with an additional .5-credit recitation component will benefit from a group of students that understands the nuances of the subject material and is able to transmit that curiosity to other students in the course. Because the additional burden of these recitations will not fall on the professor, she will have more informed students without the detriment of an increased workload.

CONCLUSION

At times, Penn's standard curriculum restricts student exploration and flexibility. By escalating institutional support for innovative curricular options, Penn can foster the intellectual growth of its diverse student body. Individualized degree programs and alternative credit models will enrich students' overall experiences by exposing them to Penn's resources outside of traditional boundaries.

PEDAGOGY

TEACHING QUALITY

PROBLEM: Prioritizing research over teaching dilutes the undergraduate learning experience.

SOLUTION: Emphasize and improve training and feedback for both professors and teaching assistants.

STATUS QUO

As an institution of higher education, Penn's top priority should be the provision of the highest quality teaching and learning experiences for students. The Penn Library System and The Center for Teaching and Learning (CTL) are among the many hubs on campus that work to develop the skills of Teaching Assistants (TAs) and faculty, as well as provide them with the means to innovate both within and beyond the classroom.

SCUE applauds the Penn Library System's recent efforts to reach out to faculty with technology workshops on posting blogs and using Second Life to complement the classroom experience. We also appreciate CTL's collaboration with SCUE to implement the well received Action, Communication and Evaluation (ACE) Initiative that incorporates workshops into CTL's annual three-day TA Training Program. In these spotlights, undergraduates provide insight into teaching, discussion and review styles that they find most helpful in a variety of disciplines. SCUE also worked closely with CTL and its advisory board to develop a mid-semester evaluation form for TAs to give to their students. These forms are on the CTL website and are widely used by TA training participants.

These successes noted, there is still a perception among students that teaching quality across all types of learning at Penn needs to be both enhanced and standardized. Inconsistent training and underutilized feedback mechanisms are two major weaknesses that can be improved by greater emphasis on and mobilization of existing resources.^{7,8}

RECOMMENDATIONS

VISION: IMPROVE AND STANDARDIZE TA TRAINING

To enhance the recitation as a time meant for discussion and review, SCUE proposes the evolution of the ACE program to improve the TA training process. To begin, the initial three-day School of Arts & Sciences TA training program at CTL should be mandatory throughout the University. Currently, it is mandatory only for departments in the College that do not have their own training programs.

Standardized training across all four schools ensures that every TA has received the same minimum level of preparation. In addition to explaining the basics of being a TA, this generalized training could explore different methods of innovative teaching, and should continue to incorporate the student-led sessions SCUE began in 2007. Such an effort signals to TAs that

Penn is committed to their development towards professorship, and to undergraduates that it is investing in a quality classroom experience.

As the benefits of improved TA training manifest in the classroom, the enhanced experience will increase the recitation's legitimacy as a valuable part of undergraduate education. Enhanced training will also help TAs and undergraduates develop an understanding of what they can expect from a recitation experience, in terms of quality of teaching and level of student engagement, no matter the discipline. [See page 27 for more ways to expand what recitations can accomplish.]

In addition to generalized training, SCUE believes TAs should be required to participate in department-specific training, as different disciplines demand unique communication techniques. Leading a discussion in a humanities class, for example, requires a different set of skills than explaining the concepts behind problem sets in the hard sciences. Although some of these distinctions are already covered in CTL's general training sessions, departmental training will help TAs further specialize their skills to their specific subject matter. Departments' initiatives will further illustrate their investment in TAs. Involving undergraduates in TA training will help build community, respect, awareness of expectations and best practices among different levels of students within departments.

In a final component of the improved training process, TAs would conduct mock recitations and be evaluated by both a panel of students and a panel of departmental instructors, experienced TAs and CTL Fellows. In teaching a panel of students, the TA would gain practice in a more authentic classroom setting and would confront genuine questions students have on the material. The students on the panel would judge the effectiveness of the TA's explanations and responses. Through evaluation by fellow instructors, the TA would obtain feedback on the best ways to present and clarify material in the subject area, as well as on how to complement the professor's delivery of content.

SCUE recognizes that this proposed training process requires a substantially increased time commitment on the part of CTL, faculty and TAs. We strongly believe, however, that such dedication to the recitation is necessary to standardize educational expectations beyond the lecture. More rigorous training signals to TAs that the University is committed to their development as professionals and teachers. The increased rigor of this process will lead to broader improvements in the quality of education, as students will get more out of their recitations and subsequently learn more from lecture.

VISION: INCREASE FEEDBACK

SCUE advocates 360° feedback between students, TAs and professors through an increased use of mid-semester evaluation forms. The use of these forms will allow concerns to be

"The [technology training] sessions are wildly popular and faculty say what they are learning and translating back to their classrooms is having enormous impact on engagement of students in seminars and lectures."

- Carton Rogers, head of the Penn Library System

articulated and addressed when students are still engaged with the class. This opportunity for communication and growth will likely be lost after the semester concludes, when students cannot sense the effects of the feedback they give and have a smaller stake in its outcomes.

Use of mid-semester evaluations will also enable professors or TAs to respond to feedback they receive. A professor, for example, might offer suggestions to students about how to complement the classroom experience with office hours, the TA or other university resources if this was not previously publicized. In addition, professors can use this discourse to clarify course expectations that were outlined at the start of the year.

Since all first-year TAs must already participate in some form of continued training, feedback forms can be used to indicate their particular strengths and weaknesses in practice, which can in turn shape the focus of such training. With regard to professors, a logical first step is increasing awareness of the availability of online feedback forms. We suggest CTL or the Penn Library System hold workshops to explain the creation and use of these forms, which can be customized for specific concerns on which professors want feedback.

CONCLUSION

Though we recognize the importance of research to the University, Penn must balance professors' scholarly pursuits with a commitment to effectively teach undergraduates so that they too can master material and contribute to the academic community. SCUE thus calls for an enhanced emphasis on faculty and TA teaching quality. This can be achieved through the expansion and standardization of TA training, as well as continued development of a feedback network among faculty, TAs and students.

PROBLEM-SOLVING LEARNING

PROBLEM: Problem-solving learning as an innovative learning tool suffers from a lack of awareness and implementation.

SOLUTIONS: Create a consortium to centralize and market PSL-related resources.

STATUS QUO

Built on the pragmatic ideals of its founder, Penn's interdisciplinary and socially aware bent present a unique opportunity for undergraduates to blend theory and practice in the classroom. Charged with the task of developing solutions to issues like Social Security, global warming and healthcare, it is essential for this generation of students to learn how to confront highly complex and multi-disciplinary problems. This imperative necessitates an educational experience that merges the study of a discipline with an understanding of its local or global relevance.

Though not administratively recognized as such, many of Penn's decentralized institutions have already integrated the problem-solving learning (PSL) approach — application of knowledge to solving real-world problems, rather than answering discipline-based questions — into programs and curricula. Because PSL organically became part of the undergraduate experience,

Definition: What is PSL and Why Is It Important?

Because problem-solving learning has the unique capacity to stretch across every department on campus, SCUE has developed an amenable definition of the concept. We refrain from a research- or civic minded-specific definition, and present this definition merely as a starting point.

SCUE defines PSL as a type of education focused on solving a real-world problem. In addition to a content component, PSL courses usually involve a practical component as well, in which experiential learning through firsthand observations in the community and meetings with non-faculty experts on the topic is incorporated into the more traditional lecture or seminar methods.

PSL courses should allow Penn students to make an impact on the problem the course presents. Methods include the presentation of independent research and the crafting of novel policies or recommendations to be presented to appropriate authorities or agencies.

In Review: History of SCUE and PSL

In December of 2007, members of SCUE presented the Provost's and President's Offices with a comprehensive plan for implementing problem-solving learning throughout a wide range of disciplines in each of the four undergraduate schools. We released a document encouraging the Penn community to provide financial and rhetorical support for PSL pedagogy. SCUE also recognized the work of five major student-faculty collaborative groups in which members have begun to apply their knowledge to solving real-world problems. These issues included renewable energy, social impact and responsibility, urban nutrition, public policy, and sustainable development.⁹

it lacks the awareness and support that a more overt, cohesive commitment would provide. In order to develop this educational model further, PSL must be embraced as an integral aspect of Penn's ideology and culture.

RECOMMENDATIONS

SCUE believes the most effective way Penn can equip students to improve the world is by orienting components of the undergraduate experience towards problem-solving.

Accordingly, SCUE endorses PSL as an innovative pedagogical technique, and sees this focus on problem-solving ability as Penn's comparative advantage over peer institutions. While SCUE commends the progress they have achieved thus far, we seek a renewed commitment from Penn's PSL stakeholders at all levels of the University to oversee current and future PSL initiatives. A unified effort must be made from administrators and existing supporters to make PSL a cohesive entity at Penn.

While SCUE advocates PSL in the classroom, we recognize that

traditional learning styles are also an invaluable part of undergraduate education. Without a strong basis of knowledge acquired in traditional courses, PSL would not be as meaningful of a learning experience. SCUE thus believes PSL should be used as a way to enhance rather than replace conventional models.

VISION: CREATE A PSL CONSORTIUM

SCUE calls upon the Provost's Office to create a Problem-Solving Learning Consortium, whose participants can drive this pedagogy forward. This consortium will stand as Penn's first and only forum for critical debate, discussion and course creation that catalyzes innovation in the classroom, mainly in the form of problem-solving learning.

Why a Consortium?

This formalized group will serve as a resource center for professors interested in taking their classroom experiences to the next level, as well as for students interested in engaging in new educational challenges. It will centralize PSL efforts and make it easy for students and professors to identify courses and co-curricular activities that support this type of learning experience. The consortium will foster the development of these pedagogies, and will be the agent for continuing adaptation of the concept to emerging classes and programs.

This effort should be led by the Provost's Office because it occupies the unique position to motivate such an effort, which would

involve the coordination of various learning centers, including the Fox Leadership Program, the Netter Center for Community Partnerships, and the Center for Undergraduate Research and Fellowships, as well as professors and students collaborating on particular educational issues. We thus urge the Provost's Office to continue building upon SCUE's long-standing commitment by convening such an alliance of the institutions that have expressed interest in further discussion.

Consortium Functions

A general call to action from the Provost's Office about PSL will certainly increase awareness and interest. By creating a consortium, the Provost indicates that PSL is an important item on Penn's agenda, and an important goal of the University. This can help both provide accolades for current PSL professors — such as recognizing teaching excellence through a centralized website or a letter to students, faculty, and other stakeholders — as well as motivation for others to join the charge. It will be up to the group itself to reach out to individual departments and professors to help promote new courses that have a PSL component. The consortium could also provide a forum for professors to talk about the pedagogy and academic interest in the field in order to spread the word about PSL.

Another function of such a coalition would be to provide professors with resources to develop PSL classes. Beyond monetary support, the consortium could hold advising sessions and informal conversations on best practices for incorporating PSL into the curriculum. It could disseminate material to departments on how best to begin evolving the classroom culture, as well as serve as a training ground for PSL-specific TAs.

In addition, the consortium would help create and maintain a system for identifying PSL classes. Many students do not realize they are in a PSL class until the course begins, and even more students do not even know that PSL courses exist altogether. For students interested in this pedagogy, a system that identifies and labels PSL classes, similar to how courses are labeled as counting for particular requirements in each school, would be helpful during the advanced registration period. The consortium could find ways to make PSL courses easily identifiable on Penn In-Touch and on department websites, in addition to maintaining an independent list of the PSL opportunities available at Penn. This type of direct marketing to students would help many more become involved in and familiar with PSL classes. The additional benefit of the labeling system would be to increase student demand, which would in turn help convince professors to supplement current teaching methods with the more interactive PSL approach.

CONCLUSION

PSL pedagogy shifts student focus from knowledge of abstract academic disciplines to solving concrete, real-world problems by applying knowledge from varying fields. Though the University has made commendable strides in encouraging this approach, its potential is hindered by lack of available courses and awareness. To address this, SCUE proposes the formation of a PSL consortium that will turn this effective, significant and relevant educational methodology into a well-defined institutional priority.

Spotlight: A Sample of Current PSL Courses

PSCI 440 - Crime, Education, and Philadelphia's Next Mayor

In an attempt to alleviate crime and educational inequality among youth in Philadelphia, students meet with community leaders and visit schools in addition to completing traditional readings of reports and social science texts relevant to these social issues. As a result, students are able to attack these problems from the vantage point of economists, political scientists and public policymakers as well as to achieve historical context through the readings. The class ultimately produced a presentation to a city governmental agency urging an expansion of a violence reduction program.¹⁰

HSOC 407 – Urban Encironments: Prevention of Tobacco

Penn undergraduates learn about the short and long term physiological consequences of smoking, social influences on tobacco use, the effectiveness of cessation programs and tobacco advocacy. These students then collaborate with teachers in West Philadelphia to prepare and deliver lessons to middle school students on these topics. The undergraduates also survey and evaluate middle school and Penn student smoking. Collaboration with middle schools gives Penn students the opportunity to apply their study of tobacco smoking prevention in a local environment.¹¹

In Focus: Who Are Stakeholders in PSL at Penn?

