

## Budgeting for a Centralized Office of Undergraduate Research

Key reports issued during the last decade (Boyer Commission, 1998; National Survey of Student Engagement, 2000; National Research Council, 2003) have helped bring attention to the benefits students gain as a result of being involved in a faculty member's research program. Campuses across the country are eager to showcase the activities of their undergraduate scholars, the outcomes of their research and the institution's support of undergraduate research. An increasingly common way to accomplish that goal is to create a campus-wide Center for Undergraduate Research or Office of Creative Scholarship. These offices have the potential to pull undergraduate creative scholarship into the center of the undergraduate learning experience by serving as an umbrella structure that coordinates the offerings of different programs (helping to avoid duplication of efforts), as an information center for students, faculty and administrators, and by acting as a strong advocate for resources to be devoted to undergraduate research experiences. These and other advantages of a centralized effort in supporting undergraduate research and scholarship are summarized by Pukkila, Taylor and Gray-Little (2001). In this article we take a more nuts-and-bolts approach, summarizing some of the budgetary issues associated with staffing an office and overseeing the typical programmatic activities: student stipends, student travel funds, student research supplies, celebrations of undergraduate research and undergraduate research journals.

We urge readers of this article who are contemplating establishing a centralized office of undergraduate research to be cognizant of their institution's mission and to reflect on the mission-specific goals and objectives such an office would have on their campus. Those factors should drive the funding priorities and patterns of such offices. For example, when one of us directed the centralized undergraduate research office at Xavier University of Louisiana, a primary goal was to help students find external summer research opportunities. That is not a primary goal of her similar office at another university and as a result the budget for certain activities varied.

Although we do not address the topic specifically in this article, we acknowledge that assessment is another important factor to consider when establishing a new centralized program. Those involved in the process of creating the centralized office should deliberate on when and how the program and its subcomponents will be evaluated, both



UC Berkeley students Monisha Brown, Franklin Dollar, and Max Watson review guidelines for a research conference.

in a summative fashion for reporting and in a formative fashion for development and growth. It is essential that assessment be aligned with the goals established for a centralized office. Similarly, it is helpful early in the process to have a formalized definition of "undergraduate research and creative activities" as it will be pursued on your campus and supported by the centralized program. Surprisingly few institutions have codified a definition of undergraduate research, but those that do typically follow the Council on Undergraduate Research (CUR) principles in that mentoring by a faculty member is a key component and that supported activities have the goal of adding to the wealth of the discipline.

### Data collection

We collected data for this article in four ways: 1) a detailed survey distributed to undergraduate research program directors; 2) current websites of centralized undergraduate research offices; 3) our colleagues' answers to a specific question(s) in follow-up phone calls and emails; and 4) discussions at the 2006 CUR national meeting.

In this article we only report on the financial support for undergraduate research through centralized undergraduate research offices. There are many public and private institutions (DePauw University, College of Wooster, Hope College, James Madison University, University of Wisconsin-La Crosse to name a few) that provide a high level of support of undergraduate research experiences without a centralized office. However, this article is not about the broader topic of "at what level do institutions financially support undergraduate research" but rather on how centralized undergraduate research offices do so. We only report on the direct institutional funding for undergraduate research. For example, The University of North Carolina at Greensboro (UNCG) pays its students \$1000 for a summer research

stipend. The National Science Foundation funded UNCG faculty members, however, pay students a summer research stipend of \$3000 or more; for the purpose of this article we only include the \$1000 stipend from UNCG. Lastly, we report data only from those institutions that have campus-wide centers. For example, Winthrop University has a strong undergraduate research office in their College of Arts and Sciences; data from their program is not included in this article.

