Report of the President’s Task Force on Undergraduate Research

Members of the Task Force
APSCUF Representative – Dr. Peg Christopher
Education & Human Services – Dr. Robert Skwarecki
Education & Human Services – Dr. Marcia Hoover
Liberal Arts – Dr. John Nass (co-chair)
Liberal Arts – Dr. Cindy Persinger
Science & Technology – Dr. Summer Arrigo-Nelson
Science & Technology – Dr. Steve Whitehead
Faculty Professional Development – Dr. Kurt Kearcher
FPDC Research Subcommittee – Dr. Paul Crawford
University Development – Mr. Anthony Mauro
Graduate Studies & Research – Dr. Stan Komacek (co-chair)

Submitted September 6, 2013
TABLE OF CONTENTS

SECTION 1 - Background & Report Overview ................................................................. 3

SECTION 2 .................................................................................................................. 3
   Undergraduate Research Mission, Goals, Objectives ............................................. 3
   Mission Statement ................................................................................................. 3
   Goals and Objectives for Undergraduate Research ............................................ 3
   President’s Task Force on Undergraduate Research ....................................... 4
   Task Force Charge & Targeted Objectives .................................................. 4
   Task Force Activities during 2012-13 ............................................................... 4
      Mission Day Presentation ............................................................................... 5
      Survey of Undergraduate Research ............................................................. 5
      Survey of Department Chairs ...................................................................... 5
      First Year Seminar Course Re-Design ......................................................... 5
      CUR Enhanced Institutional Membership .................................................. 6
      2013 Mid-Atlantic Writing Centers Associate Conference .......................... 6
      Task Force for the President’s Student-Faculty Research Funding Pool ........ 6
      2013 Academic Excellence Days .................................................................. 6
      Dr. Iain Crawford Engagement ..................................................................... 7
      2013 NCUR Conference ............................................................................... 7
      CURAH Proposal ......................................................................................... 7
      Cal U Faculty Survey .................................................................................... 7

SECTION 3 – Summary of the Cal U Faculty & Staff Survey ...................................... 8
   Respondents ....................................................................................................... 8
   Summary Results for Survey Items for Objective #1 ...................................... 8
   Summary Results for Survey Items for Objective #2 ...................................... 9
   Summary Results for Survey Items for Objective #3 .................................... 10

SECTION 4 – Recommendations to the President ................................................ 11
   1. Build on Successes ...................................................................................... 11
   2. Education & Internal Marketing .................................................................. 12
   3. Curriculum Revisions & Faculty Workloads ........................................... 14
   4. Funding ...................................................................................................... 14
   5. Change the Culture .................................................................................. 15

Appendix A – Summary of Chair Survey .............................................................. 18
Appendix B - Results for the Survey Items Related to Objective #1 .................. 20
Appendix C – Results for the Survey Items Related to Objective #2 ............... 24
Appendix D – Results for the Survey Items Related to Objective #3 ............... 28
SECTION 1 - Background & Report Overview

Cal U is a participant in a PASSHE-wide effort to institutionalize undergraduate research as a high-impact practice. In September 2012, PASSHE hosted the National Science Foundation-funded Workshop Program to Institutionalize Undergraduate Research offered by the Council on Undergraduate Research (CUR). Cal U participants in the workshop were Dr. Summer Arrigo-Nelson, Dr. Kurt Kearcher, Dr. John Nass, and Dr. Stan Komacek.

Section 2 summarizes the activities undertaken by Cal U since the September 2012 PASSHE-CUR Workshop. Section 3 summarizes the results of the survey of Cal U faculty that was conducted in Spring 2013. Section 4 provides the recommendations for President Jones.

SECTION 2

Undergraduate Research Mission, Goals, Objectives

During the September 2012 PASSHE-CUR Workshop, the Cal U team (Arrigo-Nelson, Kearcher, Komacek, Nass) worked with a CUR facilitator and drafted the following mission statement, goals, and objectives for undergraduate research at Cal U.

Mission Statement
The purpose of undergraduate research at California University of Pennsylvania is to maximize opportunities for faculty members and undergraduate students to engage together in research, scholarship, or creative activities that contribute to their academic and professional success. It will achieve its purpose by increasing student academic challenge, increasing faculty-student engagement, improving students’ perceptions of their self-efficacy, and making students active participants in their own development.

Goals and Objectives for Undergraduate Research

Goal 1: Increase faculty member participation in undergraduate research
   Objective 1: Develop a task force charged with investigating undergraduate research implementation.
   Strategy 1: Assess models on other campuses
   Strategy 2: Assess current level of undergraduate research at Cal U
   Strategy 3: Identify strengths and deficiencies of Cal U undergraduate research
   Strategy 4: Identify ways to coordinate undergraduate research at Cal U
   Objective 2: Increase faculty member rewards for engaging in undergraduate research
   Strategy 1: Make relevant to faculty tenure and promotions
   Strategy 2: Make mentoring individual student research projects credit-bearing
   Objective 3: Increase faculty members’ awareness of the broad range of research across the disciplines

Goal 2: Develop institutional infrastructure to support undergraduate research
   Objective 1: Develop curricula with undergraduate research as a central high-impact learning strategy
   Objective 2: Identify programs interested in participating in undergraduate research
   Objective 3: Provide workload adjustment options
   Objective 4: Develop mechanism for assessing undergraduate research
   Objective 5: Develop means to increase funding for undergraduate research
   Objective 6: Improve internal and external marketing of undergraduate research
Goal 3: Improve student engagement with their learning
Objective 1: Expand student access to research opportunities
Objective 2: Target specific student populations

President’s Task Force on Undergraduate Research
In October 2012, to achieve Goal 1, Objective 1 above, President Jones created a task force that was charged with making recommendation on how Cal U can enhance and expand undergraduate research opportunities. The individuals assigned to serve on the President’s Task Force on Undergraduate Research include:
- APSCUF Representative – Dr. Peg Christopher
- Education & Human Services – Dr. Robert Skwarecki
- Education & Human Services – Dr. Marcia Hoover
- Liberal Arts – Dr. John Nass (co-chair)
- Liberal Arts – Dr. Cindy Persinger
- Science & Technology – Dr. Summer Arrigo-Nelson
- Science & Technology – Dr. Steve Whitehead
- Faculty Professional Development – Dr. Kurt Kearcher
- FPD Research Subcommittee – Dr. Paul Crawford
- University Development – Mr. Anthony Mauro
- Graduate Studies & Research – Dr. Stan Komacek (co-chair)

Task Force Charge & Targeted Objectives
The task force was charged “to make recommendations to the President on how Cal U can enhance and expand undergraduate research” and assigned three targeted objectives:
1. To maximize opportunities for faculty members and undergraduate students to engage in research, scholarship, and creative activities which contribute to academic and professional success.
2. To increase faculty-student engagement, improve undergraduate students' perceptions of their self-efficacy in conducting research, increase students' perception of the level of academic challenge at Cal U, and make students more active participants in their own education and development.
3. To develop Cal U's infrastructure, operational policies, and resources so the institution may support, enhance and expand undergraduate research.
Task Force Activities during 2012-13
During the 2012-13 academic year and into Summer 2013, the task force completed the following activities.

