

**QEP Proposal for an
Office of Undergraduate Research (OUR) at VSU**

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Executive Summary

Although Valdosta State University has pockets of excellence in undergraduate research and much that we can be proud of in terms of faculty-student collaborative research, the simple truth is that we could be doing so much more in this critical area of undergraduate education. At the present time, we lack a Summer REU (Research Experience for Undergraduates) for our students, and interdisciplinary faculty/student collaboration is still rather rare at VSU. The College of Arts and Sciences has hosted a successful Symposium on Undergraduate Research for more than a decade, with especially strong growth in student participation over the last five years, but we are now at the stage where such a celebration should become a campus-wide event. The campus-wide survey sponsored by the QEP Committee this past spring revealed “opportunities to work with a faculty member on a research project” as a critical need for improvement.

The following QEP proposal calls for the creation of an Office of Undergraduate Research (OUR) at Valdosta State University. The OUR will be campus-wide, covering all academic colleges and units, helping to foster interdisciplinary research teams of faculty and students. The OUR will be charged with six principal activities:

- Organizing a campus-wide annual symposium to be called the VSU Research and Creative Activity Days;
- Developing a summer REU with student and faculty stipends;
- Awarding travel grants to support student presentations at professional meetings;
- Developing an online journal to archive and host student research projects;
- Working with area schools to develop research teams of faculty, undergraduates and high school students;
- Assisting academic colleges and departments with institutionalizing research into the undergraduate curriculum.

We note in the proposal best practices from within the University System of Georgia as well as models of undergraduate research from other institutions across the country that can help guide the OUR on a successful path. Furthermore, the activities inherent in undergraduate research experiences dovetail nicely with the VSU Mission Statement as well as the VSU Strategic Plan.

Although Crowe and Brakke (forthcoming Summer 2008) remind us that the assessment of undergraduate research experiences is still in the early stages, there are positive benefits from undergraduate research for a variety of learning outcomes. These studies, noted throughout our proposal, document the value of undergraduate research and suggest assessment measures that can be utilized by the OUR at VSU. Several studies note that the benefits of undergraduate research are particularly noticeable for minority students.

The following proposal also includes a line item budget for the OUR. The annual cost of a centralized office of undergraduate research at VSU would range from approximately \$100,000 to \$225,000 depending upon the fiscal commitment to support student research in the summer months and regular academic year. We do note in this proposal that institutionalizing undergraduate research across the campus will make VSU more competitive for a variety of grants that will help to cover the costs of undergraduate research, particularly during the summer months.

While we recognize that the SACS Leadership Team has a challenging task to select a QEP topic from diverse proposals, the creation of an OUR and the institutionalizing of undergraduate research across our campus could have a truly transformative impact.

QEP Proposal for an Office of Undergraduate Research at VSU

We propose that VSU create an Office of Undergraduate Research (OUR) to support efforts to promote undergraduate research and creative activity. Research and creative activity is broadly defined to include laboratory, field, applied, archival, creative, or traditional classroom research. The OUR will be campus-wide, covering all academic colleges and units, helping to foster interdisciplinary research teams of faculty and students.

Principal Activities for the OUR

1) The OUR will organize a campus-wide annual symposium to be called the VSU Research and Creative Activity Days. This broadens the focus of the current symposium from the College of Arts & Sciences to all colleges of VSU. The symposium will be a two day-long event that will be judged with external reviewers from colleges in Georgia and Florida. It will include poster presentations, oral presentations, and creative performances and displays. Awards will be presented for outstanding achievements with family members and the public invited to attend. This will increase awareness of the program at VSU and make VSU distinctive among state universities.

2) The OUR will award Summer Undergraduate Research Fellowships (SURFs) to undergraduate students and Faculty and Student Team Stipends (FASTs) for participating faculty members. These fellowships and stipends will be competitive and judged on merit by the OUR and a panel of internal reviewers. The purpose of the SURF and FAST stipends is to support and encourage students and faculty to work together on research projects during the summer months. Amounts should be sufficient to allow the student to not seek external employment during the summer and should also provide an amount for supplies and equipment. Awards will be for material and supplies (up to \$2000), a summer stipend for the student (\$2000), and a summer stipend for the faculty member (\$1000).

This program addresses a critical need for financial support of undergraduate research at VSU that many of our peer institutions already have in place (i.e., College of Charleston, University of Wisconsin-Eau Claire). It also demonstrates to external funding agencies an institutional commitment to undergraduate research.