Given the numerous relevant stakeholders in PSL, a primary goal of the consortium is for these groups to meet to share ideas and resources.

The Netter Center. The Netter Center works to provide resources for creating new Academically Based Community Service (ABCS) courses, which often incorporate PSL pedagogy. In the consortium, The Netter Center can help connect interested professors with community groups and leaders in order to make PSL learning possible. The organization of the ABCS program provides an excellent model for a PSL consortium.

Center for Undergraduate Research and Fellowships (CURF). CURF works to connect students with professors to engage in research, and can help urge these students and professors to attack real-world problems with a PSL approach. In addition, CURF can help students interested in specific problems find professors doing research on these topics.

The Center for Teaching and Learning (CTL). CTL provides support for professors who need help creating and teaching courses, and can serve as a resource for professors interested in incorporating PSL pedagogy in their classes. Ultimately, SCUE would like professors to be able to approach the Center with their syllabus and receive advice on evolving their course to include PSL.

Civic House. Civic House oversees over 50 community service related student groups at Penn. Though Civic House deals mostly with extracurricular opportunities, it is a hub for students interested in solving real-world problems through hands-on experience, and it could collaborate with professors interested in teaching PSL classes. Their participation in the consortium could also help market PSL curricular opportunities to students.¹²

Fox Leadership Program. Professors in the Fox program, whose roster of initiatives includes leadership-focused courses, can help spread PSL pedagogy through new and exciting courses. Additionally, Fox is in touch with many students eager for leadership experience, which often requires ability to solve pressing social problems. In this way, it can help reach out to undergraduates who would be interested in PSL classes.¹³

Individual Professors. Many professors are currently teaching PSL courses or incorporate PSL components in their courses. Without a legitimate Penn entity taking ownership of PSL, however, professors cannot receive recognition, nor can they conceive of their classes as part of a broader PSL initiative at Penn.

The Provost's Office. As a part of Central Administration with a vested interest in Penn academics, the Provost's Office is the ideal actor for convening a consortium that can bring together all of these parties to legitimize and centralize PSL opportunities.

TECHNOLOGY

PROBLEM: Educational technologies are not being used to their full potential.

SOLUTION: The University should lower barriers to utilizing technology in order to enhance learning within and beyond classrooms.

STATUS QUO

As a leading institution in the creation and provision of knowledge, Penn should also be a leader in using innovative technologies to deliver this knowledge to its students. Yet, professors who wish to use new technologies to enhance their classroom experience generally face constraints when seeking them out or setting them up on their own. Classrooms that professors are assigned to may not be equipped with voice recording equipment or new lecture technologies. Funding for use of technology in courses may not be prioritized on a departmental or school-wide level. Moreover, some professors who could benefit from

particular technological tools may not be trained in using them.

SCUE acknowledges the initiative taken by the Penn Library System to allow professors to check out video equipment and by the Provost's Office to equip particular classrooms with voice or video recording equipment. However, these initiatives are currently not nearly expansive, encouraged or publicized enough to have a significant impact on the way classrooms currently run. The disparity between Penn's rhetorical support of technological innovation and its financial support to improve the classroom experience has stifled what many faculty could achieve given more access and encouragement.

RECOMMENDATIONS

SCUE believes that both inside and outside the classroom, new technologies can enable innovative styles of teaching and learning. Technological resources are more likely to be utilized if Penn lowers barriers to existing tools while escalating support for cutting-edge approaches. SCUE encourages the University to better accommodate students' preferred strategies for learn-

ing and professors' innovative methods for delivering information.

VISION: PROMOTE ICTs

In a 21st century workplace, graduates require technological literacy, communication skills and the ability to work collaboratively. Students can gain these talents without dramatic curricular change if Penn successfully adapts and augments the way content is delivered and understood.

Information Communication Technologies (ICTs) are an important but currently underutilized asset for enhancing learning techniques. These include tools that facilitate the creation, communication, dissemination, storage and management of information. Although technology like blogs and “wikis” play a major role in students' social and extracurricular lives, SCUE encourages Penn to become a leader in transforming these technologies into educational vehicles.

Supplemental learning materials such as self-study modules, interactive activities and recorded lectures promote efficiency by increasing learning time without extending classroom hours. Professors who distribute recorded lectures before class, for example, can dedicate their in-class time with students to conversation and discussion. Electronic versions of course material also enable students to concentrate on lectures and discussion rather than only on note-taking, allowing them to review concepts at their own pace outside of class.

Tools such as blogs strengthen student community and discussion by allowing students to interact with one another outside of the classroom. Wikis enable collaborative learning in which students can post their knowledge and learn from their classmates. Professors can assess the progress of individual students, as well as of the class as a whole, and tailor their teaching to observed interests and needs.

Another important ICT that SCUE believes greatly enhances the classroom experience is clickers. Using these devices in the classroom enables students to participate without pressure of performance in front of their peers. Teachers can use the responses to assess attendance and student comprehension of the material as it is being taught. With real-time feedback, teachers can accommodate the pace of the class in order to ensure concepts are being well understood.

VISION: STANDARDIZE CLASSROOM TECHNOLOGY

SCUE recommends strategic renovations and upgrades of all academic buildings so that they can provide, at minimum, an established standard of baseline technology. Looking forward, Penn should make technologically sophisticated classrooms a priority for campus expansion efforts.

Currently, technology capabilities across the University vary from classroom to classroom. SCUE believes all rooms should be equipped with a minimum amount of hardware, specifically a technology cart including a computer and a projector. Every class, regardless of subject, can make use of this technology. Recitations, for example, often need projectors to review old exam questions.

Spotlight: MIT's Technology Enabled Active Learning Program

Students have much to gain from learning in interactive settings as opposed to traditional lecture formats, particularly in math and science disciplines. One way to develop such an interactive experience is to follow the example set by the MIT's Technology Enabled Active Learning (TEAL) program. TEAL utilizes live visualizations to teach physics interactively in freshman courses that contain up to 500 students. MIT's high-tech classrooms include networked laptops for groups of three students with data acquisition links to desktop experiments that students perform and analyze during class. This system enables students to collaborate in small groups, working to solve real-world problems and discussing the phenomenon they observe in front of them. TEAL data shows students learned the material more successfully than with traditional instruction methods.¹⁴

Spotlight: Classroom Clickers

Familiar with clickers from a colleague and conference demonstration, Professor Susan Phillips approached CTL about using them when she learned she would be teaching CHEM 053. She said her relatively high attendance rates are likely due to her use of the tool, but that is not the main benefit for instructors. “It allows us to make sure that students are getting the concepts that we want them to understand,” she explained. “It allows us to interact more with a large-enrollment class.” Students benefit from feeling more engaged in large classes, and the improved attendance positively impacts grades.

Beyond these baseline technologies, SCUE would offer the Huntsman building as an effective example of technological standardization. In each JMHH room, there is a projector, a screen and a computer. Additionally, in the majority of classrooms and in all that hold lectures, there is recording equipment available should professors want to record their lectures. In alignment with this technological outfitting, Wharton has created space on its servers to hold these recorded lectures.

Providing automatic access to these resources would lower barriers for professors to adopt technological tools and signal institutional support for innovative learning methods. Standardizing technology across the University would also simplify the scheduling process; with all rooms meeting baseline technologies, the Registrar's Office job of assigning classrooms would become greatly simplified.

VISION: CHAMPION OPEN COURSEWARE TOOLS

SCUE believes that Penn should champion OpenCourseWare for both current students and the global community. Recorded and posted lectures — such as those provided through

Massachusetts Institute of Technology's OpenCourseWare Program and websites including Academic Earth, iTunes U, and YouTube Edu, are well worth the acknowledged expense of administering such initiatives. Penn should broadcast its intellectual capital so that both students and faculty can benefit from it throughout and beyond their time at Penn.

Access to lectures online would enable students to make better use of Penn's resources for their intellectual advancement and success. For example, those who want to learn more about a topic area in which they lack background could view other courses' lectures as primers. Technologies also provide value well beyond a single semester. For example, students can use introductory class resources as reference materials when they move on to higher level courses. Students are already demonstrating interest in this strategy; one in four students in Penn's Math Department, for instance, uses MIT's recorded lectures as virtual texts as they approach higher levels of study. Given clear demand for these ICTs, Penn students should be able to access similar levels of support at their home institution.

Faculty members also gain tremendously from agreeing to release their lectures and advocating that their departments prioritize funds to this end. Valuable knowledge and best practices can be shared among faculty without traditional constraints and their work can be embraced by a wider audience of students and colleagues. Additionally, recordings could be used as evaluation and teaching tools for departments.

Beyond Penn, OpenCourseWare can allow Penn to live up to its global commitment to knowledge creation and provision. Two of the many additional benefits of making Penn course material available online include attracting exemplary faculty and students and providing a better means of exchange with peer institutions.

SCUE rejects the idea that recorded lectures would cheapen the Penn education. The worldwide community would gain access to information, but would not earn diplomas or enjoy the interaction with professors and students that the classroom offers. Moreover, while SCUE recognizes the importance of protecting the intellectual property of professors and students, hoarding the intellectual capital bred out of Penn's classrooms is in direct conflict with the University's articulated aims of expanding its global intellectual footprint. [See page 26 for a discussion of intellectual property rights.]

CONCLUSION

High barriers to use prevent technological tools from being fully integrated in and outside of the classroom. In promoting ICTs, standardizing classroom technology and championing open courseware, Penn can enhance instruction and exchange of ideas. Investing in new technological resources will propel the University to the forefront of knowledge acquisition and provision.

"The benefits of OpenCourseWare type programs outweigh the concerns about cost, intellectual property and devaluation of elite degrees. After all, the free material does not add up to a diploma, and viewers can't interact with the faculty."¹⁵

- Steve Carson, OpenCourseWare Consortium President

SCUE believes that seminar creation, particularly in the sciences, is essential to the diversification of courses within the sectors and to the broader improvement of students' learning experiences. SCUE believes the application and approval process for sector courses undermines the ability of the curriculum to function effectively. SCUE believes the existing Benjamin Franklin Scholars program should be transformed into a more structured, significant intellectual experience. **RESEARCH**

SCUE believes the benefits of making available .5-credit and 1.5-credit courses strongly outweigh the costs. SCUE believes TAs should be required to participate in department-specific training, as different disciplines demand unique communication techniques. SCUE believes the most effective way Penn can equip students to improve the world is by orienting components of the undergraduate experience towards problem-solving.

INTERDISCIPLINARY LEARNING SCUE believes that both inside and outside the classroom new technologies can enable innovative styles of teaching and learning. SCUE believes all rooms should be equipped with a minimum amount of hardware, specifically a technology cart including a computer and a projector. SCUE believes that Penn should champion OpenCourseWare for both current students and the global community. SCUE believes research should be accessible to every willing student in every course of study. SCUE believes that Penn should minimize the cross-disciplinary barriers that undergraduates face. SCUE believes that students planning to double major should be given the opportunity to write an interdisciplinary thesis that bridges the research techniques and combines the resources of multiple departments. **INFORMED DECISION-MAKING**

SCUE believes that increasing these school-wide minors will connect students to interdisciplinary opportunities. SCUE believes Penn's commitment to helping students make informed decisions can be enhanced through centralization and standardization of the formal advising system. SCUE believes Penn should establish one location to house a university-wide advising department. SCUE believes Penn should embrace a virtual course-shopping system. SCUE believes that certain technological advances could ease the inevitable burden associated with course registration. SCUE believes that posting syllabi online affords numerous benefits to faculty and students alike. SCUE believes freshmen in particular need to be given greater opportunity for smaller, academically focused residential programs. SCUE believes that the University should facilitate group work by increasing available spaces. SCUE believes that Penn should motivate and enable undergraduates to engage civically through academic partnerships. **INTELLECTUAL COMMUNITY**

SCUE believes ABCS must not only tie civic engagement to course credits, but should immerse students in challenging learning atmospheres. SCUE believes that experiences abroad are significant intellectual opportunities which should be made possible for all Penn students. SCUE believes that Penn should emphasize research during study abroad preparations and cultivate ways for students to create academic opportunities while abroad. SCUE believes that Penn's central leadership should consult more broadly with schools and research centers in constructing a global vision for Penn that serves all its stakeholders, and enhances Penn's public profile.

Campus Life

PENN'S RESEARCH
COMMUNITY INCLUDES
OVER 3,800 FACULTY.
1,000 POSTDOCTORAL
FELLOWS, 5,400
ACADEMIC SUPPORT
STAFF AND GRADUATE
ASSISTANTS, AND A RE-
SEARCH BUDGET
OF \$730 MILLION.

APPROXIMATE
NUMBER OF
PRINTED
BOOKS IN
PENN'S
LIBRARIES:
5.76
MILLION

RESEARCH

PROBLEM: Students do not have enough access to research.

SOLUTION: Proactively create and connect students with opportunities.

STATUS QUO

In 2009 alone, Penn undertook over \$730 million in research. While Penn's 3,800 faculty, 1,000 postdoctoral fellows, and 5,400 support staff and graduate students frequently receive mention for conducting this research, undergraduates are rarely included in these statistics.