Mission Day Presentation
During Mission Day XIV, Dr. John Nass and Dr. Summer Arrigo-Nelson presented information on Cal U’s participation in PASSHE’s undergraduate research initiative, CUR, the benefits of undergraduate research, and Cal’s Task Force for Undergraduate Research.

Survey of Undergraduate Research
Dr. John Nass researched comparable colleges/universities to determine the extent of their undergraduate research programs. Dr. Nass’ summary report, shared with the Task Force, focused on the presence of a dedicated undergraduate research office, the types of funding support employed, the availability of summer research opportunities, and whether an undergraduate research day was conducted.

Survey of Department Chairs & Program Directors
In Spring 2013, members of the Task Force visited each undergraduate dean’s council and distributed a survey to department chairs and program directors. The results indicate that Cal U has a good base of undergraduate research in place:
- 60% of undergraduate programs require a capstone or senior seminar course
- 80% of undergraduate programs have one or more courses focused on inquiry-based, exploratory, or discovery-based research and/or creative expression
- 85% of departments have had undergraduates either enter a poster, a creative work, or perform at a professional meeting in the past five years
- 50% of departments have had undergraduates conduct research outside of the classroom with either a Cal U professor or with a faculty member from another university.
- 45% of departments have had undergraduate researchers who were responsible for some component of a research project under the direction of a Cal U faculty member or members.
- 55% of programs have at least one research class as part of its curriculum required for graduation.

Also, there were a few areas that may require additional attention:
- 40% departments financially assisted undergraduates in attending a professional conference
- Only five programs (no departments) have a formally approved independent study course as part of its program curriculum
- Only three programs responded that undergraduate students co-authored a journal article with a faculty member within the past five years

The complete report of the survey is included in Appendix A.

First Year Seminar Course Re-Design
As a result of the CUR-PASSHE Workshop and participation in Clarion University’s High-Impact Practices Workshop (February 2013) by Cal U professors Dr. Summer Arrigo-Nelson and Dr. Sarah Meiss (Biological & Environmental Sciences), professor Lisa Driscoll (Academic Development Services), and Tracie Beck (Internship Director) the syllabus for UNI 100 First Year Seminar was revised to integrate undergraduate research and allow for discipline-specific student cohorts. The new course, UNI 101, was approved by the University Curriculum Committee on April 22, 2013 and is being piloted and evaluated in Fall 2013.
CUR Enhanced Institutional Membership
President Jones and Provost Barnhart provided funding for Cal U to secure the enhanced institutional membership in the Council on Undergraduate Research. The membership provided access for all Cal U faculty members to CUR e-news, workshops, research, and other resources.

2013 Mid-Atlantic Writing Centers Association Conference
Dr. Kurt Karcher (English), director of the Cal U Writing Center, chaired this regional conference hosted by Cal U hosted in April, 2013. The conference had over 200 attendees, many of them undergraduate students, presenting the results of their research through poster presentations, roundtable discussions, panel presentations, and individual presentations. The keynote speaker, Kerri Jordan, a member of the International Writing Centers Association executive committee and a co-editor of The Writing Center Journal, paid particular attention to the role of undergraduate tutors in contributing to research conducted in and about writing centers.

Task Force for the President’s Student-Faculty Research Funding Pool
In March 2013, President Jones approved a pool of funds to stimulate and support student-faculty research. In April, President Jones established a task force that will create processes and procedures for allocating funding to support student-faculty research at the undergraduate and graduate levels. Dr. Mark Aune, Director, Honors Program, and professor of English, is serving as chair of the task force, which includes representatives from each undergraduate college, the graduate school, and the faculty union.

2013 Academic Excellence Days
On April 23-24, 2013, the Faculty Professional Development Committee (FPDC) sponsored the 7th Annual Academic Excellence Days at Cal U to showcase the talents of faculty and students. The 2013 theme was “Taking the Lead Together.” Coordinated by the Faculty Professional Development Center and its coordinator, Dr. Kurt Karcher (English), the event featured a variety of activities designed to stimulate academic excellence were conducted during the two-day event, including faculty and student presentations. The Student Research and Creativity poster event was well attended with over 100 students represented by the 51 individual and group poster entries in the categories of Data Oriented/Independent Student Research, Data Oriented/Class Project, Information Oriented/Class Project, and Information Oriented/ Independent Student Research. Student entries included posters from the departments of Biological & Environmental Sciences, Earth Sciences, Exercise Science and Sports Studies, Health Science, Justice Law and Society, and Nursing. The event was sponsored by the FPDC Research Subcommittee and coordinated by Dr. Mark Tebbitt (Biological & Environmental Sciences) and Dr. John P. Nass, Jr. (Justice Law and Society). The posters were judged by faculty members and certificates were presented to the winners in each category. The FPDC Service and Service Learning Subcommittee also sponsored a poster presentation for students and faculty members to present the result of their scholarly projects involving service and service learning. Some service-learning projects incorporate an applied research component, particularly those projects that include pre/post testing related to learning outcomes for students or pre/post evaluations related to the impact of the services provided.
Dr. Iain Crawford Engagement
As part of the 2013 Academic Excellence Days, the Cal U FPDC Teaching and Learning Subcommittee invited Dr. Iain Crawford, Chair of the Arts and Humanities Division of the Council for Undergraduate Research, to provide two presentations: “Undergraduate Research, Scholarship, and Creativity: Going Beyond the Sciences” and “Incorporating Undergraduate Research into Your Syllabus.” The latter was a workshop designed to help faculty build undergraduate research opportunities into their existing courses and implement these opportunities throughout the curriculum. During his visit Dr. Crawford also met with President Jones, Provost Barnhart, and members of the Deans/Provosts Council to discuss his experiences increasing participation in undergraduate research in non-STEM disciplines.

2013 NCUR Conference
Dr. Summer Arrigo-Nelson (Biological & Environmental Sciences) and Dr. Craig Fox (Philosophy and University Honors) accompanied nine Cal U students to La Crosse, Wisconsin for the 2013 NCUR meeting. Five of the students were juniors and seniors who presented the results of research projects that they have been working on for at least a year. The other four students were sophomores and first year students who were given the opportunity to attend their first professional conference and to see the types of research that students are engaged in around the country. The expectation is that these students will go on to complete independent research projects and present them publicly at a future conference. All nine students, who are active participants in the Cal U Honors Program, attended a number of presentations given by other students attending the conference and NCUR sponsored activities. Following the conference, Arrigo-Nelson submitted a budget to the administration to expand Cal U participation in the 2014 NCUR Conference to students not participating in the Honors Program.

CURAH Proposal
Professors Margo Wilson (English), Margarita Rebar (Modern Languages), and Arcides Gonzalez (Modern Languages) prepared a proposal for “Creating a Vibrant Arts and Humanities Community at California University of Pennsylvania and in Southwestern Pennsylvania by Establishing a Center for Undergraduate Research in the Arts and Humanities (CURAH)” . The proposal recommends that Cal U “should be known as a regional center of innovation and creativity in the arts and humanities”. The proposal is being reviewed by various parties on campus.