3) The OUR will award Student Travel Awards for Professional Presentation. These awards, similar to the awards currently administered by the Center for Applied Research (CAR), will help support student presentation (as presenters or co-presenters) at external meetings. These will be competitive awards and will be awarded in the fall, spring, and summer semesters. Student presentation at external meetings shows that the research is of broad interest and improves students' public speaking and presentation skills. It also increases awareness of the program among peer institutions, granting agencies, and the public. In particular, we will encourage students to attend the Posters on the Hill presentation of undergraduate research where students present at Capitol Hill (sponsored by CUR, the Council on Undergraduate Research) and at the national meetings of the NCUR (National Conference on Undergraduate Research). We propose two levels of

support, including awards of up to \$300 for regional meetings and up to \$750 for national meetings.

4) Development of an online journal to archive and host student research projects at VSU. The OUR will develop, update, and host an online student research journal that will provide opportunities for students to publish, in a free, online accessible format, their research results. The OUR will engage VSU faculty from all disciplines to serve as editors to ensure high quality of the published works. This will also serve as an archival repository of web, poster, and other projects that are not published as articles in the journal.

5) The OUR will work with local high schools to involve advanced students in opportunities for research with teams of faculty, graduate students, and undergraduates. This will increase the recruitment of top local students to VSU who otherwise might select another university within Georgia or an out-of-state university. Caldwell (2007) describes an intriguing model in which faculty, undergraduates and high school students collaborate on research projects at Western State University.

6) The OUR will work with academic colleges and departments to institutionalize research into the undergraduate curriculum. This could include a variety of different models, from including a research component in specific courses (ie., a senior capstone) or as a part of an Honors degree within a subject, or as a stand-alone class. Chandra et al. (1998) emphasize the importance of helping faculty members develop new courses in their research areas as well as exposing students to research in introductory courses and encouraging students to enroll in research oriented special topics courses or directed studies. The OUR will also work with the Center for International Programs to develop a research course that is taught outside of the U.S. This could provide unique opportunities for students to combine study abroad with research. For example, students could work with Dr. Blackmore of the VSU Biology department in Sweden during the summer months studying mosquito population dynamics. DiBiasio and Mello (2004) describe a program in which students apply to complete their research project overseas. If students are not selected for the research abroad program, they complete a research project in the local community. Faculty evaluations of the research projects indicate that students perform at a higher level on the study abroad projects (DiBiasio and Mello 2004).

Relationship of the Proposal to the VSU Mission Statement

The OUR relates directly to the mission statement and core characteristics of providing “learning enrichment for all students”, “disciplinary and interdisciplinary programming at the baccalaureate level”, “a focus on the regional technical needs”, and “a commitment to scholarly and creative work to enhance instructional effectiveness and to encourage faculty scholarly pursuits and a commitment to research in selected areas of institutional strength and focused on regional need”.

Learning enrichment is provided by the guided nature of research and creative activity, in which students and faculty work together to obtain new knowledge, apply knowledge in specific areas, and create new artistic work. As research by its very nature

includes both disciplinary and interdisciplinary elements, the OUR will strengthen undergraduate education. With many faculty already working on regional issues due to logistics, cost, practicality and interest, the OUR will promote the application of undergraduate and faculty research to local and regional needs. A good example of this is the engagement of VSU faculty and students from Chemistry and Pre-Engineering with the Valdosta Optics Lab and their research into synthetic diamond production. This cooperative agreement allows students to apply their classroom knowledge, generates new research collaborations with VSU faculty, enhances regional economic development, and increases the potential for additional external sponsored funding. Bartkus (2007) describes a best practice from a College of Business that brings together business scholars, corporate executives and undergraduate students along the lines of a real world think tank. In relation to interdisciplinary research, Hernandez and Armstrong (2007) trumpet an interdisciplinary GIS program at Weber State University. Hope College has created an interdisciplinary program in which nursing and engineering students work together to improve the drinking water resources in a rural community in West Africa (Best et al. 2007).

Relationship of the Proposal to the VSU Strategic Plan

The OUR directly relates to the five key strategic goals identified in the 2006 Strategic Planning Goals document.

Enrollment and Retention: The OUR will be a distinctive aspect of VSU that will help in the recruitment of top students throughout the state and beyond and provide opportunities to retain those students for their entire undergraduate career, whether they enter as traditional freshman or transfer students.

