

University Undergraduate Faculty SAGES Impact Report *May 27, 2009*

2008-2009 UUF SAGES Impact Committee

College of Arts and Sciences:

Peter Haas (*chair*)
Gary Chottiner
Kimberly Emmons
Kurt Koenigsberger

Case School of Engineering:

Jay Mann
Uzi Landau

Weatherhead School of Management:

Bo Carlsson

Francis Payne Bolton School of Nursing:

Christine Hudak

UG Studies:

Jeffrey Wolcowitz

SAGES:

Peter Whiting

Undergraduate Student Government:

Jeffrey Zabinski

Center for Institutional Research

Thomas Geaghan

INTRODUCTION

This year the UUF Committee on the Impact of SAGES decided to focus on two areas: the Capstone and the Departmental Seminars. We chose these topics, especially the capstone, because this year's graduating seniors were the first to experience both under full implementation of SAGES.

The evaluation was carried out through a series of web-based surveys. We targeted three distinct audiences: departments (*to assess the impact of these requirements on departmental resources, faculty, facilities and finances*), faculty involved in the departmental seminars or capstone activities (*whether as instructors, advisors or mentors*), and capstone students. For the later population we sent out two surveys, one at the end of the fall semester to capture students who were finishing capstones and graduating in January, and second survey sent out near the end of the spring semester. We did not survey student attitudes about Departmental Seminars since these data are available through the standard course evaluation process.

Although the committee helped formulate the questionnaires, it was Tom Geaghan in the Office of Planning and Institutional Research who managed the deployment of the surveys and who did much of the statistical analysis and write-up. The Committee wishes to express its gratitude to him for the tremendous amount of work and thought he put into this project.

The narrative summary below is meant to highlight a few salient features that we thought deserved special attention. The raw aggregated results of the survey are included in this report so that further analysis can be done on specific questions that might arise in the future.

SUMMARY

Overall, the majority of respondents, whether departments, faculty or students, expressed satisfaction with their experiences of Departmental Seminars and Capstones. In general, the implementation of Departmental Seminars seemed to cause fewer problems for departments because many simply modified existing seminars. In some cases, this led to lower enrollments (*with the imposition of the SAGES enrollment cap*) and the addition of increased requirements. In other cases, the Seminars had to be offered in multiple sections to accommodate the demand, meaning other courses could be offered less frequently.

More issues emerged as regards the capstones. Altogether, however, some 85% of students indicated a sense of accomplishment, with two-thirds saying the capstone project reflected the sum of their knowledge in their majors. The vast bulk of faculty members who responded indicated that teaching or mentoring the capstone was not a major burden, taking up an average of one hour per day or less on Capstone matters. In those cases in which there were problems, comments from both the faculty and the students pointed to a mismatch of expectations. Some students reported that they did not like the topic of the project, that in some cases they were assigned a topic because of the class or group they were in, that the advisor was not helpful, or that the whole exercise was a waste of time. On the faculty side there were complaints that the students were uninterested, lacked motivation, and/or were not up to the task. There was some unclarity, especially on the part of the students, as to what the capstone requirement was. It should be recalled, however, that this represents a distinct minority of cases.

One persistent theme for both was the paucity of resources. Some departments complained of lack of faculty resources. Faculty comments on occasion indicated a feeling of being coerced into teaching a SAGES course, or being overwhelmed by requests to serve as a capstone mentor. Departments, faculty and students sometimes mentioned a need for more financial support, often fairly modest funds for equipment and other resource.

GENERAL NARRATIVE

I. Departmental surveys

1. Departmental responses on CAPSTONE

We received responses from 16 units: ten from the College of Arts and Science (*the departments of Chemistry, Classics, Modern Languages & Lit, Psychology, Anthropology, Religious Studies, English, Political Science, Theater and Dance, Music*); four from the School of Engineering (*Engineering – Administration, Chemical Engineering, Materials Science & Engineering, Biomedical Engineering*) and two from the School of Management (*Management, Accountancy*).

Of the departmental responses, only 2 indicated that the SAGES capstone did not exist in another form prior to becoming a SAGES Capstone. The remaining thirteen (*one respondent left the answer blank*) indicated that at least one new course had to be added, although no department reported having to drop other courses in order to accommodate

this expansion. When asked how many additional faculty needed to be hired to staff SAGES, five said none, four said 2, one said 1, one said 3-5, and one said “what needs to be done will be done, regardless.”

About half (5) of twelve responses to this question said that the capstone required no additional resources. One third (4) expressed a need for funding for supplies. Other needs were for more classroom space (2) and additional time to spend with students (1). One respondent shared frustration with the fact that the capstones are a teaching overload. Another noted that the department had to settle for one-size fits all for Capstone seminar.

In general the departmental respondents felt that the SAGES Capstone met the needs of SAGES (79%) and of the department (87%). Where there was dissatisfaction, comments focused on students who did not want to put in the effort required and either sought out other advisors, or the advisor had to find easier projects. In other words, problems arose in particular when dealing with students who did not want to do a (*or a particular*) capstone project. As a comparison, about 65% of the students thought the overall Capstone experience was “excellent” or “good”. 13% of students graded their overall evaluation as “poor”, although 19% strongly disagreed that it was an appropriate culmination of their undergraduate work and 25% strongly disagreed when asked if the Capstone was a satisfying part of their academic experience at Case.

In this regard it should be noted that the students in the School of Management indicated the lowest overall satisfaction with the Capstone, while students in the School of Nursing supplied the highest overall ratings. These data are charted in figure 1 below.

2. Departmental responses on Departmental Seminars

About half of the respondents stated that previous courses were changed into Departmental Seminars with little or no change. Two noted that the SAGES imposed cap on the course led to smaller enrollments, which allowed the instructor to move to a more seminar approach and to raise the requirements. One respondent noted that the smaller class meant that additional sections had to be taught for majors and that meant having to cut back on the frequency of other courses in order to staff multiple sections of the capstone.

II. Faculty Responses for the Capstone

In this section, we have attempted to group and summarize faculty responses. The responses are given below in our rough grouping, each with a representative citation. Note, that some faculty listed multiple resources, so the total percentages in each case might exceed 100%.

What extra resources, if any, would help you improve the way you teach/advise your capstone students?

A total of 36 faculty responded to this question (*47% of the sample*). Responses can be divided into 8 thematically related categories as follows.

- Tangible resources (money, supplies, space, tech support): 21 (58% of respondents)

- “There should be a fund students can easily use to purchase materials and supplies for their projects.”
- Additional faculty: 5 (14% of respondents)
 - “Additional faculty to oversee their work”
- Reduced course load/more time with students: 4 (11% of respondents)
 - “More time, reduction in other service/teaching duties”
- Capstones should count to my teaching load: 3 (8% of respondents)
 - “A certain number of capstones should count as a course for course load purposes in cases where the capstones are independent studies.”
- Clear priorities/expectations: 2 (6% of respondents)
 - “More guidance on capstone requirements/expectations. The expectations seem quite variable across the university, and even within the department.”
- Motivated students/Capstones should be voluntary: 2 (6% of respondents)
 - “I think Capstones should be voluntary, not mandatory, so that only highly motivated students would do them. Several students I have advised were "forced" into projects by the capstone requirement, and this is disastrous for them and for me.”
- Additional writing instruction for students: 2 (6% of respondents)
 - “Extra instruction in writing skills.”
- No need: 1 (3% of respondents)
 - “I have 13 grad students and 2 postdocs to help me with these students. That is more than adequate. I have plenty of external grant support to fund their projects.”

What factors positively affected the experience of teaching a SAGES Capstone course?

Faculty who said the experience of teaching a SAGES capstone course was “Excellent” or “Good” were then asked to explain what accounted for this positive experience. A total of 51 faculty (66% of the sample) were asked the question. Of the 51 who were asked this question, 25 (49%) provided an answer. In general, the responses could be divided into the four categories bullet-pointed below.

- I enjoy working with the students: 21 (84% of respondents)
 - “Watching the students gain confidence and take charge of their own projects, conduct their own research, and develop their own ideas.”
- Subject matter interests me: 3 (12% of respondents)
 - “The projects can be exciting. The work is intensive but the outcome is rewarding.”
- Allows me to use students to further my own research: 2 (8% of respondents)
 - “enables research to get done using undergrads “
- I enjoy working with outside collaborators: 1 (4% of respondents)

- “It was enjoyable to interact with industrial contacts.”

What factors negatively affected the experience of teaching a SAGES Capstone course?

Faculty who said the experience of teaching a SAGES capstone course was “Fair” or “Poor” were then asked to account for this more negative experience. A total of 20 faculty (26% of the sample) were asked the question. Of the 20 who were asked this question, 16 (80%) provided an answer. We divided the responses into 8 categories.

- Unmotivated students: 6 (38% of respondents)
 - “The time burden is significant, yet for most students they're simply interested in minimal compliance with minimal impact on their GPA.”
- Too few resources: 5 (31% of respondents)
 - “No resources, more work”
- Unprepared students: 3 (19% of respondents)
 - “The incompetence of some students”
- Course does not count to my teaching load: 2 (13% of respondents)
 - “The biggest problem is that the course is an "extra" or "overload" course for the instructor; I would spend more time preparing and getting [students] to work, but it takes away from my research.”
- Student time: 1 (6% of respondents)
 - “Most of the students taking Capstone in my lab do not have sufficiently large blocks of time available to be able to carry out the necessary experimental work.”
- One semester is not enough to complete a capstone: 1 (6% of respondents)
 - “One semester isn't enough for a serious senior project.”
- No clear expectations/priorities: 1 (6% of respondents)
 - “Our department hadn't nailed down clear requirements to distinguish the capstone from our prior senior honors project, so I was having to design this course on the fly.”

How did you come to teach this SAGES Capstone course?

A total of 62 faculty responded to this question (81% of the sample).

- Approached by a student: 27 (44% of respondents)
 - “[I tried directing students] to the classroom-based version of the course. But then when that class filled up, it seemed the students had nowhere to go.”
 - “Students thought I would be a good instructor.”
 - “I was asked by the student to advise his project.”
- Developed class on my own/Volunteered: 18 (29% of respondents)
 - “I was involved in designing [the capstone course]”

- By default/Designated by department: 17 (27% of respondents)
 - “Someone has to do it.”

It should be noted that the tone of responses in the “approached by a student” varied widely. Some responses were positive (*i.e., they were approached by a gifted student and were happy to help*) whereas others were negative (*i.e., they took on a capstone because the student had “nowhere else to go”*). Others felt positively about one student and negatively about another (*i.e., “One of the students asked me to be his Capstone advisor, and he had obtained a high grade in a course I taught, so I agreed. [A second] student was one of my BA major advisees and was unable to get anyone else to be his Capstone advisor, so I also agreed to take him on against my better judgment*). That said, the vast majority responded in a neutral manner (*i.e., “I was approached by a student”*).

Is there anything else you would like to say in regards to the experience of teaching a SAGES Capstone course?

A total of 32 faculty responded to this question (*42% of the sample*). Because this is such an open ended question, it was very difficult to group responses thematically as many responses were unique or dealt with specific issues with specific courses/students. That said, 6 professors (*19% of respondents*) felt that capstones should be made voluntary, due to lack of student interest/ability. Five professors (*16% of the sample*) commented on the lack of tangible resources, 3 professors (9%) felt that one semester was not enough to complete a capstone-type research project, and 2 professors (6%) specifically noted the need for more faculty.

III. Student Responses to Capstones

1. General Remarks on the sample

A. First Semester Population

A list of 472 students enrolled in Capstone courses was obtained from the registrar. Of these, 10 were graduate students, 3 were nondegree students, and 55 students started at Case before the full implementation of SAGES. These students were removed from the list, leaving a final population size of 404.

First Semester Sample

From our final population of 404 students, 177 responded to the survey (44%). The sample favors women (*43% of population, 53% of sample*). Similarly, students in the Arts & Sciences¹ are overrepresented (*41% of population, 53% of sample*) and students in Engineering were underrepresented (*37% of population, 25% of sample*). There was no significant difference between the sample and the population in terms of ethnicity. Those who answered the survey had a significantly higher GPA at the beginning of AY08-09 (3.52) than those who did not (3.40).

¹ Schools determined using “Primary Program” variable in SIS.

B. Second Semester Population

For the second semester we requested that nondegree students, graduate students, and students starting at Case before the full implementation of SAGES be removed prior to creating the final list. Our final list, obtained from the registrar, consisted of 516 undergraduate students enrolled in capstone courses.

Second Semester Sample

From our final population of 516 students, 194 responded to the survey (38%). As with the first semester, the sample favors women (*36% of the population, 44% of the sample*) over men (*64% of the population, 56% of the sample*). Again, as with the first semester sample, the second semester sample favors students in the Arts & Sciences (*58% of the population, 66% of the sample*) whereas CSE students are underrepresented (*31% of the population, 23% of the sample*). There was no significant difference between the sample and the population in terms of ethnicity. The difference in GPA between those who took the survey (3.43) and those who did not (3.34) was non-significant.

C. Total Population

Instead of producing two reports, one for each semester, all students who took the survey were combined into one dataset for this report. Some students (84) took 2-semester capstones. After removing the duplicate students, our final population consisted of 836 students.

Total Sample

From our final sample of 836 students, 360 responded to the survey (43%). The sample favors women (*46% of the population, 54% of the sample*). Similarly, the sample favors students in the Arts & Sciences (*51% of the population, 59% of the sample*) whereas CSE students are underrepresented (*32% of the population, 24% of the sample*). The sample also favored students of unknown ethnicity (*13% of the population, 16% of the sample*) whereas Asian students were underrepresented (*23% of population, 18% of sample*).

Below are some general characteristics of the corpus of student responses to the SAGES Capstone experience. We thank Tom Geaghan for taking on this more detailed statistical analysis.