Cal U Faculty Survey
In April 2013, a campus-wide online survey was conducted of all faculty. The survey focused on questions specifically-related to the targeted objectives outlined for the President’s Task Force on Undergraduate Research. The survey had 111 respondents (the regular faculty headcount is 248). During the Summer 2013 term, members of the team are reviewing the survey results and drafting a report to the President. A summary of these results can be found in Section 3, below.
SECTION 3 – Summary of the Cal U Faculty & Staff Survey

The President’s Task Force on Undergraduate Research surveyed faculty in Spring 2013. The survey instrument was drafted and reviewed by members of the Task Force. Online administration of the survey was conducted in early May 2013 by Suzanne Sarra, Management Technician, Office of Continuous Improvement.

Respondents
In Spring 2013, the survey was distributed to 367 faculty (248 regular and 119 temporary). Results:
• 111 total respondents (30% of 367) included 76 faculty, 13 tenured, 5 temp, 4 chairs, 3 tenure-track, 10 did not select a category
• 27 academic departments represented (largest: 8 Applied Engineering & Technology, 7 Math/Computer Science/Information Systems, 5 each History & Political Science, Exercise Science & Sports Studies, and Biological & Environmental Sciences).

Summary Results for Survey Items for Objective #1: To maximize opportunities for faculty members and undergraduate students to engage in research, scholarship, and creative activities which contribute to academic and professional success.

A thorough review of the survey results for items related to Objective 1 is included in Appendix B. For the three basic sections of Objective #1, section one asked questions about the existing strengths and opportunities. While a majority of the respondents scored items such as the Honors Program, the bi-annual student research poster event, the Guttman Family Grant Award, and the opportunity for students to publish their findings from research projects, other questions such as the existence of the Keystone Digital Journal for Undergraduate Research, the Gala Research Award and the FPD Research Award were not viewed as university strengths. It seems that in the minds of many faculty members, student research is not believed to play a role in the selection process. Many faculty members apparently are not sold on digital publication and are more likely to play it down than to support it, even though such journals are still peer reviewed. The question about encouraging undergraduates to do independent research also needs attention. This question was almost a tie in terms of being a strength or a weakness, and a large percentage of the respondents also had no opinion. While independent research is an important component of any undergraduate research opportunity, the experience could be obtained in other manners and I feel this may be the reason that it was rated in the manner it was. The only other question in section one that was not perceived as a strength is the existence of a discipline-based independent research course. This may have something to do with the way the preceding question was rated. Many faculty members to not feel that independent research courses are necessary to provide students with a research experience.

The section two questions pertain to the management and funding of a university-wide undergraduate research program. The consensus appears to be oversight by the Provost with funding by either the offices of the President or the Provost. Staffing of the program, should it evolve to this stage, should be from the existing faculty and staff at the university. The open-ended questions appear collected an assortment of responses. Existing methods of celebrating undergraduate research appear adequate, but the opinions pertaining to the coordination of research activities and the role of the honors college are mixed. The biggest issue is the Honors
Program. Its exact purpose, role within the university and its functioning are unclear to most of the respondents and this needs to be clarified before conversation about relation between student research and the Honors College can begin.

Section three questions cover the scope of undergraduate research at the university. Most activity takes place in the classroom and in lower series discipline-based courses. Many programs have a capstone course, but it may not actually contain a true undergraduate research component; term papers are not a good example of student abilities and research potential. While most of the respondents favored either starting or increasing the amount of research in their classes, the same was not true outside of the classroom. Since learning does not end in the classroom, research cannot be confined to just the classroom.

**Summary Results for Survey Items for Objective #2:** To increase faculty-student engagement, improve undergraduate students' perceptions of their self-efficacy in conducting research, increase students' perception of the level of academic challenge at Cal U, and make students more active participants in their own education and development.

A thorough review of the survey results for items related to Objective 2 is included in Appendix C. The following bullets summarize the results for this section of the survey:

- Significantly, a majority of respondents (85%) stated that they were interested in doing more with undergraduate research (section 3, question 6).
- The faculty is engaging in undergraduate research. 61% of respondents indicated that they have recently taught a course that incorporates undergraduate research as a key component and 69% say they are part of a department, program, or other Cal U entity that engages in undergraduate research (section 3, questions 1 and 2). A little more than half of the respondents stated that they engaged in undergraduate research outside of classes/curriculum (section 3, question 5).
- The results indicate that confusion exists among faculty as to what constitutes undergraduate research (see section 3, question 2; section 4, question 2), as well as who is engaging in undergraduate research (see section 3, questions 1 and 2). Comments included “My students are at the elementary level and research is not a part of the curriculum” and “Our department doesn’t currently have a research methods course for undergraduates ... therefore there really isn’t research occurring” (section 4, question 2).
- Undergraduate research is most often occurring in courses with 30 or fewer students (see section 3, question 4).
- 56.2% of the respondents said they would be willing to assess the impact of undergraduate research (section 3, question 3).
- More than half the respondents (55%) said that the assistance of a departmental GA to help with classes would help support their engagement with students in undergraduate research (section 4, question 1).
- Faculty is encouraging students to share research both internally and externally (section 4, question 2).
- 57% of the respondents said that both travel monies to promote undergraduate research and Promotion and Tenure considerations would encourage them to promote undergraduate research (section 4, question 5).
Summary Results for Survey Items for Objective #3 - To develop Cal U’s infrastructure, operational policies, and resources so the institution may support, enhance and expand undergraduate research.

A thorough review of the survey results for items related to Objective 3 is included in Appendix D. The chart below summarizes the respondents’ average rating for the six primary questions; two each (one related to “support” and one related to “enhance and expand”) for infrastructure, operational policies, and resources. Overall, the responding Cal U faculty rate the University’s infrastructure, operational policies, and resources below a neutral (or average) for supporting as well as enhancing and expanding undergraduate research (UR).

In terms of what improvements faculty suggest, there do not appear to be any one or few overwhelmingly common responses. However, for questions 7 and 8 of this section, the most frequent responses were related to:

- changing the culture (included items related to promoting, rewarding, communicating about, and valuing undergraduate research),
- providing funding (for resources, materials, conferences, library, etc.)
- revising faculty workloads to provide more faculty time for undergraduate research
- revising curricula to integrate undergraduate research, and
- improve labs, equipment, technology
SECTION 4 – Recommendations to the President

Given the work of the Task Force, including participation in the PASSHE-CUR workshop and the research and survey results, the Task Force makes the following recommendations to President Jones for consideration.

1. Build on Successes
   Successful undergraduate research has been going on at Cal for many years, supported primarily by the efforts of individual faculty members, departments, and programs. The University should build on those successes and find ways to leverage the knowledge of experienced faculty and staff.

