

# MAJOR EXPLORATION

## THE STRUGGLE FOR A CORE CURRICULUM, AND TWO OTHER WAYS TO GET A WELL-ROUNDED EDUCATION

AT ITS FOUNDING IN 1883, The University of Texas had two departments: the Academic Department and the Law Department. So from its very beginning, the University assumed a dual character, or, if you prefer, a split personality. On the one hand, it was seeking to broaden young minds and offer a ground for exploration, with all the modifiers that implies: classical, liberal, well-rounded, broad. On the other hand, it was seeking to prepare students for a specific profession, back then, law. In the 124 intervening years, the list of professions has grown. UT now prepares students not just for careers in law and engineering, but also for everything from advertising to sports management.

But the tension between the generalists and the specialists remains — between the free-spirited explorers for whom higher education is the foundation of their future intellectual and even spiritual lives and the vocation-ists, who satisfied in high school whatever thirst they had for broad education and now want to drill down as deep as possible to specialize in something that will guarantee their professional niche.

The latest iteration of this struggle, which came as a volley from the generalists, was the recommendation by the Commission of 125, a citizen commission of 218 accomplished Texans convened by former president Larry Faulkner, that all students be required to take a core curriculum. In its report, *A Disciplined Culture of Excellence*, under “Strategic Initiative No. 1,” the report states: “...the Commission believes that while the current system offers students myriad courses of study [123 bachelor’s programs at last count] it fails to equip undergraduates with a core body of knowledge essential to a well-balanced education.” In an assessment with which any alumnus of the last 50 years can identify, it continued, “For too many degree plans, the current curriculum resembles little more than a vast à la carte menu. While this makes for great flexibility and variety, course-selection decisions are frequently driven by class availability, convenience, and whim rather than by a well-conceived plan of instruction.”

The report continued: “To have a first-class undergraduate educational experience, the Commission believes every student should:

- Receive a broad education that includes exposure to culture, literature, foreign languages, the humanities, and the arts;
- Explore mathematics, science, and technology;
- Learn to think and read critically, write cogently, speak persuasively, and work both independently and as part of a team;
- Engage in open discussion, inquiry, discovery, research, problem-solving, and learning to learn;
- Examine questions of ethics and the attributes of effective leadership; and
- Acquire a sense of history and the global community together with a respect for other cultures.”

The commission, in its ongoing work, suggested a new “University College” that would house these staples, a cafeteria through which all freshmen must file on their way to intellectual and degree fulfillment before deciding which they find most palatable. The University College would also centralize academic and career advising and have its own dean, who would be responsible for the core curriculum.

The then-leader of the Task Force on Curricular Reform now leads UT — President Bill Powers. Curricular reform is his baby. Yet he’s run into fervent resistance from some deans, most notably engineer Ben Streetman and businessman George Gau. They think forcing freshmen who already know what they want to study to wait in the long line of the University College would make the smartest high school seniors go to A&M, Purdue, or Georgia Tech. Other critics say the University College would siphon funding and add bureaucracy. They worry about the staggering cost of the proposed Signature Courses — the tasty previews the freshmen get in the University College from top professors. The 250-student Signature Courses would need dozens of TAs to lead the discussion sections, and more professors would have to be hired to teach the courses that University College profs were teaching before they became Signature Course teachers. That takes money, and skeptics fear the only way UT could get it would be by hiking tuition yet again.

Struggle has led to compromise, and the Task Force’s latest document offers the following concessions: students can declare majors immediately; all undergraduates will enroll in the University College — not just freshmen; the new entity will be called not the University College but the Baccalaureate College. As for the advising, it remains undecided. UT’s first shot at centralized advising, the Undergraduate Advising Center, was overwhelmingly successful but was quietly shut down in 1997. No details yet on how the new centralized advising would work.