Gender Differences

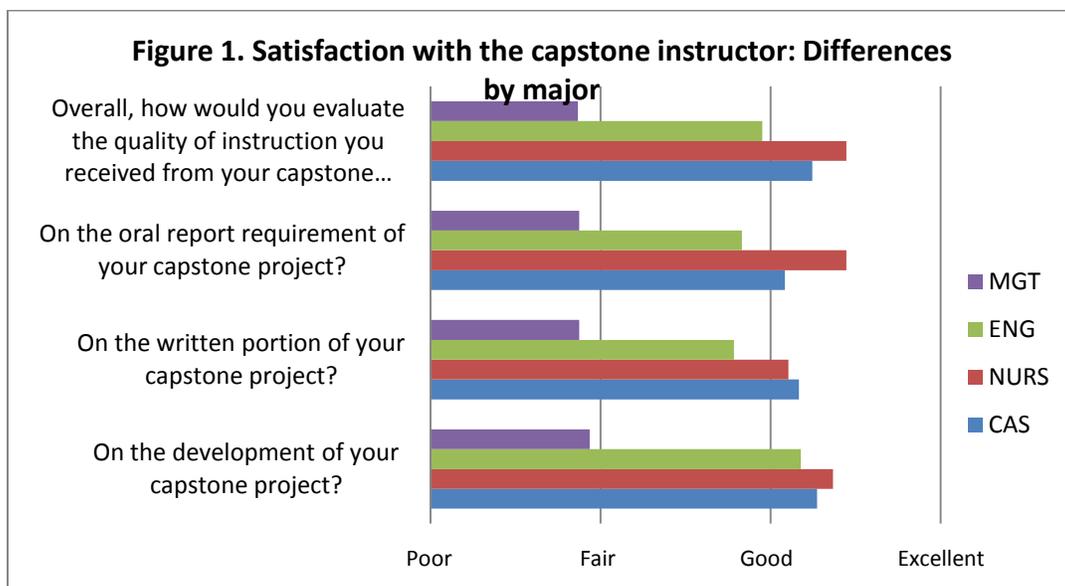
Results of a one-way analysis of variance (ANOVA) revealed significant differences between men and women on the following survey items:

- Women spent significantly more time in a typical 7-day week working on their capstone project.
- Women said they utilized Case libraries for their capstone projects with more frequency than did men.
- Men said they were required to give oral reports on their capstone projects with significantly greater frequency than did women.
- Compared to men, women said they had significantly more trouble defining their capstone project.

Differences by School

As noted above, students in the School of Management returned the lowest overall satisfaction with the Capstone, while students in the School of Nursing supplied the highest overall ratings. It is also the case that students in engineering were significantly less satisfied with the overall quality of instruction than were their peers in arts and sciences and nursing. Engineers also indicated less satisfaction than their peers in arts and sciences on the quality of feedback given on the written portion of their capstone project and were less satisfied than their peers in nursing on the feedback provided by their advisors on the oral report requirement of their capstone project. It should be noted that the CSE had a senior project program before the SAGES capstone requirement was implemented, and that SAGES had a minimal impact on this program. These results are summarized below.

The horizontal scale in Figure 1 and other similar figures is based on questions that allowed 4 levels of responses. The graphs are organized so that the left side corresponds to the most negative response, the right to the most positive response and the center to a neutral response, on average.



Results of a one-way analysis of variance (ANOVA) revealed significant differences among students in different schools on a number of survey items. Instead of going through every difference, we have decided to focus on two areas: satisfaction with the capstone advisor and learning outcomes.

Satisfaction with the capstone advisor. As can be seen in the graph below, management students were the least satisfied with all four of the measured outcomes: the quality of instruction received from their capstone advisor, the feedback their advisor provided on the oral report requirement of the project, the feedback their advisor provided on the written portion of the project, and the feedback their advisor provided on the development of the capstone project. Results of a post-hoc analysis reveal that, in all four cases, these differences are significant.

Learning outcomes. The graph below displays means, by school, on five learning outcomes:

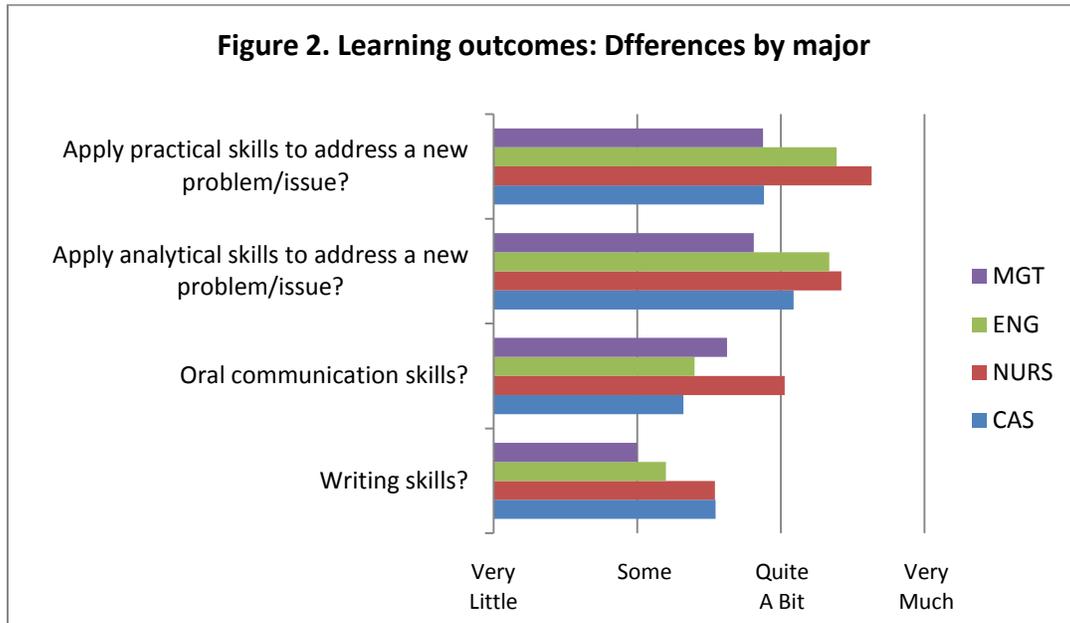
- To what extent did your capstone experience require you to apply practical skills to address a new problem/issue
- To what extent did your capstone experience require you to apply analytical skills to address a new problem/issue
- To what extent did your capstone experience contribute to the improvement of your oral communication skills?
- To what extent did your capstone experience contribute to the improvement of your writing skills?

Results of a post-hoc analysis revealed that, compared to those in engineering and nursing, students in arts and sciences and management were significantly less likely to feel that their capstone experience required them to address a new problem/issue. Similar results were found on the question assessing the application of analytical skills to address a new problem/issue. For the question of oral communication skills, nursing students reported greater gains than their peers in arts and sciences and engineering, though there were no differences among the other majors. Finally, those in arts and sciences reported significantly greater gains in writing skills than did their peers in management or engineering. Although nursing students reported nearly identical gains as their peers in arts and sciences, their mean value was not significantly different from their engineering and management peers due to a large standard deviation (*standard deviation for nursing students was approximately 45% of the mean*).

Note: The SAGES Impact Committee also addressed the following outcomes; however, our analysis revealed no significant differences by major:

- To what extent did your capstone experience require you to apply skills you've learned in other courses in your major
- To what extent did your capstone experience require you to participate in cross-disciplinary learning

- To what extent did your capstone experience contribute to the improvement of your critical thinking skills

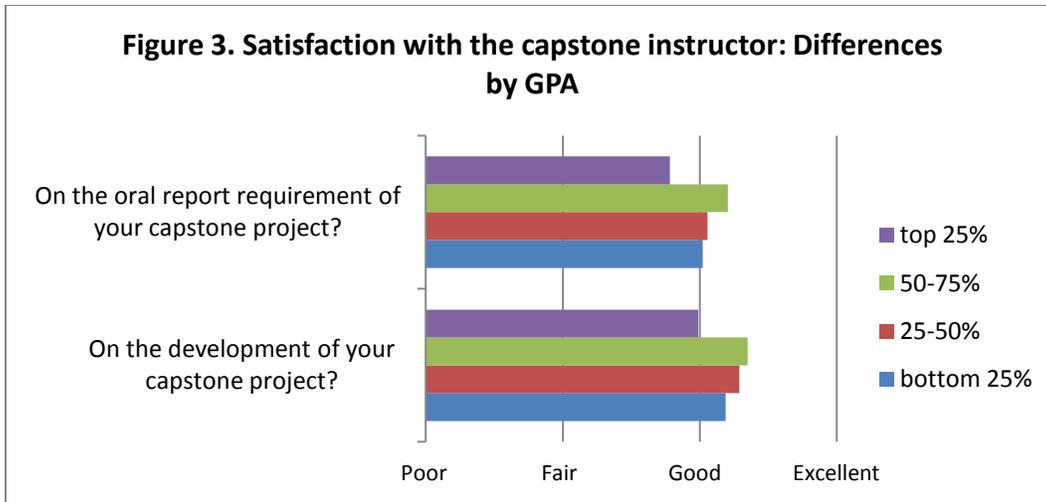


Differences by GPA

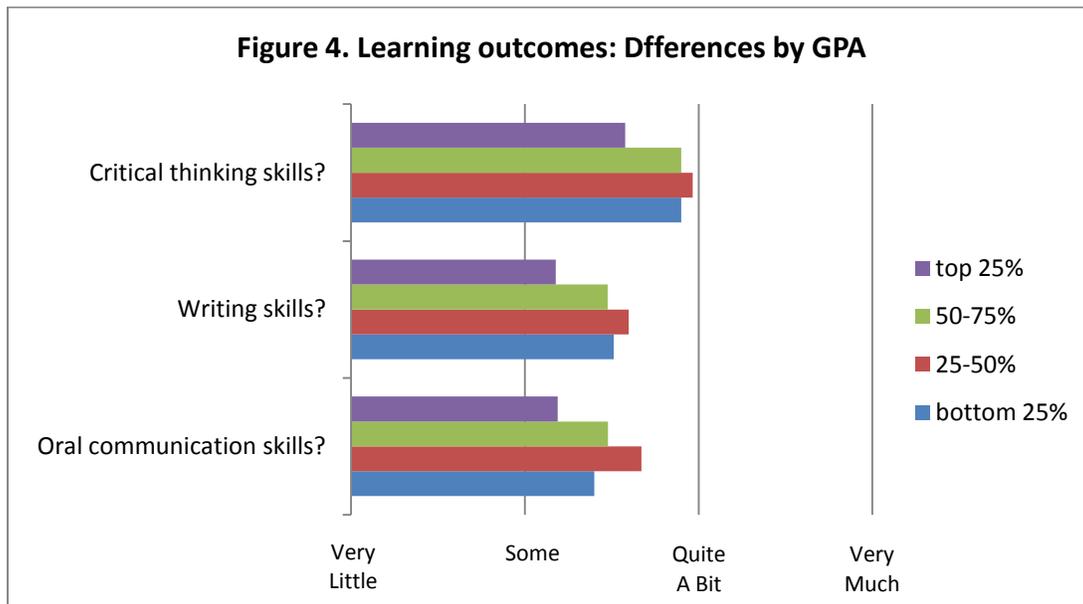
In order to examine GPA differences, students' GPA's were divided into quartiles. Results of a one-way analysis of variance (ANOVA) revealed significant differences among students in different GPA quartiles on a number satisfaction and learning outcome items.

Satisfaction with the capstone advisor. Significant differences in satisfaction by GPA emerged on two items only: the feedback provided by the capstone advisor on the development of the project and the feedback provided by the capstone advisor on the oral report requirement of the project. There was no difference, by GPA, on measures of overall satisfaction or on the measure of satisfaction with feedback provided on the written portion of the capstone.

As can be seen in Figure 3, students with the highest grades (*top 25%*) were the least satisfied with the two measures of satisfaction. Results of a post-hoc analysis reveal that, in both cases, these differences are significant.



Learning outcomes. Similar results were found when examining learning outcomes by GPA. Those with the highest GPA were the least likely to say that their capstone experience contributed to their oral communication skills, their writing skills, and their critical thinking skills. Again, post-hoc analyses confirmed that the top students report significantly fewer gains in these measures.



1. A total of 125 students wrote comments (*representing about 35% of the entire sample*). Each comment has been evaluated as positive, negative, neutral or a mix of positive and negative. 34 comments were positive (27% of comments), 19 were neutral (15%), 10 were mixed (8%) and 62 were negative (50%).

2. Complaints fell into three basic categories: a. The class was disorganized and/or requirements were not clear, b. Problems with picking, contacting, working with advisors, and c. Inconsistency of expectations across and within departments.
 3. A surprising number of students did not seem to understand that they were taking a capstone course. For example, one described the SAGES Writing portfolio as his/her capstone, many did not know which of their classes was the capstone but assumed it was what they considered their "senior project," and still others felt that the questions we asked did not fit what they thought was their "capstone," because their "capstone" was just a normal lecture class. This could be true if the department chose to have that type of capstone, but it was unclear.
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THE SURVEY RESULTS

Following are the cumulative results of the three questionnaires.

Departmental Survey

The SAGES Departmental Survey was sent to each department chair in the spring of 2009. Department chairs were asked several questions in an attempt to better understand the impact of the implementation of SAGES departmental and capstone courses on their departments. Of the 42 surveys sent out, 16 were returned (*38% response rate*). We have summarized responses to the questions below.

Departmental Seminars

1. Which of your current departmental seminar courses existed, in some format or another, before SAGES?

Nearly all respondents (13) said at least one of their departmental seminars existed prior to SAGES. Only two respondents said that none of their departmental seminars existed pre-SAGES. One respondent left this question blank.

2. Which of the following departmental seminar courses would not exist if not for the requirements associated with SAGES?

The majority of respondents (9) left this item blank, two said "none," three listed one course, one respondent replied that two courses were waiting to be approved and one replied that their department does not offer SAGES departmental seminars.

3. For courses that previously existed and were turned into Departmental Seminars, what modifications, if any, had to be made for the courses to meet SAGES departmental seminar requirements?

Eight respondents said that there were either no changes or that the question was not applicable to their department. Of the remaining eight respondents, many provided multiple answers to this question. Five department chairs cited increasing the oral presentation requirement, four said they changed the writing requirements, three department chairs mentioned changing from lecture to seminar format, two faculty mentioned needing to enforce the enrollment cap, leading to fewer students being enrolled in these classes compared to pre-SAGES numbers, and one respondent cited the need for increased faculty involvement in weekly discussions.

4. Do you require that your *majors* take a SAGES departmental seminar *offered by your department*? If so, how many departmental seminar courses *offered by your department* do you require your majors to take?

The majority of departments said that they did not require their majors to take a SAGES departmental seminar offered by their department (60%). Only two of the six faculty from departments requiring their majors to take a SAGES departmental seminar responded to the follow-up question. One faculty said they required their majors to take one of their departmental seminars, the other faculty said they required their majors to take three of their departmental seminars.

5. Do you require that your *minors* take a SAGES departmental seminar *offered by your department*? If so, how many departmental seminar courses *offered by your department* do you require your minors to take?

None of the departments represented required their minors to take departmental seminars in their department. As such, there were no responses to the follow-up question.

6. Did offering Departmental Seminars require your department to cut courses that were previously taught? If so, how many courses were cut so that you could provide department seminars?

None of the departments represented reported having to cut previously taught courses in order to accommodate SAGES departmental courses. As such, there were no responses to the follow-up question.