The Center for Undergraduate Research and Fellowships (CURF) serves as the primary liaison between undergraduate students and research opportunities. The University Research Foundation (URF), the overarching internal research funding body, also aims to encourage undergraduate involvement in research by "providing faculty with the assistance from highly motivated Penn undergraduates."¹⁶

Undergraduate students now obtain research positions through several avenues. Whereas some are able to access research through work-study funding, others are members of research-specific programs, such as the University Scholars or the Vagelos Scholars Programs. Upperclassmen are often able to perform research in their major for credit through specific departments.

CURF continues to build its presence by connecting undergraduates to research and fellowship opportunities both on campus and abroad. Despite these opportunities and recent improvements, the majority of students, particularly underclassmen, are often forced to send e-mails en masse to professors, asking for unpaid research positions. Many, unfortunately, do not succeed.

RECOMMENDATIONS

As a university with resources nearly unrivaled among its peers, Penn should commit itself to integrating research into undergraduate education. SCUE believes research should be accessible to every willing student in every course of study. This can be accomplished through an increase in resources, funds and guidance from a centralized, accessible source. By introducing the following visions, SCUE hopes to encourage Penn to better engage undergraduates to create knowledge and to remove the imposed bifurcation of teaching and research.

VISION: CREATE FRESHMAN RESEARCH SEMINARS

Freshman Research Seminars would introduce students to research early in their Penn careers, giving them the tools and confidence to engage in original research while undergraduates. These courses would supplement and mirror the mission of the Freshman Seminar Program: to acclimate students to Penn's academic environment, build relationships with faculty members, and equip freshmen with the confidence and study skills necessary to lead a successful college career.

Many freshmen would like to become involved with research, but are intimidated by the process. Through Freshman Research Seminars, students will be introduced to the process of com-

In Focus: Why is research important for undergraduates?

Research is the most effective way to challenge students to produce original ideas. The purpose of research is for students to answer a question within a field by synthesizing past contributions within that discipline and building upon that information through their own analysis. Research demands an integration of many facets of education: organizing knowledge, presenting a novel question and seeking ways to answer that question.

Research gives students the opportunity to explore an academic area in depth, think in creative ways, increase academic independence, better contextualize and absorb the material learned in the classroom and create strong bonds with faculty. It is ideal that a student's involvement with research begin as early as possible in order to promote an immersive experience spanning his entire college career. Students with research experience have a great advantage while seeking jobs or continuing on to graduate education.

pleting an original project, preparing them for more extensive research opportunities. These courses will teach students research techniques, such as presenting and analyzing data, and strategies to become involved with research projects. Seminar professors will also introduce the resources available on campus to assist students with their research and presentation, such as CURF, Communication within the Curriculum (CWic) and the Penn Library System. After this foundation is laid, students will apply their knowledge in a capstone research project.

Individual courses would each revolve around a specific subject matter ripe for intellectual exploration. Not only will professors present material and readings to be analyzed, but students will be required to actively use course content as a stepping stone to original research. In this model, professors will have great flexibility in choosing the content to incorporate in their syllabi and students will leave with the skills and confidence required to engage in higher level research elsewhere.

VISION: EXPAND COMMITMENT TO PURM

SCUE recommends that The Provost's Undergraduate Research Mentoring (PURM) be significantly expanded and reformed to accommodate student interest in research and provide freshmen with the foundation for future research opportunities in their Penn career.

PURM provides selected freshmen with a summer research project and faculty mentor; the entire project is allotted \$5,500, with the student receiving a \$3,000 stipend and the remaining funds being allocated to the faculty researcher. Though PURM represents a commendable commitment to undergraduate research, it can be expanded. In the summer of 2009, only 35 of 170 applicants were chosen. PURM had a fixed budget of only \$160,000 and there were over 200 potential research projects,

as submitted by professors interested in assistantships. Hence, the resources are either insufficient or are not being adequately spread to the interested undergraduate population.

If 200 professors are seeking undergraduates for research, 200 research assistantships should be available. Furthermore, the PURM application procedure must be reformed to judge students on their potential to contribute to research, rather than only on past experience. Currently, applications include a student's first semester GPA and short essays describing past research experience and research interests. No recommendation letters, interviews, or comprehensive essays are involved.¹⁷

As a first-semester freshman is still transitioning to college life, GPA is not a holistic reflection of a student's strengths and capacity for research. Moreover, the application could be biased against students from underprivileged communities, where opportunities to engage in research before college are non-existent.

SCUE thus advocates a more comprehensive review that deemphasizes GPA; although grades can be an important in predicting research ability, they should not be the deciding factor. An in depth interview process and requirement of letters of recommendation would greatly supplement demonstrated grade-based success.

VISION: REVITALIZE THE BFS PROGRAM

Run through CURE, The Benjamin Franklin Scholars (BFS) program has long been considered an honors program by much of the Penn community. However, the largely decentralized and ambiguous nature of this program has become a burden to students involved as well as to managing administrators. In con-

sidering ways to add value to the program, SCUE believes incorporating more structured research opportunities is key. [See page 13 for a discussion of transforming BFS into a meaningful alternative curricular program.]

VISION: INCREASE UNDERGRADUATE RESEARCH

One factor that hinders undergraduate research is faculty members' reluctance to take undergraduates under their mentorship. Many investigators already have a host of graduate students adequately performing research tasks and believe that mentoring undergraduates may take time and energy away from the research program at large.

To combat this concern, SCUE suggests that the University create incentives for faculty members who work with undergraduates. In return for mentoring undergraduates, the University could give faculty an additional summer stipend or funds for travel to collaborating institutions.

VISION: ANALYZE ACCESS TO UNDERGRADUATE RESEARCH

SCUE proposes the formation of an exploratory committee of both faculty and students to accurately and definitively gauge undergraduate research needs. The purpose of such a committee would be to measure the accessibility of undergraduate

Definition: Intellectual Property

Intellectual property in the academic sense can be defined as any knowledge or creation of the mind, both documentable or not, that has some type of value to which owners can be granted exclusive rights.

In Review: SCUE's Work with CURF

The Intellectual Community (IC) working group formed in 2007 to evaluate research opportunities on campus, make recommendations for improving the Center for Undergraduate Research and Fellowships (CURF) and advise the Provost in the selection of a new CURF director. In the Spring of 2008, Dr. Harriet Joseph filled this post. In addition, the Associate Director for Undergraduate Research position was created to increase CURF's research presence among undergraduates. Dr. Wallace Genser now fills this role, and IC has worked closely with him.¹⁸

The academic year 2008-2009 saw the realization of many IC-recommended reforms at CURF. Dr. Genser now leads several preceptorials entitled "Preceptorials on Getting Started in Undergraduate Research," which have been well-attended by freshmen since their inception. IC worked with Dr. Genser to start both the CURF Undergraduate Advisory Board (UAB) and the Research Peer Advisers (RPA) program, and these two groups are working together on outreach efforts. The RPAs hold office hours in college houses and answer email questions posed by students from the CURF website, while the UAB serves as a student voice in CURF event-planning.

In Review: Findings from SCUE Proposal on Undergraduate Research

In SCUE's February 2008 "Proposal on Undergraduate Research," the following recommendations were made to CURF:

- More administrative CURF Research Advisers
- Peer Research Advisers
- Faculty liaisons to connect CURF, interested undergrads and faculty researchers in each department.
- Extensive improvement to the website, especially the database of research opportunities
- A CURF Undergraduate Advisory Board
- Increased outreach to freshmen with research-centered events

research, pinpointing those groups on campus whose research needs are not currently being met.

By surveying the student body, the proposed committee will attempt to answer questions including but not limited to the following: How well are students informed about research? How many students want to conduct independent research but cannot find adequate funding sources? How helpful are research experiences in life beyond Penn? The creation of such a body will greatly facilitate the process of making undergraduate research more accessible.

VISION: STRENGTHEN STUDENT IP PROTECTIONS

In promoting increased undergraduate creation of original scholarship, SCUE understands the importance of protecting the outcome of those efforts. The Undergraduate Assembly's "Intellectual Property Rights Policy Proposal" noted that approximately 30% of the student body is involved in some type of research. SCUE hopes that as this percentage continues to rise, so will the percentage of students informed about their intellectual property rights.¹⁹

The precedent at universities nationwide is that students do not have rights to their own inventions and research. Similarly, Penn's intellectual property policies reveal that in the vast majority of cases, any invention, research discovery or other product of student effort will become property of the University. The presentation of IP rights policy is inefficient and ineffective, creating barriers to student understanding. Unawareness of rights can lead to situations where students unwillingly and unfairly lose legal ownership of their intellectual property. Additionally, ambiguities and language left open to interpretation could work to a student's disadvantage if an IP issue were to arise.

At the very least, there should be a concerted effort to better educate students on the current policy. SCUE also believes current intellectual property policies must be clarified and condensed. In addition to making the policies clear and accessible, SCUE recommends further examination of their content. In comparison with some of its peer institutions, which differentiate between settings where IP issues may arise, Penn's policies appear quite rigid and overly restrictive.

Penn's minimal duty is to clarify its current policies for its students, while further action should be taken to expand intellectual property rights to include undergraduates. SCUE will work with relevant groups such as the University Honor Council, Ivy Council, the UA and the Provost's Office towards this end.

CONCLUSION

Undergraduates represent a major untapped resource for the University's mission of knowledge-creation. Although some progress has been made in promoting undergraduate research, much still needs to be done. Penn should improve financial and faculty support for existing opportunities, champion new ways to expose students to scholarly discovery, and create incentives for professors to include undergraduates in their research. All of this should be complemented by a comprehensive assessment of research opportunities and stronger awareness of intellectual property rights.

INTERDISCIPLINARY LEARNING

PROBLEM: Penn's commitment to interdisciplinary learning does not translate to the undergraduate level.

SOLUTION: Cultivate opportunities inside and beyond the classroom for integrating knowledge across fields.

STATUS QUO

From the moment Benjamin Franklin penned his plan for a school offering both practical and classical instruction to prepare students to tackle real-world problems, Penn has been a trailblazer in interdisciplinary learning, now one of the central tenets of the Penn Compact.

Franklin's idea is the origin of Penn's "One University" policy, which allows students to enroll in classes across the four undergraduate schools and many of its graduate programs, and underlies many programs that link departments. In addition, Penn has made significant advances in interdisciplinary research methodology for faculty and graduate students. The Penn Integrates Knowledge (PIK) program and various interdisciplinary research centers eliminate barriers between disciplines to address common questions.²⁰

However, on the undergraduate level, it is still difficult for students to actively integrate knowledge from different fields. Penn's praise-worthy assets do not adequately encourage interdisciplinary experiences at the most fundamental level — the classroom. While undergraduates can gain a diverse skill set through Penn's extensive resources, they are seldom challenged to apply varying pieces of this skill set to solve problems presented in a particular class.

For example, while students majoring in the interdisciplinary Biological Basis of Behavior program may take varied courses throughout the Psychology and Biology departments, rarely

Definition: What is Interdisciplinary Learning and Why Is It Important?

A technique can be defined as interdisciplinary if it adjoins broad fields of study, research methods, and skills to solve a single problem or explain a single issue. In our rapidly globalizing, increasingly interconnected world, expanding interdisciplinary opportunities is necessary to comprehensively answer complex questions.

Strong cross-disciplinary approaches yield many benefits for students and the institutions they attend. For students, interdisciplinary learning encourages a synergy between subjects that aids critical thinking skills and fosters comprehensive analysis. Universities pushing for greater interdisciplinary opportunities are able to reap the benefits of student productivity and faculty research crossing academic boundaries. As a result, these institutions are attractive hubs for students and professors desiring opportunities to address multifaceted problems.

will they have the opportunity to integrate knowledge of these diverse topics to address a specific problem. Although they will take differing courses employing differing learning methods, they will infrequently apply these methods in a single course or project.

Moreover, students wishing to engage in interdisciplinary research — whether through a senior thesis project or extracurricular study — often lack resources to pursue these options. Currently, there is no program that allows students double majoring to marry their studies into a single, comprehensive senior project. There is also no existing pipeline connecting interested students to the research originating from Penn's interdisciplinary hubs.

RECOMMENDATIONS

SCUE believes that Penn should minimize the cross-disciplinary barriers that undergraduates face. Opportunities to increase interdisciplinary learning can span classroom, curricular and independent research levels.

VISION: CREATE COLLABORATIVE COURSES

One solution for lack of interdisciplinary learning at the classroom level is the creation of an interdisciplinary recitation in which two distinct classes share a common recitation that enables students to apply their knowledge of diverse subjects to address a single problem.

The model of two distinct course lectures that cover related topics joined by a single recitation which links material from both classes would be extremely useful in formalizing and expanding on common links. SCUE recognizes the importance of the lecture format and the ability of lecturers to deliver broad swaths of information about a given subject. However, we believe that, in diversifying the ways in which classes are taught, Penn can stimulate students' intellectual curiosity and allow them to engage more rigorously with covered material, especially across different disciplines or fields.