Diversity: The OUR will promote involvement of students of diverse backgrounds in all colleges, providing incentives to gain knowledge through research outside of the classroom. Biology currently has a NSF proposal in review that seeks to involve underrepresented students in research in the biological sciences. The OUR would be extremely useful in helping to publicize this opportunity to our students.

Academic Programs: The OUR will provide opportunities for students across different disciplines to apply their learning to the generation of new research and creative activity. This will promote increased interdisciplinary research. A potential future project involving research into the economic, educational, social, and health needs of migrant workers in South Georgia could involve students from Arts & Sciences (Modern and Classical Languages, Political Science, and Sociology, Anthropology and Criminal Justice), Nursing, Business, and Education.

Faculty and Staff Development: Faculty involvement in the OUR is critical to its success. By engaging faculty in research and creative activity with undergraduate students through summer stipends, faculty will benefit by interacting with students. Some of these students may seek to complete additional master's and doctoral level work at VSU, increasing the impact of the program beyond the undergraduate level. For example,

a research project begun by an undergraduate junior could extend into the senior year and for two or more years as a master's or doctoral thesis, increasing the quality of the research and allowing for a greater variety of research designs (including longitudinal studies, pre- and post, and multiple sites/years). This leverages faculty investment in undergraduate research from a short-term prospect to one that has the potential for a high-quality long-term relationship.

Financial Support: The OUR will support efforts to attract external funding through sponsored research and private gifts. The OUR helps VSU meet one of the broader impacts criteria for funding of the National Science Foundation, the primary science funding agency in the U.S. This could increase the probability of success of proposals to NSF for REU (Research Experiences for Undergraduates) Sites, Undergraduate Research Centers involving multiple disciplines, and Undergraduate Research and Mentoring programs such as the one Biology has recently submitted. The OUR will also help VSU qualify for a number of potential grants, such as the AAAS-Merck Biology/Chemistry Summer Program and the NCUR/Lancy Grant that require either matching funds or a demonstrated institutional commitment.

How Will the OUR Impact the Student Body at VSU?

The OUR will encourage all colleges and departments to identify ways to encourage student participation in research. While some programs have discipline specific research requirements (i.e. Geology) that focus mostly on senior research, the OUR will encourage participation across the undergraduate spectrum, from freshman to seniors. One successful model is that of mentoring by students, whereby senior level students themselves train younger students in research, under the guidance of faculty members and graduate students. Chaplin et al. (1998) emphasize that students should be involved in research experiences early in their college career. Furthermore, the OUR at VSU would emphasize that undergraduate research experiences should not be limited to students with the highest GPAs or Honors status.

Because the OUR is focused on undergraduate students, it will not impact directly masters, doctoral, or other advanced degree programs. However, participation in research may encourage more students to apply for and obtain advanced degrees that require research skills. Some of these students may apply to VSU, enhancing the quality and quantity of graduate students.

Best Practices: Undergraduate Research within the University System of Georgia

Within the University System of Georgia (2008), most four year colleges and universities recognize and support the value of undergraduate research, although the degree of support varies. Some university mission statements mention the importance of undergraduate research as a distinctive core characteristic (Albany State). At Armstrong Atlantic, there is a special assistant to the Dean (College of Arts and Sciences) for Undergraduate Research. Undergraduate research is housed within the Honors College at the University of West Georgia. Many units support Undergraduate Research through participation in the Council for Undergraduate Research (Albany State, Augusta State,

Georgia College & State, Georgia Southern, Georgia State, Kennesaw State, North Georgia College & State, University of Georgia, and the University of West Georgia).

In addition to formally recognizing the value of undergraduate research, some system units have organized more substantial support for undergraduate research. Three programs are focused on the sciences. At Georgia Southern University, there is an Office for Undergraduate Research in the Allen E. Paulson College of Science and Technology. This office provides travel awards, organizes an annual symposium, and provides research scholarships to students in amounts up to \$2500. Kennesaw State University's College of Science and Mathematics has an undergraduate research program called Mentor-Protégé that awards up to \$3200 (\$2000 in supplies and \$1200 in travel) to selected students. At North Georgia College and State University, the School of Science and Health Professions has a Center for Undergraduate Research and Creative Activity that provides undergraduate stipends and research awards up to \$2000. They intend to make this Center campus-wide in the near future. NGCSU also publishes an online journal of undergraduate research.