7. Has your department found that the implementation of SAGES departmental seminars have required additional teaching resources not needed prior to SAGES? If so, please explain.

Of the departments represented, six (40%) said that the implementation of SAGES departmental seminars required additional teaching resources not needed prior to SAGES. Five of the six faculty whose departments required additional resources responded to the follow-up. Two said they required additional faculty, two said that their faculty either had to teach an overload and/or departments had to cut the frequency with which they teach other courses. The final respondent said that the additional resources needed were “very limited.”

8. [if yes on question 7] Do you feel that your department has been provided with the teaching resources necessary to meet the requirements of the SAGES departmental seminars?

Five of the six faculty whose departments required additional resources responded to this follow-up question. Four of the five said no, one said yes.

9. What additional resources beyond faculty, if any, were required of your department to teach the SAGES Departmental Seminars?

Eight faculty responded to this question. Four said “none” or “N/A,” one said resources were not required for the departmental seminars but that they were required for first and university seminars, one cited a need for additional classroom space and supplies, one felt that more faculty were required to teach the departmental seminars, and one said that the department was not able to come up with a viable mechanism of offering departmental seminars.

10. Do you believe that your SAGES Departmental Seminars are meeting the goals that *SAGES* set for them? If not, why not?

The vast majority (87%) felt that their departmental seminars were meeting SAGES goals. One faculty responded to the follow up question saying that they felt their department somewhat met the SAGES goals but that there is variation among the classes offered by the department.

11. Do you believe that your SAGES Departmental Seminars are meeting the goals that *your department* set for them? If not, why not?

Most (80%) said that they felt the SAGES departmental seminars were meeting the goals their department had set for them. Two respondents answered the follow-up question. One cited the need to settle for a one-size-fits-all approach for their departmental seminar that may not be appropriate for all of their majors, one cited a need for a closer linkage between writing assignments and a departmental laboratory.

SAGES Capstone Courses

1. Which of the following SAGES Capstone courses existed, in some format or another, before SAGES?

Thirteen faculty responded to this question. Two said that all of the capstone courses existed in some format or another, pre-SAGES, two said that none of the capstone courses existed pre-SAGES, five listed one course that existed pre-SAGES, and four listed two courses that existed pre-SAGES

2. Which of the following SAGES Capstone courses would not exist if not for the requirements associated with SAGES?

Again, thirteen faculty responded to this question. Five said there was no change in their departmental offerings or that the question was not applicable to their department, five listed one course that was added because of SAGES, and three listed two or more courses added because of SAGES.

3. For courses that previously existed and were turned into SAGES Capstone courses, what modifications, if any, had to be made for the courses to meet SAGES Capstone course requirements?

Twelve respondents answered this question. Five said the question was not applicable to their department or that they made no changes to the course to accommodate SAGES requirements. Three cited an increase in the writing component of the class, three cited increased speaking or the addition of a presentation component to the class, one cited increased hiring to accommodate the demand of their department's SAGES capstone courses, and one said the only change was to formalize the course and associate it with credit hours. Note, one responded cited increased writing and speaking and, as such, is counted twice.

4. Do you require that your majors take a SAGES Capstone course offered by your department?

Fifteen respondents answered this question. Eight (60%) said yes, six (40%) said no.

5. Prior to SAGES, did your department offer Capstone-type courses? If yes, approximately what percentage of your majors took Capstone-type courses prior to the implementation of SAGES?

Eight of the fifteen respondents said yes, seven said no. Seven respondents answered the follow up question. Of these seven, five said 100% of students took capstone-type courses in their department, one said 40%, and one said 10%.

6. Approximately how many additional department faculty members are needed to operate your SAGES Capstone program? (*Count only the additional effort that can be attributed to SAGES; do not include senior projects that would exist in any case.*)

Of the thirteen respondents, six said 0, four said 2, one said 1, one said 3-5, and one said "what needs to be done will be done, regardless."

7. How would you describe your department's capstone courses (*choose all that apply*)? [a. an experimental research project, b. a theoretical research project, c. a creative endeavor, d. a performance, e. a library or historical review, f. Other (please describe)]

Nine faculty said the capstone was an experimental project, nine said it could be described as a theoretical research project, six selected a creative endeavor, two said a performance, and two selected a library or historical review. One respondent chose “other,” but did not provide a description in the space given. Note, totals add up to more than the total of 15 respondents because multiple options could be selected.

8. Are your capstone courses generally: [a. individual projects, b. group projects (if b, what is the range of students in a typical group?)]

Fourteen faculty responded to this question. Ten said the typical capstone course was an individual project and four said their capstones were generally group projects. The range of students in a typical group spanned from 3 to 8

9. What additional resources beyond faculty, if any, were required of your department to teach the SAGES Capstone courses?

Many respondents said that the capstone required no additional resources (5). The remaining faculty cited a need for more classroom space (2), funding for supplies (4), and additional time to spend with students (1). One respondent shared frustration with the fact that the capstones are a teaching overload.

10. Do you believe that your SAGES Capstone courses are meeting the goals that *SAGES* set for them? If not, why?

Of the fourteen respondents, eleven said yes (79%) and three said no (21%). Two faculty members responded to the follow-up question. One said that, since students do not want to put in the effort required, they seek out faculty who will not make them work. The other said that their department finds itself trying to find easy things for seniors to do in order to fulfill the requirement.

11. Do you believe that your SAGES Capstone courses are meeting the goals that *your department* set for them? If not, why?

Of the fifteen respondents, thirteen said yes (87%) and two said no (13%). One faculty member responded to the follow-up question. This respondent said how difficult it is to work with/motivate students who have no desire to do a capstone project in the first place.

Finances

For the next three questions, please respond with the amount spent to offer SAGES courses that is above and beyond what would have been spent on previous senior projects or SAGES-type courses

1. Not including the cost of faculty, how much do you estimate is spent from department resources for each student in a SAGES Capstone course?

Of the twelve responses, seven said \$0, one said \$100, two said \$200, and two said \$500.

2. How much do you estimate is spent from individual faculty resources (research or discretionary funds) for each SAGES Capstone student they supervise?

Of the twelve responses, ten said \$0, one said \$200, and one said \$500.

3. Does your Dean provide any resources for students in SAGES Capstones?

Of the sixteen responses, two said yes (13%) and fourteen said no (87%).

4. How much funding should be available on a per-student basis for SAGES Capstone courses?

Of the nine responses, five said \$0, one said, \$100, one said \$300, one said \$500, and one said \$1000.

General Comments

1. Please provide any additional comments that you feel may clarify the impact that the SAGES Departmental Seminar and Capstone requirements have had on your department.

Nine respondents provided an answer for this question. Note: responses are presented unedited *except* in cases where a department could be identified. In those cases, references to the particular department were removed.

Adds complexity and cost to department operations, but also improves the educational experiences of our students.

Burdensome. It is difficult to get faculty to take capstone students, because of the expense in time and materials.

For small departments like ours the SAGES experience has been a constant intrusion. It is completely disingenuous of the university to ask faculty -- again -- if the SAGES experience works. Every time they ask we tell them no and we continue on with SAGES anyway. Basically the faculty was lied to when SAGES was originally adopted. No new faculty was hired to take on the SAGES experience and faculty have the choice of either not teaching required classes or teaching an overload. I'm afraid the logic defies me, but the university certainly won't change the system at this point.

In our department, we have had in place the essence of the department seminar (discipline-based writing) and capstone (synthesis of knowledge) elements for a long time. They are good elements to the UG education, but do have costs associated with them.

The advent of SAGES has not significantly affected our department in terms of the Capstone. We would like to have more control over the content of the Department Seminar, however.

The departmental seminar and the capstone projects have enhanced the research motivation and the general science-minded culture in the department. I see this system as very important and successful. I am happy to

teach Sages seminars in general and feel that this last phase is doing exactly what it is supposed to do. Bravo Sages!

The main problem with departmental seminar is making faculty who aren't great at discussion teach discussion courses. On the whole, we've selected courses that previously had fairly low enrollments, but that we considered important, to be departmental seminars. The main problems with capstones involve getting students to do them seriously

We're offering the capstone course for the 1st time this semester, so it's not clear what the impact is yet.

You force an answer for questions where we don't necessarily have a response, as in last section. I entered those numbers just to get out. The main thing department seminars do is constrain the courses students can take to meet part of their major requirement.

SAGES has had no impact on our capstone experience. We do not participate in the SAGES departmental seminars.

Capstone Faculty Survey

1. How would you describe your role as a SAGES capstone instructor?
 - a. I act mainly as a coordinator of student projects in my department – 7%
 - b. I act mainly as a mentor of students taking Capstone courses – 67%
 - c. In addition to coordinating student projects in my department, I also mentor students taking Capstone courses – 27%
2. [IF i or iii is chosen on question 1] How many capstone projects do you coordinate? – Range: 1-20; Average: 8.63
3. [IF i or iii is chosen on question 1] How many capstone mentors do you coordinate? – Range: 0-50; Average: 8.17

Time Allocation

In a typical week, how many hours do you spend [0; less than 1 hour; 1-2 hours; 3-5 hours; 6-10 hours; 11-15 hours; More than 15 hours]

4. Teaching SAGES Capstone students?
 - a. 0 hours – 22%
 - b. less than 1 hour – 15%
 - c. 1-2 hours – 31%
 - d. 3-5 hours – 25%
 - e. 6-10 hours – 6%
 - f. 11-15 hours – 0%
 - g. More than 15 hours – 1%
5. Advising SAGES Capstone students?
 - a. 0 hours – 8%
 - b. less than 1 hour – 30%

- c. 1-2 hours – 47%
- d. 3-5 hours – 14%
- e. 6-10 hours – 1%
- f. 11-15 hours – 0%
- g. More than 15 hours – 0%

6. Grading the work of SAGES Capstone students?

- a. 0 hours – 17%
- b. less than 1 hour – 47%
- c. 1-2 hours – 23%
- d. 3-5 hours – 13%
- e. 6-10 hours – 0%
- f. 11-15 hours – 0%
- g. More than 15 hours – 1%

Response options [No Change; Significantly reduced; Somewhat reduced; Somewhat increased; Significantly increased]

7. How has teaching a SAGES Capstone course affected the amount of time you are able to spend working on your own research/scholarship?

- a. No Change – 43%
- b. Significantly reduced – 4%
- c. Somewhat reduced – 45%
- d. Somewhat increased – 7%
- e. Significantly increased – 1%

8. How has teaching a SAGES Capstone course affected the amount of time you are able to spend working with students on undergraduate research?

- a. No Change – 51%
- b. Significantly reduced – 5%
- c. Somewhat reduced – 19%
- d. Somewhat increased – 19%
- e. Significantly increased – 7%

9. How has teaching a SAGES Capstone course affected the amount of time you are able to spend working with students on activities not related to coursework?

- a. No Change – 61%
- b. Significantly reduced – 4%
- c. Somewhat reduced – 22%
- d. Somewhat increased – 9%
- e. Significantly increased – 4%

Capstone Characteristics

About how often did you require your Capstone students to [Very often; Often; Sometimes; Never]:

10. Provide you with a written progress report
 - a. Very often – 17%
 - b. Often – 34%
 - c. Sometimes – 38%
 - d. Never – 11%

11. Give an oral report on their capstone project
 - a. Very often – 24%
 - b. Often – 36%
 - c. Sometimes – 32%
 - d. Never – 8%

12. Do you work with a person not otherwise affiliated with CWRU to teach or supervise SAGES Capstone projects? - 15% Yes, 85% No

13. [IF YES on 3] Why did you choose to work with a non CWRU-affiliated person?
 - a. Open ended responses included below

14. [IF YES on 3] What does this person contribute?
 - a. Open ended responses included below

15. What proportion of the students you are teaching or advising on their Capstone projects are pursuing majors or minors in your department? [open ended question. Responses are grouped below. Response on the left, percent of sample on the right]
 - a. 100% - 66%
 - b. 50-99% - 21%
 - c. 1-49% - 8%
 - d. 0% - 5%

Resources

16. Do you feel you have sufficient resources to teach/advise your Capstone students adequately?
 - a. Yes – 63%
 - b. No – 37%

17. What extra resources, if any, would help you improve the way you teach/advise your capstone students?
 - a. Open ended responses included below

Capstone Learning Goals

Indicate the extent to which you agree or disagree with the following statements [strongly agree, agree, disagree, strongly disagree]

18. Students are academically prepared to complete their Capstone projects
 - a. strongly agree – 37%
 - b. agree – 49%
 - c. disagree – 8%
 - d. strongly disagree – 6%

19. Students understand the requirements of their Capstone projects
 - a. strongly agree – 26%
 - b. agree – 47%
 - c. disagree – 19%
 - d. strongly disagree – 8%

20. The SAGES Capstone course challenges students to push themselves, academically
 - a. strongly agree – 48%
 - b. agree – 41%
 - c. disagree – 11%
 - d. strongly disagree – 1%

21. The quality of students' written communication has improved since the implementation of SAGES
 - a. strongly agree – 13%
 - b. agree – 45%
 - c. disagree – 33%
 - d. strongly disagree – 8%

22. The quality of students' oral communication has improved since the implementation of SAGES
 - a. strongly agree – 17%
 - b. agree – 49%
 - c. disagree – 25%
 - d. strongly disagree – 9%

23. The quality of students' critical thinking skills has improved since the implementation of SAGES
 - a. strongly agree – 17%
 - b. agree – 50%
 - c. disagree – 26%
 - d. strongly disagree – 7%

24. Students will be able to use their capstone experience to demonstrate their ability to undertake a major project to future employers or graduate/professional schools
- a. strongly agree – 42%
 - b. agree – 44%
 - c. disagree – 8%
 - d. strongly disagree – 6%
25. Students will be able to use their capstone experience to demonstrate their skill in writing to future employers or graduate/professional schools.
- a. strongly agree – 27%
 - b. agree – 54%
 - c. disagree – 18%
 - d. strongly disagree – 1%

Satisfaction

26. Taken as a whole, how would you describe the experience of teaching a SAGES Capstone course?
- a. Excellent – 25%
 - b. Good – 47%
 - c. Fair – 18%
 - d. Poor – 10%
27. What factors positively affected the experience of teaching a SAGES Capstone course?
28. What factors negatively affected the experience of teaching a SAGES Capstone course?
29. How did you come to teach this SAGES Capstone course?
30. Is there anything else you would like to say in regards to the experience of teaching a SAGES Capstone course?
- a. Open ended questions included below

Optional

28. In which school/college is your primary appointment?
- i. Case School of Engineering – 6%
 - ii. College of Arts & Sciences – 77%
 - iii. Frances Payne Bolton School of Nursing – 1%
 - iv. Mandel School of Applied Social Sciences – 3%
 - v. Physical Education & Athletics – 0%

- vi. School of Dental Medicine – 0%
- vii. School of Law – 0%
- viii. School of Medicine – Basic Sciences – 6%
- ix. School of Medicine – Clinical – 0%
- x. Weatherhead School of Management – 6%
- xi. Other – 1% (UCITE)

Open Ended Responses

Note: responses are presented unedited *except* in cases where a department, student, or faculty member could be identified. In those cases, references to the particular department, student, or faculty member were removed. A total of 9 comments were edited.

