**2009 FURSCA Report**

**Step 1: Department/Program Mission (Due May 15, 2009)**

The original investigation, interpretation, and presentation of knowledge is one of the highest forms of learning. The Foundation for Undergraduate Research, Scholarship and Creative Activity fosters exploration and discovery by students and the integration of research into the way we teach and learn. The Foundation defines “research” as a set of activities leading to new knowledge or creation and supports scholarly projects in which students are the principal investigators. The Foundation exists to endorse, encourage, and support undergraduate research and research opportunities throughout the campus community, particularly in academic departments, institutes, and centers, and recognizes the importance of diversity in academic thought, methodology, and the presentation of research results.

**Step 2: List goals/outcomes (Due May 15, 2009)**

1. Foster independent and critical thinking through student/faculty collaborative scholarship in a diverse range of disciplines
2. Help students to understand and appreciate the research methods and tools in all disciplines
3. Have students become articulate in their written communication skills by learning how to effectively develop proposals, collect data and disseminate the results of their projects
4. Establish a culture of scholarship and allow students to present the results of their work in a variety of different venues

**Step 3: Identify program components (Due May 15, 2009)** *Outcome 1: Foster independent and critical thinking through student/faculty collaborative scholarship in a diverse range of disciplines
•* Student Research Partners Program: for first-year students – pairs a student and faculty member together to work on a project related to the faculty member’s research. The student receives hands-on experience with research in a specific field. (Very selective – small number of students participate)
• Semester Research Grants: Students may apply for up to $500 per semester to support their own research or other creative project. Students must work closely with a faculty advisor though projects are not limited to a particular discipline. The grant may be used towards supplies, printing costs, software, etc…
• Summer Research Fellowships: Our largest, most visible, and most successful program. Students work with faculty on campus for the summer to conduct research/scholarship for up to 10 weeks (again, in all disciplines). Students receive a $330/week stipend, and must work closely with a faculty advisor.
 *Outcome 2: Help students to understand and appreciate the research methods and tools in all disciplines
•* All students work closely with a faculty mentor within their discipline.
• When applying for Semester Research Grants or Summer Research Fellowships, the FURSCA committee evaluates the applications. The committee works with the students to have them clarify and explain the research tools and methods that will be best for the project. *•* During the summer, students who are taking part in the Summer Research program are required to attend weekly research meetings. All disciplines present at the same meeting. Students are made familiar with how research is performed in all disciplines across campus.
• Every Spring semester, the Elkin R. Isaac Student Research symposium showcases student research across campus. The participants are nominated by their faculty sponsors after having participated in independent research that results in the significant synthesis of new knowledge. The research must have been performed under the direct supervision of an Albion College faculty member, or in a College-approved off-campus program.  *Outcome 3: Have students become articulate in their written communication skills by learning how to develop effective proposals, collect data and disseminate the results of their projects*• Semester Research Grants and Summer Research Fellowships: Students are asked to write a 1-3 page proposal that outlines their plans for their research project. Required components include background information, methodology and proposed outcomes. Students work with faculty mentors to learn the techniques and successful strategies for developing these proposals. In addition the FURSCA Committee carefully reads and evaluates each proposal on its merits. In order to make this a learning experience, the committee may ask for rewrites and clarification of the proposals before the funds are awarded.
• End-of-summer reports are required from all summer students. These reports include a brief outline of the outcomes of the summer and short reflective piece on the summer. In addition, individual faculty mentors require more detailed reports on the summer’s activities.

*Outcome 4: Establish a culture of scholarship and allow students to present the results of their work in a variety of different venues*• In addition to the Elkin R. Isaac Student Research Symposium (discussed in Outcome 2), students whose research is supported by FURSCA can apply for up to $600 to defray the costs associated with presenting their work at a research conference outside of Albion College.
• During the summer, students who are taking part in the Summer Research program are required to attend weekly research meetings. All disciplines present at the same meeting. Students are made familiar with how research is performed in all disciplines across campus.

**Step 4: Select methods/data sources and instruments (Due May 15, 2009)**

1. At the end of the summer research session, we ask students to submit 1-2 page progress reports detailing the progress that they have made on their projects.  Students are also asked to provide any personal comments that they want to about the summer session.  These student reports that are written at the end of the summer are used to assess student writing skills and gauge progress on research projects.

