

OFFICE OF THE PROVOST
AND VICE CHANCELLOR FOR ACADEMIC AFFAIRS

PATHWAYS IN UNDERGRADUATE
EDUCATION

FINAL REPORT

2006-2007



ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

OFFICE OF THE PROVOST
PATHWAYS IN UNDERGRADUATE EDUCATION
FINAL REPORT

TABLE OF CONTENTS

I.	COMMITTEE CHARGE.....	1
II.	COMMITTEE MEMBERSHIP	1
III.	EXECUTIVE SUMMARY	2
IV.	COMMITTEE ACTIVITIES AND PROCESS.....	2
V.	RECOMMENDATIONS AND FINDINGS.....	3-6
VI.	ATTACHMENTS.....	7-17

I. Committee Charge

Provost Linda Katehi charged the Pathways in Undergraduate Education Committee with identifying and investigating pressing problems in undergraduate education at the University of Illinois at Urbana-Champaign. Specifically, she requested the committee to evaluate the degree to which undergraduate students “face unexpected and undesirable barriers to success on our campus,” asking the committee to consider potential problems in four areas. The first inquiry was to determine if curricula are inflexible, with “over prescription” of courses leading to limited course options for students. Second, Provost Katehi asked if students encounter undue barriers to transfer among colleges, preventing them from following their interests and expanding academic strengths. Third, she suggested that Educational Opportunities Program students tend to be concentrated in LAS, reflecting the presence of barriers to matriculation in other colleges. Fourth, she solicited information on how well our undergraduate programs articulate with the campus strategic plan, raising the possibility that development of a general or liberal studies degree could help align curricula with this plan. As an overall goal, Provost Katehi asked that the committee work towards identifying ways to define Illinois as a unique and innovative leader in higher education.

II. Committee Membership

Steven Leigh, Anthropology, Chair
Nancy Abelman, E. Asian Languages & Cultures
Andrew Alleyne, Mechanical Science & Engr.
James Anderson, Educational Policy Studies
Matthew Ando, Mathematics
Carol Augspurger, Plant Biology
James Barrett, History
Ruth Ann Clark, Speech Communication
Larry DeBrock, Economics
Kim Graber, Kinesiology & Community Health
Rochelle Gutierrez, Curriculum & Instruction
William Hammack, Chemical & Biomolecular Engr.
Eve Harwood, Music
Gail Hawisher, English
Laurie Kramer, Human & Community Development
James Lisy, Chemistry
Michael Loui, Electrical & Computer Engineering
Mats Selen, Physics
Joseph Squier, Art & Design
Arlene Torres, Latina/o Studies
Madhu Viswanathan, Business Administration

III. Executive Summary

The Pathways in Undergraduate Education Committee finds that: 1) inflexibility and over prescription characterize a number of curricula at UIUC, 2) transfer regulations and information vary and are difficult to access, and 3) deficiencies in certain skill sets, particularly quantitative skills, may pose academic barriers to undergraduates. These problems will worsen, unless interventions are considered and implemented. Steps to resolving these problems include: 1) requiring units evaluate and remediate inflexibility and over prescription, 2) centralizing and standardizing transfer resources, and 3) increasing resources to strengthen quantitative capabilities, possibly modeled on the Writer’s Workshop. These recommendations should enhance student options, particular for intercollege transfer. Finally, new kinds of programs that emphasize

flexibility, interdisciplinarity, and thematic training should be considered.

This report presents two kinds of recommendations, including primary or overarching recommendations and ancillary recommendations. Appendices present the committee charge and procedures, overall findings, and individual subcommittee reports.

IV. Committee Procedures

Following Provost Katehi's inquiry, the full Pathways in Undergraduate Education met on March 2, 2007 to discuss the issues, review basic data provided by the Provost's office, and form subcommittees charged with more detailed investigations of the four topics outlined in the committee charge letter. Subcommittees then met during the following six weeks. Subcommittee chairs met on Tuesday, April 24, 2007 to discuss findings and recommendations. Subcommittee chairs discussed each problem area at length, and conveyed recommendations on each of the points outlined by the original charge letter.

Findings of subcommittees were condensed into the present report, a draft of which was then supplied to committee members prior to a meeting of the full Pathways Committee on May 8, 2007. At this meeting, the findings of subcommittees were discussed, and recommendations given preliminary evaluation by the full committee. Following discussion, committee chair, Steven Leigh the present report, detailing findings and recommendations of the Pathways Committee.