[If faculty works with a non CWRU-affiliated collaborator] Why did you choose to work with a non CWRU-affiliated person?

Access to research resources such as ship time or other ongoing data gathering programs.

Brings valuable industrial skills to class.

Each of the six projects (4 students/project) is associated with a local industrial chemical engineering facility, and has an engineer contact at that facility.

I needed an outside institution for the service learning component

I selected two coaches (mentors) who have the desired specialized expertise (management consulting experience).

NASA has opportunities for my students COOP companies have opportunities for my students

Students are encouraged to design their own capstone research and in many cases my own expertise is not enough.

Students identify their mentors. One this year is from the FBI, where the student worked over the summer. This typically happens for one or two of our majors each year.

The other person is a faculty member at Cleveland Institute of Art; his participation was necessary to develop a class bringing science and art students together.

The student was already doing a research project with a physician at University Hospitals. She needed a faculty member to act as instructor of record for her SAGES capstone, but her research supervisor did not have authority to do so. I was peripherally involved in the research project and not directly involved in mentoring her research. But I was familiar enough to evaluate the quality of her final paper.

The student was interested in their project, which was medically related.

[If faculty works with a non CWRU-affiliated collaborator] What does this person contribute?

Co-ordination, people, and space

Each coach works directly with a set of three - five student teams to coach the teams through the process of conducting a consulting project for a Cleveland-area organization.

Expertise in project management, industrial organizations, technical writing and technical project management.

Research problems of interest to NASA and to the students, industrial problems of interest to the companies and the student interests

Research supervision and direct mentoring of the student.

Resource agency personnel provide both mentoring and teaching support for the students.

The outside mentors provide the project concept and many of the resources to carry it out.

These persons create the projects and contribute technical expertise and necessary data (and sometimes use of facilities).

They are providing the data for the student's project, and some (though not sufficient) advice and support.

Unique set of artistic skills and perspectives, connections to artistic world for bringing in class guest lecturers.

Varies; instrument time or specific expertise is most common.

What extra resources, if any, would help you improve the way you teach/advise your capstone students?

A certain number of capstones should count as a course for course load purposes in cases where the capstones are independent studies.

A good video camera, the ability to provide tape (digital) recorders

Additional faculty to oversee their work

Better facilities for the arts!

Computer facilities for student

Consumable supplies to support their experiments

Discretionary funds possibly for travel, some supplies, and refreshments during presentations.

Extra instruction in writing skills.

Financial resources to help with their projects, reduced teaching load due to the amount of time that these projects take

Funding aid for capstone students doing undergraduate research.

Funding for student projects is the main problem. Although I have not had the load of these students that some of my colleagues have had, the time commitment in working individually with students needs to be recognized in the assigned teaching load.

Funds to support printing their posters for SOURCES would be welcome. A campus license to turnitin.com or other plagiarism detection program.

Funds to support students that want to do original research projects - buy tests, subject payment etc.

Help with reading papers Help with additional expertise from faculty in other depts.

I have 13 grad students and 2 postdocs to help me with these students. That is more than adequate. I have plenty of external grant support to fund their projects.

I have had access to Howard Hughes funds to the Biology Dept. for materials and equipment. Without those funds my capstones would require funds be made available for materials and supplies.

I think Capstones should be voluntary, not mandatory, so that only highly motivated students would do them. Several students I have advised were "forced" into projects by the capstone requirement, and this is disastrous for them and for me.

It is not clear how seriously the student(s) are taking this activity. When a student does not show enough initiative on his or her own, I do not have the time to do the project for them, and sometimes there can be very little progress.

Lab supply allowance

laboratory equipment, space

Money for laboratory supplies

Money for research not supported by grants.

Money for research, instrumentation time, equipment, etc..

More faculty in our small department.

More guidance on capstone requirements/expectations. The expectations seem quite variable across the university, and even within the department.

MORE tenured or tenure-track faculty in XXX to share this burden
more time in the day

More time to spend with the students.

More time, reduction in other service/teaching duties

Our department is low on research infrastructure; particularly instrument and technical support

Research expenses are limited by our own grant funds we may have available at any given time.

Small research fund to pay for student research expenses apart from KSL sources.

There should be a fund students can easily use to purchase materials and supplies for their projects. This should not be imposed on individual faculty, departments and the students themselves.

Time, writing support

To have this "count" as an actual part of my teaching load; as it is, it's just an additional uncompensated burden

When advising students not in my department, it would be nice to be given a list up front of all the benchmarks that have to be met and the deadlines.

[If the faculty was satisfied with the experience of teaching a Capstone course] What factors positively affected the experience of teaching a SAGES Capstone course?

Ability to mentor and work with students in a creative venture. However, none of this can be credited to SAGES.

Actually, my advising of a number of seniors in their capstone course is a natural evolution from our previous capstone course which anticipated SAGES

All the students are doing research in my lab so they are contributing to the overall ambiance and productivity of the lab. Many have also worked in the lab for extended times so resulting in a much greater productivity.

Close contact with motivated students focused on specific topics; working with students

Who I taught in First Seminar as seniors

Close interaction with students and the opportunity to work with works of art in the collections of the Cleveland Museum of Art

Enables research to get done using undergrads

Good students, and a strong culture of student research in the department.

Good students.

Having the concurrent department seminar for the capstone

Helpful to have students conducting their Capstones in my lab--assistance with data collection is particularly valuable for me and for them.

High interest on the part of the students: they really liked doing a project that was self-initiated.

I am working with two French majors on their capstone projects, both enthusiastic about their projects and well prepared.

I enjoy seeing students gain confidence in their abilities. I have been mentoring undergraduate students in research before the capstone concept and see no difference between my experience before or after the program was implemented.

I enjoy taking students who have not had a real research experience and exposing them to the challenges that occur in completing a real project.

I enjoy working with students on research and writing projects, which is what I do with SAGES capstones.

I had one excellent and one weak student. The experience was quite different for each.

I liked the independence of the students and their enthusiasm and commitment to work hard on the topic.

I think the students here are generally very good and being in the medical school, I don't get much contact with undergraduates.

Introducing cutting-edge research to students.

It was enjoyable to interact with industrial contacts.

It's fun to work with an enthusiastic group of senior majors. This also helps me stay abreast of the research efforts of our faculty.

One-to-one interaction with students

Our experience is research-based. Most students in our dept carry out research. This experience ties up all ends nicely.

Quality of students

Quality of students

Quality of students and their engagements

SAGES Capstone is simply the senior project experience for engineering students and as such is the same as it was before SAGES came into existence. SAGES has not had any impact on the purposes or outcome of the senior project course.

Student being exceptionally pleasant

Student enthusiasm

Students get more directed research experience than might be available to them.

Students have opportunity to pursue research in an independent manner. I have supervised some very gifted individuals.

Students that are truly prepare do to the work really demonstrate a significant change and have outstanding end products

The course I teach is one that I believe will have a lasting positive impact on my students.

The credit, grade, the written and oral requirement is a huge incentive.

The frequent interaction with the students

The material, and the willingness of students that matched my passion

The projects can be exciting. The work is intensive but the outcome is rewarding.

The senior capstone was integrated into the department curriculum effectively.

Watching the students gain confidence and take charge of their own projects, conduct their own research, and develop their own ideas.

Worked with an interesting student who really benefitted from the capstone.

Working individually with students is always energizing.

Working one-on-one with a student

**[If the faculty was dissatisfied with the experience of teaching a Capstone course]
What factors negatively affected the experience of teaching a SAGES Capstone course?**

I felt I had little choice in the matter.

We have a lot of majors, and someone had to take them on. I felt I needed to shoulder my share of the load, so I took on 6 students.

Many of us are having to teach this 'course' with no compensation.

Because we aren't having a "regular class" with "regular meetings", there is no easy opportunity for the students to get to know one another and help each other. I had an initial start-up meeting, but I've had to structure the rest of it as an independent study in which students send me assignments each week.

Our department hadn't nailed down clear requirements to distinguish the capstone from our prior senior honors project, so I was having to design this course on the fly.

The students are all doing projects on topics of their own interest, none of which are in my areas of expertise.

We don't have the resources to have this many students actually implement research studies, so they are just doing literature reviews and posters of these literature reviews. It seems a bit lame.

There was some confusion in communication between the students and the SOURCE office that led to last-minute stress when it came time to print posters.

Forcing students to do research is an extremely poor idea. Capstones should be voluntary.

Having enough time to make the experience worthwhile for the students

It is just a requirement for the students; they are not interested in research.

Lack of resources/time

Most of the students taking Capstone in my lab do not have sufficiently large blocks of time available to be able to carry out the necessary experimental work. As a result they do not produce anything worthwhile.

No resources more work, less willingness on the part of students to learn for the sake of the learning experience, just want to complete the hurdle

One semester isn't enough for a serious senior project. We don't have the resources in my small department to give the students a structured program over an entire year. The capstone project is like the rest of SAGES, in my mind. A good idea but not properly funded.

The biggest problem is that the course is an "extra" or "overload" course for the instructor; I would spend more time preparing and getting them to work, but it takes away from my research.

The effort level of the student.

The incompetence of some students.

The student was not academically strong and had a great deal of trouble with writing

The time burden is significant, yet for most students they're simply interested in minimal compliance with minimal impact on their GPA.

Time demands, necessity of students doing least amount of work possible

Time, lack of preparation on student's part

Too many students for one faculty member to do a good job. Need assistance with reading and grading papers.

How did you come to teach this SAGES Capstone course?

A student contacted me directly about supervising his research.

Another professor suggested the student contact me to supervise senior writing project.

Approached by individual students

Assigned by dept.

At the request of students.

Because I was assigned to coordinate the senior project course which is required of all graduating engineers in the department

By default. As the Academic Representative for the department, many things fall to me

By default.

By necessity

Drew straws to see who would be instructor of record. There is no formal course; in our dept. the capstones so far have all been research projects with individual faculty or research staff.

I am currently the only one in the department with the expertise, training and interest to teach the course, given its content.

I am serving only as the instructor of record for one student whose mentor is in another department. I have not been directly involved in most of my department's capstone activities, which have been run by the department collectively.

I am the designated person in my area of concentration

I created the course

I developed both courses.

I felt stuck. I had lots of students approaching me, and someone had to say yes to them eventually. I said no to as many as possible early on, directing them to the classroom-based version of the course. But then when that class filled up, it seemed the students had nowhere to go.

I had the student I worked with in a class a year earlier.

I have a secondary appointment under which I have worked with undergraduates doing honors and senior project; I also sometimes teach a course that is cross-listed and open to advanced undergraduates.

I have been mentoring undergraduates in research for more than 30 years. This is just a continuation of what I have always done.

I run my own scientific research lab and I strive to offer graduate level of training to undergraduate research experiences. They work on ideas related to my research program.

I serve as a mentor, not teaching. I mentor based on student request

I taught the existing course that was developed into a capstone.

I was approached by the student. In one case, a student was simply assigned to me without my consent because she urgently needed an advisor, I had left for the weekend, and I was not there to demur. This is inappropriate and extremely demoralizing for me and for the student.

I was asked by the student to advise his project.

I was asked to adapt and pilot the course several years ago from a course that was offered to graduate students. The course was successful and met SAGES capstone requirements.

I was involved in designing it

I was requested to be a capstone advisor

I was the one most competent to do so, for the topics suggested by the student in my department, we offer independent studies. Most of the students I've advised have been assigned to me by the chair.

In our small department, we're all called upon to teach this periodically.

In two of the three students, they approached me after first taking one of my courses. For the third student, I invited her to participate in a semester-long, off-campus project that lent itself to a Capstone project.

Independent study has always been an option, and having students in a SAGES Capstone is no different than in the past. Only the numbers of students is changing.

It is simply an extension of my normal teaching of undergraduate research but with more students than previously.

It was a good fit for my background, and I had experience teaching interdisciplinary courses at another University.

Large group of undergraduate advisees and research students.

My chair asked me to do it.

No idea.

Normal teaching assignment.

On behalf of my Department I submitted to the Curriculum Committee a design of this course which can be taught by different professors. For example, " This project allows for original thought and for the tailoring of the research to the student's interests. The student will integrate theory, methods, and various issues, as

he/she applies critical thinking skills and insights to the analysis of the subject chosen." Evidently this year I was the first to teach this course in my department.

One grew out of an ongoing research project with the student since summer 2008.

One of the students asked me to be his Capstone advisor, and he had obtained a high grade in a course I taught, so I agreed. A second student asked me to be his advisor, and was academically weaker, but I still agreed (with hesitation). A third student was one of my BA major advisees and was unable to get anyone else to be his Capstone advisor, so I also agreed to take him on against my better judgement. So far, he appears to be clueless about what he is supposed to be doing.

Our department only offers the capstone course every other year... and two students who needed it to graduate and wanted to take the capstone in art history had failed to take it the previous year.. so I offered it as a quasi-independent study

Previous students

Prior instructor retired, and I had an idea for new type of course.

Program Director. Solely responsible for capstone experience.

Request from a student

Requested by students.

Research interest of students

Research is required in our department and students have requested that I supervise them to meet the Sages research requirement.

Responded to call for volunteers.

See above

Somebody had to do it

Somebody had to do it.

Someone has to do it.

Student chose me to do capstone project with

Student contacted me

Student in our department needed appropriate advisor.

Student selected me as advisor for senior project.

Students approached me

Students asked me to be their advisor. Glad to do it. The process is exactly like what we had in our department prior to SAGES capstone.

Students asked me to be their capstone advisor

Students asked me to teach them.

Students sought out research opportunities in my lab.

Students thought I would be a good instructor.

There was no one able or willing to teach it

Volunteered

Volunteered to develop the department seminar in conjunction with the capstone as director of Engineering Physics program

Is there anything else you would like to say in regards to the experience of teaching a SAGES Capstone course?

1. The goal of undertaking a "major research project" is inconsistent with a one semester capstone. 2. I joined the faculty in 2006, so I cannot comment on progress since SAGES was implemented.