2. The number of papers published per year as a result of faculty-student collaborative research supported by FURSCA is used to gauge student engagement and awareness of the research methods in their chosen discipline.

3. Students have the chance to showcase their research at the yearly Elkin R. Isaac Research Symposium.  Many students list these presentations as an outcome in their research proposals.  We calculate the percentage of FURSCA-supported students who present at the Elkin R. Isaac Research Symposium presentations each year given by students to show progress towards Goal 4 (establishing a culture of scholarship) and as a way to gauge student involvement in their discipline beyond the classroom.

4. Another common outcome that students include in their research proposals is to write a thesis for either Albion College Honors or Departmental Honors. Calculating the percentage of FURSCA-supported students who deposit theses each year will show that students are becoming proficient in their written communication skills.

5. An alumni survey is being developed for administration during the spring and summer 2010 to assess the long-term impacts of student research on their careers and their impression of research at Albion College.

**Step 5: Analyze and interpret the data (Due Early Fall 2009)**

Table 1 - Number of students funded through FURSCA's Summer Research Program and Semester Grants (Semester Grants include research grants and travel applications.)

|  |  |  |
| --- | --- | --- |
| Academic Year | Summer FURSCA Students | Number of Semester Grants |
| 1999-2000 | 62 |  |
| 2000-2001 | 62 |  |
| 2001-2002 | 76 | 58 |
| 2002-2003 | 76 | 50 |
| 2003-2004 | 84 | 45 |
| 2004-2005 | 71 | 56 |
| 2005-2006 | 62 | 45 |
| 2006-2007 | 41 | 33 |
| 2007-2008 | 45 | 77 |
| 2008-2009 | 46 | 56 |

**1. The End of Summer Reports (EOSRs)** written by FURSCA students at the end of their summer experiences provide a great deal of information about the success of the students' research projects, but more importantly, about the attitudes of the students themselves towards research.  The ESOR was instituted in 2006 as a requirement of the summer program.  Student participation has been quite varied as can be seen from the following data:

Table 2: Percentage of students were turned in ESORs since the inception of the requirement.

|  |  |
| --- | --- |
| Summer | Percent of students who turned in a ESOR |
| 2006 | 91% |
| 2007 | 77% |
| 2008 | 75% |
| 2009 | 98% |

The large increase in the percentage of students who are turning in the ESORs can be attributed to a new policy (instituted at the beginning of summer 2008) that says that students will not be funded through FURSCA if they do not turn in this report.  One summer application was turned down for Summer 2009 because the student did not complete the ESOR.  In the Summer of 2009, the students were warned every week during presentations that these were taken seriously and would affect future funding opportunities.  25 of the EOSRs from 2009 were chosen randomly from the total of 44 that were submitted by students for evaluation.  Of the 25 reports, 16 students said that they would continue working on their project or one that is closely related.  10 of 25 said that they are planning on writing theses based on the findings of their summer projects.  However, only 6 of 25 said that there were planning on presenting their results at either the Elkin Isaac Research Symposium or a National Conference.

Overall, the quality of the reports was very good.  Most of the students took the reports seriously and turned in very detailed and thorough reports (23/25).  Students were asked to give comments on their personal experiences that we could use in advertising and fundraising but only 7 of the 25 included more personal comments.

One comment that was common to over half of the ESORs (13/25) was that the project did not go as planned.  It was surprising to read how many students had to face significant revisions to their project and their attitudes towards these difficulties.  Many reported that working with their faculty advisors was extremely important in overcoming these difficulties and how much they feel that they learned from experience about how "real" research is done.  One student commented on how much they learned working side-by-side with their faculty mentor to overcome the difficulties of the project.

**2.  Number of papers published per year as a result of faculty-student collaborative research**

Web of Science allows one to search over a thousand journals in the sciences, social sciences and humanities.   A Web of Science search was done using the search term "Albion Coll" for the years 2000-2009.  The search results were refined to include "articles", "reviews" and "paper proceedings".  Citations that detailed "editorial comments" and "meeting abstracts" were excluded from this analysis.  The data from these searches is shown in Table 2.

Table 3 - Number of Publications cited on Web of Science by Albion College faculty and the number of those publications that include students listed as authors.

