Many colleges and universities across the country now have offices dedicated to the expansion and promotion of research activities by undergraduate students. Unfortunately, many undergraduates arrive on campus associating the concept of research with the STEM fields—science, technology, engineering, and math. This narrow (and thus inaccurate) understanding of academic research often means that relatively few undergraduate students get involved in research. Thus, one of the major goals of the Office of Undergraduate Research and Creative Endeavors at Florida State University (FSU) is to increase participation by students in the humanities, the social sciences, and the arts. As the name of the office implies, we are interested in promoting academic success and skills not just in the traditional STEM research fields, but also in fields such as art, music, theater, and film, where creative works, rather than research data, may be the scholarly product. This article will discuss the specific strategies that we are using to increase participation by students and faculty outside of the sciences, while enhancing the independent work of future scientists.

Centralized Support for Undergraduate Research and Creative Endeavors (URACE)

As a Research I institution, Florida State University has a long history of undergraduate involvement in research activity. Faculty mentor undergraduates in every academic field, and undergraduates are engaged in novel research leading to scholarly publications, presentations at national meetings, and creative works that get national attention. Clearly students who participate in an undergraduate research experience are better prepared for graduate and professional school. They have a better understanding of the demands of graduate training in their fields, and benefit from exposure to specific research tools, methods, and techniques. Most important, undergraduate researchers have more highly developed critical thinking skills. For students not planning postgraduate work, the benefits of undergraduate research are also clear, as critical thinking, analytical abilities, and problem-solving skills are all enhanced by undergraduate research.

Given this active research environment, an ad hoc committee on undergraduate research surveyed faculty and administrators to get a better understanding of the needs of faculty and students. The survey confirmed a significant interest in undergraduate research that stemmed from faculty members’ understanding of the benefits of research experience to undergraduate training. The committee also recognized the need to provide more support for student researchers, enhance the visibility of faculty who give their time to undergraduates, and expand the scope of the work in which undergraduates participate. Thus, the dean of undergraduate studies and the university provost and executive vice president for academic affairs created the Office of Undergraduate Research and Creative Endeavors (URACE). The URACE office is staffed by a faculty director (a quarter-time URACE appointment) with an active research program and experience teaching undergraduates, as well as a full-time associate director who runs the day-to-day operations of the office. In 2007, this new office joined the long-standing and highly successful Honors Program and Office of National Fellowships in the division of undergraduate studies. Together, these three offices coordinate and promote the Honors, Scholars, and Fellows Program for undergraduates on the FSU campus.

Office Goals and Philosophy

From its inception, the URACE objective has been not only to help students get involved in research, but to help them get the most out of the experience. The undergraduate research process is a continuum that begins with getting students interested in research and later involves helping them identify their interests,
find a mentor, and become actively involved in the research process. We provide competitive avenues for funding their work and for support while conducting research, as well as opportunities to present their work on campus and at regional and national venues. Our philosophy is that this continuum applies equally to the sciences and humanities.

Two guiding principals have helped integrate more students from underserved areas of arts and humanities into independent research and creative work. First, the URACE office has actively encouraged faculty in these disciplines to use the “science model” of undergraduate research. In the sciences, undergraduates typically work in teams with graduate students and faculty. At the beginning stages of their work, they help in relatively routine ways, but are exposed to the culture of a working research laboratory. With time, many undergraduates are able to contribute to the laboratory’s goals. Undergraduates become coauthors on abstracts, publications, and presentations. This model benefits graduate students and faculty mentors, as well as undergraduate students.

In contrast, undergraduate research projects in the humanities are often independent endeavors with students working on topics related only tangentially to the faculty member’s own research. While the one-on-one aspect of this model can be beneficial to the student, the faculty member gains little from the relationship. Thus, at FSU we have encouraged faculty in all disciplines to have undergraduates help them in their research. In the humanities, this may mean having an undergraduate student help a faculty member work on the index of a book he or she is writing, or collect resources for the next project he or she is planning. While many faculty members are quite rightly reluctant to assign students “busy work,” I would counter that it is precisely this type of work that students not only need to see, but need to actively participate in to become productive researchers. Students need to be mentored in the entire research process. The best way for this to happen is to put students in a position to become a research assistant and be truly useful to the research program. In short, scientists have long put undergraduates to work to the benefit of both the student and the faculty member. This is a model that could serve many in the humanities as well.