A disaster

Capstones, like SAGES teaching, are in practice a mandate without the funds needed to support them; few extra teachers, little extra funding yet creating a very significant burden on faculty time. Certainly in my case, any extra money the school might have gotten via tuition is lost in the form of the overhead on grants I can no longer support.

Dump it! Students who really want to do research do have that opportunity and are sufficiently motivated that they do a decent job. Students who are compelled to take on a research project but are not particularly interested in it waste everybody's time and don't get anything worthwhile out of the experience.

Helpful to me in doing research.

I am new to CWRU; I started as a faculty member in Fall 2008, and taught a capstone that semester. I was surprised to find that the writing skills of the students was bimodally distributed: about half the students were excellent writers, and the other half had very poor writing abilities (e.g., terrible spelling, grammar, incomplete sentences in the middle of paragraphs, etc). I don't yet have enough experience at CWRU to know if this observation is common, or if the class I taught was just an outlier. But if this is a common problem, some effort must be made in the earlier SAGES classes to improve student's basic writing skills.

I get at least some recognition for my work because I'm listed as the course instructor (although the course itself is an additional duty added to a normal teaching load in our department.) Our mentors get no formal recognition; it's just another duty piled on top of too many responsibilities.

I repeat that all SAGES Capstones should immediately be made voluntary.

I think it had detracted a lot from completion of honors projects with a select few talented students.

I think the idea of having students do independent projects is valuable but it is extremely labor and time intensive

I think that the capstone is the most important part of SAGES. As mentorship program it allows students to take the information they acquired in the classroom and use it in a more realistic research program. Students who have taken either of my capstone courses typically look upon it as a most rewarding experience. The trick is to keep the types of capstone as wide as possible. Not all students thrive in a lab situation, but may enjoy a service learning experience or in depth library research project.

I would recommend NOT having this as a requirement. I was always concerned about the capstone, even back when SAGES was being discussed initially, but with the assurance of being able to hire more faculty I was more optimistic back then. This is a major burden on the faculty and impedes us from completing other important tasks in research, teaching, and administration. And I'm not sure that the small "value added" for the students is really worth all of the effort that this takes from faculty.

In general undergrads who do research in my lab spend more than a single semester there. I am of the opinion that a true capstone needs to be 2 semesters, and perhaps only 3 credits spread over those two semesters. One of the deficiencies of the undergrad education is the lack of time for reflection on any course/undertaking. Therefore, in many ways the capstone will evolve into just one more course as the time necessary to do more than this dwindles. The exception will continue to be undergraduate research where, as indicated earlier, students generally spend longer in the program.

In order to do justice to our majors, we need MORE tenured or tenure-track faculty, among whom we can evenly distribute the workload. In all honesty, those of us in the section have had to encourage our majors to do their capstone in other disciplines, as the 3 of us also have to take on Senior Honors Thesis students and Indep. Study students both semesters.

It is satisfying and encouraging. Students put in more effort without complaint

It is very expensive to have inexperienced undergraduates doing research in the lab for one semester. I had a very capable technician, paid by my research grant, who supervised the students in the lab. I could never have done it myself time-wise.

It will be under constant revision

Many of these questions are meaningless to instructors in the School of Engineering. CSE has taught capstone classes before SAGES and I have seen no changes due to SAGES. As far as I can tell there has been no additional training or support from SAGES in teaching a capstone class. More significantly, I have not seen any increase in critical thinking, creativity, oral communications, or writing skills demonstrated by the students taking my capstone classes over the past five years.

My interaction with SAGES was only to be interviewed by SAGES teams 4-5 per semester, I never reviewed their work or saw the results of their questioning

My students have all worked on research projects with the goal of collecting primary data, organizing and analyzing these data, with a written final report and oral presentation. I meet with the student weekly and they must demonstrate progress. I have not received any guidelines about the program in terms of the goals of a Capstone experience other than it provides an opportunity for a student to conduct research with a faculty. Nor do I see any departmental means of project oversight. Students projects are often difficult to complete in a single term. I would like to see students spend an academic year on the project. Is there a mechanism where the results of the projects (or at least project titles) can be published and disseminated throughout the university?

My teaching has been for XXX students, and we have required a capstone experience years before sages existed, so sages has neither helped nor hurt in that regard. I can see how it can work a significant hardship in some depts with hundreds of majors like biology.

Our SAGES Capstone course was basically a course we had already been teaching students who wanted to earn honors; all we did was change the name. I like the course, I only wish it were not an overload. Given that it really isn't a different course, I don't really see any advantage to the SAGES system; the main goals of writing across the curriculum and seminar-style courses can be achieved without as great an outlay of university resources (i.e., a huge program with a whole set of new requirements, support faculty and staff, and centralized bureaucracy). Given these lean times, the fact that the administration pushed the program through with promises of added faculty that never materialized, and the extreme unpopularity of the

program among students as documented by survey after survey, what is the continuing justification for the program in its present form? Inertia?

So far the way we do it (research projects with individual faculty) has worked reasonably well. There is the problem of weaker students. Previous to SAGES, most of our students did these projects anyway, so there hasn't been much of a shift here. However, the difference is that previously if a student was not prepared to do research, we just didn't offer that student a research experience. Now, we have to make sure all students have a capstone experience. So this is kind of the "hot potato" -- given a senior class with one or two weak students, who has to advise that student in a capstone? Takes a lot of time, and honestly has the potential to trigger resentment by faculty if the others get "good students". So far, this hasn't really happened, but it's something that I am concerned about in general....

Something like it is indispensable to a liberal arts education.

Students have to be given freedom to direct (with guidance) their own research project. Therefore, students shouldn't have a clear understanding of what is required, and neither should the advisor. "What is required" is part of the outcomes of the project.

The course is still evolving. I am still searching for the best ways to increase the sophistication of critical thinking students bring to their capstone topics.

The demands of teaching every single student are straining our department. WE do not have enough faculty to provide individual experiences to all students who seek the experience, and are unsure how to best satisfy the need.

There is a learning curve for integrating these projects into the existing set of duties which I am in the process of mastering. Normally, I require a great deal from my independent study students, work with them closely, and am reluctant to take them on so that they see my willingness to work with them as a privilege. Now I sort of feel obliged to take them on because our department is small and I know they need capstones, but I have discovered that they do not have the self-discipline of the ones I would ordinarily accept. Time constraints from admin service and my regular teaching have made it harder to have the intense interaction I would ordinarily have. Next time I am going to approach the projects in a different spirit (but also, I hope, have more free time for them).

This has the potential to be unmanageable with greater numbers. The intensiveness of the projects require a great deal of supervision, and with more than a handful of students, would become overwhelming.

This is a time intensive activity that does not scale well as numbers of students seeking independent study increase. The numbers of capstones thus threatens the quality of the experience for both students and faculty.

This is very time consuming to supervise individual student research but I feel it is the most important and rewarding teaching that goes on in the sciences.

We need a better way to train other people outside of CAS to work with our students. SOM takes a lot of our students, but it is hard to make sure they are getting enough training and mentoring.

Writing across the curriculum would be a much better experience for the student

Your questions above in regard to the impact of SAGES on the preparation of students are poorly worded. I clicked "somewhat agree" because you did not have the option of "hard to know" or something like that.

STUDENT SURVEY

Data Quality

First Semester Population

A list of 472 students enrolled in Capstone courses was obtained from the registrar. Of these, 10 were graduate students, 3 were nondegree students, and 55 students started at Case before the full implementation of SAGES. These students were removed from the list, leaving a final population size of 404.

First Semester Sample

From our final population of 404 students, 177 responded to the survey (44%). The sample favors women (43% of population, 53% of sample). Similarly, students in the Arts & Sciences² are overrepresented (41% of population, 53% of sample) and students in Engineering were underrepresented (37% of population, 25% of sample). There was no significant difference between the sample and the population in terms of ethnicity. Those who answered the survey had a significantly higher GPA at the beginning of AY08-09 (3.52) than those who did not (3.40).

Second Semester Population

For the second semester we requested that nondegree students, graduate students, and students starting at Case before the full implementation of SAGES be removed prior to creating the final list. Our final list, obtained from the registrar, consisted of 516 undergraduate students enrolled in capstone courses.

Second Semester Sample

From our final population of 516 students, 194 responded to the survey (38%). As with the first semester, the sample favors women (36% of the population, 44% of the sample) over men (64% of the population, 56% of the sample). Again, as with the first semester sample, the second semester sample favors students in the Arts & Sciences (58% of the population, 66% of the sample) whereas Engineering students are underrepresented (31% of the population, 23% of the sample). There was no significant difference between the sample and the population in terms of ethnicity. The difference in GPA between those who took the survey (3.43) and those who did not (3.34) was non-significant.

Total Population

Instead of producing two reports, one for each semester, all students who took the survey have been combined into one dataset for the present report. Some students (84)

² Schools determined using "Primary Program" variable in SIS.

took 2-semester capstones. After removing the duplicate students, our final population consisted of 836 students.

Of those 84 students who took a 2-semester capstone, 22 took the survey in the first semester, 27 took the survey in the second semester, and 11 took the survey in the second semester. To maintain consistency we used students' second semester responses when available. If a student taking a 2-semester capstone replied only in the first semester, we used their first-semester responses. Ultimately, 11 of the responses from 2-semester capstone students are from the first semester and 27 are from the second semester.

Total Sample

From our final sample of 836 students, 360 responded to the survey (43%). The sample favors women (46% of the population, 54% of the sample). Similarly, the sample favors students in the Arts & Sciences (51% of the population, 59% of the sample) whereas engineering students are underrepresented (32% of the population, 24% of the sample). The sample also favored students of unknown ethnicity (13% of the population, 16% of the sample) whereas Asian students were underrepresented (23% of population, 18% of sample). Those who answered the survey had a significantly higher GPA at the beginning of AY08-09 (3.35) than those who did not (3.47).

How do we determine school?

In the above sections, the “primary program” variable from SIS was used. This does not take into account double major/dual degree students. For the most part, students took capstone courses in the school of their primary program; however, about 5% of students took Capstone courses in a school outside of their “primary program.”

Results³

Capstone Characteristics:

1. My capstone course was in my major department (or one of my major departments):
 - i. Yes - 94%
 - ii. No - 6%
2. One of my mentors/advisors was from a department outside my major(s)
 - i. Yes - 29%
 - ii. No - 71%
3. SEMESTER 1: One of my mentors/advisors was not a faculty member at the University

³ Note: Due to rounding, not all percentages in all questions add to 100%

- i. Yes - 30%
 - ii. No - 70%
4. SEMESTER 2: One of my mentors/advisors was not a faculty member at the University
- i. Yes - 17%
 - ii. No - 80%
 - iii. Don't know⁴ – 3%
5. My capstone was completed in:
- i. One semester - 82%
 - ii. Two semesters - 18%
6. If a two semester capstone, this is my:
- i. First semester - 30%
 - ii. Second semester - 70%
7. My capstone was:
- i. An individual project - 62%
 - ii. A group project - 38%
8. If a group project, how many in the group?
- i. 2 - 19%
 - ii. 3 - 34%
 - iii. 4 - 31%
 - iv. 5 - 14%
 - v. 7 - 1%
9. My capstone could best be described as:
- i. An experimental research project - 46%
 - ii. A theoretical research project - 21%
 - iii. A creative endeavor, such as writing a short story - 4%
 - iv. A performance, such as a musical production or a part in a play – 3%
 - v. Library or historical review - 9%
 - vi. Other - 17%
10. About how many hours did you spend in a typical 7 - day week on your capstone project?
- i. None - 1%

⁴ "I don't know" was an option in the second semester, only. Hence, these two questions are listed separately.

- ii. Less than one hour - 2%
- iii. 1 - 2 Hours - 14%
- iv. 3 - 5 Hours - 35%
- v. 6 - 10 Hours - 27%
- vi. 11 - 15 Hours - 10%
- vii. More than 15 Hours - 11%

11. Sufficient resources were available to complete my capstone project⁵

- i. Strongly agree – 43%
- ii. Somewhat agree – 46%
- iii. Somewhat disagree – 7%
- iv. Strongly disagree – 4%

12. About how often did your capstone project require the use of research laboratories?

- i. Very often - 30%
- ii. Often - 8%
- iii. Sometimes - 7%
- iv. Never - 55%

13. About how often did your capstone project require the use of Case libraries?

- i. Very often - 18%
- ii. Often - 16%
- iii. Sometimes - 34%
- iv. Never - 32%

14. About how often did your capstone project require the use of the Freedman Multimedia Center?

- i. Very often - 2%
- ii. Often - 1%
- iii. Sometimes - 10%
- iv. Never - 87%

15. About how often did your capstone project require the use of other Case Facilities?

- i. Very often - 10%
- ii. Often - 11%
- iii. Sometimes - 15%
- iv. Never - 65%

⁵ Question asked only in second semester.

16. About how often were you required to hand in a draft of your capstone project or provide your advisor with a written progress report?