The key to this intellectual stimulation lies in the recitation. Often used to review material, the recitation has the potential to become much more. As most recitations consist of reviews or minor extensions of material covered in lecture, students often do not attend unless required to do so. Although review is worthwhile in some courses, in many, students do not see the value. In addition, the current model does not stimulate interest in interdisciplinary study. The introduction of a two-lecture/

one recitation model would address this shortcoming, making recitations useful and stimulating student interest.

Rather than reviewing lecture material in recitation, teaching assistants would use case studies and class discussion to foster learning and connect the two courses through the lens of a broad theme. Students would attend because of added value. Rather than relearning material already covered, they would be challenged with real-world problems that synthesize knowledge from both courses.

SCUE acknowledges the two-lecture/one recitation model would not work for just any two courses; the classes must be inherently linked in an overreaching theme. Penn's numerous interdisciplinary programs would benefit the most from this model, with clear advantages gained by this innovative structure.

In addition, for this model to succeed, teaching assistants would need to be of the highest quality. For example, the TA could be a graduate student with expertise in the field of study or an undergraduate completing a capstone thesis in the topic the recitation would cover. In some recitations, a visiting professor or speaker from the field could be brought in to address the students and lead a stimulating discussion.

VISION: PROMOTE PROBLEM-SOLVING LEARNING

SCUE questions whether the traditional lecture is the best way to promote interdisciplinary learning. Problem-solving learning (PSL), a means to bridge disciplines by posing challenging problems that elude simple solutions, must be more cohesively introduced into the undergraduate curriculum. PSL represents a departure from the current lecture model of learning. It would challenge students by changing the emphasis from compartmentalized knowledge acquisition to addressing real problems from multiple directions. Only by this latter method will society solve the pressing problems of the 21st century. [See page 17 for a discussion of PSL as an innovative pedagogical strategy.]

VISION: CREATE AN INTERDISCIPLINARY THESES PROGRAM

SCUE believes that students planning to double major should be given the opportunity to write an interdisciplinary thesis that bridges the research techniques and combines the resources of multiple departments.

We envision that an Interdisciplinary Thesis Capstone Program would allow inquisitive, highly-motivated students to enrich

In Focus: Example of the Two-Lecture/One Recitation Model

Microfinance, as studied simultaneously in Wharton and the Department of Environmental Studies in the College, would be a perfect fit for this model and could be married with the overarching theme of International Development. A single recitation would join the two lectures and students would learn about how microfinance and sustainability relate to each other and to developing nations.

The two departments would treat the lectures just as they do any others. For the recitation, the two lecture professors would collaborate with teaching assistant(s) to develop weekly class plans that stimulate student interest in the overlapping interdisciplinary theme. The course would still count as two credits because students would have a large amount of work in preparing for a challenging recitation and two lectures, as opposed to simply preparing for two lectures.

their learning experiences by giving them the ability to investigate different fields and explore the common threads between two disciplines. It would appeal specifically to students with more than one academic concentration interested in drawing from both areas. It would also be an option for students who have previously participated in interdisciplinary research and wish to apply it toward a final project.

The Thesis Capstone Project would provide students who wish to write an interdisciplinary thesis with the same structure and support available to students writing theses within individual majors or departments. These students typically receive, in addition to guidance from a knowledgeable faculty adviser, a support system in the form of other students pursuing the same goals. Majors are often encouraged or required to take particular thesis writing courses, which further facilitate collaboration and a sense of community.

Students pursuing an interdisciplinary track, however, do not have this same opportunity for collaboration; consequently, many students have been discouraged from undertaking an interdisciplinary thesis. An interdisciplinary thesis program would provide interested students with the same structure, support network and community as those students who complete a thesis in one department or program.

SCUE envisions a program logistically similar to that of individual department theses. Students would apply to the program in their junior year after declaring majors and minors individually, and would independently choose an adviser for each area of study in which they wish to engage. Ideally, every student accepted into the program would be required to take an interdisciplinary thesis-writing course, which would help cultivate a sense of community and facilitate collaboration between students. However, we realize the interdisciplinary nature of the program may create challenges for such a thesis course. Therefore, the program may begin by assigning “thesis course” numbers to students and organizing mandatory meetings for the students to provide peer support.

We acknowledge that an interdisciplinary thesis may fall outside of honors guidelines for individual departments or programs. However, students that meet certain criteria, as outlined by the program guidelines or students’ advisers, should merit distinction, potentially an honors certification or recognition as an “interdisciplinary scholar” upon graduation.

Such a program would require extensive coordination of resources, but there are ways to build it up from the University’s existing infrastructure. If the program were housed in CURE, for example, students would have access to its extensive network of professors and researchers. Professors affiliated with CURF already have a passion for undergraduate research and are invested in providing guidance and support for students pursuing independent projects. These individuals would be ideal mentors and advisers for students in the proposed program.

VISION: PRIORITIZE INTER-SCHOOL MINORS

Inter-school minors combine study in two or more interrelated fields in different schools, an ideal means for interested students to explore and combine topics outside their primary academic focuses. SCUE believes that increasing these school-wide minors will bridge divides between fields and connect students to interdisciplinary opportunities.

Though an excellent range of minor options already exist, Penn’s Responsibility-Centered Management structure poses a challenge to further interdisciplinary minor creation. Decentralized funding and administrative responsibility for these programs is often an obstacle. Minors are co-administered by each of the schools in which the minor is housed so the process of minor creation must involve engaging administrators from each home school. Instead of approval by an individual school’s curriculum committee, a potential university minor must be approved by all four undergraduate schools, each with its own interests and priorities. These barriers prevent many worthwhile programs from coming into existence.

To stimulate the creation of these academic opportunities, SCUE proposes a simpler process for establishing school-wide

In Focus: A Sample of Current Interdisciplinary Options and Hubs

University minors include Consumer Psychology, Legal Studies & History, Urban Real Estate & Development, and Sustainability & Environmental Management. Interdisciplinary programs include Biological Basis of Behavior; Philosophy, Politics and Economics and Urban Studies. Dual-Degree Programs include the Huntsman Program in International Studies & Business, Jerome T. Fisher Program in Management & Technology, and Vagelos Program in Life Sciences & Management.

Among the large number of interdisciplinary hubs is the Center for Neuroscience and Society, created in 2009 to enable researchers to study the ethical, legal and social implications of neuroscience; and the Institute for Law and Economics, a joint research center of the Law School, Wharton, and the Department of Economics.

In Focus: A Sample of Penn Integrates Knowledge Professors

- Professor Philippe Bourgois is a medical anthropologist in the Department of Anthropology and School of Medicine.
- Professor Robert Ghrist applies mathematical methods to engineering, with dual appointments in Engineering and the Department of Mathematics in the School of Arts & Sciences.
- Professor Sarah Tishoff is a leading expert in human genetics, appointed in the Department of Genetics in the School of Medicine and the Department of Biology in the School of Arts & Sciences.

minors. Because the Office of the Provost has a broader view of and investment in all of Penn's schools, it would be an ideal governing body for these programs. Minor proposals would first be brought to the Council of Undergraduate Deans (CUD) in order to garner the support of the four undergraduate deans, the Vice Provost for Education and other University officials. CUD should then be given the power to approve or deny the application for the program's creation, instead of the proposal having to be formally brought to each individual curricular committee for approval. The Provost would serve as the ultimate arbitrator of the minor, ensuring its academic rigor and maintenance of its interdisciplinary character.

VISION: LINK STUDENTS TO INTERDISCIPLINARY CENTERS

Penn's commitment to interdisciplinary study is exemplified both by the increasing number of research hubs that span disciplines and the establishment of the Penn Integrates Knowledge

(PIK) program, which creates endowed professorships with joint appointments between two or more schools. Though these are incredible assets to Penn's research ambitions, undergraduate students do not directly gain from their existence.

Few interdisciplinary research centers are connected with classes or undergraduate programs, meaning students have trouble accessing learning opportunities housed there. By opening these centers to undergraduates, Penn will provide students with increased access to cutting-edge research and prepare them for graduate school study or other post-graduate plans. The centers, in turn, gain from access to undergraduate capital.

In a similar interdisciplinary vein, the PIK program could transcend endowed professorships by integrating scholars' innovative focuses into the undergraduate curriculum, such as through PIK seminars. Such courses would be designed around particular PIK professors' interests, providing students a unique opportunity for close interaction with eminent researchers at the cutting-edge of their fields.

SCUE encourages professors and researchers associated with interdisciplinary centers to actively reach out to undergraduates and improve channels of communication. Speaker events, symposia and new research projects should all be better marketed and broadcast to the undergraduate community, which represents an important untapped audience for these hubs. Undergraduate access and exposure should also be institutionally supported by individual departments, schools and the Provost's Office, which are all situated to identify opportunities for research and for incorporating the work of interdisciplinary centers into courses and curricula.

SCUE also proposes the creation of formal research opportunities for undergraduates in Penn's interdisciplinary research centers and institutes. One approach is the creation of a Provost Award for Undergraduate Research in Interdisciplinary Studies. Modeled on the GAPSA-Provost Award for Interdisciplinary Innovation, which provides a stipend for graduate students,

this grant would fund students interested in research which couples a study of two different disciplines.²¹ Perhaps, similar to the model of the Provost's Undergraduate Research Mentoring Program, a list of potential research projects could be provided, drawn from researchers at the different interdisciplinary institutes. Selected participants would then receive a grant towards the completion of their project and would be required to present their findings at a symposium following its completion. [See page 25 for more about expanding support for undergraduate research opportunities.]

"Studying both nursing and business at Penn allows me to engage with issues such as the current healthcare debate on a deeper level because I understand it from both a clinical as well as a financial perspective."

- Susanna Shuman, '11
Nursing Healthcare Management program

CONCLUSION

Penn's commitment to interdisciplinary learning has not reached its full potential on the undergraduate level. The institution can address this shortcoming by establishing a two-lecture/one recitation model and interdisciplinary thesis program and by increasing problem-

solving learning opportunities. Beyond the classroom, Penn should create a pipeline for linking undergraduates with cross-field scholars and hubs, as well as facilitate the creation of inter-school minors.

INFORMED DECISION MAKING

ADVISING

PROBLEM: Inconsistent advising quality and policies undermine the system's strengths.

SOLUTION: Produce better advising outcomes for students by centralizing resources and standardizing processes.

STATUS QUO

Penn is resource-rich, but often information-poor. With so many possibilities spread across twelve schools, dozens of programs, and hundreds of pathways, students may find it difficult to gain awareness and access to these opportunities. Penn's decentralization means advisers go through different training processes and follow different policies. As a result, there is typically little communication or standardization across schools. While Penn's advising system has long been praised as a premiere model, in practice, it risks letting students fall through the cracks.

RECOMMENDATIONS

SCUE believes Penn's commitment to helping students make informed decisions can be enhanced through centralization and standardization of the formal advising system. Students should be equipped and empowered to navigate their academic endeavors. Towards this end, we recommend centralizing advising resources, standardizing adviser quality, and ensuring consistency of waiver policies.

VISION: CENTRALIZE ADVISING RESOURCES

SCUE believes Penn should establish one building or location to house a university-wide advising department. Here, all stu-

dents could access advisers from all four schools, as well as advisers for other academic options including study abroad, joint degree, dual degree and internal transfer.

A major challenge arises from the different processes of advising experienced in each of the four undergraduate schools. Whereas College students are assigned advisers before arriving on campus, for example, Wharton students are instructed to see any of the advisers in the advising office upon arrival. A clear merit of this decentralized system is that advisers are skilled in their respective areas of expertise within a specific school or program. However, in execution, the lack of centralization can create burdens for students.

For instance, a College student's pre-major adviser may not have a background in the field of study in which her assigned student is interested. In this case, the adviser may not be able to address the specific educational needs of her advisee. Alternatively, Wharton students are never assigned an adviser, so they lack a go-to person to answer questions and invest in their success.

The system also fails those students who are considering enrolling in courses or programs in a school outside their home school. A College student who wants to learn about a dual degree with Wharton, for example, must contact a second specialized adviser who may know little about cross-counting requirements between schools. Having a centralized hub would facilitate flow of communication and improve students' ability to make informed academic decisions.

VISION: IMPROVE AND STANDARDIZE ADVISING QUALITY

Increasing the rigor of College adviser training would help ensure that advisers are well informed and committed to the advising program. While some students enjoy pre-major advisers who are extremely knowledgeable and engaged in the students' educational paths, others may be assigned advisers who are less motivated and helpful.

College advisers are selected and trained on a voluntary basis, often resulting in inconsistent preparedness to fulfill obligations. All advisers are given preliminary training and a manual on using online advising resources. After the initial training, they are encouraged to attend advising workshops from year to year. Since these workshops are not mandatory, the group that attends is self-selecting and might not need the most assistance. In addition, there is no follow-up process conducted to ensure that all advisers are meeting expectations.

A mandatory yearly training workshop would enable advisers to stay attuned to changing requirements, highlight new courses to suggest each semester and reemphasize other resources to share with advisees. This training would standardize the quality of College advisers by making them all knowledgeable about campus resources and the ever-changing course planning timeline.

An evaluation and incentive program could also be implemented to reward quality advisers and encourage others to follow suit. Such a program would enable students to give anonymous

feedback, providing constructive criticism to improve individual advisers and the program as a whole.