Several system units have integrated undergraduate research across all colleges and schools. At Georgia College and State University, the Office of Academic Engagement supports undergraduate research through an annual Student Research Conference and publishes a journal of undergraduate research. Georgia State University has an Office of Undergraduate Studies that includes an Undergraduate Research Program. This program supports students through financial aid for participation in research, hosts an annual conference, and makes an annual award for excellence. The most comprehensive support for undergraduate research within the University System of Georgia is at UGA. At the University of Georgia, there is the Center for Undergraduate Research Opportunities (CURO) that spans the entire university. CURO includes an Apprenticeship Program, Faculty Research Projects, Summer Research Fellowships, the CURO symposium, an online undergraduate research journal, awards for travel to NCUR and an Excellence in Undergraduate Research Award.

Currently, VSU supports undergraduate research through participation in CUR and through the College of Arts & Sciences Annual Symposium on Undergraduate Research. The Center for Applied Research (CAR) awards small travel grants (up to \$250) for student presentations at conferences for students from the College of Arts & Sciences. However, we do not provide any specific funding to either students or faculty sponsors other than the regular Faculty Research Grants and/or CAR Applied Research Seed Grants. The development of the OUR will make VSU similar to some of the most selective 4-year colleges and research universities in the state of Georgia with its support for undergraduate research.

Increasing minority-student participation in research

The value of engagement of students in undergraduate research is well supported by numerous national documents in the sciences and other disciplines. For example, the Louis Stokes Alliances for Minority Participation (LSAMP) is a NSF funded program to increase minority student participation in research and to prepare students for advanced work at the graduate level. Among its various activities, undergraduate research participation is a central theme. Within Georgia, there are three LSAMP alliances, the

Peach State Alliance (UGA, Bainbridge College, Georgia Perimeter College, Fort Valley State University, Savannah State University, and Southern Polytechnic State University), the Florida-Georgia Louis Stokes Alliance (Albany State, Florida International University, Miami-Dade College, University of Miami, Bethune-Cookman, Florida A&M University, Florida Memorial College, University of Central Florida, University of South Florida, Tallahassee Community College, Florida State University, University of Florida, and Florida Community College), and the Georgia Louis Stokes Alliance for Minority Participation (Clark Atlanta University, Georgia State University, Morehouse College, Paine College, and Spelman College). While VSU is not currently a member of these alliances, the OUR could explore joining one of these alliances to provide additional funds to improve minority student academic success at VSU.

Student Learning Outcomes

The proposed OUR can positively impact several student learning outcomes. The OUR addresses the critical issues of knowledge, skills, behaviors, and values of students that are directly tied to student participation in research.

The in-depth study of a particular topic provides knowledge of both specific systems and the process of research. One of the most valuable attributes of participation in research is the ability to ask relevant research questions. This involves the ability to synthesize and comprehend existing knowledge, identify gaps in knowledge, develop a research question, and produce a research plan.

Students gain valuable skills in participating in research. Specific skills include the acquisition of topic specific instrumentation, validation, and data handling (including data collection, verification, and analysis). A core component of any research project is its dissemination to other interested parties. Students gain valuable skills in the design, layout, and writing of posters, oral presentations, or other creative activities. Core speaking skills include public speaking, synthesis of information, and the ability to comprehend and respond adequately to questions. Core writing skills include the development of papers and other visual media projects for publication.

The OUR will positively impact the behavior and values of students in that it will emphasize that one of the critical distinctions of higher education that makes it different from high school is the generation and application of knowledge through research. This will help students envision themselves as participants in college, not passive receptacles, but actual agents of creation and research in the knowledge that they are themselves studying. Students who participate in undergraduate research tend to have more positive impressions of their undergraduate degree program than students who did not participate.

In their study of almost 1,000 alumni from the University of Delaware, Bauer and Bennett (2003) discovered that alumni involved in the Undergraduate Research Program (URP) reported significantly greater overall satisfaction with their undergraduate education than alumni who were not involved in undergraduate research. The survey also asked alumni “to indicate the level to which 32 skills and abilities that are generally valued outcomes of a baccalaureate education had been enhanced by their years of study at this university” (Bauer and Bennett 2003, 217). Alumni from the URP reported significantly higher growth in “the ability to develop intellectual curiosity, acquire information independently, understand scientific findings, analyze literature critically,

speak effectively, act as a leader, and possess clear career goals” in comparison to alumni with no research experience (Bauer and Bennett 2003, 221). Interestingly, the study revealed that even one semester of research experience can be very beneficial, and a factor analysis of responses to the 32 skills and abilities highlighted that URP respondents believed they had enhanced skills in three (science/math/problem-solving factor, literature/language/mastery of contexts factor, and communication/initiative factor) of four factors in comparison to non-research alumni (Bauer and Bennett 2003, 222-225).