- i. Very often - 12%
- ii. Often - 32%
- iii. Sometimes - 42%
- iv. Never - 15%

17. About how often, before your final presentation, were you required to give oral reports on your capstone project?

- i. Very often - 10%
- ii. Often - 24%
- iii. Sometimes - 42%
- iv. Never - 24%

18. How would you describe the experience of defining a capstone project?

- i. Very easy - 9%
- ii. Somewhat easy - 29%
- iii. Somewhat difficult - 51%
- iv. Very difficult - 12%

19. How would you describe the experience of choosing a mentor/capstone advisor?

- i. Very easy - 38%
- ii. Somewhat easy - 37%
- iii. Somewhat difficult - 17%
- iv. Very difficult - 8%

Evaluation of mentor/advisor:

20. Which option best describes the involvement of your department and/or advisor during *development* of your capstone project

- i. My advisor was not involved in the development of my capstone project; it was largely my own idea - 17%
- ii. My advisor was somewhat involved in the development of my capstone project - 34%
- iii. My advisor was highly involved in the development of my capstone project - 34%
- iv. My advisor developed my capstone project for me - 15%

How would you evaluate the feedback your advisor provided:

21. On the *development* of your capstone project?

- i. Excellent - 47%

- ii. Good - 32%
- iii. Fair - 14%
- iv. Poor - 6%

22. On the *written* portion of your capstone project?

- i. Excellent - 38%
- ii. Good - 35%
- iii. Fair - 19%
- iv. Poor – 9%

23. On the *oral report* requirement of your capstone project?

- i. Excellent - 38%
- ii. Good - 35%
- iii. Fair - 18%
- iv. Poor - 9%

24. Overall, how would you evaluate the *quality of instruction* you received from your capstone advisor

- i. Excellent - 45%
- ii. Good - 33%
- iii. Fair - 15%
- iv. Poor - 8%

Capstone Learning Goals:

To what extent did your capstone experience require you to:

25. Apply practical skills to address a new problem/issue?

- i. Very much - 44%
- ii. Quite a bit - 27%
- iii. Some - 21%
- iv. Very little - 9%

26. Apply analytical skills to address a new problem/issue?

- i. Very much - 47%
- ii. Quite a bit - 30%
- iii. Some - 18%
- iv. Very little - 6%

27. Apply skills you've learned in other courses in your major?

- i. Very much - 40%
- ii. Quite a bit - 31%

- iii. Some - 19%
- iv. Very little - 10%

28. Participate in cross - disciplinary learning?

- i. Very much - 26%
- ii. Quite a bit - 24%
- iii. Some - 28%
- iv. Very little - 21%

To what extent did your capstone experience contribute to the improvement of your:

29. Oral communication skills?

- i. Very much - 19%
- ii. Quite a bit - 23%
- iii. Some - 39%
- iv. Very little - 18%

30. Writing skills?

- i. Very much - 18%
- ii. Quite a bit - 25%
- iii. Some - 38%
- iv. Very little - 18%

31. Critical thinking skills?

- i. Very much - 32%
- ii. Quite a bit - 31%
- iii. Some - 28%
- iv. Very little - 10%

To what extent do you believe you will be able to use your capstone experience to:

32. Demonstrate your ability to undertake a major project to future employers or graduate/professional schools

- i. Very much - 43%
- ii. Quite a bit - 23%
- iii. Some - 21%
- iv. Very little - 13%

33. Demonstrate your skill in writing to future employers or graduate/professional schools

- i. Very much - 25%
- ii. Quite a bit - 25%
- iii. Some - 31%

- iv. Very little - 20%

Overall Evaluation:

- 34. The departmental seminar was helpful preparation for the capstone.
 - i. Strongly agree - 12%
 - ii. Somewhat agree - 35%
 - iii. Somewhat disagree - 25%
 - iv. Strongly disagree - 28%

- 35. I feel a sense of accomplishment in completing this capstone.
 - i. Strongly agree - 53%
 - ii. Somewhat agree - 32%
 - iii. Somewhat disagree - 6%
 - iv. Strongly disagree - 9%

- 36. The capstone reflected the sum of the knowledge and skills required for my major(s).
 - i. Strongly agree - 29%
 - ii. Somewhat agree - 38%
 - iii. Somewhat disagree - 19%
 - iv. Strongly disagree - 15%

- 37. The capstone was an appropriate culmination of my undergraduate experience.
 - i. Strongly agree - 34%
 - ii. Somewhat agree - 35%
 - iii. Somewhat disagree - 13%
 - iv. Strongly disagree - 19%

- 38. The capstone was one of the most satisfying parts of my academic experience at Case.
 - i. Strongly agree - 23%
 - ii. Somewhat agree - 28%
 - iii. Somewhat disagree - 24%
 - iv. Strongly disagree - 25%

- 39. Taken as a whole, how would you evaluate the capstone experience?
 - i. Excellent - 27%
 - ii. Good - 38%
 - iii. Fair - 23%
 - iv. Poor - 13%

General Comments

The following is the list of comments made by students on the final open-ended question of the survey. Responses are presented unedited *except* in cases where a particular student or faculty member could be identified, or in the case of profanities. Profanities and references to the particular student or faculty member were removed or replaced with "XXX." Eleven (11) comments were edited.

A two semester project might have been wiser.

Although this was a difficult experience because of the issues that were addressed and the responsibility it put on the individual to present the stories in a clear honest manner, I think that this experience was a well rounded introduction to dealing with the more difficult aspects of theater. I also believe that this experience helped me as an individual to appreciate the gravity of my goals as an actress.

As a biochemistry major there are not many options for our capstone. While I believe research may be beneficial to many undergrads going to graduate programs and med school, I am not in the least bit interested in the research side of biochemistry. In the fall

I am attending pharmacy school and will not apply what I have learned throughout this experience in anything I do. It would have been nice to have an alternative capstone experience if research is not something you are going into or interested in. In addition the mentor I chose was not helpful throughout the entire process, making the experience that much more frustrating.

As one of the few biochemistry majors who did not participate in undergraduate research *at this university* I was assigned a library research project for my capstone. The other students are writing formal lab reports in a publishable style and can refer to their principal investigator and the graduate students in their labs for assistance. I was left mainly on my own, and I felt very hesitant to develop a concept for my literature review.

I became very unsure of my abilities and was not inclined to work on the project. I suspect that more frequent meetings with my advisor would have pushed me to work harder. An interesting alternative would be to pair students who have not worked in labs.

Working regularly with another student would probably also have been more effective. I can imagine meeting with my partner on a weekly basis to evaluate relevant literature and fit the evidence into a framework for a comprehensive literature review. As it is, I am trying to incorporate psychological concepts and neuroscientific research into a biochemical framework - and it is extremely intimidating! Anxiety over the capstone has kept me from having an enjoyable semester.

Being able to choose my project and team members would have made the project much more enjoyable and helped me deliver better results to my client.

Capstone seminar was thrown together by the department at the last minute, not much direction about the project was available from department staff.

Did not receive enough support from TAs and at times the professor.

Different capstone experiences vary by a huge margin depending on what route is taken. Students who undertake senior design have a much heavier workload than students who undertake research capstones (particularly in BME), and some capstones are even lab work or co-ops in which the student is paid to complete it.

Dr. XXX was a great mentor and advisor.

Capstone course not well organized, felt like the project was pushed to the last month of the semester, not much check points along the way

For a number of majors, the capstone was a poor fit or poorly designed. The math department straight up told me that they didn't want to deal with capstone projects because they didn't have anything worthwhile for students to do, and that I should do my project in my other major. In music, a senior recital, which everyone does anyway, was required, and then an additional research paper, which wasn't particularly different from research papers I had done for other classes, and other than having one more paper under my belt, didn't particularly enrich the experience of being a music major.

For science majors, it is nearly impossible to complete a capstone project in one semester with 9-10 hours of work per week. Most science majors needed to participate in a summer research program or a paid work position (40 hrs per week) in addition to their semester in order to learn the basic skills required before embarking on a full project. I'm not sure how to rectify this problem. Just be aware that the training needed to be successful in a laboratory takes at least 10 hours per week for a whole semester.

For the biochemistry department, there were no deadlines throughout the semester. There is only a deadline for the final paper and final poster. They also told us they were disappointed in the quality of work done by previous seniors, but did not give us complete directions and expectations for the paper and poster. I understand that some students may not have their projects done and setting rough draft deadlines may be hard, but it is very difficult to write a research paper for the first time with very few guidelines and no feedback from the people grading the papers. It would be useful to at least provide some student examples of what you are looking for. Or review the paper writing skills at the end of BIOC 373 instead of the beginning - learning about them in September doesn't help me very much in April. Also, maybe you should assign every student a capstone advisor that understands the expectations of the project. We can use our PI's, but they aren't necessarily in the biochemistry department and cannot provide any help specific to the capstone project.

For the question "The capstone reflected the sum of knowledge and skills required for my major(s)": It would be difficult, if not impossible to come up with a project that spanned the breadth of knowledge and skills required for my major.

Hard project, but my group worked it out. XXX barely discussed the project.

I am a biochemistry student. Which wasn't addressed on this survey. I had to work with a professor on his projects for my capstone. I would never have had the time and ability to create and finish a project like the one I was given were I to try and attempt this on my own. I feel that this survey does not accurately address this particular style of capstone experience. I will be going to graduate school next year in biomedical sciences and many of the professors are very happy that I have these kinds of experiences.

I am a BME, and taking EBME 398 for my senior capstone was amazing. It allowed me to continue my independent research that I was already doing in my department. In addition, it forced me to create a quasi-paper and give an oral presentation which helped my communication skills.

I am a music performance major. Therefore, I feel as though the research paper writing portion of my capstone project is entirely unnecessary. I feel that only the senior recital, along with program notes, is a more appropriate way to complete this particular major.

I am fortunate that HSTY 398, the senior research seminar already existed as a requirement for history majors. If I had to write a 25 page paper for history and then on top of that do something else for SAGES it would have been an overwhelming amount of work.

I am taking the Econ 395 class, which is a good class, but is hard to evaluate using these questions. My "adviser" was pre-chosen (it was the teacher of the class), and he is great.

We aren't turning anything written in for the final part of our group project- just a presentation. While we do have a written paper due at the end of the semester, I have not started working on it. I suggest re-working this entire survey and asking if the capstone experiences were driven by a specific course, or if it was a self-developed project.

I believe that this program is highly unorganized and I felt that I was being burdensome to my advisor and my mentor. I felt that I was weighing them down with paper work and meetings.

I did not think the Capstone experience was well defined. Additionally, I felt like the requirements for different majors were not equal in terms of difficulty or work required.

Even within my major, some people "piggy-backed" on to Case faculty projects, which I think is much much easier than designing your own project since these students are working with someone who knows exactly what they are doing and likely already has a project designed for the student. For my project, which was not based on someone else's research, I think I faced a lot more difficulty because I had to find the answers to all of my questions myself. These two options should not be defined as equal. Finally, although

I had a practical project planned, I was not able to do it because it would have cost several hundred dollars which Case did not have the money for. It was disappointing after a full semester of planning (plus trial runs in the summer) not to be able to do my project, as well as being a lot less educational. If Case does want us to design our own research projects, which are much more beneficial to the students, they should provide a fund for us to do this.

I don't even know who my mentor is for my capstone. All I knew was that I had to work in a lab. Even now, the biochem dept. still hasn't given us specific guidelines as to what they expect from us, only general pointers, which obviously are not enough since only 2 people in our entire major got A's last year. I have no clue what's going on except for my deadlines.

i don't think it was structured well enough. Some programs get group projects while others get individuals. Some work with professors while other professors are too busy to work with students. It is a very uneven balance between resources.

I don't think my experience was typical though because I really was excited about what I was doing. I know there were alot of people that saw the project as some sort of hurdle that they had to find a loophole to overcome. I like the way the psychology dept had it set up in that students were encouraged to implement their research designs.

I enjoyed having a real world experience. I applied text and lecture material to my project. The capstone overall was a great experience.

I failed to see the point of the capstone project and to simply put it the entire sages program. From my participation in the capstone and the entire program I have not increased any knowledge or skills that will help me in my major or life as a whole. Most of the teachers are ill equipped to teach the sages program and advise for the capstone.

There is also the problem that many of them don't care about it, as it is seen as extra work added to there course load that is unnecessary. Therefore, it has resulted in extra classes full of busy work, which is a waste of my time spent here. There should still be an option to take regular English classes and whatever else is needed for general graduation requirements. If that was an option, I would have more than likely improved my writing skills and gained other useful skills that would help me advance in life. The capstone and sages program needs to be revised or deleted from the Case curriculum.

I feel like Undergraduate Studies and the various SAGES departments on campus need to work more in concert so that all the faculty know the requirements for SAGES capstone projects and so that students are more informed of the choices they have and the decisions they need to make.

I feel that my capstone project has been very difficult, but I believe it is worth it because I have gained valuable experience, knowledge, and skills that will hopefully help me when applying to grad programs. My capstone experience would not have been possible without my excellent advisor/mentor, Dr. XXX. She is excellent and has worked tirelessly on this project with me!

I feel that the capstone experience could be either excellent or poor. I think it has to do a lot with the mentor. My capstone sponsor, XXX, was a wonderful mentor. Although the project was a bit out of the realm of my major, I feel that I learned a lot and this was mostly stimulated through my mentor. Nonetheless, I felt that there was only 1 option for me to complete my capstone and it was the one I took. I talked to my adviser about an individual senior capstone, and I was given little information about it and discouraged from the idea. This is where the university needs the most improvement.

I feel that the entire SAGES program needs to be reviewed, I feel as though I received more writing work and improvement in my history classes than in my SAGES classes.

As far as the capstone experience, I feel that all the capstones, at least the history one, should be two semesters. If students need a writing sample for graduate school they can turn in their essay early and have it critiqued. One semester goes by very fast and students are limited in the options they can explore to write about.

I felt the capstone experience was unnecessary and difficult. It was hard to find faculty willing to help, very few faculty members actually knew what was required of the project, and it was basically a waste of my time. I usually enjoy doing research but this was very burdensome to me. We've written many research papers before, I don't understand how writing another one on something we don't really want to do in the first place will help us in the future. The departmental seminar was useful in learning how to write a research paper and I think that the seminar is sufficient, we shouldn't have to do another project on top of everything else we do at school (especially when most of us have had research experience while at Case). The capstone program should be seriously revised.

I greatly enjoyed my capstone research project. My capstone experience relied heavily on my summer research internship in a biomechanics lab, located in Pittsburgh, PA.

Throughout the experience I applied many various skills I had learned at Case. I did not find my capstone experience at Case to be very informative, but the research internship more than made up for any confusion once I got back to Case.

I greatly value the opportunities that the capstone has allowed for. Dr. XXX is probably my best mentor here at Case Western Reserve University. However, I feel as though I went far beyond the basic requirement for the project, and so I will be rewarded for it.

I had the opportunity to work with the Cleveland Clinic, performing a consulting project.

The experience was invaluable and I learned a lot from it and made important contacts.

I hated doing the capstone project. I wish management majors had more options for their capstone other than Action Learning or research. Although even though it was a pain, it was a real world experience that will give me something to talk about in interviews.

I have not taken my departmental seminar yet, so I left that question blank. Overall, I found the capstone to be valuable, especially regarding the question about demonstrating my writing and analytical abilities to future employers/grad schools. I like having something substantial with my name on it as a senior. I would say there was very little guidance or support from the department, and the structure was fairly loose. My advisor was great, but it was entirely my effort to find him and decide on our project. It simply isn't clear as a junior student what's expected of the capstone, especially my departments requirements. I understand requiring the project to be self-directed, but I think the way I was introduced to the capstone and senior

project process was too self-directed to the point of discouraging. Once I got going it was good, but it was really tough to get going.

I learned a lot in my capstone which permitted me to undertake a research topic in my own field of interest. I thought it was more important I work with someone I like, trust, in the political science department. It was also great the sages department was not involved because they are by far some of the most incompetent people I have encountered in my life.

I made up my own capstone experience, as per the instructions of the professors in my department, including my advisor. Though I think that I have gained much from the experience as a whole, I find it unfair that some other departments have a much more lax judgment of the capstone experience. I know people who just had to take a class and do a final project/presentation in that class. Like I said, I gained a lot of experience by having to take the initiative and use creativity to think critically about a project, and I think that it should be like this across the board. Students should all be required to do a final project in their own way, as opposed to taking the easy way out and just taking a class.