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Total Number of Publications | Publications with FURSCA supported students | Percentage |
| 2000 | 11 | 1 | 9.09% |
| 2001 | 12 | 0 | 0.00% |
| 2002 | 14 | 0 | 0.00% |
| 2003 | 16 | 1 | 6.25% |
| 2004 | 24 | 5 | 20.83% |
| 2005 | 12 | 3 | 25.00% |
| 2006 | 12 | 0 | 0.00% |
| 2007 | 27 | 4 | 14.81% |
| 2008 | 26 | 5 | 19.23% |
| 2009 | 15 | 4 | 26.67% |

The number of publications by Albion College faculty has been variable over the past 10 years, but the number of publications that include FURSCA-supported students has remained constant in the last six year, with the exception of 2006.  The drop in the number of students listed on publications can be correlated with the same drop in the number of students that participated in FURSCA in the 2005-2006 academic year.  There has been a dramatic increase in the percentage of publications in which FURSCA students are listed as authors since the inception of the program.  This can be seen as evidence that students are becoming more involved and conversant in their chosen research fields.  It is very encouraging for us to see that a large percentage of publications coming from Albion College have undergraduates associated with them.

When the data in Table 3 is compared to the total number of students who are participating in FURSCA in any given year, it is discouraging to see that only a very small fraction of the research being doing by students is finding its way to publication.  This could be attributed to two factors.  1 - Not all publications are being represented by Web of Science.  Student publications such as Lux Fiat are not included in Web of Science indexing.  2 - Many of the research projects being funded are not suitable for publication in peer-reviewed journals.  Many of the projects being undertaken by students are not meant for outside publications.  Students are working on projects for theses, and conferences and not for publication.  Even though the publication rate by students is low, we believe that letting students design and write research proposals is strengthening their writing skills and making them more competitive for admission to graduate schools and in the hiring process.

Table 4 - Percentages calculated for data sources 3 and 4 in Step 4.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Graduation Year | Percent Thesis Writers funded by FURSCA | Percent Thesis Writers for the entire graduating Class. | Percent Elkin Isaac Presentations | Percent Elkin Isaac Presenters for the entire graduating class. | Total Number of Students Funded through FURSCA |
| 2000 | 72% | 13% | 91% | NA | 32 |
| 2001 | 65% | 16% | 81% | NA | 54 |
| 2002 | 58% | 16% | 67% | NA | 78 |
| 2003 | 55% | 15% | 66% | NA | 73 |
| 2004 | 49% | 15% | 62% | 23% | 85 |
| 2005 | 59% | 16% | 71% | 28% | 82 |
| 2006 | 49% | 12% | 63% | 25% | 72 |
| 2007 | 43% | 11% | 69% | 26% | 70 |
| 2008 | 44% | 14% | 71% | 24% | 78 |
| 2009 | 33% | 12% | 58% | 22% | 67 |

Data were collected by grouping students funded by FURSCA by graduation year.  Students are considered to be funded through four different means - SRP participation, travel grant receipt, semester grant receipt or participation in the summer research session at Albion College.  This list of students was cross-referenced with the list of students participating in the research symposium and those depositing theses.  Multiple presentations in the same year or consecutive years are not included in this analysis.  (NA = data not available for this analysis.)

3.  **Percent Participation in Elkin R. Isaac Research Symposium.** FURSCA has been supporting students at Albion College since the 1999-2000 school year.  Students apply for grants (semester and summer) by writing short proposals and submitting them to the FURSCA committee. Students are asked to include proposed outcomes for the dissemination of the product generated by the research grants.  One of the common proposed outcomes is participation in the annual Elkin R. Isaac Research Symposium held on campus.  As can be seen in Table 4, around 65% of students funded through FURSCA participate in this symposium.

In the early years of FURSCA, the percentage of students participating in the Elkin R. Isaac Research Symposium was much higher.  The number of students participating was approximately constant from 2002-2008.  There was a  drop in the number of students participating in the 2009 research symposium.  While it is difficult to definitively assess why this is the case, informal conversations with the organizers suggest that overall, campus participation in the research symposium was down.  Overall, FURSCA students are more than twice as likely to participate in the Elkin Isaac Research Symposium.