**Surveys of Undergraduate Research Program Directors (n=21)** - A budgeting survey developed in the summer of 2005 was distributed to known directors of undergraduate research (UR) programs. The 43 items on our survey asked individuals to report detailed information about the budgetary items and structure of their campus programs. We asked respondents to report whether or not their institution supported student stipends, separating the academic year from summer stipends. We also requested their annual per person budget for each type of stipend as well as their total annual budget for each stipend. A second survey, distributed similarly, was focused on operational details such as support staff, advisory committees, and a more detailed look at the institutional structure within which the UR office exists. In summer 2006, the two surveys were combined into one and distributed at the 2006 CUR Conference; the comprehensive survey can be accessed at [www.ndure.org](http://www.ndure.org).

**Undergraduate Research Program Websites (n= 34)** - To supplement the data collected from the above survey we visited the current websites of an additional 34 centralized undergraduate research programs. With some effort it was possible to find specific budgetary information on student stipend amounts, support for student travel as well as supplies for research. It is interesting to note that among all 55 schools included in this work, only three had direct links to the UR Office/Program on the institution's home page (Lafayette College, University of Alaska-Anchorage, and University of Florida).

**Colleagues' Answers to Specific Questions** - We were able to determine from websites if institutions had celebrations of undergraduate research days, but predictably the costs associated with this activity were not readily available from websites. We sent follow-up emails and made phone calls to the appropriate personnel at each institution to gather that information.

**Discussions at the June 2006 CUR National Meeting** - Conversations with participants at two budgeting workshops at the 2006 CUR biennial meeting allowed us to gain further insight into cost-sharing for celebration of research days.



UC Berkeley mathematics students Ronald Page and Tia Baker study for their exams.



UC Berkeley students Andrew Cardes (Mechanical Engineering), Brian Nguyen (Mathematics), Raquel Orozco (Chemical Engineering), Max Watson (Physics), and Daniel Lee (Molecular and Cellular Biology) work as a team to answer, analyze and discuss sexual harassment scenarios during the summer research program orientation.

In many cases the sample size for individual items is notably lower than the total pool size (n=55) as we were unable to gather complete information from all 55 institutions for all programmatic activities. In some cases this was a result of an institution not offering a given service (undergraduate research journal) and in others there were complicating factors that precluded a simple "yes" or "no" answer or identification of a set funding amount.

## Results

**Staffing the Office** - Institutions approach the oversight of their undergraduate research offices in widely varying ways. In some cases, a faculty committee runs the program and no single person is responsible for the programmatic activities. In other cases, the oversight of the UR program falls under the expected duties of an additional administrative office (VPAA, Dean, Provost, etc.) and the percentage of time focused on administering the UR Office could not easily be estimated. Conversations at the 2006 CUR national meeting and at the new CUR institute, "Initiating and Sustaining Undergraduate Research Offices", held in January 2006 suggest that more institutions are moving towards creating a centralized office and hiring a dedicated person to run the office. There does not appear to be a substantial difference between the private (59% mean) and public (64% mean) institutions in terms of contractual commitment. The number of those with full-time director positions is similar with 3 of 9 (33%) private schools and 9 of 25 (36%) public schools reporting such appointments (Table 1). In many cases where the reported contractual commitment is 100%, the director is considered non-faculty administrative staff (although he/she often was hired from faculty

**Table 1.** Employment of directors for centralized undergraduate research offices.

Student body size	Number of schools responding	Average % of Director's time committed to the centralized office	Range (min. – max.)
<b>Private</b>			
<4,000	7	54	16.7 - 100
>4,000	3	67	50 - 100
<b>Public</b>			
<7,500	2	100	100 - 100
7,500-15,000	11	54	10 - 100
15,000-21,000	8	59	15 - 100
> 21,000	5	85	50 - 100