Actions Steps
a. Leverage Faculty Expertise – as we move forward, focus on the faculty who are ready and willing to engage in undergraduate research, and make sure that they are able through education. Doing so has the potential to increase student-faculty engagement. Engage faculty who are experienced in conducting undergraduate research in serving as trainers, mentors, or collaborators with faculty who have little experience but desire to integrate undergraduate research into their curriculum/programs. Determine whether any of these efforts can be integrated into or supported by the FPDC.

b. Continue the Student Research Poster events - continue the FPDC-sponsored biannual Student Research Poster events. Promote the event and recognize the students’ achievements. Demonstrate that the University values and celebrates undergraduate research. Require any students (including Honors) who are supported in presenting research at off-campus conferences and other venues to present their posters at Cal’s poster events.

c. Infuse Research in First-Year Seminar - based on CUR research, the move to infuse research into First-Year Seminar with cohorts of students in the same major is a good first step. The research component of FYS can be discipline-based or interdisciplinary in nature. Discipline-based can approach a common, real-day issue, or the FYS seminar section can be linked to a content-based course within the student’s major (a learning community). The results of the pilot program should be assessed by FYS faculty and considered for implementation across departments. FYS leaders and involved faculty should present results to the department chairs and program directors so that they can bring this to their department and program meetings to secure suggestions for improvements from discipline content experts.

d. Emphasize Research in Other Existing Curricula – following the lead of infusing and emphasizing research in FYS, identify other opportunities where existing curricula may be enhanced with undergraduate research or research (using CUR’s definition) could be emphasized. For example, teacher education programs could require or highlight action
research in field experience courses and student teaching. In the arts, students’ creative expressions could be recognized as aligning with CUR’s definition of undergraduate research. Similar efforts could take place in technology-related fields where students design and produce custom products, services, and systems. Across campus in virtually every discipline, there are strong academic programs in which undergraduate research aligned with CUR’s definition is taking place but not being prominently recognized. Emphasizing and communicating the alignment will help raise the visibility of undergraduate research.

e. **Increase Contributions to the **Keystone Journal of Undergraduate Research** –** Cal U has contributed to the operation of this online multidisciplinary, faculty-reviewed publication dedicated to showcasing outstanding undergraduate research completed at each of the 14 PASSHE universities. Dr. Arrigo-Nelson is the Cal U Campus Editor. Faculty should encourage and assist more students in submitting their research for publication in this journal. In particular, students in the Honors Program should publish their honors theses.

f. **Make Honors more Transparent** – despite many significant achievements by students and faculty, the Honors Program could be more transparent in its operations and share more information, especially about their integration of undergraduate research, with the entire campus community and seek wider engagement. Also, the honors thesis should remain within the Honors Program.

2. **Education & Internal Marketing**

The survey of faculty conducted by the Task Force suggests that more work is required to educate faculty about the CUR definition of undergraduate research and its almost universal application. Education can help eliminate confusion that exists regarding undergraduate research as well as improve students’ perceptions of their self-efficacy in conducting research. If the faculty is not always aware of what undergraduate research is, students will not be either.

**Action Steps**

a. **Professional Development** – the Task Force applauds the university’s support of the CUR enhanced membership for all faculty. Access to the rich resources and research related to undergraduate research are critically important. To build on those resources, bring an undergraduate research expert from CUR or another organization to Cal U to provide professional development for faculty. Consider implementing a train-the-trainer model where a small group of faculty, selected from each academic division and willing to train others on campus, is prepared by an expert in best practices in developing an undergraduate research program. Collaborate with FPDC in this effort.
b. **College & Discipline Leaders** – this item relates to the Leverage Faculty Expertise and Professional Development items above and the Champions item below. Cal U should encourage faculty members to step forward in each college and discipline if they are willing to serve as trainers, mentors, collaborators, or facilitators to assist and educate other faculty members within their colleges and/or disciplines about what undergraduate research is, how it can be executed, and the benefits to students and programs. Cal U should encourage faculty member within each of the undergraduate colleges and disciplines to step forward if they are willing to serve as trainers, mentors, collaborators, or facilitators.

c. **Publicize Achievements** – better marketing and communication about undergraduate research at Cal U is needed among all stakeholders in this venture. We need to recognize and publicize the achievements of our students. In addition, there needs to be more communication from the Honors Program about their activities and pending honors thesis presentations so that more faculty members can attend. These should also be held at more convenient times. A section of the *Cal Journal* or a new newsletter should be specifically devoted to promoting undergraduate research to all students, faculty, and staff. Faculty involved in undergraduate research could submit articles and reports for possible inclusion in the Provost’s quarterly newsletter and/or reports to the Cal U Council of Trustees. A high-quality annual publication that features Cal U student research could be integrated into the Admissions mail stream to prospective students. Video podcasts with interviews of student researchers and their faculty mentors and a section of the Cal U web page could be created. Information about research and applied research associated with service-learning can also be identified through PASSHE’s Economic Impact Study to which each Department contributes annually. All of these items would publicize undergraduate research achievements internally and externally and stimulate additional faculty and students to participate.

d. **Reward Systems** - develop a reward system for students and faculty members who are contributing to continuing and enhancing undergraduate research. Faculty and students should be involved in the process of deciding what this reward system will include and how it will be administered. Both intrinsic and extrinsic rewards may be created, but more intrinsic rewards, which cost little other than time, may be more sustainable in the long run. Letters of recognition for both students and faculty from the president, provost, and deans are simple examples. Another would be a special recognition, awards, or a reception to coincide with honors convocation or undergraduate commencements. Also, for faculty, a new award in the Faculty Professional Development Center could be created to promote undergraduate research.
3. **Curriculum Revisions & Faculty Workloads**

To become an integral part of the learning experience for students, undergraduate research must be part of the curriculum. Our surveys indicate that many programs already have strong undergraduate research elements. As noted above, these successes should be highlighted and supported. For areas where integration of undergraduate research into the curriculum is not already required by accreditation organizations and/or PASSHE, departments and programs may be asked to decide how best to revise curricula to ensure that their faculty and students participate in the university’s undergraduate research initiative. Also, in all areas, whether undergraduate research exists already or is a desired enhancement, faculty workloads must provide sufficient support.

**Action Steps**

a. **Create Credit-Based Research Courses** – any programs that want to become more involved in undergraduate research should have a UCC-approved credit-based research course. Some programs already have such courses available. In other areas, an independent study course could be created. Also, for programs where it makes sense, a senior-level seminar, project, thesis, or other capstone experience should be available in the course catalog for academic credit.

b. **Revise Faculty Workloads** – have each department and program suggest creative, innovative, and meaningful ways to revise faculty workloads so undergraduate research can be integrated into the curriculum. Of course, the CBA definitions of workloads must be considered, and given the potential financial cost in times of declining funding, we must seek FTE-neutral impacts, where possible. In the PASSHE-CUR workshop, the CUR consultant suggested that FTE-neutral models are possible.

c. **Establish Interdisciplinary Research Courses** – would it be possible for Cal U to establish courses that brought together students from various disciplines to conduct interdisciplinary research projects? Most problems in the real world are inter- or multi-disciplinary in nature. Engaging our students in working in real-world contexts to research problems that require expertise from various disciplines will help prepare them for building careers and foster interpersonal relationships that build character. Faculty could be encouraged to pursue an FPDC Learning Community Grant for support.