V. Primary Recommendations

- A. *Require that units self-evaluate curricular inflexibility and over prescription*
- B. *Invest in web and advising resources to improve student transfer options*
- C. *Develop mathematics tutoring resources to serve students across campus*
- D. *Foster interdisciplinary education for undergraduate students*

Discussion of Primary Recommendations

The Pathways in Undergraduate Education Committee saw its charge as a request to facilitate success for undergraduates at the University of Illinois, Urbana-Champaign. The main concern is that numerous barriers to success have emerged as knowledge has advanced, new disciplines have emerged, and other disciplines have matured. Our primary recommendations are intended to erode barriers to academic success across the entire campus, with the four primary recommendations addressing large-scale problems. Ancillary recommendations deal with more specific problems.

- A. *Require that units self-evaluate curricular inflexibility and over prescription.*

The great variety of units and curricula at UIUC presents superb options to students. However, some curricula are indeed inflexible and over prescribed, often constraining students to narrowly focused training.

In light of these findings, our main recommendation is to request that academic units scrutinize their programs, with the objective of reducing both inflexibility and over prescription. Ideally, units could realize incentives to increase flexibility, although the committee had concerns about the logistics of such incentives. However, an institutional priority to provide undergraduate students with a variety of options within a discipline may be productive, generating significant benefits to both units and majors.

The committee also recommends that units determine if course requirements sustain the breadth of training necessary for future success and advancement, while retaining flexibility. Disciplinary skills remain absolutely crucial. However, it is equally evident that students must have the kinds of training necessary to function in milieus in which knowledge is both highly uncertain and contested. Uncertainty and contestation will increase in economic, political, cultural, scientific, and social arenas. Therefore, our institutional priority should be to prepare students for the future by offering cogent, challenging, and broad interdisciplinary training. Consequently, units should determine the degree to which current curricula provide adequate preparation for the future, and take steps to modify programs of study accordingly.

Several steps could aid efforts to increase curricular flexibility and reduce prescription, with particular attention to how these problems influence time-to-degree. First, units should assess student reliance on Advanced Placement credits. If students cannot graduate in four years without AP credits, units should take steps to correct this problem (possibly including appealing for longer undergraduate training times). Committee members anecdotally discussed cases in which students who had many AP credits managed to graduate from highly prescriptive programs in four years. However, these students were seen as exceptional, and even with abundant AP credits, students had some difficulty in managing the curriculum. Second, units should investigate time-to-degree more broadly. Academic units should be aware of both current time-to-degree and historical in time-to-degree data to help students develop realistic academic plans. This will become increasingly important given tuition ceilings for incoming students. Specifically, increased time-to-degree may mean large tuition increases near the end of undergraduate careers. Improving flexibility should help alleviate this problem. Third, units should examine retention rates, assuming that inflexibility and over prescription affect retention.

B. Invest in web and advising resources to improve student transfer options.

The committee determined that significant barriers exist for students transferring among colleges. Our research revealed several problems, including inconsistent scheduling of transfer “windows,” highly variable transfer requirements, and lack of advisers knowledgeable about transfer procedures.

The first recommendation is to increase the accessibility and uniformity of transfer information. These goals could probably be attained with only slight modifications to existing resources, including the Degree Audit Reporting System (DARS). Students currently utilize DARS for degree progress information. The committee suggests that this system may be capable of allowing students to run queries relevant to transfer. Such resources should be evaluated and, if necessary, modified to perform this function.

The second recommendation is that students have convenient and unambiguous ways to assess chances for successful transfer. Specifically, the committee suggested that a webtool could be developed that helps determine the likelihood of transfer. For instance, given the student’s GPA and coursework, the webtool could output a probability of transfer success based on historical transfer data. Improved, centralized web resources devoted to transfer could also be developed. One component of such a system could include clear transfer procedures for various colleges, as well as synchronized transfer deadlines across campus.

The committee felt that colleges should have the freedom to set transfer requirements, despite problems that occur when minimum GPA requirements within a college are below minimum GPA for accepting transfer students. However, we encourage flexibility in allowing transfers, perhaps looking beyond GPA. Students with exceptional talents should have the ability reveal

those talents while making transfer requests. We recommend that colleges review transfer requests with a broad view of student talents, backgrounds, and interests.

