

## 3.6 Expansion of Mentored Research Opportunities and Resources

The Council on Undergraduate Research reports that students who have engaged in faculty mentored undergraduate research are more likely to pursue graduate education and be employed in major-related fields (2005). Other studies have indicated retention rate benefits. For example, data from the University of Michigan's Undergraduate Research Opportunity Program (1996) show that attrition rates for underrepresented minorities who participated in mentored research were significantly lower than those students who did not participate in the program.

As students learn about research and become better trained in research-related skills, more students will want to engage in mentored research projects. While mentored research in faculty labs will be expanded as part of the QEP, so too will opportunities be increased for students to address real-world problems and perform mentored research in other settings. Our *Discovery-Based Learning Initiative* will include the following mechanisms to expand mentored research opportunities for our students:

- Credit-Bearing Research Opportunities
- Stipend-Supported Mentored Research Fellowships
- Faculty-Supported Research Assistantships
- Houston Research Internships

The *On-Campus Research Opportunities Database* will be a resource for students seeking paid or unpaid research experiences in faculty labs, institutes and centers, or campus offices. In addition, the *Houston Research Internship Database* will connect students with local off-campus opportunities (see Table 10).

### 3.6.1 Credit-Bearing Research Opportunities

Students may participate in mentored research projects for course credit. Two-semester Senior Honors Thesis courses already exist for all majors and are available for those students who meet a minimum GPA requirement. The Office of Undergraduate Discovery Programs will provide incentives to colleges and department that propose creative ways to provide course credit for expanding research experiences. For example, some departments may want to add opportunities for individual instruction courses such as independent study or project, special topics, or undergraduate research courses that provide students opportunities to earn course credit for mentored research. In addition, some degree plans already have a credit-bearing internship requirement. Departments may choose to broaden the scope of qualifying internship experiences to include research as well.

Research courses in which faculty collaborators co-mentor a team of undergraduate researchers from two or more disciplines will also be encouraged. Such research teams reflect evolving real-world interdisciplinary research groups and provide a means for our undergraduate students to participate in faculty research cluster projects.

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*In their own words...*

"[The opportunity to work in a research lab] gave me a wealth of training that simply cannot be received in the classroom...and gave me critical training and knowledge that in and of itself will help me in my professional career and aid me in obtaining future graduate studies."

*UH Alumnus*  
2005 Alumni Attitude Survey

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*In their own words...*

"[The] opportunity to do research in [my Chemistry Professor's] lab during my senior year...helped shape my desire to attend graduate school and pursue a career in research."

*UH Alumnus*  
2005 Alumni Attitude Survey

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### 3.6.2 Stipend-Supported Mentored Research Opportunities

Students of all majors who meet minimum GPA requirements may apply for two campus-wide programs, the Summer Undergraduate Research Fellowship (SURF) and Provost Undergraduate Scholarship (PURS) programs (Section 3.3). Currently, there are more than twice as many eligible applicants as are selected for these programs. As part of the QEP, funding will be increased for the PURS program administered by the Office of Undergraduate Research.

As summarized previously in Table 3, several colleges and departments administer externally funded programs that offer additional opportunities for students to participate in stipend-supported mentored research. To further increase the number of such positions for our students, academic units will be encouraged to apply for external funding for mentored undergraduate research programs. The Office of Undergraduate Discovery Programs will provide assistance in leveraging the various QEP-initiated programs in the development of grant proposals to external agencies.

### 3.6.3 Faculty-Supported Research Assistantships

Faculty will be encouraged to include undergraduate research assistantships as part of their proposals submitted to external funding agencies. The National Science Foundation and other such agencies encourage faculty to participate in these mentoring opportunities by providing supplemental funding. To support proposals that include undergraduate assistantships, the Office of Undergraduate Discovery Programs will provide information about available research-related training resources.

The Office of Undergraduate Discovery Programs will also work closely with the Division of Research to include support for undergraduate training in multi-investigator or center grant proposals. Such proposals are expected to increase with the University's recent effort to catalyze interdisciplinary research through the research clusters described in Section 1.1. Inclusion of undergraduate research assistants in interdisciplinary research or training grant proposals would provide our students the exciting opportunity to work at the frontier of discovery.

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*In their own words...*

"...developing such a program is an excellent idea. Students at this University deserve to be exposed to as much field material as possible, and research and Undergraduate Internship Programs are excellent ways of making this happen."

*Phillip Bannon, Undergraduate Student  
Cullen College of Engineering  
QEP Online Feedback*

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### 3.6.4 Houston Research Internships

The Office of Undergraduate Discovery Programs will build partnerships with Houston-area clients looking to employ our students for real-world learning experiences that focus on research or have a strong research component. **The Houston Research Internship Database** will serve as a repository for these local opportunities (see Table 10). Potential off-campus employers include energy industry research centers, the Texas Medical Center institutions, the NASA Johnson Space Center and its contractors, local biotechnology and medical device companies, law firms, advertising agencies, etc. Both undergraduate and graduate students will benefit from this compilation of opportunities for experiential learning.