4. **Funding**

Many believe that money will solve everything, but we realize that current conditions suggest we are highly unlikely to secure additional funding. A few funding action steps are suggested here, but the Task Force recommends that alternatives to funding, like rewards and recognition of efforts, rethinking workloads, rethinking curriculum, and other non-financial efforts may become very important.
Action Steps

a. **Provide Student-Faculty Research Funding** – the Task Force applauds President Jones’ decision to establish a competitive pool of funding to support student-faculty research. The availability of the funding should help stimulate additional undergraduate research and will increase recognition of its importance. Also, it is important to note that many faculty have already been engaging undergraduate students in research with little financial support. Faculty members have pragmatically set their research agendas based on limited resources. The Task Force is excited to see what might faculty and students might be able to accomplish with a stronger financial base.

b. **Build on Successes; Spread the Wealth** - a significant portion of any new funding allocated to undergraduate research should probably be provided to those programs that are already established. At the same time, a portion of any available funds should be allocated to stimulate and support start-ups and for moving toward the desired institutional cultural change where undergraduate research is ubiquitous. Undergraduate research, given CUR’s definition, should permeate the entire campus, and financial support should not be allocated exclusively to a limited number of disciplines. Perhaps funds could be made available for experienced undergraduate research faculty members to mentor newer efforts?

c. **Support Extra-Curricular Research** – a small source of funding could be provided for faculty members who work with students outside of the normal classroom environments. For example, funding could be used to support student presentations at professional conferences. Money could be used to support printing of student posters, conference registration, or other travel costs. Similarly, funding could be provided to support community service learning research and projects that supplement classes and enrich students’ overall learning experiences.

d. **Improve Labs/Technology** – the university should continue to provide support for faculty who wish to improve their labs and technology with external funding sources to enhance student engagement in undergraduate research.

5. **Change the Culture**

Many of the items recommended here relate to changing the culture or mindset of the university. Our ways of executing our duties and responsibilities on a daily basis must make it clear (to students, faculty, staff, and those outside Cal U) that Cal U values, supports, rewards, promotes undergraduate research. Changes in organizational structure might be needed to further facilitate the integration of undergraduate research with teaching, learning and service to the community. We must constantly communicate internally and externally that we value undergraduate research and back up our communication with action and resources. The way that we organize our efforts indicate what we value most.
Action Steps

a. **Administrative Leadership** – the academic administrative leadership (president, provost, deans) should make undergraduate research a priority and regularly recognize, applaud, stimulate, and incentivize its operation, development, and enhancement. These academic leaders are in the best position to set direction as seek ways to infuse undergraduate research into the operation of the academic aspects of the university. Could undergraduate research be highlighted in the mission statement or strategic plan or regular business of the university, academic affairs, or the undergraduate colleges? Can administration and faculty together explore organizational changes at the undergraduate level that might better facilitate interdisciplinary undergraduate research or applied research related to service-learning? Can deans highlight the efforts of faculty who regularly engage in undergraduate research in the evaluation, promotion, tenure process? While engaging in undergraduate research is not required in the evaluation, promotion, and tenure process, could deans and the provost help emphasize its relevance? As a strategic vision for undergraduate research is developed, the administrative leadership should ensure that silo-based approaches for few players are avoided in favor of widespread engagement for all stakeholders. The administrative leadership should partner with individual faculty members and groups (APSCUF, FPDC, Senate, Forum, etc.) throughout the effort to develop and enhance undergraduate research at Cal U.

b. **Undergraduate Research Council** - form a university-wide, standing council charged with developing the policies and procedures for implementing a university-wide undergraduate research initiative. Develop a fair and objective process for selecting those who will have leadership roles on this Council, and ensure that all of the stakeholders in undergraduate research have opportunities for participation in decision-making. Like the composition of the Task Force, the membership should include faculty and staff members from all four undergraduate colleges, the Office of Student Retention & Success, APSCUF, the library, FPDC, and academic affairs administration. The council should not have more than nine members and should develop strong working relationships with the undergraduate deans’ councils, the Chair Forum, the UCC, and the Provost’s office. A mission statement for the Council, along with operating policies and procedures, should be approved by both faculty and administration in an appropriate manner.

c. **Identify Champions and (a) Director(s)** – the Undergraduate Research Council would be responsible for oversight, direction setting, and coordination but be transparent and accountable to both the faculty and administration. Two other specific types of people should be identified on campus, inside or outside the Council: champions and director. Champions would be those individuals; probably faculty, who have been active in conducting undergraduate research. They serve as exemplars of what undergraduate
research should or could be. They lead by example and would be willing to mentor/guide other faculty and help them to infuse and highlight undergraduate research. The director would be on the administrative (small "a") side and deal with coordination of events, program promotion, delegation of tasks, securing financial and other support, etc. The director would serve as a liaison between the faculty who are engaged in undergraduate research and the administrators and staff on campus who support and manage the organization. Initially, one director on campus may be appropriate, but as undergraduate research grows, there may be a need for college-based directors.

d. **Nurture Undergraduate Research in the Humanities** - Disciplines in the Humanities are significantly underrepresented in undergraduate research efforts. Cal U should make a concerted effort to develop the campus's understanding of how the Humanities can foster undergraduate research as a means of enriching the lives of students and faculty members in the Humanities.
Appendix A - Summary of Department Chairs Survey

Not all of the department chairs responded to the original survey passed out at the academic council meetings. A second survey mailed to department chairs who had not completed the original survey added a few more. We obtained a response rate of 71% of the questionnaires distributed to department chairs:
- Liberal Arts (two programs and all 10 departments responded)
- Science/Technology (six of eight departments responded)
- Education /Human Services (two of eight departments responded)

The results by college are summarized below:

1. **Do any of the academic discipline(s) in your department have a capstone course?**
   This question specifically requested programs because several departments have more than a single program. Based on responses by department chairs, sixty percent (60%, 12 of 20 respondents) of programs have a required capstone or senior seminar with 7 of the 20 departments being within the College of Liberal Arts.

2. **Do any of your UCC approved courses specifically include inquiry-based, exploratory, or discovery-based research and/or creative expression?**
   This question specifically requested programs because some departments have more than a single program. Based on responses by department chairs, 80% (16 of 20) of programs have one or more such courses as part of their curriculum.

3. **Does your academic department financially support undergraduate travel to professional conferences and, if so, under what conditions?**
   Based on responses by department chairs, 8 of 20 departments have financially assisted undergraduate students attending a professional conference.

4. **Have undergraduate majors within your department presented either a research poster or a research paper, or presented a work of prose, art, poetry, or performance at a local, regional or national conference in the past five years?**
   Based on responses by department chairs, 85% (17 of 20) of departments have had students either enter a poster, a creative work, or perform at a professional meeting in the past five years.

5. **Have any of your undergraduate majors conducted research with a Cal U faculty member outside of the classroom in the STEM sciences, or the social sciences, or the humanities, or the College of Education in the past five years?**
   Based on responses by department chairs, 10 of 20 departments have conducted research outside of the classroom with either a Cal U professor or with a faculty member from another university.

6. **Have any of your undergraduate majors traveled to another college or university to participate in a summer research program in the past five years? (This would not include internships).**
Based on responses by department chairs, only 4 of 20 departments have had students conduct some sort of research under the direction of a faculty member from another college or university.

7. **Have any of your undergraduate majors actually contributed to a grant-based research project of a Cal U faculty member by being responsible for the collection, analysis, etc. of data in the past five years?**
   Based on responses by department chairs, 45% (9 of 20) of departments have had student researchers who were responsible for some component of a research project under the direction of a Cal U faculty member or members.

8. **Do any of the academic discipline(s) in your department currently have a UCC-approved research class or series of classes as part of its curriculum?**
   This question specifically requested programs because some departments have more than a single program. Based on department chairs’ responses, 55% (11 of 20) of programs have at least one UCC-approved research class as part of its curriculum. When asked if this course was a requirement for graduation, all 11 programs responded with a Yes.