C. Develop mathematics tutoring resources to serve students across campus.

The committee strongly suspects that transfer barriers frequently involve insufficiently developed quantitative abilities. Moreover, concerns about quantitative skills link all four of areas identified in Provost Katehi's committee charge letter. First, insufficient quantitative skills restrict transfer options into and among colleges where such abilities are integral to success. Second, the committee suggests that Educational Opportunities Program (EOP) students may encounter exceptional barriers stemming from inadequate quantitative training. The committee agreed that quantitative skills posed serious barriers to transfer into certain colleges, and may be motivating transfers out of these same colleges

Several recommendations may help solve this problem. First, the simplest, most cost-effective solution would be to limit student options for mathematics classes to those recommended by placement examinations. Specifically, committee members reported that students often receive class placement, but then register for a more advanced class, only to be overwhelmed. Thus, limiting class options may be helpful (even if unpalatable to students). Academic advising should be strengthened to address this issue.

Second, the committee recommends investment in resources to improve quantitative skills. For example, campus could support a quantitative or mathematics skills center, modeled on the Writer's Workshop. The Mathematics Department currently sponsors tutors for several core classes (Math 125, 220, 230, 241, and 385) and lists private tutors. A complement to this system could parallel the Writer's Workshop, which serves the campus community as a whole. Offering assistance across the curriculum may be a good way to provide students with targeted assistance in quantitative classes. Such assistance could increase chances for academic success across the campus.

The committee recognizes both logistic problems and financial constraints that may impact the development of a "Mathematics Workshop." For example, tutors would need to know what classes across campus incorporate quantitative learning, forcing tutors to comprehend a very wide range of topics. Tutors may need discipline-specific preparation time, requiring that clients carefully plan visits. Despite these logistic problems, such a resource would have wide-ranging applications, benefiting students from across campus.

Third, as mathematics skills are developed very early, a long-term strategy might involve early intervention and supplementation of resources in primary and secondary schools. This would require large-scale investments, as well as a concentrated effort on behalf of the State of Illinois. It may be beyond the scope of campus capabilities, but should receive the political support of the campus community.

D. Foster interdisciplinary education for undergraduate students

Several options for improving access to interdisciplinary education were discussed. By definition, such options would increase curricular flexibility. In addition, carefully planned interdisciplinary training would produce students who are well prepared for the challenges of the coming decades. Moreover, UIUC's breadth, historically one of its primary strengths, provides unparalleled options for interdisciplinary training.

The Strategic Plan Subcommittee defined exciting paths for future training of undergraduate students (see pages xx). Specifically, this subcommittee recommends thematic training with intensive advising to offer students wide-ranging, interdisciplinary opportunities. An individual plan of study organized around a theme is the focal point of this idea. Such a plan could be deployed for majors, minors, or concentrations.

In addition, committee members reviewed options from other institutions. For example, as brought forward by Prof. Mortensen, Bentley College offers thematic training in arts and sciences to business students as a double major (a Liberal Studies Major). Bentley's double major program

provides students with thematic training in a second discipline, emphasizing depth in a particular field, and strengthening the primary major.

In responding to the request to consider a general studies major, the committee strongly doubts the efficacy of this suggestion. It would have no perceptible effect on the problems identified in the charge letter. In addition, broad curricular options already exist at UIUC. Most notably, the Interdisciplinary Studies Major in LAS essentially provides the same options as would a general studies major. Numerous other existing programs provide wide curricular latitude. Duplicating such programs is inefficient, and would be difficult to justify in today's budget climate. Furthermore, committee members felt that general studies programs at peer institutions are ineffective, and often stigmatized as repositories for underperforming students. The options outlined above (e.g., formalized interdisciplinary training and thematic training) offer superior alternatives to a general studies program. Additional details regarding thematic training are provided in the subcommittee report.

Synopsis of Findings

Undergraduate students at the University of Illinois do face unexpected and undesirable barriers to undergraduate education.