**Table 2.** Funding for centralized undergraduate research offices at private institutions.

Programmatic activity	Student body size	Number of institutions that responded <sup>1</sup>	Number of responding institutions that offer this programmatic activity	Average funding level <sup>2</sup> (\$)	Funding level (\$, min-max)
<b>Academic year student stipend: (per semester)</b>	<4000	7	3	1000	<i>see note 3</i>
	>4000	5	4	1050	250 -2400
<b>Student stipend: (summer )</b>	<4000	7	7	3150	1000 -5000
	>4000	5	5	2790	2500 -3200
<b>Student travel for presentation</b>	<4000	7	6	680	500 -1000
	>4000	5	5	640	350 -1500
<b>Student research supplies (Grants-in-aid)</b>	<4000	7	6	500	500 -500
	>4000	4	4	460	350 -500
<b>Celebration of undergraduate research</b>	<4000	8	7	4460	500 -15000
	>4000	5	5	10230	1700 -25000

<sup>1</sup>The total number of positive and negative responses received for this query

<sup>2</sup>Average per student for stipends and grants, average for annual celebration of undergraduate research

<sup>3</sup>Only one respondent provided a funding level for this item

ranks). In the cases where the director's commitment to the centralized program is <100%, the directorship is usually a faculty-held position and the faculty member receives course re-assigned time. Specific values for the percentage of commitment must be considered in light of a given institution's structure, mission and program goals. For instance, the director at Elon University receives a 12-credit course release per year (out of a normal 24-credit faculty load) giving him a 50% contractual commitment on a nine-month contract, but he receives no stipend in the summer for overseeing the summer research program. The Director of Albion College's centralized program receives a one-course release out of a normal faculty load of six courses (16.7% contractual commitment) but receives additional pay for

oversight of the summer program. Over 80% of the centralized offices for which we have data provide administrative/secretarial help for their directors; 70% have undergraduate student workers and 50% employ an associate or assistant director.

**Student Stipends** - More institutions provide summer stipends for students than academic year stipends (Tables 2 & 3). Academic year stipends are lower than summer stipends but this is likely the result of the expectation that students will work full-time on their research in the summer but only part-time during the semester and other issues related to financial aid. Furthermore, it was often the case that academic year stipends were part of a larger award that included funds for supplies and travel. Table 3 demonstrates that public institutions



UC Berkeley students Franklin Dollar (Engineering Physics) and Salvador Barriga (Physics) discuss the knot theory and the Jones Polynomial

with an undergraduate student body from 7,500 - 15,000 students are far less likely to offer academic-year stipends than other public schools but showed no statistical differences in other categories. The average academic-year stipend amount supplied by private and public institutions is similar; however, summer research stipends show a notable difference: private institutions tend to pay approximately 12% more per student than do public institutions. Note, however, that both private and public institutions approximate the stipends provided by external funding sources (NSF, HHMI) for 8- and 10-week research experiences, especially considering that the funding levels cited here are for stipend only, not for room and board supplements offered by some schools. Perhaps of more interest is the minimum funding level for summer research stipends. For schools of similar size, the minimum stipend for summer research offered by private institutions was twice that of public ones, whereas the maximum level was essentially the same.

Although our survey did not directly address the question, another issue regarding student remuneration should be addressed here. Some institutions pay students a flat stipend (regardless of whether it is academic-year or summer activity) whereas others pay students an hourly wage. Members of the CUR Email Listserv were treated to a lively debate on this topic spanning a period of about a month during February 2006. Some participants in the debate feel that offering an hourly wage changes the perception of research from what we hope is a transforming experience for the student (and mentor) into a 400-hour summer job. Others note that using an hourly wage provides a system for flexibility (covering shorter projects) and accountability so that students cannot be used as lab workhorses in 12-hour workdays. Also, taxes and benefits (FICA) must be considered. In many cases, if students are paid an hourly wage, the institution will cover half of the FICA costs, whereas with stipends, the entire FICA cost sometimes is deducted from the student's check. In a unique approach, the

University of Alaska-Anchorage demonstrates firm accountability in that students do not receive an academic-year stipend until they have publicly disseminated their research results (via publication or either an on- or off-campus presentation).