Loppatto (2004), a leader in the field of undergraduate research assessment, surveyed 1,135 undergraduates representing 41 universities in the summer and fall of 2003. The undergraduates reported gains on 20 specific learning outcomes such as understanding of the research process, readiness for more demanding research, tolerance for obstacles, learning to work independently, skill in the interpretation of results, understanding how knowledge is constructed, becoming part of a learning community, clarification of a career path, skill in oral presentation, and learning ethical conduct (Loppatto 2004, 272-273). Ethical conduct can and should be emphasized through training undergraduates in research ethics. Stiles et al. (2007) outline a useful model for training students in research ethics in the social and behavioral sciences. Furthermore, in qualitative assessment of undergraduate research, Hakim (1998) reports that students felt more connected to their discipline and improved their problem solving skills after an undergraduate research experience. Kardash (2000) draws our attention to student gains in oral communication, making observations, collecting data, and relating their study to the big picture after a summer research experience.

Proposed Budget and Organization for the OUR

In the December 2006 issue of the *CUR Quarterly*, Crowe and Sienerth provide a detailed analysis of budgeting for a centralized office of undergraduate research. The authors surveyed undergraduate research program directors, analyzed undergraduate research program websites, and conducted budgeting workshops at the 2006 CUR national meeting. The line items in Table 1 are averages based upon Crowe and Sienerth’s (2006, 59) budgetary analysis of public institutions ranging in size from 7,500 to 15,000 students. Crowe and Sienerth (2006, 59) estimate an annual cost of a centralized office of undergraduate research at approximately \$216,000 with startup costs of \$38,000.

Our analysis in Table 1 reveals that the annual cost at VSU could range from \$114,000 to \$227,000. The first three lines of Table 1 estimate the cost of staffing the office. A coordinator could be drawn from our faculty ranks with varying expenses for reassigned time. The administrative assistant could be full-time in the office or split between two offices on campus. The budget also estimates the expense for a student worker, general office operating budget, and travel for the coordinator. Travel for the coordinator to AAC&U, CUR, and NCUR meetings/conferences are especially important for learning about and modeling best practices. Crowe and Sienerth (2006, 59) estimate approximately \$5,000 for an undergraduate research celebration event, but this cost could be covered by the various deans’ offices across campus (the College of Arts and Sciences currently funds an annual spring symposium on undergraduate research).

Table 1
Proposed Budget for an Office of Undergraduate Research (OUR)