- ∞ Over prescription characterizes various curricula, particularly fields that require tightly integrated course sequences
- ∞ Rules for transfer among colleges are inconsistent, and deadlines vary considerably among colleges
- ∞ Students often do not know where to obtain transfer advice
- ∞ Educational Opportunities Program students may face difficulties transferring into fields that require high levels of quantitative skills
- ∞ Mechanisms are in place to enable "Bridge Program" students to enter various colleges
- ∞ High turnover among Bridge Program advisers limits choices
- ∞ Undergraduate curricula may not closely align with the strategic plan
- ∞ An individual plan of study approach, integrated with thematic directions, warrants evaluation

VI. Attachments

Subcommittee Reports

A. Flexibility in curricula report

Pathways in Undergraduate Education Committee Flexibility in Curricula Subcommittee

Report

Members: Larry DeBrock, Economics; Bill Hammack, Chemical Engineering; Laurie Kramer, Human and Community Development; Mats Selen, Physics (Chair)

Staff: Emily Holtan, Provost's Office Student Intern; Harrison Hsueh, Provost's Office Student Intern; Peter Mortensen, Associate Provost Fellow

Meeting: Friday, March 16, 2007, 200 Swanlund Administration Building. Selen, Holtan, and Mortensen in attendance.

1. Subcommittee Charge

What level of flexibility do our undergraduates have in changing majors, particularly in moving across colleges on campus? This question is of particular importance for students whose grade point averages place them "in good academic standing" (i.e., GPAs at and above 2.00), but prevent them from enrolling in the major of their choice. What level of opportunity should students have in making inter-college transfers around campus? What is our collective commitment and responsibility to students who perform within acceptable academic boundaries?

2. Response to Charge

It is recognized that the schools, departments, and programs will by necessity have varying entrance and/or transfer requirements, and that the main problems students face when transferring from one to another are due to a lack of information and/or adequate planning. It is felt that the best way to ease this difficult issue is to provide the best possible planning resources for students (both face to face advising and general "self serve" information), and the following ideas were discussed:

- ∞ Establish a designated transfer contact in each school, department, or program, and maintain a campus-wide transfer contact list.
- ∞ Ensure that transfer contacts have the time and information resources to counsel students who seek information about transferring into their units. One model of implementation would need to be developed for units that have centralized, professional advising. Another implementation model would be required for units that feature faculty advising.
- ∞ Schools, departments, and programs should make current and historical statistics (applied, accepted, denied) on ICT publicly available, and/or such information should be consolidated into a central report accessible to students and advisors on campus. The point would be to give students and advisors basic information about the success rate of applicants for ICT into particular programs of study.
- ∞ The timeframe currently allowed for ICT is not necessarily convenient to students, and may in fact not align well with advising capacity in colleges and departments. A revised

agreement on the timeframe for ICT should be sought: it should put considerations of retention and time-to-degree first.

- ∞ The campus and colleges should seek clarity on policy and procedure regarding the applicability of hours students earn at other institutions while they enrolled at UIUC. Clarified policies and procedures should be readily available to students on the web, with links to tools that can help students determine the applicability of courses (e.g., the Illinois Articulation Initiative [www.itransfer.org] for in-state general education offerings, and the Course Applicability System [www.transfer.org] for courses at in- and out-of-state institutions).
- ∞ Assess ICT practices on campus. How much of the processes might be guided by self-advising, using web-based resources. How much must remain subject to advisor (faculty or professional) intervention?
- ∞ Explore the possibility of adapting DARS (<http://www.oar.uiuc.edu/current/dars/>) as a tool that would enable students and advisors to assess the implications of transferring from one program of student to another. The thought here is that students could use DARS as a tool that would allow them to project the courses they would need to complete the major they plan to transfer into. (Currently, DARS templates are set up to assess a student's progress in a declared major.)
- ∞ We need to understand what the inflow/outflow ICT data mean for each college (see data in committee binder). To what extent are the flows driven by academic performance issues in prerequisite courses? In major courses? (What sort of academic supports might be put in place to reduce flows that are driven by performance issues?) And to what extent are the flows simply the result of students changing their interests once admitted? (How might such flows be influenced by providing more or different information about majors at the point of application?)

B. Intercollege Transfer Meeting Summary

Pathways in Undergraduate Education Subcommittee on Inter-college Transfers (ICT)

Report

Members:

Kim C. Graber, Kinesiology and Community Health (Chair)
Matthew Ando, Mathematics
Joseph Squier, Art and Design
Kristi Kuntz, Office of the Provost
Ayanna Coleman, Student

Subcommittee Charge:

“What level of flexibility do our undergraduates have in changing majors, particularly in moving across colleges on campus? This question is of particular importance for students whose grade point averages place them “in good academic standing” (i.e., GPAs at and above 2.00) but prevent them from enrolling in the major of their choice? What level of opportunity should students have in making inter-college transfers around campus? What is our collective commitment and responsibility to students who perform within acceptable academic boundaries?” (Letter from Provost Katehi on 2-9-07)

Current Rules for Inter-college Transfers at the University of Illinois:

- ∞ Students are not allowed to transfer until after their freshman year.
- ∞ In some colleges, there is a two-week period each semester in which students may transfer. In others, there is only a two-week period once per year.
- ∞ Some colleges have more transfer requirements and more stringent entry standards than other colleges (e.g., GPA).