Virtually all institutions offer summer student research opportunities for a specified length of time (usually 8-10 weeks), with a fixed rate of pay per hour, per week, or per summer. Albion College takes a more flexible approach in that student applications for summer research support include the anticipated time required to complete the project. In other words, one student might apply for a 4-week summer research experience to work on a project in the Visual Arts while another student applies for an 8-week experience on a project in Field Biology.

**Student Travel and Supply Grants** - The greatest agreement between public and private institutions was seen in support of student travel to present results at conferences and meetings (Tables 2 and 3). Nearly all of the private (92%) and public (97%) institutions offer student travel grants averaging around \$600 per student. Furthermore, the mode of each sample was \$500, with 10 of 12 private and 21 of 34 public schools funding at that level, per student, per conference. In addition to such individual travel grants, several schools budget travel to the National



UC Berkeley student Cristian Esquivas (Physics) checks his e-mail at the student center.



UC Berkeley Undergraduate Research Scholars and their Director build community by mapping out their graduate school plans. Front Row (left to right): Andrew Cardes (Mechanical Engineer), Aditya Adiredja (Math Education), Yessenia Lopez (Mechanical Engineer), Monisha Brown (Environmental Engineer) Back Row (left to right): Diana Lizarraga (Director), PK Farnsworth (Biological Sciences), Pablo Garcia (Chemistry), Franklin Dollar (Engineering Physics), Raquel Orozco (Chemical Engineering), Jose Antonio Gomez (Biological Chemistry), Christian Chanco (Mathematics), Victoria Angel (Mathematics), and Amanda Heiderman (Astrophysics).

Conferences on Undergraduate Research (NCUR) separately, covering some or all of the student expenses. For instance, the University of North Carolina-Asheville has a travel grant award of \$250 per student per trip, but in addition to that they have supported the travel of around 30 students per year to NCUR over the last several years.

Public and private institutions are comparable with respect to the funding for supplies for conducting research. Most of the private (91%) and public (96%) institutions offer such grants, with the average of the latter group being substantially higher (\$850 compared to \$480 for private institutions). However, the median in both groups is \$500, with nine of the responding public institutions offering grants-in-aid larger than that amount. As noted before, it is important to understand one's own institutional structure, culture, and objectives when making decisions regarding programmatic activity. For instance, the Massachusetts Institute of Technology does not offer grants-in-aid for supplies to students because funding for supplies and general research needs are typically covered by individual departments and/or external research grants of individual research mentors.

At virtually all institutions, students apply for grants (travel and supply) and summer research support via an application form or a straightforward proposal with a descriptive abstract. Grant-in-aid requests often require a description of the project and minimal justification for probable expenditures, whereas requests for summer research support typically require a more formal proposal. Most institutions have a committee of faculty (and sometimes student) readers/reviewers that provides feedback and recommendations on proposals and grant requests.

*Journal* - Forty-three percent (24 of 55) of institutions have their own undergraduate research journal, but we only obtained specific funding data from 12 of those institutions (3 private and 9 public). Of all the programmatic activities provided by centralized offices, the cost differential for creating an undergraduate research journal was most dramatic. One institution needed less than \$1,000 for their journal while another spends close to \$20,000 a year. It is likely that the discrepancy in cost is the result of some journals being available on-line while others also print hard copies and CDs.