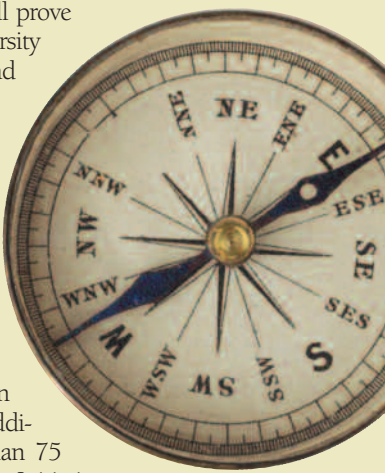
Despite the changes, questions linger:

- If all UT students are enrolled in the Baccalaureate College, how is it any different from UT as a whole?
- Where will the money come from, and, assuming it can be found, is this the most pressing need for it? With tuition soaring, buildings crumbling, academic budgets stretched, and class sizes bloated, should adding a whole new college that some say is redundant top the to-do list?
- Will the Signature Courses, with their massive size and heavy reliance on TAs, really offer the kind of signature experience the Commission of 125 envisioned?

These issues and others must be addressed if the proposed changes are to clear the remaining significant hurdles to implementation: 1) approval by the Faculty Council, 2) an OK from the Board of Regents, and 3) the blessing of the state legislature. Of the three, the first hurdle might be the highest.

As of presstime, the latest development was the appointment of Paul Woodruff, a former director of UT’s Plan II honors program, as the first dean of undergraduate studies and the man to oversee the implementation of the new core curriculum. A professor of ancient Greek philosophy, Woodruff studied at Princeton and Oxford, bastions of the classical education. Woodruff harbors no delusions of the challenge that he and the core curriculum face. His first task, he says, is to listen. But he’s also confident of success: “We will prove that a top research-oriented university can bring as much passion and coherence to undergraduate teaching as a small, elite college.”

The tug of war between generalists and specialists has never been resolved to the satisfaction of everyone, and might never be. But in the meantime, there are those who have found significant ways to help undergraduates gain a better grasp of the strange new world in which they are submerged. In addition to Plan II, which is more than 75 years old, the Freshman Research Initiative and the Intellectual Entrepreneurship Internship are two existing programs that offer undergrads a way to explore the world of ideas before settling down into specialty ...  
—Alcalde Staff



## Re-imagining Undergraduate Education through Intellectual Entrepreneurship

by Richard A. Cherwitz

Increasing accountability in higher education is the subject of intense national discussion. Witness the recent recommendations of the secretary of education's Commission on the Future of Higher Education and the controversy created in its wake.

Obscured in these conversations, which frequently bog down in heated debates about who and how best to assess the effectiveness of education, is a serious worry, one that has occupied the attention of UT president William Powers, the Task Force on Curricular Reform, and the Faculty Council: How can students negotiate the undergraduate curriculum, choosing what to study from the wide array of opportunities available?

Many undergraduates are uncertain about a major; hundreds of specialized possibilities often make little sense, frequently appearing to have limited connection to students' personal interests and professional goals.

Career and professional development opportunities come too late in the game. Emerging at the back end of education, these opportunities not only are seen as inherently separate from the academic and intellectual work students undertake within their discipline but also tend to be viewed as non-academic and secondary to scholarship and study.

Undergraduate pedagogy sometimes is overly didactic; students are spoon-fed disciplinary knowledge without sufficient occasion to discern a particular field's unique mindset or perspective.

The unfortunate consequence of these shortcomings is that many undergraduates leave school not fully appreciating the potential contribution of disciplinary expertise or how that expertise compares, contrasts, and harmonizes with other areas of inquiry.

What is needed is a space where undergraduates can discover — in an entrepreneurial manner — how their interests might serve as a compass for navigating the University, as well as harnessing and integrating the rich knowledge produced by the wide assortment of disciplines.