Problems:

- ∞ Currently, it is not easy for students to explore different options.
- ∞ Transfer procedures are not uniform and differ dramatically from one college to the next.
- ∞ There is no central resource for transferring.
- ∞ There are different requirements for different colleges, and this causes student confusion.
- ∞ Students who have been in a difficult curriculum (e.g., engineering) and who might otherwise be very successful in a different program can have difficulty transferring.
- ∞ In some colleges, admitted students only need to maintain a 2.0 GPA to be considered in good standing, however, transfer students might need a 3.5 GPA for entry.
- ∞ Students sometimes take a number of courses toward graduation in a particular college in hopes that they will be admitted, yet admission is not guaranteed.
- ∞ Currently, there is no centralized advising on campus.

Response to Charge:

The subcommittee met on March 9, 2007 to discuss current ICT procedures and discuss alternatives that would positively facilitate the transfer process. Our efforts were informed by data that described the transfer criteria currently employed at the University of Illinois Urbana-Champaign and at five aspirational peer universities (University of Michigan, University of North Carolina at Chapel Hill, University of Virginia, University of California at Berkeley, and University of California Los Angeles). Chairs from the different subcommittees met again on April 24, 2007 to discuss and compare reports.

Although the criteria for entry at the University of Illinois is not distinctly different than the aspirational peer universities examined, the subcommittee believed that campus procedures

could be improved. Suggestions from committee members ranged from simple and relatively easy to implement to more controversial and difficult to execute. Options discussed included:

- ∞ Standardize transfer procedures across campus.
- ∞ Establish consistency so that ICT transfer requirements are the same as requirements for new students to the program (e.g., those applying as freshmen)
- ∞ Allow students an opportunity to transfer at least once per semester.
- ∞ Establish a clearinghouse for information concerning transfer requirements and procedures for different colleges (Web site at minimum).
- ∞ Institute centralized advising for transfer students.
- ∞ Offer incentives to colleges to accept additional qualified students. For example, make a greater number of seats available in high demand colleges that are forced to require high GPAs due to limited capacity (e.g., College of Education).
- ∞ Do not admit students into individual colleges until their sophomore or junior year.
- ∞ Encourage colleges to design programs analogous to post-baccalaureate programs for students who wish to transfer in but are behind in required courses (rapid absorption of late comers).
- ∞ Inform students of the odds of being admitted into a particular college. (Some students assume they will automatically be admitted by meeting the minimum entry requirements.)
- ∞ Allow students to transfer into a new college as long as they are in good academic standing at the university. In this case, colleges would no longer admit students
- ∞ Require that admission and retention standards be the same. That is, if students must maintain a 2.0 GPA to remain in the program, then students would only need a 2.0 GPA to be admitted into the program.

Constraints to Options Above:

- ∞ If a college is oversubscribed, a GPA cut-off is one means of limiting enrollment.
- ∞ If a college is forced to admit students because good academic standing is the sole criterion for admission, students might be less likely to succeed
- ∞ Some colleges require substantial special training over a period of several years (Engineering, FAA). Waiting to admit students until their sophomore or junior year could delay their graduation.
- ∞ Removing a student from a college due to a low GPA (to make it easier for transfer students to be admitted) will not help the student finish in a timely manner. Since students dropped from a college would seek out other colleges with less stringent GPA requirements, those colleges would inevitably become oversubscribed with weaker students.

C. Educational Opportunities Students

To: Pathways in Undergraduate Education Committee
From: Steve Leigh

RE: Synopsis of subcommittee meeting on Educational Opportunities Program Students, 14 March 2007

Date: 17 March 2007

Subcommittee members (Profs. James Barrett, Ruth Ann Clark, and Steve Leigh) met with Mr. Abel Montoya (Associate Director of Undergraduate Admissions) to discuss the experiences of Educational Opportunities Program (EOP) students in response to Provost Katehi's concerns regarding the distribution of EOP students across campus (letter of 9 February 2007). Subcommittee chair, James Anderson, and subcommittee member Carol Augspurger were unable to attend. Our subcommittee met for approximately one hour to discuss both issues identified by the Provost's initial letter and points raised during the full committee meeting on 2 March 2007.