VISION: STANDARDIZE WAIVER AND PERMIT PROCESSING

It is essential that Penn standardize the policy for requesting waivers and permits for course requirements and course registration. The current system relies too heavily on unpredictable variations in adviser discretion. Some advisers are more apt to grant waivers or permits for classes not on pre-approved lists of courses that fulfill requirements or in letting students register for closed courses. In certain situations, they are justified in doing so. However, the system needs to work well and fairly for all students; either all advisers should be able to waive requirements or override registration permits, or none should be empowered to do so.

Furthermore, the process of petitioning to have a course count for a requirement should be transparent and known to all students, advisers and professors. Clarifying this policy would remove much of the uncertainty and frustration that students face when planning their course of study. In addition, if Penn were to allow students to petition for courses to count for requirements, some of the burden on professors and department chairs who currently have to apply for their courses to count towards fulfilling requirements would be lifted. [See page 12 for more ways to improve the requirement-approval process.]

CONCLUSION

SCUE commends Penn's highly rated advising system, but emphasizes greater focus on how students fare in the process. Through centralizing advising resources, improving adviser training and standardizing the waiver and permit process, Penn can better commit itself to supporting students making informed choices.

COURSE SELECTION AND REGISTRATION

PROBLEM: The absence of a formal course-shopping period makes course selection haphazard and needlessly complex.

SOLUTION: Create virtual course-shopping options and standardized waitlist procedures.

STATUS QUO

Course selection is perhaps the time at which students most need resources that support informed decision-making. Although many undergraduates plan out their future courses far in advance, others prefer to make course registration decisions during the Add/Drop period, attending a wide variety of courses and selecting from among those.

Penn does not have a course-shopping period, as many other universities do. The existing system for experimenting with course selection is an Add/Drop Period in which students are free to add and drop courses from their schedules on Penn In-Touch.

Over the last five years, SCUE has worked to provide helpful tools and resources to overcome the lack of an actual shopping period, including supporting Penn Course Review's addition of

In Review: SCUE's Efforts to Promote Syllabi Online

In line with SCUE's commitment to helping students make informed decisions, encouraging professors to post syllabi online has been a central initiative of the past five years. In the spring of 2009, former Provost Ron Daniels approved a plan to create an online syllabi repository where faculty would post in-progress syllabi to aid with student course registration decisions. The repository was created soon thereafter, allowing faculty to post their syllabi to Courses InTouch. Today, students utilizing the Course Section Tool can view syllabi posted for courses in which they are interested in registering. For Fall 2009 registration, over 400 syllabi were posted online.

SCUE believes that posting syllabi online affords numerous benefits to faculty and students alike. On the student end, it allows undergraduates to fully appreciate course content before enrolling in courses and exposes students to a wider variety of course content. Faculty members benefit because posting syllabi online enhances publicity for little-known courses and better matches students with classes in which they are interested, ensuring that those who register will genuinely engage with the material. Because SCUE recognizes these important benefits, we will continue to actively encourage faculty members to post their syllabi online, with the goal of 100% participation.

qualitative comments to its website and encouraging professors to post syllabi online before the semester begins. While these resources do help, they are not a substitute for sitting in on and experiencing lectures first hand.

Paramount to the Add/Drop period is the process through which students register for courses once spaces in them open up. Whereas some professors close their courses once they are full and create manual waitlists, others allow individuals to add and drop their course at will. Lack of standardization is a burden on students, who may miss out on courses of interest.

RECOMMENDATIONS

Although an actual course-shopping period would be ideal, SCUE sees the potential for virtual course-shopping. Students should be able to take courses that they find both intellectually stimulating and enjoyable. In order to do so, it is necessary that the University provide students with the resources necessary in order for them to be able to choose the right classes for themselves.

VISION: CREATE A VIRTUAL COURSE-SHOPPING PROGRAM

A course-shopping period would allow students to meet a professor, listen to his expectations for the class and hear a sample lecture. Many students know after the first lecture whether or not they want to remain in a class. This is verified by the fact that closed classes inevitably open after the first or second lecture has taken place. With the current system, a student who is debating between two courses that take place during the same time slot is at a major disadvantage because he will inevitably miss out on the opportunity to sit in on both first lectures. Also, with the existing system, students are more likely to play it safe and take popular classes instead of trying new ones.

During a course-shopping period, professors would present an abridged introductory lecture multiple times so that students could actually shop different classes before making any registration decisions. This shopping period could take place one or two days before classes begin in the Fall and Spring semesters, thereby not interrupting the regular rhythm of the start of semester. Understandably, adding an actual course-shopping period would be difficult to implement. Obvious drawbacks also

In Focus: Implementing Stronger Waitlist Policies

To create a standardized waitlist process, SCUE hopes to:

- Observe the reactions of both students and professors to the manual waitlist system for small seminars.
- Work with ISC to create an online waitlist function.
- Complete a small-scale trial of the online system, and address issues that arise with its application of
- Hold workshops with heads of departments and professors on the operation of the online waitlist, and provide information to all students on what it means to sign up for an online waitlist.

leave room for other solutions. For example, professors may find it monotonous and bothersome to give the same lecture multiple times. There is also no guarantee that students would take advantage of the opportunity to shop courses.

It is more feasible that Penn adopt a system for virtual course-shopping where professors videotape their first lecture or a mock introductory message that students can view online. These videos would allow students to virtually attend multiple first lectures whose time slots might interfere with one another. They could either be posted on a Pennkey-protected site or on iTunes U, where sixty-second lectures are currently accessible to everyone who knows where to find them. To start, every professor can post one video to represent the array of courses he teaches. Whether the sample video is the professor lecturing or an interview with that professor, these videos would introduce students to the professor and give them a taste for the professor's style and point of view. Such video clips, in conjunction with online syllabi, would give students a fuller picture of classes in which they are interested, allowing them to make more informed decisions when registering for courses.

While this solution may be seen as daunting, it would allow even more students to take advantage of the breadth of courses that Penn has to offer, help them discover interesting electives and allow them to choose courses based on more than just three

sentence course descriptions, professor ratings and campus-wide reputations.

With the current Add/Drop period, students are discouraged from switching classes after the first couple days of the semester because they will have inevitably missed a vital lecture or assignment handout. The capacity to add courses for 16 days becomes irrelevant, as one has missed too many initial classes after just the first few days of Add/Drop. In not having a real course-shopping period, students are prevented from exploring their curricular options and their academic growth is stunted by the inherent risk of shopping with the current system. SCUE believes that although nothing can replace experiencing a class first hand, creating a system for virtual course-shopping is an admirable alternative to address these issues.

VISION: STREAMLINE COURSE WAITLIST SYSTEM

Harnessing the potential of technology can enable students to make more informed decisions related to their Penn educations. SCUE believes that certain technological advances could ease the inevitable burden associated with course registration by helping students overcome the perennial challenge of enrolling in closed courses.

Last year, SCUE addressed how students pursue closed classes by investigating the potential methods for broadening the availability of course waitlist options. Although students may not be admitted to their preferred classes during preliminary registration, seats frequently become available during the Add/Drop period. Students trying to enroll in a closed class are told to check Penn InTouch periodically; if a student happens to access the page at just the right time, he or she may claim an open spot. The current method is haphazard. Students are rewarded for monitoring a website, rather than for their genuine interest in the course material. This shortcoming is especially problematic for small seminars that benefit from a cohesive group of engaged students.

In our efforts to research this problem, SCUE interviewed nearly a dozen senior faculty and department chairpersons. We discovered three broad categories under which all courses fall: large introductory classes, specialized lectures and small seminars. Based on our interviews, we concluded that small seminars would benefit most from a standardized waitlist system.

Acting on this conclusion, we delivered a letter to all faculty members asking each professor to manage his small classes with a manual waitlist system. We suggested that, once a class fills, professors request that the department coordinator close further registration on Penn InTouch and, from that point, use e-mail to manage a list of prospective students currently unable to get into the class. If a spot were to open, the professor would manually enroll a student from the waitlist. We realize that many professors already have a functional waitlist system in place and encourage them to continue using their waitlist methods.

While manual waitlists provide a feasible short-term option for small seminars, they do not address the waitlist needs of larger classes for which managing a manual waitlist would be over-

whelming for professors. Hence, in the long term, we recommend the Courses InTouch interface provide professors with a centrally managed, transparent waitlist system, similar to that employed by Wharton's Finance Department. We envision a system in which students have the option of enrolling on a waitlist for any class online, through Courses InTouch, and professors can exercise varying degrees of control over their waitlists by managing waitlists manually, coding their waitlist (for example, automatically placing upperclassmen or majors ahead of underclassmen and non-majors), or allowing their waitlist to operate on a default first-come, first-served basis.

Although there are several potential obstacles, especially those surrounding the technical challenges of creating a functional waitlist, the benefits of a standardized, online waitlist system are manifold. Most importantly, professors will enjoy the participation of passionate, committed students in their classes and students will be freed from the stresses that come with an inconsistent and confusing waitlist system.

CONCLUSION

Implementing a standardized video course-shopping program and centralized waitlist system would better assist students during the registration process. In creating students who are more informed about their academic options, Penn assists administrators and faculty as well. Knowledgeable students make better advisees, class participants, and members of the community at large, allowing everyone to reap the benefits of undergraduate empowerment.

INTELLECTUAL COMMUNITY

RESIDENTIAL ACADEMIC LIFE

PROBLEM: Most residential programs represent wastes of resources and intellectual opportunities.

SOLUTION: Hold programs accountable to clear expectations and replace ineffective ones with innovative living-learning models.

STATUS QUO

At the 10-year anniversary of the College House system, there is no better time to step back and evaluate the status of Penn's Residential Programs, designed to bring together students who share a culture, lifestyle or academic interest. These 30 programs are structured differently — some have special amenities, some offer academic credit, some include only freshmen — but all have the same underlying characteristics: a designated section or floor, a central faculty adviser, and a range of related activities. Program themes range from Healthy Living to Film Culture to Study of Infectious Diseases.

SCUE is interested in assessing just those Residential Programs that are academic in focus, most of which currently fall short of their potential as learning experiences. They drain Penn's financial and human resources, and are a burdensome to both those who run them and students whose expectations for meaningful intellectual gains fall short. Challenges include lack of account-

ability, inconsistent ideas and goals for the programs, and scarce resources.

Academic Residential Programs are not considered serious endeavors by participating students. Underlying this lack of engagement is a minimally competitive application processes that rewards ulterior motives. It turns residential programs into tools for getting into favored dorms, rather than chances for significant academic experiences. Although the College Houses & Academic Services (CHAS) brochure notes that “it is not advisable to apply as a way to gain admission into a particular House as program acceptance is not guaranteed,” it is a warning without repercussions.²² As it is less likely that one receive his top housing choice should he enter the general, non-Residential Program lottery for College House rooms, students can only gain by applying to Residential Programs. The short essay required for admission is not an effective tool for separating students who are truly interested from those who merely want a prime living choice, resulting in an applicant pool that is not composed of the active, committed students that programs need to thrive.

Once admitted, accountability is minimal. As students engage themselves in class work and other extracurricular activities, they rarely view College House programs as priorities. There is little backlash for students who are uninvolved in their residential programs. Because the success of these programs is contingent upon student involvement, unengaged students compromise the programs’ community-building and academic goals and reinforce their illegitimacy. The large number of College House programs is a double-edged

sword. On one hand it offers options for students with many different interests. But it also leaves these programs with relatively small budgets and contributes to competition for student interest.

Another challenge in administering the programs is conflicting visions over what purpose they serve and what they should achieve. Many faculty members point out that the residential programs do not have a defined intellectual focus because they are not designed to be academically based. Professors typically note that the greatest benefit of the College House system is building community among faculty and students, making professors more accessible. Because the focus is not academic, many are hesitant to impose more significant academic expectations on residential programs. Concerns about mandating educational programming lead to reinforcement of lower demands and expectations for the programs.

RECOMMENDATIONS

SCUE agrees that not all residential programs need an academic component. There is much value in having students with similar involvements live together, as effectively exemplified by Riepe College House’s mentoring program. There is also much to be gained by having accessible faculty members calling student dorms their homes. Furthermore, SCUE appreciates that there are many students who do not want an academic component in their residence.

At the same time, there are many students who could benefit from learning outside of traditional classroom frameworks. The lack of student engagement in current programs reflects short-

Spotlight: A Sample of Current Penn Residential Programs

Penn Women in Leadership

Alexandra Gordon, a Wharton student who served as the Residential Adviser for Ware College House’s Women in Leadership floor, was responsible for planning the two to three events the program is required to hold each semester, which include dinners with professors and seminars with women’s groups on campus. She feels she was given very little direction with running the program. Without official oversight or assistance, she found it hard to come up with programming ideas that were “feasible, within my budget, and easy to plan.” She concluded that the program would benefit from a faculty adviser and “some sort of direction as to what is expected of it.” Addressing the motivations of participants is important too, since she quickly realized it was difficult to “drum up excitement when one knows that students are not really interested.”