The second guiding principal is that students should begin the research process as early in their academic careers as possible. Too often, students learn about the advantages of undergraduate research in their junior or senior years. Many rush to complete an honors thesis in their final two or three semesters. While students clearly benefit from these research experiences, the most valuable experiences take several years to develop. If students are ultimately going to be able to serve as research assistants and get the most out of the experience, the earlier they start, the better. At FSU we encourage first- and second-year students to explore research opportunities. It takes time to build the kind of relationships that are needed to be part of a research team and be productive. It takes time to develop the skills needed to produce a meaningful product—regardless of whether that product is scientific, artistic, or literary.

Strategies for Success

To facilitate the entire continuum of undergraduate research, the URACE office uses a variety of strategies, including introductory workshops, classes, funding mechanisms, and opportunities for presentation of research and creative works. We conduct a series of fall workshops aimed particularly at students who have not yet identified a research mentor. We target academic areas with separate workshops for sciences, humanities, and the arts. While a variety of formats can be used, we typically have a panel with both faculty and senior members of our Student Council on Undergraduate Research and Creativity talk about the advantages of getting involved in research, tips to finding a research mentor, and how to make the research experience successful. The student panelists have been remarkably candid, sharing both their successes and frustrations with the research process, and giving new students a clear overview of the rigors and demands of undergraduate research.

The office also teaches a second-year research colloquium. This one-credit-hour course is required for all honors students who were admitted to the Honors Program in their second year. Through a series of panel discussions, approximately 400 honors students hear from faculty and students in a variety of fields to learn the benefits of getting an undergraduate research experience, how to get involved, how to be a
successful and productive member of a research program, and how academic research is applied. There are also planned activities to help students explore their own interests and identify possible faculty mentors. More advanced students can take advantage of any of several research-oriented seminars, including student-run journal clubs and “frontiers” classes where groups of ten to twelve students meet weekly with a faculty facilitator to discuss cutting-edge research and discovery in a specialized area.

URACE also provides a number of funding opportunities for undergraduate researchers. These funds are largely unrestricted awards distributed in the summer. This permits students to use the money in a variety of ways—including for the purchase of supplies needed to conduct the research or produce the creative work, for travel to support the work, or even as a summer stipend to support the student researcher. To increase participation by students in the arts and humanities, we have included several awards specifically for students proposing work in these areas. For example, we recently named two Atlantic Coast Conference (ACC) fellows in undergraduate research funded by the ACC International Academic Collaborative with money from the ACC football championships. Fellows were each awarded $5,000 to further their ongoing research. At FSU, we designated one award for a student in the sciences, and the other for a student in the arts or humanities. These awards, which were widely covered in the press, have enabled us to showcase the cutting-edge work done by undergraduates.
And because one of the recipients used the money to direct and stage a new play, we were able to highlight the important role of research in the arts.

Once students have begun to work and produce research data or creative works, the URACE office seeks to help them find avenues to present their work. In the fall, we hold a symposium for our award winners where students give oral or poster presentations. These symposia are well attended by both faculty and students. In the spring, we broaden the opportunity to all undergraduate researchers, and encourage presentation of “works in progress.” We offer workshops on poster making and presentation skills as well as individualized practice sessions and feedback. To ensure that these symposia are inclusive of all fields, we provide students with the ability to present creative works at these sessions. As students advance, we also provide competitive support for students to travel to present their work at regional and national venues.

Conclusion

A successful undergraduate research program requires a faculty committed to undergraduate education and a university administration willing to make the investment in the training of its students outside of the classroom. The strategies we are using to increase participation in all fields have been successful. Our early calls for research proposals from undergraduates were answered by applications largely from students in STEM fields. However, in our most recent funding cycle, 60 percent of the applicants were from non-STEM fields. The quality of these proposals has also improved since the implementation of the URACE programs. At FSU, the office of Undergraduate Research and Creative Endeavors has shown that we can foster novel, cutting-edge work in all fields—and the fact that this work is produced by undergraduates gives them an advantage as they transition into postgraduate and professional life.