**Table 3.** Funding for centralized undergraduate research offices at public institutions.

Programmatic activity	Student body size	Number of institutions that responded <sup>1</sup>	Number of responding institutions that offer this programmatic activity	Average funding level <sup>2</sup> (\$)	Funding level (\$, min-max)
<b>Academic year student stipend: (per semester)</b>	<7,500	4	4	930	350 -1500
	7,500-15,000	18	10	930	500 -1750
	15,000- 21,000	6	6	1510	570 -2500
	>21,000	7	7	1090	500 -1670
<b>Student stipend: (summer)</b>	<7,500	6	6	2400	500 -4280
	7,500-15,000	13	12	2590	500 -4000
	15,000- 21,000	9	9	2870	1800 -3500
	>21,000	6	6	2730	2400 -3000
<b>Student travel for presentation</b>	<7,500	5	5	250	see note 3
	7,500-15,000	12	12	610	300 -1500
	15,000- 21,000	7	7	620	330 -1000
	>21,000	5	5	650	450 -1000
<b>Student research supplies (Grants-in-aid)</b>	<7,500	4	3	330	300 -350
	7,500-15,000	11	11	870	300 -2500
	15,000- 21,000	6	6	630	250 -1000
	>21,000	4	4	1290	150 -2500
<b>Celebration of undergraduate research</b>	<7, 500	6	4	10000	see note 3
	7,500-15,000	15	13	5110	250 -13000
	15,000- 21,000	10	10	4210	500 -9500
	>21,000	10	6	9800	2000 -25000

<sup>1</sup>The total number of positive and negative responses received for this query

<sup>2</sup>Average per student for stipends and grants, average for annual celebration of undergraduate research

<sup>3</sup>Only one respondent provided a funding level for this item

**Table 4.** Average starting budget for a centralized undergraduate research center at two types of institutions. The numbers used in the following budgets represent the "average" of the data we collected; the ranges for each line item are provided in Tables 2 & 3. Some of the numbers used in the table below are not found in the narrative of the article but were provided on the detailed NDURE survey (the number of students supported by stipends, general office operating budget). We only include line items found in typical centralized offices. Since less than 50% of offices have a journal we have not included that item in the table below. We have excluded one very important line item, faculty credit for mentoring students but it really bears consideration. We excluded that line item for three reasons. First, the cost is usually not under the direction of a centralized office. Second, the types of remuneration were too variable, from a flat fee for each student supervised, a "banking system", pay for overload etc. Third, compensation for faculty members usually occurs in advance of creating a centralized office. Items in italics are picked up by other offices (i.e. Provost, Dean)

Line Item	PUBLIC	PRIVATE	Description
	7,500-15,000 students	<4000 students	
<i>Half-time director, hired from faculty ranks</i>	40,000	13,500	<i>At the public institution, the line item represents 50% of the person's 12 month salary; the PUI amount assumes a 9-month contract and the figure is the cost to "buy out" the courses covered by an adjunct (\$3500 a course, 2 courses a semester). Please note that although budgeting for "buy out" time is cheaper in the short run, it will be more difficult to convert to a full-time position as the need arises.</i>
<i>Administrative Assistant</i>	17,000	14,000	<i>The public institution assumes a 1/2 person while the PUI splits the administrative position with 1-3 other offices (honors, career services etc).</i>
Undergraduate student workers	2,250	4,500	Assumes student worker is paid \$750 /hour, 10 hours a week, for 30 weeks. Because the PUI has less office support than the public, two student workers are needed.
Yearly general office operating budget	5,000	1,500	
Travel for director	4,000	3,000	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
Web page consultant	6,000	1,500	
Undergraduate Research Celebration Event	5,110	4,460	
Academic year student stipends	55,800	0	The public institution supports 30 students. Half of the private institutions that responded to the NDURE survey did not provide stipends during the academic year.
Summer student stipends	25,900	47,250	The public institution supports 10 students while the PUI supports 15 students. The students at the public institution pay their own room and board while at the PUI's room and board is included.
Student travel to present results of research	27,900	16,000	The public institution assumes the department is matching half the travel request; the PUI supports 100% of the student's travel (\$8K/yr) and also dedicates funds (\$8K/yr) to send students to NCUR each year.
Supplies for student research projects	26,100	7,500	The public assumes 30 student projects at \$870 for supplies; the PUI 15 summer students *500 for supplies.
Faculty travel	0	1,500	The public assumes that a faculty member will get funding from an external grant or the department. The PUI assumes 2 faculty at \$750 a trip.
Summer faculty stipends	0	15,000	\$1,000 per mentor at the PUI
Faculty development workshops	300	400	Snacks and drinks at brown bag discussions about "How to integrate teaching and learning"
Student development workshops	600	400	Pizzas and beverages for discussions such as "What is research?" "How to find a research mentor"
<b>Annual cost of centralized office</b>	<b>215,960</b>	<b>130,510</b>	
<b>One time start-up expenses</b>			
Easels for poster presentations	15,000	800	The public institution invests in roll-able "room dividers"; the PUI assumes foldable easels.
Poster plotter	3,000		
Supplies for celebration (laser pointers, banners for advertising)	1,000		
Office furniture	5,000	5,000	
Office equipment (computers, photocopier)	15,000	8,000	
<b>Startup total</b>	<b>38,000</b>	<b>14,800</b>	