9. **If you have more than one program within your department, do all of the programs have an UCC-approved research class or series of classes as a requirement for graduation?**
   Based on department chair responses, only six programs (not departments) require one or more UCC-approved research class for graduation.

10. **Do any of the academic discipline(s) in your department have a true UCC-approved independent study (not to be confused with Individualized Instruction) course as part of its curriculum?**
    Based on responses by department chairs, only five programs (not departments) have a formally approved independent study course as part of its program curriculum. Two of these are Liberal Arts programs, one is an Education program, and two are Science & Technology programs.

11. **Have any of your undergraduate students co-authored a journal article with a faculty member within your program in the past five years?**
    Based on responses by department chairs, only three programs (one in Liberal Arts and two in Science & Technology) could provide a positive response to the question.
Appendix B – Results for the Survey Items Related to Objective #1: To maximize opportunities for faculty members and undergraduate students to engage in research, scholarship, and creative activities which contribute to academic and professional success.

Section One Questions
Of the 11 questions in Section One, Questions 5, 8-11 obtained the lowest faculty response for university strengths (below 70%); with question 11 having the lowest such score at 38%. There appears to be a disconnect between how some current programs, events, and curriculum choices (or lack thereof) at Cal are related to Undergraduate Research. It would be interesting to see if the respondents to Question 5, for instance, could be sorted by academic college (Liberal Arts, Sciences, and Education). Highly accredited programs and those that require certifications such Education Programs may not see the existence of independent research courses as relevant to their programs or be able to integrate research given accreditation requirements. This does not mean that such research courses have no place at Cal but, rather, for their programs, such courses are not important because of the numerous competencies their students are required to meet to meet certification.

Question 11 is most closely related to Question 5 because both relate to the idea of independent student research. This perception of being a weakness is interesting given that 73% of the respondents felt a summer research experience would be a strength. Generally speaking, there are two models currently employed for students taking a summer research experience: credit bearing experiences, and those that are not. Students in either experience also receive a stipend for summer expenses, etc. Both questions also relate to the purpose of independent student research: its intent and value for both students and faculty members. Some of the science programs at Cal already have experimentation and research embedded within existing classes which lead to the specific development of an idea, a product, or a device, given specified parameters, such as the robotic program. Since experimentation and research are embedded within the course, some faculty may not see the value in independent research classes. Biological Sciences is probably the only sciences department that specifically teaches how to conduct research using both laboratory courses and does this using a series of tiered courses. Outside of the Natural Sciences, Music, Sociology, and Psychology are the only Liberal Arts programs that have specific methodological classes devoted to experimentation and learning how to develop and conducting both qualitative and quantitative research.

The responses to Questions 8-9 seem to support the idea that the only two university awards recognizing research have little to do with students. Altering this perception should be a future priority and can be altered in one of three ways: emphasizing student research as one criterion for the award, connecting student research to tenure and promotion, and regular publishing of joint student-faculty research examples in both the journal and the Cal U Review. The ideal would be all three methods, but we could certainly begin with the last because this would require the least amount of change. The insertion of student research as a criterion for FPD and Gala research awards would also be easily to change. If PASSHE’s emphasis upon student research is really sincere, then a dialogue between PASSHE and APSCUF should be initiated in order to modify the collective bargaining agreement relating to tenure and promotion.

The faculty opinion of the Keystone digital journal for undergraduate research (Question 10) was cool at best. Perhaps the fact the journal is digital reflects the idea that only published journal contributions (printed format) has merit. The idea of digital journals is still not accepted
by all, and this might also reflect the indifference of some faculty to poster presentations. Although both are gaining in popularity, there still is a large contingent at California who is indifferent to both mediums.

**Section Two Questions**
This set of questions addresses three topics: administration/resources and the role of the honors program. Responses to **Questions 1-4** support the belief that the administration (either the Provost or the President) should play the lead role in the oversight, the staffing, and the financial support of a university-wide undergraduate research program. However, if external funding is sought, then the consensus is support by a foundation as opposed to a corporate sponsor.

**Question Five** polled faculty thought about the venue for showcasing student research. The majority of those completing the survey support a continuation of the existing venue rather than a separate day with no classes. An entire day set aside was also popular, but cancelling classes for the day was not.

**Questions 6 and 7** were open-ended and the diversity of responses interesting. The Honors Program (Question 6) has always seemed to have a mysterious cloud enveloping it. Unless one is an advisor of an Honors Program student thesis, or is an instructor for the program, or on the Honors Program Board, few faculty members are aware of the program’s purpose and functioning. This statement seems apparent by the array of opinions about the role the Honors Program should play in establishing a university-wide undergraduate research experience/opportunity. Twenty-nine responses could be categorized as either no opinion or as having no bearing at all upon the intent of the question – again a misunderstanding of the purpose and functioning (curriculum) of the program. The remaining responses to the question could be sorted into roughly 10 categories and these are listed below:

- The Honors Program should be a partner in such an initiative, not the leader
- The Honors Program should play a leadership role in establishing a university-wide Undergraduate Research initiative
- The Honors Program should be part of a university-wide Undergraduate Research initiative that should be open to all Cal U students, but it should maintain its own identity
- The Honors Program will be a deterrent from recruiting students to participate in a university-wide Undergraduate Research initiative because of the perception of the program
- Downplay the existence of the Honors Program
- Undergraduate Research should be the keystone of the Honors Program as well
- The Honors Program is a strength of the university
- The Honors Program should remain a separate entity because its students are required to complete a Honors Thesis, which will not be a requirement for students interested in participating in a university-wide Undergraduate Research initiative
- The Honors Program should be the marketing or public relations face for a university-wide Undergraduate Research initiative
- The Honors Program should serve as the source of funding for Undergraduate Research

As one can see from the ten categories above, there is no real consensus regarding the role of the Honors Program. While a diversity of opinion is positive, there needs to be a more clearly communicated story of the Honors Program, its history, the role of research within it, and its
requirements (curriculum). Otherwise, it will be perceived as simply a bunch of smart students who are better than everyone else and have more perks.

**Question Seven** sought to gather faculty member comments regarding the coordination of Undergraduate Research at California. Seventeen comments could be categorized as either no opinion or as having no bearing at all upon the intent of the question. The remaining responses were condensed into the following 14 categories:

- Use the university website or create a brochure for distribution to interested faculty members and students
- Have all program capstone courses integrate research into them
- Communication between all constituents
- Faculty training
- Smaller class sizes and fewer classes to teach
- Create freshman research classes for all disciplines
- Plan the poster events a year in advance and publish the event in the university calendar
- Improve the teaching load by having fewer classes so that faculty members could engage in undergraduate research, or revise the work schedule to allow for more contact time
- Offer research methods classes in all disciplines
- Create a university-wide committee or office to coordinate all current and future undergraduate research activities
- Select a strong coordinator to inspire and challenge faculty members and students to become involved in undergraduate research
- Have more joint student/faculty research, especially interdisciplinary research
- Recruit faculty members who want to get involved in undergraduate research
- Use the Honors Program and Honors societies as outreach across campus to recruit students

Not even all of the remaining responses speak directly to the original question regarding coordination. Some comments do specifically suggest ways to improve communication between faculty members and students, while others recommend the use of class size, scheduling and the work load (4/4). While class size, scheduling and the work load are important factors to the implementation of a university-wide undergraduate research program, communication is not the primary focus. We would guess from the responses that there will be a significant amount of work involved in conveying what is undergraduate research, how it can be implemented even with our work load, and strengthening campus communication.