Line Item	Cost	Description
OUR Coordinator, hired from faculty ranks	\$16,000 to \$20,000	The \$16,000 cost estimate is based upon a 2 course release for the fall and spring semesters (\$8,000 for an adjunct to cover four courses) as well as a salary (\$8,000 for salary and fringe) for the coordinator to oversee the OUR during the summer months. The \$20,000 estimate is based upon a 3 course release for the fall and spring semesters (\$12,000 for an adjunct to cover 6 courses) as well as a summary salary for the coordinator (\$8,000).
Administrative Assistant	\$19,000 to \$38,000	The estimate of \$38,000 is based upon the entry level salary at VSU for a secretary (\$19,526) plus fringe benefits (\$18,160). This cost could be reduced if the administrative assistant was shared with another office on campus (\$19,000 assumes the cost is shared between two offices).
Undergraduate student worker	\$0 to \$3,000	Cost estimate is based upon one student worker for the fall and spring semesters (10 hours a week for the entire semester). Work study would provide the opportunity to reduce this cost to zero.
Yearly general office operating budget	\$5,000	Cost estimate based upon the survey from Crowe and Sienerth (2006).
Travel for the OUR coordinator	\$4,000	Cost estimate based upon the survey from Crowe and Sienerth (2006, 59) to cover "travel to meetings of professional societies such as AAC&U, CUR, NCUR, PKAL as well as to meet with program officers in D.C. about grant opportunities."
Undergraduate Research Celebration Event	\$0 to \$5,110	The cost could be covered from the offices of the various deans across campus, which would result in no expense for the OUR (\$0). The estimate of \$5,110 is derived from the survey by Crowe and Sienerth (2006).
Academic year student stipends	\$0 to \$55,800	The cost of \$55,800 is reported in Crowe and Sienerth (2006). Many institutions do not provide academic year stipends since students can receive course credit (\$0).
Summer student stipends	\$0 to \$25,900	See analysis above
Student travel to present results of research	\$27,900	Crowe and Sienerth (2006)
Supplies for student research projects	\$26,100	Crowe and Sienerth (2006)
Faculty travel	\$0	Crowe and Sienerth (2006) estimate that the faculty member can get funding from their department, other sources on campus, or an external grant.
Summer faculty stipends	\$15,000	Crowe and Sienerth (2006) estimate \$1,000 per mentor at public institutions. Grants could help to expand the stipends in subsequent years.
Faculty development workshops	\$300	Crowe and Sienerth (2006) note the funds can be used for "snacks and drinks at brown bag discussions about 'How to integrate teaching and learning.'"
Student development workshops	\$600	Crowe and Sienerth (2006) note the funds can be used for "pizzas and beverages for discussions such as 'What is research?' 'How to find a research mentor.'"
Annual cost of centralized office	\$113,900 to \$226,710	
One time start-up expenses		
Easels for poster presentations	0	Available through College of Arts and Sciences at VSU.
Poster plotter	0	Available through A&S and Media Services at VSU.
Supplies for celebration (laser pointers, banners for advertising)	0	Available through A&S at VSU.
Office furniture	\$5,000	Crowe and Sienerth (2006) estimate \$5,000, although furniture could be acquired through surplus.
Office equipment (computers, photocopier)	\$15,000	Crowe and Sienerth (2006) estimate \$15,000, although equipment could be acquired through surplus.
Startup total	\$0 to \$20,000	

Table 1 also provides estimates for academic year as well as summer student stipends. Some public institutions do not provide stipends since students receive academic credit. The summer student stipends would be critical for initially funding SURFs (Summer Undergraduate Research Fellowships). Crowe and Sienerth (2006, 59) report an average funding level of \$27,900 for student travel to present the results of their research and \$26,100 for supplies for student research projects across public institutions. \$15,000 is budgeted for summer faculty stipends (FASTs). As noted previously in this proposal, NSF grants and NCUR/Lancy grants provide the opportunity to supplement summer student stipends.

Table 1 includes limited funding for workshops targeting faculty and student development. Startup costs could be kept to zero with current resources on campus. The expense of an online journal is not included in Table 1. Crowe and Sienerth (2006) note that some universities successfully fund an online undergraduate journal with as little as \$1,000. An online journal would likely be implemented in the second or third year of the OUR as decisions are made about submission, review, and editing guidelines.

While an annual price tag of \$100,000 to \$250,000 might initially cause “sticker shock,” it is important to keep in mind that a successful undergraduate research program can help to generate funds for the university. A productive OUR can facilitate faculty and student involvement on applied research contracts. Institutionalizing undergraduate research at VSU improves our chances for successful funding of a variety of grants. Furthermore, celebrating the achievements of undergraduate research across the university can help with alumni and community fundraising.

As a campus-wide initiative, the coordinator of the OUR would report to the Vice President for Academic Affairs. The OUR would not be housed in a specific college, but the coordinator would work closely with administrators and faculty across our colleges to help build interdisciplinary research teams. A key element in the organization of the OUR would be a faculty advisory board to help promote program initiatives (similar to the Council on Undergraduate Research in the College of Arts and Sciences). A community advisory board might also be considered in the first few years of the OUR to build connections with local industry, government, schools, and nonprofits for collaborative research opportunities.

Assessment of Undergraduate Research

With the creation of an Office of Undergraduate Research at VSU, the first critical step would be to simply collect data on the number of students involved in a collaborative undergraduate research project or creative activity with a faculty member. Baseline data should also be collected on the number of students presenting their research on campus or at professional meetings. Furthermore, data on the number of students publishing their work as well as involved in interdisciplinary research teams would be instructive. In terms of Summer REUs (Research Experiences for Undergraduates), such opportunities do not currently exist on campus for our students. With the establishment of baseline numbers, goals could then be set for the first five years of the OUR. For example, the Symposium on Undergraduate Research sponsored by the Council on Undergraduate Research in the College of Arts and Sciences has witnessed an increase in

the total number of students delivering oral or poster presentations from about 60 students five years ago to slightly more than 100 this past April. Over the last two years, the Center for Applied Research in the College of Arts and Sciences has supported around a dozen student presentations each year at professional meetings. Ambitious goals could be set through a campus-wide OUR.