**Other assumptions about budgets**

- The Director reports to the Associate Provost or Provost.
- The centralized office supports but does not coordinate departmental activities.
- Dedicated office space is provided, not associated with any given department.
- Advisory committee of UR-active faculty is available for review and program initiatives.

**Celebration Days** - Of all the programmatic activities run by centralized offices, an annual celebration of research appears to be the most prevalent (54/55 report doing such!). One institution budgets just \$500 a year while two institutions, one public and one private, budget \$25,000 for their celebration. Obviously celebrations vary from campus to campus, not only with respect to length (1/2 day to a full week), but also in the level of involvement of the campus community (some campuses cancel "normal" class schedules so that the entire campus participates), whether or not outside speakers are invited, and even in the number of such events offered. For example, the University of Delaware holds at least five different undergraduate research events. Institutions also vary with respect to how much "cost-sharing" occurs. At one private school, the cafeteria shuts down and all students on the meal plan participate in a celebratory cookout, thus the center does not have to budget for an evening reception. At another, the centralized office partners with the honor's college for a formal reception, splitting the total cost of the meal. Often, the institutions reporting the higher annual cost for celebration events were required to include as budgetary items the cost of media and technology support, presentation/poster room set-up, and even overhead (room usage costs). Most often, the budgets for the offices reporting lower costs did not include these items because the institution does not charge for support services as a line item. In the latter case, the cost of the celebration day(s) goes towards receptions, student awards, and speaker costs.

The cost of running a celebration can change from year to year. For example, the first and second Festival of Scholars at Xavier University of Louisiana cost more to run than subsequent years. Why? In the first year, the office paid for date-free signs (Festival of Scholars next week, Festival of Scholars today) so that they could be used year after year. In the second year, the office purchased poster display boards that can be used for years to come. These one-time costs vary from year to year, but are important to consider in developing a budget.

## Conclusion

We hope readers of this article come away with a greater understanding of the programmatic activities administered by centralized undergraduate research offices and their funding levels at a variety of institution sizes and types. It is clear that no single model fits all institutions, and it is likely that some schools will determine that no distinct benefit will be derived from taking the centralized approach

at all. We reiterate what we said at the beginning of this article: individuals who are contemplating establishing a centralized office of undergraduate research need to be cognizant of their institution's mission and to reflect on the mission-specific goals and objectives such an office would have on their campus.

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## Mary Crowe

Office of Undergraduate Research  
The University of North Carolina at Greensboro  
P.O. Box 21670  
Greensboro, N.C. 27402  
EM: [mlcrowe@uncg.edu](mailto:mlcrowe@uncg.edu)

## Karl Sienerth

Director, Undergraduate Research Program and Assoc. Prof. of Chemistry  
Elon University  
Elon, NC 27244  
EM: [Sienerth@elon.edu](mailto:Sienerth@elon.edu)

*Mary Crowe is the Director, Office of Undergraduate Research at The University of North Carolina at Greensboro. Karl Sienerth is the Director, Undergraduate Research Program at Elon University in Elon, NC. Both Dr. Crowe and Dr. Sienerth are councilors in the Undergraduate Research Program Directors Division of CUR.*