I probably went about it the wrong way, but I had a really hard time getting any instruction from my advisor. The whole thing was so poorly defined from the beginning that I stressed more over what it should end up looking like than over the actual research and writing. I finally just gave up and decided to turn in basically what I have. It's a big mess, in my opinion.

I really enjoyed preparing my recital for my capstone in the Music department. I have had a good experience with sages throughout my 4 years here; I have been lucky. However, I feel like this questionnaire was very slanted toward the assumption that the capstone was a paper/oral presentation. It made answering some of the questions a little difficult b/c my capstone had two parts, one of which was a recital.

I really enjoyed the Management capstone experience. We were able to get into the real world to solve real business problems. I would definitely say this was the most fulfilling project I've done in my 4 years of college.

I strongly regret taking a Senior Capstone class. If I could do it again I would have done an independent project. Little information was available regarding the expectations of the capstone. Capstone experience seems to vary greatly among students. Advisers are inconsistent. The capstone experience had very little to do with the rest of my undergraduate experience. Over the last four years I've been an advocate of the SAGES curriculum. I was very happy with my first three SAGES classes. My capstone class was a horrible way to end my experience at Case. Dr. XXX and Dr. XXX should hold a workshop for other SAGES professors...they had excellent command over what I think SAGES should be.

I think it's very refreshing to have a project that is open-ended and takes into account all majors of an undergraduate career.

I think that a year should be required for the capstone. The focus of my capstone changed radically one semester through, so I have essentially completed it in one semester.

Having to learn an incredible amount, do original research, and write that up in a reasonable way is REALLY hard to do in one semester. All of my fellow math majors have expressed the same sentiments. I think it would be positive if each department had a thesis template available for the capstone. I ended up using the College of Wooster LaTeX template for mine. My fiancée goes to the College of Wooster, so I have the scoop on their program. One thing she spoke really highly of was having a course in the last semester of Junior year just for literature review. By getting up to date in your field one semester, you can spend the entire following year doing original research (and writing up your results!). I think that this would be a positive inclusion to our program.

I think the capstone varies from department to department. I think it should be a departmental task to determine what their students have to do as far as a specific graduation requirement. I have a lot of friends

who are doing their capstones now, and almost everyone I know has already been accepted to grad/med school and we just want to get out of here. Most people have not put anything together for their capstones and are just getting started. The capstone to me is just some fancy crap we have to do so SAGES can better be advertised. This is a bit harsh I know and may or may not be true but it is the way I feel. I put in my time doing research and it was great, probably the best part of my academic career, but as for the capstone represented by a paper at the end that most people will pump out in one or two days I am not sure about. The last month of senior year is when everyone is getting ready to leave, most people have both feet out the door and don't care about completing this final project. The theory and idea is good, but come on, we have put in a ton of work the last four years, the capstone is just one more thing to worry about senior year. Bottom line, you tell us to do it, we do it. You can advertise it. Is it helpful? I like to think most people who spend time in the lab enjoy the experience to some extent, the capstone is not enjoyable at all. It is unimportant but the lab time really is. The capstone might benefit people who will not go to grad or medical school right away, they could have some original project to show people, but for me it's just another annoying thing to do, and right now, the end of senior year, I am not feeling very motivated. I have talked with several friends who feel the same way but I am not sure they will take the time to tell you. I was reluctant myself to fill out this survey but I am currently procrastinating the start of my capstone document so here you go.

I think the possibilities of a capstone vary so much that it is really difficult to prepare for it. The rest of the SAGES classes did nothing to help me get ready for my capstone.

I took the evolutionary biology seminar for my capstone, which integrated an individual original research project and presentation at the Source Symposium with in-class weekly in depth discussion of evolutionary biology research. I am very grateful for this option, because as an undergrad I value in class time, because I have not picked my research specialization yet and enjoy the inter-disciplinary nature of undergraduate. I think a capstone course that mixes outside individual research with course time should be available in most majors. That capstone writing requirement though painful as any writing is, provides opportunity to improve the much needed skill of writing for the future. I am thankful that SAGES was part of the curriculum, with the seminars because I could match my passions to classes I had to write in developing a disciplined skill to help advance my passions, and in the capstone because I was able to complete an original research project while getting the experience that I value of class discussion as an undergrad.

I was not able to take the departmental seminar in the same department I did my capstone (Math department) in due to scheduling conflicts with a course required for my major (in the physics department). To me, this seems to suggest that more care should be taken in scheduling courses that won't conflict with people doing the combined Mathematics and Physics degree. I would also like to say that the senior capstone for the combined Mathematics and Physics program (on the math side, at least) needs improvement. It seemed as if nobody knew what was going on, and took me some time to even figure out what I was supposed to be doing. Also, for the first few months of the second semester of my project, I was not informed of the fact that I was supposed to be attending weekly meetings, or that the final paper was required to be written in LaTeX. I believe this was due to an oversight in emailing the students in the Math/Phys senior project within the math department. My advisor was also not aware of these facts. Overall, the program seems disorganized, causing many frustrations to myself. I hope that in the future, these, and other problems, are worked out so that students can enjoy the experience.

I wish everyone's capstone was comparable. In our class every project is so different that some people do little work and get great feedback from clients, while others have to do significantly more work to achieve little results and get little feedback from clients.

Some projects depend on the soft skills while others are highly technical and require reading and learning industry specific skills.

I worked with Professor XXX. She is great and I have had an amazing experience with her as my advisor for my capstone!

I would describe my capstone project as an engineering design project.

I/we did not have much if any choice in who our capstone adviser was which wasn't a bad thing for us but could lead to future problems.

If I am assuming this correctly, I considered my feasibility project in ENGL 398 to be my SAGES capstone. This project, while analyzing the feasibility of an engineering project on campus, really did not apply any engineering knowledge I had. This project worked on and improved my skills in contacting and interviewing administration members, drawing conclusions, and oral presentation skills.

In the nursing school, the capstone project is a group endeavor lasting the entire semester.

I worked with 7 other students in the CMSD. I was under the impression that we would be developing our own research project, but on our first day the advisor basically told us that we had to continue the project that other students had begun three years previous. We were told to concentrate on childhood obesity and hypertension and to hold a "Winter Olympics" for the kids. The advisor continually stressed that we should not feel "boxed in" and that we could "marry in" other research ideas but that each idea should "relate to childhood obesity". Because I was interested in looking at other issues within the schools, this was very disappointing and frustrating. There was truly was not time or resources to implement more than one project. I do not feel that I did any research for this specific project. We took heights, weights, and blood pressures and shadowed school nurses in the CMSD, but most of our nearly 35 hours a week of work was spent getting donation money to buy prizes, organizing the Olympics, and being recess monitors. Furthermore, we were not told of the ongoing contract negotiations between CWRU and CMSD until our first day of clinical and we were unable to do any work with the children until 4 weeks into our scheduled project time. I am extremely disappointed with my capstone experience. Overall, I feel that the nursing school misrepresented the opportunities offered for capstone experiences and misled us concerning the freedom we would have to develop and carry out a unique research project. I would hardly consider the "Winter Olympics" we put on as a culmination of my efforts at CWRU. I was forced into a project I did not want to work on, and any attempts to modify or branch off the main obesity theme were met with resistance and oblique admonishment from the advisor. To be completely honest, I feel like the entire semester was a waste of resources, time, and my tuition money.

In was a management consulting course. the quality of the projects will be very hit or miss. it's not really possible to change that.

Is there any difference between the senior project, and the sages capstone? Because I thought the senior project was always required, and that's what I'm doing. My particular project isn't that hard, but completing it will be very helpful for some people, so it is still rewarding. Is the sages capstone and senior project supposed to be separate entities? If so, why? It merely seems redundant, for the same general idea.

It helps when one's advisor is very involved in the student's Capstone project. I was very fortunate in having a Capstone advisor who was very invested in my progress and concerned that I learned. Having the right advisor makes all the difference, because I enjoyed my Capstone a great deal and would have liked to have continued if it was for 2 semesters and not 1.

It is absolutely disheartening to find that the administration has required the capstone of their seniors without supporting them or the departments. The biochemistry department continues to be fragmented and ill equipped for teaching undergraduates in its general curriculum. Professors complain about how not even one cent is put towards supporting undergraduates in their labs even though CWRU has made it a requirement. The administration needs to put the money where their mouth is if they are to make the Senior capstone more than an uneven experience that they can put in a brochure to fool prospective students that Case is better than it really is (like the SAGES general seminars). The capstone in regards to personal growth is too little too late. The administration going through with it without giving it backing shows how little it cares about undergraduates. It is merely adding another hoop for students to jump through without giving any direction, guidance, or support. Why do it at all? The only thing it adds is another stressor and gives departments more control over their students. Now I am uncomfortable with voicing my opinions in

the department because it might hurt my Capstone evaluation. The capstone says that Case fails at including its undergrads in the research process. Even SOURCE is underfunded and understaffed for an aspect of education that Case should be excellent at. Making the capstone a requirement is an admission of guilt of this symptom and an ineffective strategy for fixing the problem. I have found people that support me that are part of the university. Even so, this university has not and does not support me in my senior project, it has merely demanded that my department does.

It is important to note that the "capstone" for Civil Engineering is a senior project. Within groups, we complete a design project that each group determines for themselves. This has been the Civil Engineering standard well before any Sages Capstone was required.

It was a great experience because I could actually apply my knowledge from all the chemistry courses.

It was excellent that I got to work in the field and outside of this university for my capstone research. The whole experience has been pretty positive. The biggest drawback for me was the funding for my research. My project mentor's grant was able to cover more than his fair share of the cost and I paid for the rest. There should be more readily available funding for student's whose capstone research required extensive travel expenses.

It was fun, in addition I was able to learn new skills that will help me in the future!

It would be nice if more professors were willing to be an adviser. It was very difficult and stressful to try to find someone who would let me work in their lab.

Judging from the questions in this survey, it sounds like my capstone (Art History) was completely unlike what it was supposed to be. It was not a capstone in the sense that you speak of; it was just a class that all majors were required to take. It had very little to do with anything that I will actually be doing in Art History because it forced 20+ undergraduate upperclassmen to study one period which was relevant to only two students' areas of interest. In my opinion, students should be able to choose their advisor with whom they might develop a project that is relevant to their academic goals. The capstone could have been a valuable experience that could have given me a foundation on which to write my honor's thesis. This being said, I cannot be surprised that the capstone of a failed program (SAGES) was itself a failure too.

XXX needs to be fired. XXX, as well as all other SAGES courses must be dropped and all people associated with, in favor of, or who have not been outspoken against SAGES should be fired. Also, anyone from Bon Appetit should be fired for trying to poison us and stealing all of our money. You are all thieves

My biggest problem with the capstone experience I had was that my department was unclear on the project requirements and on the logistics of meetings. The individual help that I received from my project adviser was excellent. I enjoyed the capstone experience up until the point where the department scheduled regular meetings for all capstone students to meet and discuss projects/report progress. These meetings were difficult. Each week a different professor or professors ran the meeting. Instead of feeling like I was reporting on my progress or discussing my project, I felt like I was giving the same synopsis each week to a different set of professors. In addition, the professors who ran the meetings were often unprepared. Usually they did not know what we were supposed to be doing. It seemed like there was no communication amongst the professors about the capstone projects. The meetings devolved into a stressful weekly occasion on which it was difficult to know what to expect. The capstone experience is, I think, a great concept. I enjoyed working on a research project, and I think it was a great experience for my intellectual and professional development. However, when the departmental meetings started, the enjoyment of the project was overshadowed by stress over what the requirements of the project were and whether I was going to be able to meet them. It may just be that it was the first year of the program, but there needs to be a much clearer explanation of the procedure of the capstone project. There also needs to be communication between professors that are in charge of the capstone project so that requirements are standardized. In the particular case of my department, the experience would have been greatly aided had there been one professor who consistently attended the meetings so that there was continuity, and other

professors in the department could attend the meetings to see the research that the capstone students were doing.

My capstone advisor probably won't even read my paper. He'll look at it to make sure I actually wrote something then throw it in a cabinet. I'm sick of going through the motions when it's all so pointless. I really do want a refund on my education. Case Engineering is overpriced and its value is completely overstated to incoming freshmen. I'm glad I paid all this money for a piece of paper - now just give it to me already.

my capstone experience was unique because I'm a nursing major and my capstone was tied to my public health/global health practicum.

My capstone felt thrown together, and I did not enjoy the experience.

My capstone project was part of a biology lab led by Dr. XXX. We made a website called. I felt that this applied much of my knowledge in bio, in addition to learning how to use a program called DreamWeaver. I feel that laboratory courses and other classes that go beyond using textbooks should be able to count as a capstone course if some sort of presentation or large project is done, like this class, at the end.

My capstone was an extension of research I had been doing with my supervisor, Dr. XXX. It was also tied with a class in which I helped develop. These aspects provided me a chance to incorporate the capstone into many things I was currently working on. As a result I was able to integrate all threads of previous research into my capstone project. This was my favorite part.

My capstone was just a project in a class (EECS 393 for Computer Science) so my survey should be considered with that taken into account. Overall, SAGES blows and the only reason my survey had any positive results was because the project my group chose to do was really cool.

My engineering department changed how our senior project was handled. Comments have been sent to the course faculty.

My experience doing this capstone was very rewarding, and I am very glad that Case gives an option for independent research. It allowed me to use all the skills that I have been developing for three years as an undergrad at Case. My advisor was wonderful in helping me prepare and I am grateful for the experience.

My main challenge was scheduling research time around school. Working on a research project helped me to develop better time management.

My oral presentation is 9 days away and I have still not been given a grading rubric or any direction from my advisor on what I am supposed to cover or even how much time I have. I am a very structured person and therefore this is very frustrating to me. This whole semester I have been hounding my advisor for grading criteria on my paper and my presentation and have received nothing. It would be nice if the professors that want to be capstone advisors had to turn in some sort of rubric to the SAGES office or thier department head.

My SAGES experience in general at Case has taught me about some of the inherent problems with compulsory education. There was nothing wrong with my capstone class or my other SAGES classes, most of them happened to be quite excellent (I think I was very fortunate). The mere existence of their compulsory nature, however, frustrates the student body and presents a large negative externality to any benefit that the classes may offer. As an English major, having taken many writing classes, I don't know that I wouldn't have been better off taking an additional elective in a more disparate field than one of my SAGES requirements. Those problems with the SAGES department being said, my teacher's extreme flexibility turned my capstone experience into a positive one, in which I was able to change my project multiple times and eventually pursue a project that interested me and does seem to even poetically cap off my college experience.

My senior capstone was just a portfolio of 3 papers I wrote during the 3 SAGES courses I took. There was no capstone adviser, presentation, etc.