Emily Shaeffer applied to the program because she wanted both a community of likeminded women and a spot in the Quad, and was “a little disappointed” in the programming. Lack of variety in activities and inconvenient scheduling forced her to miss out. Reflecting a common student sentiment, Shaeffer points out that “residential programs are often seen as a joke and a way to get into the building that someone wants to live in.” She suggests having more programming as a way to build sincere student interest. “An intellectual community is important,” she said, “but at the same time it’s nice to come home to a safe and supportive place where you don’t feel under pressure to do additional work.”²³

Ancient Studies Program

Karen Sonik and Sasha Renniger were the GA and RA respectively for the Ancient Studies Program in 2009-2010. With the formal titles of “Director” and “Assistant Director” of the program, Sonik and Renniger met with the outgoing leaders a few times prior to taking over in order to guide their planning of events, but received no other formal training. They believe the greatest success of their program is meaningfully integrating a strong academic component while also developing a strong sense community. A syllabus for the program details weekly events, such as resident research presentations and study breaks, as well as a wide range of larger scale ones like museum tours.²⁴

comings that can be corrected to maximize and harness student interest. To this end, SCUE offers suggestions for improving the current function of the programs, as well as for creating innovative new options that fill unmet demand.

VISION: IMPROVE PROGRAM ADMINISTRATION

CHAS must evaluate its programs to see what is working and what is not. If the goal of residential programs is to hold study breaks and other group activities with an overarching theme, then they should be labeled community-building themed hallways. But if opportunities for academically meaningful experiences are mirrored by sufficient student interest and commitment, stakeholders can work harder to make them realities.

Successful execution of these programs depends on effective planning and leadership by student coordinators, faculty and staff. In order to improve accountability, CHAS must articulate clear expectations, with continued funding contingent on adherence to these goals. Currently, administrators, faculty, and students have inconsistent expectations of Residential Programs, a reflection of their many potential purposes. Standardized CHAS benchmarks would clarify what participants are expected to contribute and gain from programs. For example, specifying the number of faculty fellow discussions to be held each month would set a standard for participation not currently in place.

Setting clear expectations would enable CHAS to impose sunset periods on residential programs. This is a necessary step to hold programs accountable and identify those that should be terminated, enabling scarce resources to better serve students and faculty through more productive channels. Sunset periods would also challenge CHAS to continually pay attention and innovate, instead of perpetuating unsuccessful programs.

VISION: LINK RESIDENCES TO FOR-CREDIT COURSES

In addition to improving the status quo, SCUE recommends CHAS develop new, innovative, academically-significant programming with mechanisms to encourage meaningful participation. Applying the lessons of successful academic residential programs at other institutions, Penn can build exemplary programs of its own that foster academic curiosity, engagement and faculty-student interaction.

Penn should view the College Houses as intellectual communities and living-learning arenas. The unique residential environment lends itself to analytical discussion and reciprocal learning between students and professors. This potential can be harnessed to maximize formal education, such as through focused seminars and small-group research projects. Academic residential programs can also help students transcend scheduling constraints and encourage exploration. They have potential as alternative ways to fulfill requirements and can focus on topics or teaching styles not found in the traditional classroom, such as through a liberal arts seminar or hands-on business practicum.

One way of adding more meaningful academic dimensions to residential programs is to combine them with for-credit courses. These may be pre-existing courses for which residents are offered priority registration, or they could be new creations. A

for-credit designation will ensure that applicants are committed and that program coordinators prioritize academic rigor. This should correspond with improvements to the application process, specifically more comprehensive material for evaluating interested students. [See page 14 for a discussion of alternative credit models, which can be linked with residential programs.]

VISION: DESIGN ACADEMIC FRESHMAN COMMUNITIES

SCUE believes freshmen in particular need to be given greater opportunity for smaller, academically focused residential programs, such as through an “Experimental College” model. Out of the 42 residential programs offered, seven are designated as freshman-only; only four of these are academically focused. Penn’s class of 2013 has 2,477 members, yet there are only 297 spaces allotted in freshman-only resident programs — roughly 12% of the class.²⁶

In this “Experimental College” model, students with varied academic interests and backgrounds would be clustered together in the same dorm or halls, taking some of the same requirement classes together and working collaboratively towards a culminating research project. Basic skills, methods and individual ex-

Spotlight: Stanford University’s Structured Liberal Education Program (SLE)

SLE is an exemplary illustration of how fusing intellectual and residential life maximizes the potential of both. An alternative three-course sequence, SLE lets freshmen fulfill their humanities and writing requirements while living and learning together through a “multicultural Great Books curriculum” that spans ancient culture to modern political theory. The residential hall serves as a communal, informal space for lectures, small-group discussions and films, while fostering close friendships and student-instructor relationships.

SLE successfully combines academic rigor and social community, and it demonstrates how residential programs can be harnessed to create close-knit liberal arts atmospheres within a major research university. By connecting its academic experience to credits, SLE ensures a high degree of commitment; the link to course credit signals that participants actually want to be there, creating a community of engaged learners and providing incentive for meaningful contributions.

Moreover, the SLE curriculum provides an alternative way to fulfill requirements that all students must take, making it possible for students with a wide range of academic pursuits and interests to participate. For students with rigid requirement tracks — such as those on dual-degree tracks who often have a prescribed set of courses to take every semester — a residential-based academic program would provide an avenue to a more diverse education without detracting from their ability to take necessary courses.²⁵

expertise from each discipline in which a student is involved can be utilized for the project. In order to ensure that the program maintains an intimate and dynamic environment, the number of students in the program should be limited, perhaps to the size of a floor in a larger dormitory or even to an entire building in a small college house.

Students in such a program would not simply attend weekly meetings, but would be given constant feedback from the live-in faculty masters of the program and the other highly engaged students. This model would expose intellectually curious students to academically rigorous coursework at a level that prepares them for future scholarly endeavors. It would also signal the University's commitment to supporting undergraduate intellectual development from the beginning, rather than focusing on students who have already decided to specialize in or who are already experienced with college-level studies. [See page 24 for a discussion of Freshman Research Seminars and other ways the University can foster undergraduate intellectual development throughout all stages of the Penn career.]

CONCLUSION

If Penn is going to continue investing resources in residential programs, it must ensure those resources are effectively used. Improved admissions and accountability procedures will guarantee program quality and equip administrators with the tools to identify those that should be reworked. CHAS can also better harness the unique potential of living-learning models, designing innovative programs that meet unfulfilled student needs.

COLLABORATIVE SPACES

PROBLEM: Campus spaces for group work are in high demand but short supply.

SOLUTION: Prioritize group spaces to promote collaborative learning and drive intellectual community.

STATUS QUO

There are limited collaborative spaces for group learning at Penn, causing consistent high demand for those that do exist. Few locations facilitate student collaboration at sufficient capacity. Huntsman Hall's Group Study Rooms (GSRs) represent an ideal group space. Each of the 57 rooms seats six students and is equipped with audio conferencing, whiteboards, dual wide-screen monitors, computer work stations, and two laptop connections for display.

The desire for such rooms is reflected by the fact they are often consistently booked – especially during the times they are in greatest need, such as during midterms and reading days. Moreover, only Wharton students can reserve GSRs. Other students face far fewer options, such as limited space in Van Pelt's Lipincott Library and Weigle Information Commons.

Other potential options include College House lounges and cafes, but communal spaces are often not conducive to academic work; in particular, they lack the technological capacity that make Huntsman and Weigle such high-demand locations.

RECOMMENDATIONS

In Focus: Faculty Opinions on Residential Programs

"Teaching is infinitely broad," explained Kings Court faculty resident Cam Grey, who said that the role of residential programs is to show students that "professors are people too." He warned against striving to recreate the traditions of institutions like Cambridge University, which has a centuries-old history of small living-learning communities. "We must work with what we have," he said, cautioning that many Penn students are simply not interested in merging academics with their dorm lives.²⁷

Ware House Faculty Fellow Heather Love similarly perceived low interest in academic programs in the Quad as an extension of Penn's "work hard, play hard mantra." Students want to unwind rather than continue working when they come home, making academic offerings an "uncomfortable fit."²⁸

Collaborative learning complements both in-class education and individual study. Whether through assigned group projects or informal exam study groups, collaborative work promotes team dynamics and prepares undergraduates for future interpersonal professional and academic interactions. SCUE believes that the University should facilitate group work by increasing available spaces.

VISION: CREATE MORE GROUP STUDY LOCATIONS

Creating more group study locations will promote the benefits of collaborative learning. Perhaps the model that is best to replicate is that evidenced by Weigle Information Commons. Students are encouraged to engage in an informal way with their classmates, allowing for a less intense and less stressful experience. In addition, the technological capabilities — such as video recording systems, monitors and laptops — allow for wider learning opportunities.

In encouraging Penn to prioritize the creation of new collaborative spaces, limited resources are a clear challenge. However, the University's eastward expansion project represents a tremendous opportunity to rethink how campus space is used. For example, relocating the administrative offices housed in the Franklin Building would make this valuable, central space available for student use. The building could be transformed into an academic hub that combines collaborative study spaces with seminar rooms. In addition, all rehabilitation and new construction projects should make student work space a priority, including group-oriented settings and technological capacity. [See page 20 for a discussion of standardizing classroom technology.]

CONCLUSION

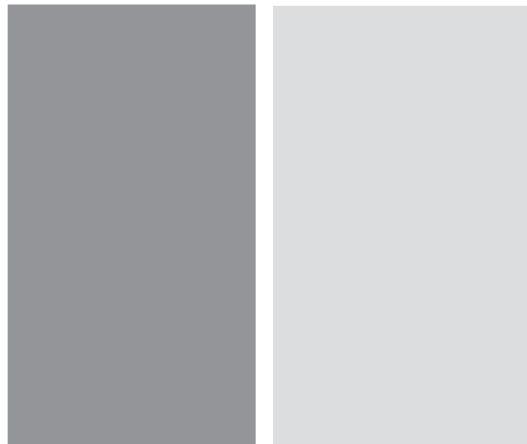
Penn can foster collaborative learning by constructing physical spaces that facilitate it. Clear student demand for more collaborative spaces exists. By making it a priority for campus construction, Penn can enhance the undergraduate experience and cultivate a thriving intellectual community.

SCUE believes that seminars are ideal for requirement fulfillment, especially in scientific disciplines. SCUE believes that seminar creation, particularly in the sciences, is essential to the diversification of courses within the sectors and to the broader improvement of students' learning experiences. SCUE believes the application and approval process for sector courses undermines the ability of the curriculum to function effectively. SCUE believes the existing Benjamin Franklin Scholars program should be transformed into a more structured, significant intellectual experience. SCUE believes the benefits of making available .5-credit and 1.5-credit courses strongly outweigh the costs.

CIVIC ENGAGEMENT SCUE believes TAs should be required to participate in department-specific training, as different disciplines demand unique communication techniques. SCUE believes the most effective way Penn can equip students to improve the world is by orienting components of the undergraduate experience towards problem-solving. SCUE believes that both inside and outside the classroom, new technologies can enable innovative styles of teaching and learning. SCUE believes all rooms should be equipped with a minimum amount of hardware, specifically a technology cart including a computer and a projector. SCUE believes that Penn should champion OpenCourseWare for both current students and the global community. SCUE believes research should be accessible to every willing student in every course of study. SCUE believes that Penn should minimize the cross-disciplinary barriers that undergraduates face. SCUE believes that students planning to double major should be given the opportunity to write an interdisciplinary thesis that bridges the research techniques and combines the resources of multiple departments. SCUE believes that increasing these school-wide minors will connect students to interdisciplinary opportunities. SCUE believes Penn's commitment to helping students make informed decisions can be enhanced through centralization and standardization of the formal advising system. SCUE believes Penn should establish one location to house a university-wide advising department.

STUDY ABROAD SCUE believes Penn should embrace a virtual course-shopping system. SCUE believes that certain technological advances could ease the inevitable burden associated with course registration. SCUE believes that posting syllabi online affords numerous benefits to faculty and students alike. SCUE believes freshmen in particular need to be given greater opportunity for smaller, academically focused residential programs. SCUE believes that the University should facilitate group work by increasing available spaces. SCUE believes that Penn should motivate and enable undergraduates to engage civically through academic partnerships. SCUE believes ABCS must not only tie civic engagement to course credits, but should immerse students in challenging learning atmospheres. SCUE believes that experiences abroad are significant intellectual opportunities which should be made possible for all Penn students. SCUE believes that Penn should emphasize research during study abroad preparations and cultivate ways for students to create academic opportunities while abroad. SCUE believes that Penn's central leadership should consult more broadly with schools and research centers in constructing a global vision for Penn that serves all its stakeholders, and enhances Penn's public profile.

Beyond PENN



APPROXIMATELY
12,000
UNIVERSITY STUDENTS,
FACULTY AND STAFF
PARTICIPATE IN MORE
THAN 300 PENN
VOLUNTEER AND
COMMUNITY SERVICE
PROGRAMS.