**Section Three Questions**
The final set of questions pertaining to Objective One collect data on current faculty practices relating to undergraduate research at California. Assuming that everyone is on the same page and is in agreement with our characterization of undergraduate research, only 69% of those individuals (Question Two) who completed the survey are currently in programs that employ some undergraduate research, while only 61% of those same individuals (Question One) actually had students undertake some sort of research endeavor. Interestingly, a majority of the classes that have incorporated a research component are 100 and 200 series classes. Upper division classes that typically offer students opportunity to immerse themselves in discipline-based research, or even interdisciplinary research, were in the minority. The fact that the respondents listed 100 series courses and then 200 series courses as second in frequency as those incorporating research may well reflect lab courses that involve experiments and
independent assignment that require students to collect data for analysis. This fact seems borne out by the fact that the class size for the lower division classes is less than 30. What might also be the case is a situation in which the instructor has students work in teams within a classroom setting to solve a group problem. This seems to be a common strategy in education and some of the STEM programs.

While is it is certainly good that some students are being introduced to research at an early stage in their programs, including working on a common problem as part of a group, there appears to be a lack of follow-up in the upper division curriculums in those same programs. Having upper division research experiences is an essential feature of programs that have a strong undergraduate research emphasis.

If the student scholarship and creativity event is any indication and responses by those completing our survey support this inference, undergraduate research is happening outside of the classroom (Question 5). Exactly what is happening is uncertain, but each semester there are between 1-5 poster entries in the independent category and in the joint/faculty research category. These categories certainly require research outside of the classroom. Based on poster entries, most of these are from Biological Sciences and Psychology.

Finally, Question 6 posed a number of options for faculty interaction with students. Of the options listed, the majority of the respondents listed an interest in doing more research with students, but restricting this to the classroom. We believe this supports my earlier statement that much of the undergraduate research that takes place at Cal occurs in lower-level courses that have lab research components and group-based problems. It is still encouraging that there are faculty members who are willing to help students beyond the classroom. These individuals should be of interest to us because they will most likely form the needed core of faculty members committed to the idea of infusing undergraduate throughout the curriculum.
Appendix C – Results for the Survey Items Related to Objective #2: To increase faculty-student engagement, improve undergraduate students’ perceptions of their self-efficacy in conducting research, increase students’ perception of the level of academic challenge at Cal U, and make students more active participants in their own education and development.

The first four questions dealt with undergraduate research that occurs as part of a department, program or other Cal U entity. The next question dealt with engaging students in research projects outside of the classroom/curriculum. While 66 said they have recently taught a course in which undergraduate research was a key component in the curriculum, 56 said they engage students in research projects outside of the classroom. Question 6 deals with undergraduate research both in and out of the classroom.

Summary of Results
The results indicate that confusion exists among faculty as to what constitutes undergraduate research (see section 3, question 2; section 4, question 2), as well as who is engaging in undergraduate research (see section 3, questions 1 and 2).

Undergraduate research is most often occurring in courses with 30 or fewer students (see section 3, question 4).

A little more than half of the respondents stated that they did engage in undergraduate research outside of classes/curriculum (section 3, question 5). This response is encouraging.

An overwhelming number of respondents (85% of the respondents) stated that they were interested in doing more with undergraduate research (section 3, question 6), which is great news!

56.2% of the respondents said they would be willing to assess the impact of undergraduate research. (section 3, question 3) Good news!

Recommendations based on Results
The survey indicates that faculty have a limited perception of research. A key concern would then be educating the campus community about CUR’s define research.

Each department chair should be contacted to ask how undergraduate research is occurring in their respective departments as the survey seems to indicate some confusion on this matter.

Additionally, it is recommended that individuals who stated their willingness to assess undergraduate research be contacted for follow-up research.
Section 3

Question 1 - Are you part of a department, program, or other Cal U entity that engages in undergraduate research?
75 of 109 responses (69%) answered yes
34 of 109 responses (31%) answered no

Faculty in the following departments answered yes.

- Art & Design
- Biological and Environmental Sciences
- Business and Economics
- Chemistry & Physics
- Health Science
- History and Political Science
- Justice, Law and Society
- Nursing
- Philosophy
- Professional Studies
- Psychology

Faculty in the following departments answered both yes and no:

- Applied Engineering and Technology
- Earth Sciences
- English
- Early, Middle and Special Ed
- ESSS
- Math, Computer Science and Information Systems
- CMD
- Library Services
- Social Work

Faculty in the following departments answered no:

- Student Services
- Counselor Education
- Secondary Education
- Interim Dean Eberly College of Science and Technology
- Modern Languages and Cultures
- Music

From above, faculty in 20 departments said YES, faculty in 5 departments said NO.

Question 2 - Do any of the courses you have recently taught incorporate undergraduate research as a key component of the curriculum?
66 of 108 responses (61%) answered yes
42 of 108 responses (39%) answered no

Of the 75 who answered yes to question 1, 21 answered no to question 2 indicating that although their department engages in undergraduate research, they personally have not taught a course in which they believe that undergraduate research was a key component of the curriculum.

Of the 34 who answered no to question 1, 13 answered yes to question 2 indicating that although they stated that their department does no engage in undergraduate research, they have taught a course in which undergraduate research was a key component of the curriculum.

It seems that the inconsistencies in these answers may be due to the fact that the definition of undergraduate research is unclear.
Question 3 - If yes to #2, at what levels are the courses you have taught that incorporate undergraduate research as a key component of the curriculum? Select all that apply.
Of the 66 who said they had taught a course in which undergraduate research was a key component of the curriculum:
58 (87%) said they had taught a 400 level class
37 (55%) had taught a 300 level class
13 (19%) had taught a 200 level class
7 (10%) had taught a 100 level class

Question 4 - If yes to #2, what is the typical enrollment of your courses in which undergraduate research is a key component of the curriculum? Select all that apply.
39 said 20 people
24 said 30 people
14 said 40 people
6 said 50 or more people

Question 5 - Do you engage undergraduate students in research projects outside of the classroom/curriculum?
56 of 105 respondents (53%) said yes
49 of 105 respondents (47%) said no
This division is fairly equal.

Question 6 - Are you interested in doing more with undergraduate research?
85% of responses indicate they are interested in doing more with undergraduate research whether in or outside of the classroom.
62.6% of responses indicate they are interested in doing more with undergraduate research both in and outside of the classroom

Section 4
Question 1 - What adjustments to your workload would support your current engagement with undergraduate research or encourage you to participate in undergraduate research? Select all that apply.

The most popular response was assistance of a departmental GA to help with classes – 60 of 108 respondents (55%) selected this response.

Classroom location and enrollment size was the second most popular response. I am not sure why we put these two together … what is the correlation between these two? 42 of 108 respondents (39%) selected this response.

Preferred teaching schedule was the third most popular response – 36 of 108 (33%) people selected this response.

Only teach upper division courses garnered 13% of the respondents (14 of 108).