Background. Provost Katehi's letter of 9 February 2007 expressed concerns that EOP students on the Urbana campus are enrolled disproportionately in the College of Liberal Arts and Sciences. She asked that the Pathways Committee consider "what is necessary to increase the presence of students from EOP high schools into a greater range of majors." Consequently, our subcommittee focused on this question, in light of data provided during our March 2 meeting.

Mr. Abel Montoya offered subcommittee members background information on the EOP and related information about various models of student recruiting across campus. EOP schools are defined as schools in which at least 70% of students qualify for free or reduced cost lunch programs. The vast majority of such schools are in Chicago and surrounding areas, but EOP schools also exist in larger cities (East St. Louis) as well as rural schools downstate. Mr. Montoya described high school experiences of EOP students, indicating that such students typically present outstanding academic and extracurricular records, but often have relatively low standardized test scores. He also summarized programs at UIUC to aid EOP students in the university environment. In particular, he praised the Summer Bridge Program in preparing EOP students, but noted that thereafter, support across colleges varies substantially. Moreover, he recognized that EOP students, especially students of color, often face unexpected cultural transitions in attending UIUC.

Subcommittee Discussion and Problem Recognition. The subcommittee addressed several issues related to the distribution of EOP students across campus. We sought to understand the scope of the Summer Bridge Program, as well as programs that may be available for matriculating students. Problems for students, such as time management posed by participating in tutorial programs were considered. In addition, Dr. Clark related her experiences in the Bridge Program, and agreed to collect additional information on this important program. Professor Barrett discussed strategies employed by the History Department to support students who may be at elevated academic risk in General Education courses. He noted that History utilizes "bridge sections" for students who have participated in the Bridge Program, noting that the best graduate teaching assistants are always assigned to these sections.

The subcommittee then turned to discussion of the Writer's Workshop, and considered what other comparable programs existed in various disciplines. Considerable discussion was devoted to whether or not EOP (and other students) had access to mathematics "workshops" along the lines of the Writer's Workshop. Our subcommittee was uncertain about the presence of such programs, but Leigh is following up with inquiries to the Mathematics Department. The subcommittee strongly suspects that mathematics poses serious challenges to EOP students who wish to enroll in colleges other than LAS (especially Business and Engineering). Mr. Montoya reported that the College of Business had made significant strides in this area.

We also discussed the presence of outreach programs by various departments on campus. Unfortunately, in the absence of empirical data, we largely relied on our impressions of such programs. For example, Civil Engineering maintains a high school outreach program, but we were unaware of the specifics. Mr. Montoya indicated that Chemical Engineering has a variety of

approaches to provide basic background courses to students, particularly transfers from junior colleges. Leigh will follow up with inquiries to these two departments.

The issue of workloads featured prominently in our discussion. Students through the Bridge Program are apparently encouraged to continue seeking assistance from units such as the Writer's Workshop. These students (as well as others) often must balance normal course loads, tutoring, and jobs, so tutoring represents an additional commitment. Unfortunately, we have no data on outside jobs, but hypothesize that financial strains differentially affect EOP students. The serious problem of inadequate financial resources experienced through primary and secondary education may be further exacerbated by the costs of college. EOP students may also feel extra obligations to support disadvantaged family members. Finally, we need to determine how our initial assessments of students (i.e., recommending the Bridge Program for some students, but not others) relate to student outcomes.

Specific Recommendations.

During discussion, the subcommittee settled upon a range of specific recommendations. Several of these are contingent upon obtaining additional data, so must be regarded as tentative.

1. *Increase access to assistance with mathematics.* The subcommittee is uncertain as to what extent resources are available to students in terms of mathematics. The mathematics department supports tutoring for Math 125, 220, 230, 241, and 385. In addition, private tutors are listed on the departmental website. This may contrast with the structure of the Writer's Workshop, in which more general assistance seems to be available.

The subcommittee was concerned that inadequate mathematics proficiency represents the largest single obstacle to transferring into colleges where such skills are prioritized. Considerable discussion followed on this point. In addition, we felt that math abilities presented obstacles during the admissions process to units like Architecture, Engineering, and Business. We also realized that this problem could be relatively deep and longstanding. Poor early mathematics training may significantly limit options, requiring attention to primary education. In any case, obtaining better information on the mathematics needs of EOP students is a logical next step. Discussion with the Mathematics Department is advisable.