4.  **Percentage Students Depositing Theses.**  Students are eligible for Albion College Honors or Departmental Honors if they write and deposit a faculty-juried thesis before graduation.  One way that FURSCA supports student achievement is by supporting students who are writing theses. Approximately 50% of the students who are supported by FURSCA write theses every year.  This is compared to an average of 15% for the entire student body over the time surveyed for this analysis.  FURSCA-supported students are much more likely to write a thesis than one not supported by FURSCA.  There was a drop in the percentage of students who deposited theses in 2009, which is reflected in the similar drop in Elkin Isaac presentations.  There is a general decline in the percentage of FURSCA students who are writing theses.  It is not clear why this is the case.  Students are required to include outcomes in their research proposals and it could be that they know that a thesis is one of the expected and approved outcomes.  Because of the time frame of student proposals and when theses are deposited, there is no penalty if students do not achieve the outcomes listed in their proposals.  This has been a topic of discussion in the FURSCA committee and we will continue to look for ways to improve the percentage of students achieving their stated outcomes.

5.  **Alumni Survey**.  This assessment plan is currently in the planning stages.  We have contacted the Gerstacker Institute to bring a student intern on board in the Spring of 2010 to help in creating and administering this survey.  We have decided to focus initially on assessing the Student Research Partners (SPR) program that is administered through FURSCA.

The initial assessment will be through a paper or online survey of Albion College alumni who have participated in the SRP program.  We are interested in determining how previous participants view the program and if they believe that it has helped them since leaving Albion College.  The survey will then be expanded to include current students participants to evaluate their views of the work load and expectations.  Faculty who have participated as SRP mentors will be interviewed and their views of the program and any suggestions that they have for the program in future years will be collected.

**Step 6: How will the data collected be used for decision-making, strategic planning, etc. (Due Early Fall 2009)**

The data collected and presented in Step 5 is extremely important in determining the future directions of FURSCA.  The full data will be presented to the FURSCA advisory committee (consisting of 10 faculty across campus, a representative from the library and two student representatives).  The Directorship of FURSCA is a rotating position that is usually held by a faculty member for two or three years. Recommendations for change will be solicited from the committee as a whole.  The Director of FURSCA is a position that is held by a faculty member for two or three years before a replacement is selected, ideally from the FURSCA advisory committee but in reality the position can be filled by any faculty member from the College.  Because of the transitory nature of the Directorship, any changes in the mission and directions of FURSCA must be supported and guided by the committee as a whole.

1.  **End of Summer Reports.**  Already the information collected in the first data source has lead to changes being made in the format of the reports from the students.  Up to this point, there were no specific guidelines or requirements distributed to the students.  The reports range from a one paragraph statements of how important the experience has been for the students to a three page formal research summary.  We are working on creating guidelines that will be available for students to download off the FURSCA website.  These guidelines will include written penalties for not submitting the report.  As was mentioned in Step 5, students were warned multiple times about the penalties in the summer of 2009, which we believe helped to achieve an almost 100% compliance rate.

Based on the low number of students who indicated that they are planning on participating in either the Elkin R. Isaac Research Symposium or national conferences with their results, we are planning on contacting the FURSCA students in the Spring when the solicitation for Elkin R. Isaac presentations comes out.  We hope that this will increase participation in this important event.

We also plan on administering a survey at the end of the summer research program to solicit information about how to make the program better.  We also plan on asking targeted questions about if they feel they achieved their goals for the summer research.

2.  **Publications with Student Authors.**  The information collected in this section was extremely encouraging and useful.  There has been an increase in the percent of publications with students listed as authors that we feel is correlated with the number of students supported by FURSCA.  This information will be used as leverage when talking to the administration and faculty to encourage their support of this program.

3.  **Percent Participation in Elkin R. Isaac Research Symposium and Percentage of Students Depositing Theses.**  The drop in the numbers of theses and Elkin Isaac presentations by FURSCA students is something that we are going to work hard to remedy.  We plan on asking faculty sponsors to encourage the students to do Elkin Isaac presentations.  As part of this, the committee is looking at ways that we can increase student accountability and compliance with their stated outcomes.  We are starting to keep track of a student's stated outcomes from year to year and see if they are making progress towards their goals.  This is a difficult task and will require faculty sponsors help in keeping track of these numbers.  We may also start asking students to turn in a copy of their thesis to the FURSCA office if it was supported by FURSCA funding.  These will be part of long-term longitudinal studies on the effectiveness of FURSCA funding.

4.  **Alumni Surveys**.  This is currently in progress.  The results of this survey will be used to make recommendations about the student research partners program and if it should be continued or expanded.