In the fill-in-the-blank section, a variety of interesting responses were provided. Some were very specific to individuals. Some overall themes did emerge. Overall, folks wanted more time. 15 of the 108 (14%) respondents indicated in various ways that more time was needed. Ideas of how
to achieve this varied and included: workload release, departmental support, and fewer classes and students. Concern about student capabilities and interest were raised by one. The usefulness of GAs was disputed.

**Question 2 - In what forums do you currently encourage your students to share their research results? Select all that apply.**
- 49.1% of respondents said Academic Excellence Days
- 48.1% of respondents said discipline based conference
- 38.7% said publication
- 17% said that their students do not engage in research
- 4.7% said that they didn’t encourage their students to share research.

Respondents also noted sharing research results in classes, at campus events such as the English Department’s Celebration of Student Writing event, departmental events, regional events, etc.

Again, occasional comments reflect the notion that research is not for lower level undergraduate students: “My students are at the elementary level and research is not a part of the curriculum.” Also: “Our department doesn’t currently have a research methods course for undergraduates...therefore there really isn't research occurring.”[Do these comments indicate that the CUR definition of UR is not understood by respondents?]

**Question 3 - Would you be willing to formally assess the impacts of undergraduate research in which you engage?**
- 56.2% of respondents said yes (a list of individuals can be provided)
- 21.9% said no
- 21.9% said they do not participate in undergraduate research

**Question 4 - If yes to #9, what resources would you require to effectively complete such assessments?**
- Time (4 of the 59 (7%)), financial support (2 of the 59 (3%)), GA (6 of the 59 (10%)), change in culture at Cal U as well as expert advice (6 of the 59 (10%)).
- Questions were posed regarding what specifically the question referred to. Folks didn’t seem to understand what was meant by “impacts of undergraduate research.”

**Question 5 - What would encourage you to promote your undergraduate research efforts both internally and externally? Select all that apply.**

Both FPD travel monies and Promotion and Tenure considerations were the two most popular responses with 61 of 107 respondents each; 60% of total respondents.

Faculty awards by FPDC and university media emphasis were the two next most popular responses. 45 of 107 respondents (44%) selected FPD award; 41 of 107 (40%) selected publication in Cal U journal and 31 of 107 respondents (30%) selected a feature story in the Cal U review. 6.9% of respondents said they were not interested in undergraduate research

Again, time (7%) and money (6%) were both among the more common responses.
Appendix D – Results for the Survey Items Related to Objective #3: To develop Cal U’s infrastructure, operational policies, and resources so the institution may support, enhance and expand undergraduate research.

Respondents were asked to rate Cal U’s infrastructure, operational policies, and resources to support, enhance, and expand undergraduate research. Eight (8) questions were asked; two each for infrastructure, operational policies, and resources; one related to “support” and one related to “enhance and expand”. For each question, these responses were provided: Very High, High, Neutral, Low, Very Low, Do Not Know, Not Applicable. Also for each question, an open-ended follow up question that asked respondents whose ratings were in the Low or Very Low categories to identify what improvements would be required. Results for each question and follow up are summarized below. To calculate a mean or average response rating, values were assigned from 1 (Very Low) to 5 (Very High) with Do Not Know and Not Applicable excluded. Given the 1 to 5 scale, a “neutral” response would be 3.00. Average responses below 3 would indicate lower than neutral ratings and responses above 3 would indicate higher than neutral ratings. For the percentage of responses provided below, all seven responses were included.

Question 1 How would you rate Cal U’s current infrastructure (physical and technological support systems) for supporting undergraduate research?
Average response = 2.65 (out of 5)
23.6% rated High or Very High, 38.2% rated Low or Very Low

Question 1a. If you rated Cal U’s infrastructure Low or Very Low, what improvements would be required to better support undergraduate research?
42 total Low and Very Low responses with 35 respondents providing answers.
Most Frequent Responses:
9 - Improve Labs, Equipment, Technology
6 – Improve Funding (resources, materials, conferences, library resources, etc.)
5 - Revise faculty workloads, provide more faculty time
3 - Smaller classes

2. How would you rate Cal U’s current infrastructure for enhancing and expanding undergraduate research?
Average response = 2.73 (out of 5)
21.1% rated High (0% Very High), 29.3% rated Low or Very Low

2a. If you rated Cal U’s infrastructure Low or Very Low, what improvements would be required to better enhance and expand undergraduate research?
32 total Low and Very Low responses with 25 respondents providing answers.
Most Frequent Responses:
8 – See previous responses
6 – Improve Funding (resources, materials, conferences, library resources, etc.)

3. How would you rate Cal U’s current operational policies for supporting undergraduate research?
Average response = 2.64 (out of 5)
14.5% rated High (0% Very High), 27.3% rated Low or Very Low
3a. If you rated Cal U's operational policies Low or Very Low, what improvements would be required to better supporting undergraduate research?
30 total Low and Very Low responses with 23 respondents providing answers.
Most Frequent Responses:
5 – Reduce bureaucracy/complexity
5 – Revise faculty workloads, provide more faculty time

4. How would you rate Cal U's current operational policies for enhancing and expanding undergraduate research?
Average response = 2.76 (out of 5)
14.5% rated High (0% Very High), 26.7% rated Low or Very Low

4a. If you rated Cal U's operational policies Low or Very Low, what improvements would be required to better enhance and expand undergraduate research?
23 total Low and Very Low responses with 18 respondents providing answers.
Most Frequent Responses:
9 – See previous responses
3 - Reduce bureaucracy/complexity

5. How would you rate Cal U's resources for supporting undergraduate research?
Average response = 2.60 (out of 5)
16.5% rated High (0% Very High), 35.8% rated Low or Very Low

5a. If you rated Cal U's resources for supporting undergraduate research Low or Very Low, what improvements would be required to better support undergraduate research?
39 total Low and Very Low responses with 32 respondents providing answers.
Most Frequent Responses:
15 – Improve Funding (resources, materials, conferences, library resources, etc.)
8 – See previous responses

6. How would you rate Cal U's resources for enhancing and expanding undergraduate research?
Average response = 2.66 (out of 5)
15.4% rated High or Very High, 29.1% rated Low or Very Low

6b. If you rated Cal U's resources Low or Very Low, what improvements would be required to better enhance and expand undergraduate research?
32 total Low and Very Low responses with 24 respondents providing answers.
Most Frequent Responses:
13 – See previous responses
4 – Improve Funding (resources, materials, conferences, library resources, etc.)

7. What other improvements would be required in Cal U from an overall perspective to better support, enhance, and expand undergraduate research?
51 Total Responses
Most Frequent Responses:
15 - Change the culture (promote UR, reward UR, communicate UR, value UR)
6 - Funding (resources, materials, conferences, library resources, etc.)
6 - Revise faculty workloads, provide more faculty time

8. What other improvements would be required in your department/program to better support, enhance, and expand undergraduate research?
55 Total Responses
Most Frequent Responses:
11 - Change the culture (promote UR, reward UR, communicate UR, value UR)
11 - Funding (resources, materials, conferences, library resources, etc.)
6 - Curriculum revisions

Average Rating for Survey Questions

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.65</td>
<td>2.73</td>
<td>2.64</td>
<td>2.76</td>
<td>2.60</td>
<td>2.66</td>
<td></td>
</tr>
</tbody>
</table>