There is hope. Consider UT's Intellectual Entrepreneurship (IE) Pre-Graduate School Internship. Part of the nationally acclaimed inter-collegial IE Consortium, this mentorship offers upperclassmen the chance to work with veteran graduate students to determine whether they should pursue advanced education and, if so, in what discipline. This internship isn't merely an "applied" or "work" experience where students "just do it." Instead, it enables students to own their education, discovering how to leverage knowledge for social good — to be "citizen-scholars."

Interestingly, interns, most of whom are juniors and seniors and more than 40 percent of whom are first-generation or underrepresented minorities, wonder why the Pre-Grad Internship was their first chance during their college years to step back and assess the meaning and significance of disciplinary knowledge.

So why not provide a similar discovery space — an "IE Undergraduate Mentorship Course" — for students at the beginning of their college tenure, empowering them to devise a thoughtful plan of academic study?

The IE Undergraduate Mentorship Course will build upon and extend the IE philosophy and already successful Pre-Graduate School Internship. With the assistance of paid graduate student mentors, and perhaps "community sponsors" (members of the public and private sector seeking a well-educated and diverse workforce), freshmen and sophomores would work both inside and outside a contemplated discipline, unearthing important connections between academic fields and their personal and career aspirations. This would be a rigorous academic exercise — one where students become anthropologists of the academy, studying, interrogating and reflecting upon the discipline/career to which they aspire.

Students not only would explore UT's vast academic landscape but would ponder systematically and write incisively (as ethnographers of a discipline) about their own participation in it; the course will culminate in students designing and presenting an entrepreneurial plan for their academic career at UT, one enabling them to meaningfully pick a specialized major and guiding them in weaving together a tapestry of courses across the curriculum defining and linking their intellectual, personal, and professional identities.

The proposed IE Mentorship Course complements and supplies one mechanism for implementing some of the thoughtful recommendations made by President Powers, the Task Force and Faculty Council — including the recently created dean of undergraduate studies position, "signature courses," and the much debated Baccalaureate College, which could house the IE Mentorship Course. By providing students greater agency in their undergraduate education, this course might shift the metaphor and model of students' education from one of "apprenticeship-certification-entitlement" to one of "discovery-ownership-accountability."

The IE Mentorship Course will yield other positive effects. It might significantly enhance the education of first-generation and underrepresented minority students, an effect already well-documented by the IE educational philosophy and Pre-Grad Internship. The mentorship also will introduce into the undergraduate curriculum a unique interdisciplinary learning laboratory, one that begins with students' interests rather than predetermined topics chosen in advance by faculty and administrators — a prospect that could stimulate student curiosity and increase engaged learning.

Finally, the mentorship will afford valuable professional development for graduate students, permitting these future professors to acquire effective mentoring habits, enhance their marketability, and assist the University in forging long overdo connections between undergraduate and graduate education.

The proposed mentorship brings together in one class students' personal, academic, and professional interests. Like the IE Pre-Grad Internship upon which it is modeled, this course will help undergraduates own their education, learning the real meaning of disciplines and how they might use their personal and professional aspirations as a lens for selecting, integrating, and utilizing disciplinary knowledge.

As the recommendations of the secretary of education's Commission on the Future of Higher Education are scrutinized, we must refrain from becoming ensnared in debates about the metrics of assessment. Instead, academics should boldly re-envision the undergraduate experience, allowing students to become intellectual entrepreneurs: to study themselves, their disciplines, and the way academic knowledge and scholarship can transform lives for the benefit of society. The IE Mentorship Course is a modest first step.

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## The Freshman Research Initiative

by Sarah Simmons, College of Natural Sciences

One of the greatest opportunities a major research university can offer its undergraduates is the chance to do front-line research in faculty laboratories. Early research experience profoundly affects graduate school performance and long-term academic and career success. But getting undergraduates into research labs has always been a great challenge. Enrollment is high — the College of Natural Sciences alone has 8,700 undergraduates in more than 50 degree programs. And although UT Austin boasts \$380 million in annually sponsored research, recent reductions in national research funding and the current faculty reward structure discourage the use of resources for undergraduates in research. Though some students seek out these experiences anyway, research has not historically been a major part of our degree plans or our course offerings.