None of my SAGES classes seemed to give me any skills that were required for this capstone. I learned all the skills I needed for my capstone through other coursework. I enjoyed the capstone project and thought it was worthwhile but thought that all my other SAGES classes were useless.

On the whole, not happy with the SAGES experience. Made me sacrifice three credits each semester to do something I didn't want; in addition, didn't feel like I learned anything that useful from these classes. Writing research papers was certainly useful, but could there should be a better way of suiting students to interests rather than stick them in (or make them choose) unwanted courses.

Personally, I feel as though the capstone is just another paper to write. It does not feel like it was meant to "culminate my undergraduate experience". The course I took in order to complete my capstone treated it as though it was simply a paper. We went over theses, etc. I feel the preparation for the capstone (specifically PSCL 375), was more beneficial than this capstone course. Perhaps if the capstone course was two semesters long and required a research study of some sort, I might have gotten something out of it.

Personally, I found the capstone experience to be INCREDIBLY frustrating. The department was not at all prepared for the amount of students who would need to complete a capstone and finding an advisor and a project was a NIGHTMARE. Once I finally was matched with an advisor, I was working with someone on sabbatical who was incredibly busy and seldomly available to me. I spent much of my own money making copies of materials and had to use an illegal version of statistical software because Case doesn't offer SPSS to students- or at least, not without special permission and I only learned of that opportunity in the last week of my project. Overall, I felt that the expectations for the capstone were really vague. While I struggled to analyze data, one of my classmates was handed a set of data analyses and told to summarize them. The whole project seems to be a mess and I regret having to be a member of the guinea pig class.

The capstone allowed my group and I to combine all of the skills that we learned during our studies and apply them to this project.

The capstone experience taught me a lot about consulting and working in the real world. I can use this capstone experience in my future career.

The capstone I was enlisted in, BIOL/ANTH368, was very unorganized, mainly because it was thrown together last minute for the Darwin year lectures. I think it would have been much better had it not been a test course. It is a good option for people who need to get a capstone done in a hurry. But, it kind of belittles the really great research work others do for a capstone when all I had to do was write a paper on a research topic.

The capstone is a poorly organized endeavor with very little actual resources for the students to use. If your adviser is not deeply aware of what you should be doing at all times for the project, it will not get done, because there are no systems in place to help students organize their projects themselves. There should be a handbook with a timeline and a checklist of sorts, because many departments (most notably the three with which I'm involved) do not really know what they themselves are supposed to do to assist students in doing their capstones. Additionally, professors don't feel as though it's their responsibility to agree to being a student's capstone advisor, so it's difficult for many students to even find one, let alone find one that has some idea what the capstone requires.

The capstone itself was a typical ending of the college experience, I would say, non different than most school's "senior thesis," etc. would be.

The capstone project is well organized for Business majors, but the departmental seminars are inconsistent, irrelevant to the capstone, and usually a much heavier workload than merits their 1 credit each allocation. They also are scheduled extremely poorly, only offered on two days of the week this semester (at least until problems arose) and with class times that run until other class times (I have two departmental seminars that

go until 3pm. I have another class at 3pm. The professors of the departmental seminars are apparently unaware of the time constrictions and consistently release us late, making me late every time for my other class).

The Capstone project should be optional for 3+2 students who are 4th year undergraduate students and first year master's level students at the same time because it is way too much work taken as a whole and quite overwhelming to do all three things at the same time. I shouldn't have even had to do the Capstone because I'm a 3+2 student or I should have had 2 semesters to complete it but I should not have had to do it in my first year of graduate school which is hard in itself. Please take this into consideration.

The capstone was not horrible, but I did not get a whole lot out of it. I suppose my group could have picked a more ground-breaking topic to study, which would have made it more rewarding. However, in a history-based capstone class that was kind of hard to do and still have the topic be relevant to the course.

The capstone was one of the most satisfying parts of my academic experience here at Case, but I do not feel that it was because of anything that Case did. It was satisfying because of the people we worked with and our supervisor at the health department in Florida- they made sure we had a great experience and helped us learn a lot. Our dean and faculty here at Case actually made it harder for our capstone to get started and almost made it not happen.

The capstone was previously a required class I would have had to take senior year anyway.

The capstone was the best part of SAGES. Honestly, the early seminars were nice because I could learn about different fields of study. The management seminars are few in topic, large in range of expected effort, and overall boring. However, the management capstone (Action Learning) was THE best experience of my undergraduate career. If management classes offered more opportunities to work with other companies to solve problems, I believe the Weatherhead rankings would improve significantly. The REAL experience I got was far superior and taught more helpful information than any class I took throughout the four years.

The capstone, and SAGES in general, are a good idea, but seem to result too often in lots of unnecessary work on the part of the students that leeches away the time and energy that we should be investing in other classes that relate more directly to our field.

The entire SAGES process was a complete waster of time, yet the capstone was totally awesome! the capstone really prepared me for my field of study. It gave me an opportunity to do research in a field that I am passionate about.

The entire SAGES program was not as helpful as it was described. The only seminar that did anything to help my writing was the first seminar. That was because the professor was an English professor. Otherwise, the professors grading my papers were more concerned with the content of the paper than my ability to write about the topic. As to the capstone experience itself: The freedom of being able to have my capstone in any department allowed me to work on a project that helped prepare me for graduate school. The capstone was probably the most helpful SAGES course as it allowed the most freedom to develop a plan for my own educational needs.

The expectations of EBME 380 should be stated more clearly. There should be more structure/organization.

The expectations were not very clear, It was hard to choose a project because I had to blindly ask faculty members if I could work with them without knowing them and having no experience in their field, the engineering physics majors are sort of left to fend for themselves, we had to sit through lectures with no new information and repeat information from earlier lectures, my advisor was downright rude to me and completely useless when it came to my project, he never helped with any aspect, he was just there to critique my work

The final performance required for General Musicianship majors would have occurred regardless of a capstone class or not. But since it is now listed as a part of the capstone project, this is the most rewarding portion of SAGES for me.

The idea of the capstone is good, but the professor who oversaw my project, Dr. XXX, was incompetent and difficult to say the least. Dr. XXX knows how to structure a paper and knows about XXX but does not have the ability to manage a student project. She is extremely forgetful and yells at students when they don't do what she thought she asked them to do. The most dreaded part of this entire capstone was meeting with Dr. XXX who would no doubt ramble on about something unrelated to the project, and would yell and say nasty things to me when I didn't do exactly what she wanted. It was a terrible experience that I wouldn't wish on anyone.

The Management capstone, because the Accounting Department does not have its own Capstone is a joke. They give you a team, tell you what your client wants you to do, spend a week of night classes training you on how your supposed to interview the clients and create logic diagrams for the solutions. You then spend the next 11 weeks making it look like your doing something more than throwing together a half dozen ideas that solve the problems the client wants solved with maybe a couple citations to make it look impressive. You then mock up the logic diagram and your ideas into a 20 minute slideshow, where the coach actually gives you good advice on how to make your client think you aren't just giving them the stuff they gave you back in a report full of jargon. You generate a report which has a bit more BS than your presentation. Finally, you present to your client, who is impressed that A. You got something done. B. Your not just wearing jeans and a T-Shirt and C. Some of the ideas sound good. You are then done and hope that you get a good grade and pretty sure that 90% of your work will go into the circular filing cabinet.

The nursing school capstone needs to be handled by someone else. It is handled very inefficiently and unprofessional. I feel like I have completely wasted this semester. Not only did I not learn anything, I feel I have forgotten all the knowledge I had previously learned. I am very disappointed and unsatisfied. Something really needs to be done.

The nursing school capstones are a total joke, waste of time, and are poorly organized by faculty. This course needs some serious attention. The final paper and presentation was poorly organized and resembled work of a third grader.

The nursing school really dropped the ball with our capstone experience. I spent a majority of my time desperately trying to look busy rather than actually doing anything. I could have accomplished my project in 80 hours rather than the required 300 hours. I gained absolutely nothing from this experience and I feel that my nursing skills and knowledge have deteriorated over this semester.

The only bad part about this project was that we had to drive down to the company and I had to pay for gas and parking because I was the only one with a car.

The overall capstone experience was a success because my partner and I contributed much time and effort. Unfortunately, our adviser did not.

The Political Science department requires that you do your capstone under the dept. if you want a degree for Political Science. I had my sights set on doing my capstone on a more sociological topic and therefore was forced into a project that I do not care about. I met with the head of the department to try to use one of the child policy externships as the basis for my senior project, but was told I could not because it was not listed as Political Science. The Head of the Department, upon meeting with me, threw out ideas for papers but I did not want to just write a paper. He suggested I talk to XXX, in the sociology department (wait a second...I thought it had to be in the political science department). After meeting with XXX, I once again went back to the head of Poli Sci and he basically told me what I'd be doing for my project. I had little input beyond the main subject area of my project. To top it off, I am on the varsity softball team and am being forced to miss a game to present my project tonight (I'm pretty sure this is against University policy). Make-up presentations are offered every year and I am not pleased that I am giving up something I love for something I hate.

The problem with the English Senior Capstone class is that it's new. It was really left up to the professor to decide, and honestly, we spent a lot of time doing nothing that had to do with any of our projects. We had to meet every Tuesday for 2.5 hours, but most of time was NOT spent talking/discussing our projects. We actually had texts to read, but I think at that level of class, you don't really need texts. The class should really be a more "independent study" type of course, where the class rarely, if ever physically meets, but each individual student has to meet with advisor of Capstone course to discuss their project and their progress. I really HATED the fact that I had to actually come and sit in a class.

The process was very disorganized and I received untimely answers from my adviser to all of my questions (typically took a week to get a response). It was very frustrating overall, but managed to turn out OK.

There are too many status reports/updates where we state the same thing over and over. I wouldn't be opposed to a weekly status update, as long as it was more "informal" and would give you the opportunity to simply list issues/accomplishments for that week. The course should have more guest speakers. We only had 3, but we could have a lot more covering different aspects of software/hardware design principles. It would also be good to hear from someone "in the real world" who could shed some light on to how software/hardware development projects are run in the REAL WORLD, not in the Case world of research and laboratories.

There needs to be a forum or symposium in the fall semester for capstone projects. My major department did not have any opportunities for oral presentation and it was necessary to present in a department that was fairly unrelated to our project.

There were no projects available in the Aerospace Engineering field. Even after speaking with NASA officials it was very difficult to find anything even related to the aerospace industry.

These questions frequently didn't accurately describe my senior capstone, being a computer science major. We develop a large scale software project along with the necessary documentation. Our advisor/mentor is just the professor who teaches the (required in-major) course.

This experience required a substantial portion of time to complete. I am not afraid to work, but the fact that it required about 15 hours/week for me to complete this project and I did not get paid for it. This was highly frustrating. Why would you believe that not getting paid would be a conflict of interest? If anything, I would have been more willing to go to the lab everyday and work if I knew I was getting paid. All that I will get out of this project is a grade and 3.0 credit hours, that I paid for! I think that by not allowing students to complete a Capstone while getting paid is troubling and extremely resource consuming. I made no money this semester because my Capstone required so much time to complete. You should really put yourselves in the shoes of a student and wonder, "would completing this project be made better by a small paycheck every 2 weeks?"

This is a nonsensical exercise that is, in no way at all, regulated by the university. As a result, it's just a random effort to complete some vague requirement for the sake of graduating. It has been a terrible experience.

This was a fun yet educational experience. I'm glad I got to work with Dr. XXX, he's a good dude.

This survey should better reflect all of the capstone options. I participated in a capstone course in which I had to give a presentation and write a paper. The answer choices did not always reflect my exact work/experience with my capstone. Additionally answer choices should be made available to reflect such capstone options.

This was the best experience ever. However, I wish I had a little bit more guidance from my actual class instructor (i.e. my adviser). My mentor was great. I could not have asked for a better mentor. She helped me through the presentation for SOURCE symposium and genuinely wanted me to do well. Overall, I was very happy about the experience. It made it the best semester ever.

This whole project was done completely on my own. In no way, shape, or form did any audio recording major receive any guidelines for the capstone....all we knew was, record an hour of music, write a paper, and prepare a presentation. NOBODY really knows what is going on in the audio department.

We did not choose capstone advisers, we ranked companies we wanted to work with, and companies were paired with specific advisers.

We need more direction and requirements. I felt lost in terms of what needed to be done and by when.

What I like most about the Capstone: Case didn't interfere with me. No guidelines. No annoying requirements to stifle creativity. It was open-ended and I appreciate that. I've been very frustrated my undergraduate experience because I think you guys require too much. I'm a self-motivated individual and have known I wanted to write since 16. When I came to Case I wanted to create my own major. The process was way too annoying/difficult/frustrating/claustrophobic/rigid due to degree requirements and interdisciplinary controversies. I'm paying you \$40,000 a year and I don't think it was worth it. Not because the classes I had were bad (though some were). The opportunity cost of each class is where I feel robbed. I have no complaints about spending time in the class room, in discussion--that I feel is very beneficial. But all the tests, all the homework, all the papers... Writers always talk about the importance of editing, of cleaning up your work, of trimming the fat. Editing helps clarify your point. Less is more is a cliché for a reason. Case needs to edit their requirements top to bottom--all the way down to each individual class. Instill this in teachers too. Writers are also told to "trust the reader". Not everything has to be spelled out. Case needs to learn to trust its students. Teachers need to stop using homework and tests and papers as insurance that we're learning. Trust us. We'll sink or swim. Believe it not, a majority of us know how to swim. Except when you pile so much on top of us, it's hard to keep from drowning. Sometimes a midterm, a final, and time in-between to learn on our own schedule is all we need. Class discussion too--it's an editing process. That's exactly what this capstone has been. Each of us came up with a project, we discuss our process and progress in class, and work on it when we want. It's all I've ever wanted from Case. My only complaint about this class is that we had three randomly assigned texts and spent 3-5 weeks discussing them. Again, opportunity cost. The time it took me to read all three texts could have definitely been spent in more worthwhile endeavors. I have texts I want to read for my project. Those 3-5 classes we spent discussing could have been spent in research or work. I guess what I'm saying is: I like it when Case helps me with what I want to do, gives suggestions, offers guidance--provides opportunity. If I wanted someone to schedule a majority of my time, demand I do this or that, and limit my experiences (albeit while allowing for many), I'd get a job. At least then I get paid. I'm paying you. Which makes me the employer or the customer. Either way, I should have more power than I do. I have a lot of complaints/suggestions. Last I checked

Working on a team of 5 people with a budget of \$16,000 in the biomedical engineering project, we have had an opportunity to create something that's really going to last a long time and be of some worth beyond Case Western.