2. *Ensure formal support at the end of the Bridge Program.* This issue is related to the first point. Again, the subcommittee expressed some uncertainty as to the extent of support provided for students. Additional information will be sought on this issue.

3. *Explore various other models on campus.* Unfortunately, the subcommittee lacked detailed information about how various units recruit and support underrepresented students. Preliminary data will be collected in discussion with unit heads in Chemical Engineering and Civil Engineering. We also ask that members of the full Pathways Committee provide us with any additional information on this issue.

4. *Talk to EOP students about their experiences.* This is essential in understanding the challenges faced by students. It is imperative that we develop data on their academic decisions. We further suspect that issues of the campus "climate" for underrepresented students will play an important role in this discussion. Mr. Montoya reports that many EOP students are unprepared for what are really very major cultural changes. Specifically, they may have a brief transition from a disadvantaged area to one that presents a curious (and sometimes volatile) mix of predominantly suburban and rural attitudes and social behaviors. Other issues, such as outside jobs, are also critically important in understanding what these students face.

5. *Consider "bridge sections" in General Education courses.* The History Department reports success with this model. However, the subcommittee also recognized (as does History) that this strategy is contingent upon teaching assistant quality. Moreover, this model requires steps to avoid stigmatizing students enrolled in such sections. The committee was uncertain as to whether or not similar models exist in other departments.

6. *Re-establish sections cut from General Education courses in 2002-2003.* Budget cuts, felt especially by LAS departments teaching General Education courses, have had devastating effects on our ability to deliver anything other than large class lectures. The experiences of subcommittee members' departments following these cuts have been uniformly negative. The subcommittee suspects that EOP students are affected most by the withdrawal of resources from undergraduate education that such cuts represent.

7. *Take steps to improve the quality of undergraduate advising in departments.* The subcommittee deemed this a potentially simple and cost-effective solution to ensuring that EOP students can find and realize their academic strengths. In terms of transferring, it may be helpful for undergraduate advisers to identify whether or not students have interests in transferring to different colleges, and advise accordingly.

D. *Strategic Plan and General Studies*

Pathways in Undergraduate Education Subcommittee on Strategic Plan and Interdisciplinary (General Studies) Program

Michael Loui, Electrical and Computer Engineering, chair
Eve Harwood, Fine and Applied Arts
Gail Hawisher, English and Writing Studies
Madhu Viswanathan, Business Administration
Ruth Watkins, Office of the Provost

April 25, 2007

Our subcommittee was charged with responding to questions from the provost about how undergraduate curricula could be structured to achieve goals of the campus's strategic plan: In considering the general goals of the strategic plan, we have identified broad themes of importance in preparing students for the 21st century, such as globalization, multiculturalism, leadership, and information literacy. How can we best address these goals, in the context of our institutional culture? For example, creating interdisciplinary minors for undergraduates may be one approach. Another option may be creating a meaningful general or liberal studies degree, perhaps incorporating a concentration in one of the key thematic priority areas. I would also ask you to consider whether partnerships between academic and student affairs could provide effective options for ensuring that students build knowledge and skills in cross-disciplinary areas.

The subcommittee met on March 15 and March 30. We also read several documents, listed below. With more time, we would have reviewed the literature in a systematic, scholarly way.

We began with three questions:

- ∞ What is the most compelling broad theme? Global awareness? Research literacy? Leadership? Cultural diversity?
- ∞ What is the best way to educate students in this theme?
- ∞ If our theme requires interdisciplinary efforts, then how might a general studies degree fit with our campus?

We identified a compelling theme, responsible global citizenship. This theme captures a number of critical elements: a global perspective that provides exposure to diverse cultures and contexts, interdisciplinary approaches that encourage multiple ways of viewing problems and solutions, and an emphasis on professional and personal responsibility. At the heart of our theme of global citizenship for the 21st century is the need to appreciate diverse perspectives across the globe and to imagine circumstances beyond one's immediate experience, while working toward a better world. We recommend several means to implement this theme, ranging from the introduction of innovative courses and shorter learning modules from faculty to individual plans of study for students. We could also adopt pedagogical, curricular, and co-curricular practices used at other institutions. In the book *Educating Citizens* (Jossey-Bass, 2003), Anne Colby et al. describe programs

at twelve colleges and universities that prepare undergraduates for lives of moral and civic responsibility.