In response to these deficiencies, the College of Natural Sciences has developed an innovative model to ensure that the twin missions of the research institution — education and research — are mutually beneficial, we have created the Undergraduate Research Center for Natural Sciences majors that offers a research-based curriculum for large cohorts of students in authentic, faculty-led research projects. Incoming freshmen can enroll in a new four-semester experience centered around "research streams," where students work on real biology, chemistry, and computer science faculty research in newly remodeled educational labs. Our efforts have been recognized nationally. Both the National Science Foundation and Howard Hughes Medical Institute have pledged a total of \$4.7 million over the next five years to support this initiative.

Involving large numbers of freshmen in an authentic research experience requires a change in thinking. Space, resources, and personnel to place these students in traditional one-on-one mentoring situations within faculty research labs simply do not exist. A major strength of this program is that it addresses these challenges in a new way, by comprehensively integrating research and teaching as a new standard for undergraduate science education. It makes research an available, concrete part of the undergraduate curriculum early, and it supports the researchers involved with currency that moves the research enterprise forward: funding for supplies, space to do additional research, additional hands (many of them) to do the work, and a qualified research staff to mentor students.

Our model begins with a three-semester research-based course sequence that targets incoming freshmen to ensure that

their research experience occurs early enough to impact their research awareness and their understanding of the link between research and education. Students are recruited during summer orientation to take part in this program, and they begin by enrolling in the first course, "Research Methods." This course is a multidisciplinary introduction to general scientific processes that helps students rediscover the joy of science. Through a series of inquiries, students remember that before they learned how to ace standardized tests, they were naturally inclined toward science; they invented things, built things, took apart things, and questioned the world and its workings. During the "Research Methods" course, students are exposed to different research areas, "research streams," that they can choose from to do research for the subsequent year.

In developing the research streams, we challenged the faculty to give us real research questions that could be investigated by a cohort of trained undergraduates working several hours a week for a year if given sufficient space, research staff, and resources. These questions employ basic lab techniques appropriate for otherwise inexperienced students but are powerful enough in parallel to produce cutting-edge, original research. Our faculty responded in force and have come up with exciting, innovative, multidisciplinary extensions of their own research for integration into this model. Our research streams (seven for 2006-07) will each accommodate 20-30 students and cover a different topic. Each student or small student team will work on their own piece of the research question for a full year, and receive course credit toward their degrees (freshman lab credit in the spring and independent research credit in the fall). Select sophomores remain in the spring to mentor incoming freshmen. Students who complete two years of the program then will be ready to choose a traditional research experience with a faculty member, an internship at a government or industrial research lab, an organized summer research program, or a research experience in a foreign lab.

Although it has been suggested that changing the reward structure for faculty will be necessary to increase faculty motivation to be involved in undergraduate research, our model instead builds rewards into the existing structure. Research stream faculty receive teaching workload credit for the course they develop; support is provided for graduate students to perform their stream-related research in the teaching laboratory, effectively increasing the primary laboratory space available for that faculty member's research program; association with our center will bring additional research funding to our faculty; and the amount of research leading to publications accomplished by students will be significant.

Initially implemented within the chemical and biological sciences and allied disciplines, the model will be a steady state of 400 students and can be extended across disciplines and to other research institutions, serving as a national model for the effective integration of research and education. Former president Larry Faulkner challenged UT's Academy of Distinguished Teachers to "turn your minds toward creating the best undergraduate experience in the country." We believe that in science this means involving as many students as possible in meaningful research experiences and that the College of Natural Sciences is answering the call.

*Sarah Simmons is program manager for the Bridging Disciplines Program, which helps students organize area requirements, electives, major requirements, internships, and research experiences around an interdisciplinary theme.*