IT IS ESTIMATED THAT
EVERY YEAR, MORE THAN
1700 PENN STUDENTS AT
ALL DEGREE LEVELS
PARTICIPATE IN SOME FORM
OF INTERNATIONAL STUDY,
RESEARCH, TRAINING OR
VOLUNTEER ACTIVITY.²⁹

CIVIC ENGAGEMENT THROUGH ACADEMIC PARTNERSHIPS

PROBLEM: Lack of academic rigor and relevance undermines opportunities to connect Penn's strong civic profile to classrooms.

SOLUTION: Integrate ABCS courses into curriculum while standardizing and ensuring academic quality.

STATUS QUO

Given the growing importance of theory-based learning in real world applications, SCUE perceives civic engagement as a vehicle to sensitize students to the value of education and to enable them to identify problems and implement sustainable solutions in the community. Beyond Penn, students can use the conceptual frameworks from class and the pragmatic tools acquired from civic experiences to make informed decisions, formulate and propose public policies and establish rewarding partnerships. As best stated in President Amy Gutmann's Penn Compact: Engaging Locally and Globally, all students and faculty should "share the fruits of our integrated knowledge wherever there is an opportunity for our students, faculty, and alumni to serve and to learn."

At the 2009 Conference of the Coalition of Urban and Metropolitan Universities, Penn was ranked first in a "Survey of College and University Civic Partnerships," which recognized the University's contributions to local communities, most notably its contributions to improving West Philadelphia schools.³⁰ The numerous civic resources available to Penn's students and faculty, notably the Netter Center for Community Partnerships and Civic House, make the University an ideal place for community engagement.

The Netter Center's Academically Based Community Service (ABCS) program stands as Penn's predominant curricular outlet into local communities. Answering the President's call for Local Engagement, ABCS follows a model of service learning, targeting problem-oriented research. ABCS courses equip students with the proper tools and skills to make successful and

In Focus: History of ABCS Program

Since their inception in 1991, the number of ABCS courses has increased across disciplines and schools. Today, students can register for 160 ABCS courses offered in diverse schools and disciplines. During the 2008-2009 academic year, over 1500 ABCS students participated in 59 courses across 21 departments and 8 schools at Penn.

lasting changes in local communities, directly interfacing with public schools and community organizations. Students can delve into issues ranging from urban nutrition to clinical psychology and develop innovative strategies that synthesize the information they have learned.

However, the success of these programs comes despite a lack of curriculum integration, which is essential for success from the student perspective. A student's enrollment in an ABCS course is most likely a result of his or her self-motivation to seek out such opportunities. While this sort of participation must not be undervalued, SCUE feels that students should additionally be made aware of civic partnerships through College curriculum options. Students not already active in community service activities may have trouble identifying these opportunities and, more importantly, their academic relevance. Without the incentive of contributing to curricular requirements, ABCS courses do not represent priorities in students' busy schedules. An underlying barrier to wider utilization of ABCS opportunities is their perception of being academically soft.

RECOMMENDATIONS

SCUE believes that Penn should motivate and enable undergraduates to engage civically through academic partnerships. In doing so, it will prepare students to serve a greater cause as global citizens.

VISION: INTEGRATE CIVIC ENGAGEMENT INTO CURRICULUM REQUIREMENTS

SCUE proposes that ABCS courses fulfill major and sector re-

Spotlight: A Sample of Current ABCS Courses

Urban Environments: The Urban Asthma Epidemic (ENVS 408-401/HSOC 408-401)

"Penn undergraduates learn about the epidemiology of urban asthma, the debate about the probable causes of the current asthma crisis, and the nature and distribution of environmental factors that modern medicine describes as potential triggers of asthma episodes. Penn students will collaborate with the Children's Hospital of Philadelphia (CHOP) on a clinical research study entitled the Community Asthma Prevention Program. The Penn undergraduates will co-teach with CHOP parent educators asthma classes offered at community centers in Southwest, West, and North Philadelphia. The CHOP study gives the Penn students the opportunity to apply their study of the urban asthma epidemic to real world situations."³¹

The Politics of Food (PSCI 135 301/HSOC 135 401/GAFL 135 401)

"Students explore the politics that shape food production, marketing and consumption. Community service projects involve opportunities to research and address problems in several different arenas: campus cafeterias, the West Philadelphia schools, anti-hunger campaigns, food workers' organizing efforts, and impact of food industry advertising on diets. A focus on case studies of leaders who are making a difference in the politics of food include several guest speakers, who work on food related health, labor, farming, technology, and globalization issues."³²

What If? ABCS Courses Counted For Society Sector

The University's official descriptions of the requirements closely parallel ABCS objectives. A prime example is the Society Sector. One of the underlying premises of ABCS courses is to forge stronger, sustainable relationships between Penn and its neighboring communities. Given that the Society sector emphasizes the complexities of human behavior and interactions in contemporary societies, many ABCS courses adequately fulfill this objective.

An example is Citizenship and Democratic Development (PSCI 291), part of the Penn Democracy Project, which serves to assess democratic political development among undergraduates using Penn as a model for similar studies in the U.S. and other countries. In addition to carrying out more traditional classroom activities, such as theoretical discussions and individual papers, students contribute to ongoing research with tangible community impact by conducting interviews and formulating policy recommendations.³³

requirements, and that the breadth of this coursework expand to untapped undergraduate departments. SCUE recommends that the University allow students to count one or more ABCS course in the form of major-related elective credit. To qualify, an ABCS course would either substantively complement a course required for the major or address central issues often considered in the field. Students would inform and clarify objectives learned in class by analyzing these critical issues under a civic lens. This policy would allow students who might not have freedom in their academic plan to incorporate community engagement into their time at Penn.

Similarly, ABCS Courses should be allowed to count for Sector Requirements. Considering their multidisciplinary nature, some ABCS courses ideally fit established sector goals, especially those of Society, Arts & Letters, and Humanities & Social Sciences.

VISION: ENSURE RIGOR OF ABCS COURSES

In advocating for an expanded role for ABCS in the curriculum, it is important to address the perception that ABCS courses are less academically rigorous than non-ABCS courses. SCUE believes ABCS must not only tie civic engagement to course credits, but should immerse students in challenging learning atmospheres that force them to think critically and hold them to suitable standards.

Although some current offerings do provide this, the lack of expectations set by all stakeholders as well as the lack of a process to assess these expectations in specific courses, hinders the broader ABCS program. SCUE proposes a formalized structure for evaluating and maintaining ABCS academic rigor. Departments should work closely and regularly with the Netter Center to develop clear guidelines for what ABCS courses should achieve, as well as to design regular evaluation and review processes. This might involve reviews of syllabi and on-site observations. This process should also include the voices of ABCS professors, participants and the community members with whom they work. Once academic rigor is standardized, it becomes more appropriate that these courses count for major and sector requirements. Their increased standing will help attract students who are genuinely interested in the academic components of ABCS and committed to meeting their expectations.

CONCLUSION

Penn's long-term success as a community partner depends on lowering curricular constraints to civic engagement while ensuring academic rigor. We thus urge the University to integrate ABCS courses into the curriculum by allowing these courses to fulfill major and sector requirements. Continued collaboration among the Netter Center, department administrators and faculty will ensure ABCS courses are fulfilling both their academic and civic purposes.

STUDY ABROAD & OFF-CAMPUS OPPORTUNITIES

PROBLEM: Barriers and inconsistencies in study abroad and other off-campus opportunities mean Penn's commitment to global engagement does not translate to meaningful undergraduate involvement.

SOLUTION: Integrate global initiatives into campus life while increasing opportunities for academically meaningful study abroad options.

STATUS QUO

As a world-class university, Penn's global engagement initiatives are central to the University's academic and social missions. Penn strives to engage globally, but what should this mean in practice? Students' ability to reap benefits abroad is hindered by barriers to participation and missed opportunities. Lack of cohesion and classroom connections mean undergraduates are not meaningfully linked to Penn's array of global programs and research centers.

RECOMMENDATIONS

SCUE believes that experiences abroad are significant intellectual opportunities which should be made possible for all Penn students. Models range from traditional semester-long enrollment at foreign universities to innovative, flexible options like courses with abroad components or gap years. Such experiences provide students with unique understandings of other cultures, opportunities to integrate disciplines in new settings, and gain hands-on experience that enhances global-oriented academic programs. By promoting the academic benefits of abroad options and harnessing undergraduate capital on a global scale, Penn can better fulfill its commitment to global engagement while gaining untapped resources that advance its work.

VISION: EXPAND ALTERNATIVE MODELS OF STUDYING ABROAD

To accommodate broad student schedules and needs, Penn should expand and diversify the types of study abroad experiences offered while prioritizing their intellectual benefits and ensuring their academic quality.

Study abroad opportunities are offered through Penn Abroad during the regular academic year. During the summer, five-week programs are run through the College of Liberal & Professional Studies (LPS). A large portion of the student body is unable to study abroad because of existing major or General Education Requirements, financial concerns or extra-curricular and leadership commitments. Burdens are particularly pronounced for those pursuing double-majors and dual degrees, as well as transfer students unable to receive credit for previous coursework. Summer opportunities are a useful alternative to semester-long study abroad, but similarly inaccessible for many students seeking internships or other employment.

SCUE proposes that Penn increase the implementation one-

Spotlight: Peer Institutions

Syracuse's Short-Term Study Abroad Options

Syracuse University's "Short-Term Study Abroad Options" are designed for students who cannot commit to a whole year, semester or summer abroad, as well as for those who want to try out studying abroad before pursuing a longer program. Courses are offered in a partnership between the Syracuse study abroad office and academic departments. Interested students fill out applications that are reviewed by course leaders.

Examples include "Mexico and the United States," a Political Science course in which students learn about the historic and present relations between the two countries and compare their political systems with a trip to the Southern State of Oaxaca over Spring Break. Another offering is the African Business Seminar, which involves a trip to South Africa and Uganda that examines business and cultural institutions.³⁴

Princeton's "Bridge Year Program"

In September of 2008, Princeton University launched its "Bridge Year Program" which subsidizes a gap year for a selected group of students. Students admitted to the program spend nine months in an international community offering "humble service" in governmental and non-profit organization. The goal of the program is to allow students to become immersed in the language and culture of another country and positively impact the communities and organizations in which the students serve. Princeton has chosen to work with a select group of partner organizations in carefully devised projects appropriate for the skill level of pre-college students.³⁵

credit study abroad programs during winter and spring breaks, which would provide similar benefits on a more manageable time scale. The infrastructure is already in place for one-credit summer abroad programs, facilitating expansion of such offerings; the same procedures could be translated into winter opportunities as well. Courses would be designed by individual departments and administered by LPS. Abroad experiences could also supplement already existing course.

SCUE also encourages departments to offer courses that combine standard lecture or seminar structures with abroad components. New courses can be designed around specific off-campus experiences, or such experiences could be incorporated into already existing classes. For example, a lecture on European history offered during the Spring semester could also include an optional trip during Spring Break to explore the content in person.

Classes would allow students to engage with relevant material before departing, while projects completed during and after their return would allow synthesis of knowledge and practical application of the experience. Mechanisms such as preparatory research, lectures before departure, and follow-up assignments would ensure such courses do not devolve into glorified field trips. Moreover, as such courses would be designed and led by Penn faculty, SCUE is confident that they would necessarily adhere to the same academic standards as other departmental offerings.

VISION: PROMOTE ACADEMIC RESEARCH IN STUDY ABROAD

By immersing students in the culture, history, economics and politics of their host country, time abroad serves as a catalyst for research by prompting questions about their first-hand experiences. Unfortunately, after returning to Penn, many students no longer have access to the rich primary sources on their subject, whether surveys, interview subjects or national archives. While some students are able to secure coveted funding to return to their region of interest to collect data, many cannot.

SCUE believes that Penn should emphasize research during study abroad preparations and cultivate ways for students to create academic opportunities while abroad. Through proactive planning, students could better incorporate research into time abroad without extra costs or missed opportunities. This would involve increased commitment, coordination and collaboration among stakeholders including CURF, Penn Abroad, individual departments and academic advisers.

Aligning with our belief that students be involved in research throughout their Penn careers, SCUE proposes that all students planning to go abroad be advised to think about potential research topics and investigate the primary sources available in their host countries. Advisers at all levels should ensure that students are familiar with their options and equipped with the tools for pursuing them. In addition to promoting awareness, Penn could provide incentives that encourage research abroad. For example, those who propose research designs before departure could be eligible for credit and priority access to departmental funds for expenses such as travel and archival fees. Greater institutional support for research abroad will help pro-

mote study abroad as an integral part of broader academic pursuits, ensuring travel does not simply become a vacation from Penn. Where resources and student initiative permits, students should leverage existing relationships between professors and their colleagues abroad to facilitate seminars or research opportunities. Close involvement of Penn faculty will provide direction for students and ensure the academic rigor of resulting projects.

VISION: ENGAGE UNDERGRADUATES IN PENN'S GLOBAL FOOTPRINT

The current array of global engagement initiatives falls short as a cohesive strategy. Rather than a distinctive global identity, the status quo represents disjointed projects that, while admittedly successful in and of themselves, poorly serve Penn as a whole.