As noted previously, undergraduate research contributes to the development of a variety of important cognitive skills and abilities. The assessment literature on undergraduate research has documented benefits for freshman and sophomore students. Nagda et al. (1998) report higher retention rates for freshman and sophomore students involved in an undergraduate research program when compared to a control group. In a nationwide assessment of undergraduate research experiences, Russell et al. (2007) emphasize the benefits of involving freshman and sophomore students. Ishiyama (2001) reports higher retention rates for first-generation college and low-income students who are involved in a research program that begins their sophomore year and continues until their senior year in comparison to a control group. Furthermore, a higher percentage of students from the research program went on to graduate school than the control group (Ishiyama 2001).

Fundamentally, the involvement of undergraduate students in research is linked to many positive outcomes, including increased retention and graduation rates, increased application and acceptance to professional and graduate school, higher GPAs, higher alumni participation and giving, and higher placement rates in jobs in the public and private sectors. The benefits are especially notable for minority students (National Science Board 2003; Chu et al. 2006; National Science Foundation 2006). Alexander et al. (2000) and Foertsch et al. (2000) find particular benefits of undergraduate research for minority students in terms of graduate school attendance. Nagda et al. (1998) discover that the retention benefits of undergraduate research are most noticeable for African American students. Summers and Hrabowksi (2006) report that African American students involved in an undergraduate research program were twice as likely to graduate and five times more likely to attend graduate school than the control group.

A variety of techniques are available to the OUR to conduct an assessment of undergraduate research experiences. Students participating in the summer research program or interdisciplinary research teams during the academic year could be compared to a control group in relation to retention rates, GPAs, graduation rates, and graduate school attendance. Seymour et al. (2003) highlight the advantage of focus groups in assessing student learning outcomes from undergraduate research experiences. An alumni survey also provides a powerful tool to assess the long-term benefits of undergraduate research. Alumni who participated in the undergraduate research program could be compared to those who did not in order to evaluate job placement in field and completion of a graduate degree. Following the design of Bauer and Bennett (2003) the survey might ask alumni to evaluate the skills and abilities enhanced during their undergraduate education.

Conclusion

There are pockets of excellence in undergraduate research at VSU. Dr. Tom Manning's collaborative research with his Chemistry students on natural products and

cancer drugs offers exciting possibilities. Dr. Matthew Richard's summer field school in Belize provides unique opportunities for research by undergraduate anthropology students. The current collaboration between the Center for Applied Research and the Valdosta Optics Lab has provided Chemistry and Pre-Engineering students with impressive research opportunities involving laser technology. Without diminishing the significance of these research projects, VSU could be doing much more to promote and expand undergraduate research.

In the campus-wide needs assessment conducted earlier this year by the QEP Committee, 1382 respondents evaluated 18 items on a scale of 1 to 5 with 1 representing a minimal need for improvement and 5 representing a critical need for improvement. More than one in five respondents (22.1%) identified "opportunities to work with a faculty member on a research project" as a critical need for improvement (as indicated by marking "4" or "5" to this question). This was the highest need item in the survey followed closely by "courses at VSU expose students to a global/international perspective as well as diverse ideas and cultures" and "VSU provides opportunities for students to participate in community service or volunteer work as part of a course." The OUR would serve a critical need on campus.

The OUR can draw upon best practices in the University System of Georgia and other institutions across the country. A summer research program would open the door for the pursuit of numerous grants. The OUR would play the lead role in helping to organize interdisciplinary teams across our colleges. A campus-wide celebration of undergraduate research and creative activities could be the highlight of our academic year at VSU. The development of an online journal would provide a valuable tool for disseminating our student research. The funds for student presentations at professional conferences and support for faculty-student research throughout the year could energize the entire campus.

The scholarship cited in this proposal documents the clear impact of undergraduate research on cognitive skills and abilities as well as retention, graduation, and graduate school attendance. Investment in a centralized Office of Undergraduate Research will pay dividends for our students through an enriched undergraduate curriculum. The report of the Boyer Commission (1998) received much attention for its clarion call that faculty should collaborate with undergraduate researchers. VSU can answer that call with a campus-wide initiative to promote undergraduate research.

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