We caution against imposing specific curricular requirements. Too often students interpret curricular requirements as merely a set of hurdles to clear, or a list of items to check off. Instead, to promote greater integration between academic and experiential learning, we recommend that the campus enable students to pursue individual plans of study, particularly plans that integrate learning across disciplines and experiences. Because increasing numbers of students pursue double majors and supplement their major programs with minors, and because students engage in a variety of co-curricular activities, we believe that students hunger for opportunities to integrate their intellectual and social development in a personally meaningful way.

Through an individual plan of study, a student can take courses and reflect on experiences around a coherent subject. For example, students could pursue a program on the subject of environmental studies and sustainability. This interdisciplinary subject would require integration of content across the humanities, social sciences, and natural sciences. Through this program, students could improve skills in global awareness and social responsibility. In general, an individual plan of study could include an experiential learning assignment based on a community service project or a pre-professional internship. The plan could include academic demonstrations (papers, presentations) of improved competencies in cultural understanding and moral reasoning.

An individual plan of study could be a full major, or a minor, or even a focus area. Currently the College of Liberal Arts and Sciences allows an individual plan of study for a major, but few students choose this major. In addition, LAS offers a major in interdisciplinary studies with defined concentrations in American civilization, in cinema studies, in gender and women's studies, and in renaissance studies. Some undergraduate curricula already encourage focus areas outside the major field. For example, the undergraduate major in general engineering requires a secondary field concentration of 12 semester hours of credit; many secondary fields are pre-approved, but students may seek approval for self-designed "customized" programs too. In the open studies major for the B.Mus. degree in the School of Music, the student negotiates the content of 20–25 semester hours of requirements beyond the core courses in music; typically these students combine music with business, theatre, or art. The major in community health requires a correlate area of 18 semester hours primarily outside the department.

Because individual plans of study would be intentional rather than accidental, they would be superior to a "general studies" degree, which often has negative connotations, or a "self-directed studies" degree, which omits the role of the academic advisor. Perhaps individual study plans could have a special name such as "custom designed." A new name would attract attention and signal a break with the past.

For individual plans of study to become widespread—perhaps even the norm—more attentive academic advising will be essential. Furthermore, curricula full of requirements, such as the curricula in teacher preparation, will require modification. For instance, the curriculum in electrical engineering requires many more semester hours of technical subjects than are required for accreditation (one year of mathematics and science, one and one-half years of engineering topics). Barriers to the creation of plans that cut across colleges should also be reduced. For example, college-specific general education rules could be waived.

Individual plans of study should not replace a student's free electives, which allow students to explore many subjects before settling on a major or a minor. In addition, students should be able to pursue two or three individual plans of study on different themes.

We believe that the campus should provide the infrastructure for faculty and students to create and sustain integrative interdisciplinary learning experiences. Funds could be provided for the development of courses and learning modules, like Faculty Fellows Program sponsored by the Academy for Entrepreneurial Leadership on campus; the new Center for Professional Responsibility in Business and Society also plans to support efforts to integrate professional

responsibility across curricula on campus. These funds would stimulate innovation and subsequently sustain new offerings.

A relatively short learning module can provide an integrative experience. For example, a learning module on sustainable product development for subsistence marketplaces would combine global and interdisciplinary perspectives in a radically different environment, while presenting professional responsibility issues in the context of the product development process.

In summary, we believe that individual plans of study would promote creativity and responsibility. Undergraduate curricula with uniform requirements may have been appropriate for the assembly-line of the 20th century, but for productive careers in the 21st century, students will need to develop individual initiative and innovation skills (cf. Daniel Pink, *A Whole New Mind*). To create individual plans of study, students will exercise their imaginations to find connections between disparate subjects. Furthermore, by designing individual plans of study, students will begin to take responsibility for their learning.

Documents Read by the Subcommittee

See the subcommittee's Web site <https://netfiles.uiuc.edu/loui/shared/pathways/index.html>

- Urbana-Champaign Campus Strategic Plan, March 2007
- The Spirit of Liberty — a short essay by Anne Colby et al. on educating students for moral and civic responsibility
- Chicago Tribune story on designer majors, February 21, 2007
- Integrative Learning and Study Abroad Web site, Michigan State University
- General Education Report, Harvard University, February 2007
- Redefining Undergraduate Education for the 21st Century — a speech by Steven Sample, President of the University of Southern California, November 2006