At one end of the spectrum, isolated partnerships exist between faculty and their international colleagues, with undergraduates excluded from these fruitful collaborations. At the other end, President Amy Gutmann has announced prominent alliances with Tsinghua University and Shanghai Jiao Tong University, but it has not yet been evident how these relationships will enrich the undergraduate experience locally and expand undergraduate opportunities globally. If the University claims that these programs were initiated to enhance the academic experience Penn fosters, they need to be created and evolved with undergraduate students in mind.

SCUE believes that Penn's central leadership should consult more broadly with schools and research centers in constructing a global vision for Penn that serves all its stakeholders, and enhances Penn's public profile. Just as Penn partners with West Philadelphia public schools through the Netter Center for Community Partnerships, merging the best of Penn's intellec-

Spotlight: Penn in Botswana

Penn's partnership with the University of Botswana, developed in 2001 and significantly expanded in 2006, is remarkable for its depth of substantive collaboration and the tangible results it has achieved toward Penn's twin aims of enhancing student opportunities abroad and advancing global progress. The President and Provost, when highlighting notable international initiatives, most often point to the Botswana partnership.

Unfortunately, the partnership's roots in medical research and HIV/AIDS prevention have excluded a significant proportion of Penn's stakeholders. As evidenced by a leadership predominantly based in the School of Medicine, the scope of the partnership is mostly limited to public health applications.

Botswana represents a rich opportunity for students in Political Science, Anthropology, African Studies, International Economics, social entrepreneurship and Engineering and should expand to fill these niches.

In this regard, SCUE believes that Botswana represents a missed opportunity. Undergraduates would be eager to partner with faculty to broaden the academic mission of this exciting program. Moreover, the experience from Botswana must be carried back into classrooms at Penn, making the knowledge gleaned there accessible to more students than just those who actually studied on site.³⁶

Spotlight: A Sample of Current Courses with Off-Campus Components

Techniques in Conservation Biology (BIOL465)

In this course, students travel to the Smithsonian Institution's Conservation and Research Center in Front Royal, Virginia over Spring Break. The course consists of four meetings outside of this trip: one in January to introduce the course, one in April to discuss student research progress, and two sessions with resource centers to help students hone their scientific writing and literary search skills. The rest of the course credit is compacted into the week-long visit to the Institute, where students spend evenings in introductory lectures and each full day in the field, collecting real data on live organisms. Students' grades are divided equally between their engagement and work during the trip and two papers, one written in a group after the trip and one written individually before they go.³⁷

Penn-in-Cannes (CINE 049)

This two-week excursion to the Cannes Film Festival during the last two weeks of May explores the intersecting worlds of cinema and business. After attending two pre-departure lectures and analyzing films in the Philadelphia Film Festival as a warm up, students go abroad to watch 20-25 films in the company of the most influential names in the movie business. Students also participate in several lectures led by leading film experts and businesspeople. After returning, students complete a 20-page paper discussing two films as well as reflections on their experiences.

A major strength of these programs is their timing. By aligning with student schedules, they provide many students with opportunities that they could not otherwise enjoy; the ecology trip is clearly in tune with Penn's calendar, and the Cannes program occurs before many summer internships start. Although the experiences occur in shorter time frames, they are effectively complemented by mechanisms like assignments and lectures to ensure academic rigor and worthiness of a Penn credit.³⁸

tual capital with the creativity and service-oriented drive of its students, so too should a center for international partnerships serve as the clearinghouse and enabler of a series of rich, multi-disciplinary and accessible academic partnerships in the model of the Botswana program. From an undergraduate perspective, Penn would be the first university to meaningfully transcend the traditional study abroad experience, integrating research, service and study at partner universities that have deep linkages with Penn through scholarship and exchange.

CONCLUSION

Participation in Penn's range of study abroad opportunities is often hindered by lack of awareness, encouragement and financial considerations, along with scheduling constraints. Lowering these barriers will improve student ability to contribute to Penn's global presence. In better linking undergraduates to its worldwide research and programs, the University will strengthen its commitment to global engagement.

What If? Transfer Credit Systems Were Streamlined

In addition to encouraging awareness and formalizing opportunities for study abroad, Penn must lower logistical barriers, one of which is the unpredictable credit transfer approval process. Inefficiencies and inconsistencies in the process mean students who take courses abroad, as well as transfer students, are sometimes prevented from taking full advantage of Penn's curricular offerings.

While the XCAT system – an online forum for students to upload electronic files and information to the appropriate departments – is a great tool for managing transfer credit approval requests, it does not correct decentralized practices and procedures for approving credit towards graduation. Each department has room to approve or deny credit based on assessment of materials the student provides. The subjective nature of this process gives the departments great latitude to deny credit.

Unforeseen credit issues can cause students to fall behind in fulfilling sector and major requirements; as a result, they face difficult choices between graduating on time and exploring all their academic interests. Transfer students are welcomed to Penn by the Admissions Office with either sophomore or junior status, but are oftentimes demoted to freshman or sophomore status, respectively, as a result of credit denials. Assuming students will meet College graduation requirements in a timely manner is often unreasonable. In addition, unpredictability means students considering study abroad have trouble planning ahead, raising the barriers to pursuing this option.

SCUE proposes this system be critically examined, standardized, and streamlined. A logical restructuring of transfer credit approval system would place the power to accept or deny credit in the hands of a single transfer or abroad credit adviser. This special adviser would be able to determine whether coursework at the student's prior or abroad university merits credit, as well as judge whether the credit can be applied to a general education sector.

What If? Penn Made Gap Years a Priority

Although time off in between high school and college is a common practice in parts of Europe and Australia, very few high school seniors in the United States pursue the option. Barriers include financial and technical restraints, as well as the potential stigma attached to a year-long break. Without institutionalized encouragement, too many students do not realize such opportunities exist, let alone the benefits of them.

Gap years offer tremendous benefits for both individual students and universities as a whole. For students coming from an intensely competitive high school experience, gap years can provide refreshing perspective on the world outside of academia and an opportunity to learn through experience – a method all too often excluded in formal education. Moreover, students returning from a year abroad bring to campus their diverse experiences and maturity, informing their own Penn educations as well as those of their peers.

SCUE recommends Penn make the gap year option more financially feasible and formalized through structured programs with partner organizations. Gap years can take many forms. They can involve paying jobs or volunteer work, community service or business experience, traveling to foreign nations or working on a local level. Some students design their own gap years while others work with a gap year organization for a more structured program.

Reflecting these diverse possibilities, Penn should begin by conducting preliminary research on the best models and partnerships to explore. This process should meaningfully involve consultations with professors, departments and programs to understand how they can integrate student experiences into their work. By scaling up its support, Penn reinforces its commitment to global engagement and becomes more attractive to students interested in such unique opportunities.

NOTES

1. "Barbara and Edward Netter Center for Community Partnerships, University of Pennsylvania - Academically Based Community Service." Penn: University of Pennsylvania. Web. 2009. <<http://www.upenn.edu/ccp/abcs-courses/academically-based-community-service.html>>
2. "Communication Within the Curriculum Program, School of Arts & Sciences - University of Pennsylvania." School of Arts & Sciences - University of Pennsylvania. Web. 2009. <<http://www.sas.upenn.edu/cwic/>>.
3. Peterman, Kent. Personal Interview. 21 October 2009.
4. "Center for Undergraduate Research and Fellowships | Benjamin Franklin Scholars." Penn: University of Pennsylvania. Web. 2009. <<http://www.upenn.edu/curf/bfs/>>.
5. "College of Arts and Sciences at Cornell University." Cornell University, College of Arts and Sciences, Liberal Arts. Web. 2009. <<http://www.arts.cornell.edu/programs/collschl.php>>.
6. "Undergraduate Program - The Wharton School of the University of Pennsylvania." MARKETING WEBSITE - The Wharton School of the University of Pennsylvania. Web. 2009. <http://marketing.wharton.upenn.edu/programs/undergrad_program.cfm>.
7. "Library Workshops." Penn Libraries. Web. 2009. <http://www.library.upenn.edu/cgi-bin/workshopmgr/workshopMgrTop?xslt_style=viewList>.
8. Center for Teaching and Learning. Web. 2009. <<http://wwwctl.sas.upenn.edu/>>.
9. "Publications." SCUE: The Student Committee on Undergraduate Education. Web. 2009. <<http://www.scue.org/publications/>>.
10. DiIulio, Jr., John J., and And Joseph P. Tierney. PSCI 440 Syllabus. 2007. Web. 2009. <<http://www.polisci.upenn.edu/courses/syllabi/fall07/ps440401.pdf>>.
11. "Department of History and Sociology of Science | 407 Urban Environments: Prevention of Tobacco Smoking in Adolescents." Web. 2009. <http://hss.sas.upenn.edu/mt-static/hsoc/courses_1/407_urban_environments_prevent.php>. HSOC 407 Urban Environments: Prevention of Tobacco Smoking in Adolescents is cross-listed as ENVS 407, also a Capstone Course and ABCS Course.
12. "Civic House: University of Pennsylvania." The Vice Provost for University Life at the University of Pennsylvania. Web. 2009. <<http://www.vpul.upenn.edu/civichouse/>>.
13. Fox Leadership. Web. 2009. <<http://foxleadership.upenn.edu/>>.
14. "Educational Transformation through Technology at - TEAL." MIT. Web. 2009. <<http://web.mit.edu/edtech/casestudies/teal.html>>.
15. Ford, Andréa. "Logging On to the Ivy League." Time 27 Apr. 2009. Print.
16. "University Research Foundation Guidelines." University of Pennsylvania. Web. 2009. <<http://www.upenn.edu/research/FoundationGuidelines.htm>>.
17. "Publications." SCUE: The Student Committee on Undergraduate Education. Web. 2009. <<http://www.scue.org/publications/>>.
18. "Center for Undergraduate Research and Fellowships | Grants." Penn: University of Pennsylvania. Web. 2009. <<http://www.upenn.edu/curf/research/grants/purm>>.
19. "Academic Affairs." Penn Undergraduate Assembly: Your Student Government. Web. 2009. <<http://pennua.org/category/academics/>>.
20. "Penn Compact: Integrating Knowledge." Penn: University of Pennsylvania. Web. 2009. <<http://www.upenn.edu/compact/knowledge.html>>.
21. "GAPSA-Provost Award for Interdisciplinary Innovation." Graduate and Professional Student Assembly: University of Pennsylvania. Web. 2009. <<http://www.gapsa.upenn.edu/engage/funding/award-for-interdisciplinary-innovation>>.
22. "College Houses & Academic Services: University of Pennsylvania." Web. 2009. <<http://www.collegehouses.upenn.edu/brochure/index.asp>>.
23. "Penn Women in Leadership." Web. 2009. <http://www.collegehouses.upenn.edu/residentialprograms/women_in_leadership.html>.
24. "Ancient Studies/University Museum." Web. 2009. <<http://www.collegehouses.upenn.edu/residentialprograms/ancientstudies.html>>.
25. "UAL - Structured Liberal Education Program (SLE)." Undergraduate Academic Life Home. Web. 2009. <http://ual.stanford.edu/AP/univ_req/IHUM_SLE/SLE.html>.
26. "Residential Programs at the University of Pennsylvania." Web. 2009. <<http://www.collegehouses.upenn.edu/residentialprograms/index.html>>.
27. Grey, Cam. Kings Court Faculty Resident. Personal Interview. 30 April 2009.
28. Love, Heather. Ware House Faculty Fellow. Personal Interview. 5 May 2009.
29. All statistics on section break pages were taken from: <http://www.upenn.edu/about/facts.php>.
30. "Penn and Southern Cal Top Ranking of Good-Neighbor Colleges - Administration - The Chronicle of Higher Education." Home - The Chronicle of Higher Education. Web. 2009. <<http://chronicle.com/article/PennSouthern-Cal-Top/48787/>>.
31. "Department of History and Sociology of Science | 408 Urban Asthma Epidemic." Web. 2009. <http://hss.sas.upenn.edu/mt-static/hsoc/courses_1/408_urban_asthma_epidemic.php>.
32. "Department of History and Sociology of Science | 135 The Politics of Food and Agriculture." Web. 2009. <http://hss.sas.upenn.edu/mt-static/hsoc/courses_1/135_the_politics_of_food.php>.
33. Teune, Henry. PSCI 291 Syllabus. Web. 2009. <<http://www.polisci.upenn.edu/courses/syllabi/Fall2009/PSCI291301.pdf>>.
34. "SU Abroad - Short-Term Programs." SU Abroad - Your Place In The World. Web. 2009. <<http://studyabroadarchive.syr.edu/programs/short-Term/>>.
35. "Bridge Year Program - Home." Princeton University - Welcome. Web. 2009. <<http://www.princeton.edu/bridgeyear/>>.
36. "Botswana-UPenn Partnership Home." Penn: University of Pennsylvania. Web. 2009. <<http://www.upenn.edu/botswana/programs.html>>.
37. McShea, Bill. BIOL 465 Syllabus. Web. 2009. <<http://www.bio.upenn.edu/media/pdf/courses/S2010/BIOL465/BIOL465.syllabus.pdf>>.
38. "Penn-in-Cannes, France | Penn LPS." School of Arts & Sciences - University of Pennsylvania. Web. 2009. <<http://www.sas.upenn.edu/lps/summer/abroad/cannes/>>.

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