EYP research

Wheaton College, Mars Center for Science and Technology:

Post-Occupancy Evaluation Surveys

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Confidentiality Statement

This report concerns the impact of science buildings on college campuses. The report has been developed by EYP, Inc. (EYP) at significant expense, devotion of resources, and time. As such, EYP considers the report as its proprietary information.

Executive Summary

To upgrade the science facilities at Wheaton College, EYP designed the renovation of the first floor of the old Science Center and an adjacent addition that created the Mars Center for Science and Technology. As one means of evaluating the impact of this project, EYP conducted two post-occupancy surveys, one of faculty and the other of students, in spring 2013. Based on survey responses, the new Mars Center has succeeded in accomplishing several goals. As the findings show:

- Faculty members perceive that the new Mars Center classrooms have enhanced the quality of the teaching environment, and students rate these classrooms as far superior to other classrooms on campus.

- New teaching laboratories have improved the quality of the teaching experience and led many instructors to change the way they teach.

- New research laboratories have created a safer working environment, enhanced the faculty's ability to conduct research, and made it easier to collaborate with others.

- Students make extensive use of the Mars Center, choosing public spaces throughout the Center to study alone, study or work with other students, or just hang out and get something to eat or drink. Students and faculty find the Center to be a comfortable place. They like its natural lighting and spaciousness, and students find its numerous study areas particularly attractive.

- Public areas in the Mars Center facilitate learning and intellectual discourse. Faculty members often meet students and colleagues in the Center, where conversations turn to teaching, research, or other scholarly subjects. Similarly, an estimated 85 percent of Wheaton students describe the Center as a good or favorite place to get together with others to engage in various learning activities, including working on problems and group projects and discussing ideas from class.

- Lab activities made visible through glass walls and the building as a whole appear to pique students' interest in science and create a stimulating environment in which to work.

- Faculty and students are aware of many of the sustainable measures employed in the Mars Center. The building's sustainability was especially important to many students, with the majority reporting that the building has increased their general awareness of sustainability.

- Most faculty are very satisfied with the Mars Center overall, and nearly all faculty and students believe it projects a favorable image of Wheaton.

- In making suggestions for improvement, students generally wanted to extend the Center's resources and the time the café and other areas are open. The most frequent suggestions from faculty were to provide greater lighting and temperature control.

- Overall, survey findings strongly support goals set forth by Wheaton College in designing the Mars Center: flexibility, community, connections, and sustainability.

Introduction

At Wheaton College, EYP designed a building to replace the existing Science Center. To assess the impact of its designs, EYP launched a program of evaluation. The program involved the collection and analysis of a variety of data to assess several goals. In this report, summarizing results as they relate to project goals, we present findings from two post-occupancy surveys conducted in spring 2013.

The Wheaton construction involved a major renovation of the first floor of the existing Science Center and the creation of a new building, called the Mars Center for Science and Technology, adjacent and connected to the old Science Center. Together, the new facilities provided new classrooms and faculty offices, upgraded teaching and research laboratories, and numerous formal and informal learning spaces. As a result of the construction, faculty offices for four departments and two programs were relocated: biology, chemistry, mathematics and computer science, physics and astronomy, neuroscience, and psychobiology. Construction began in October 2010 and occurred in two stages: the addition was completed in August 2011, with occupancy and classes beginning that fall; the renovation of the first floor of the Science Center, which was in use through May 2011, was ready for occupancy in December 2011.

Methods

Overview

Two questionnaire surveys targeted the principal users of the new or renovated buildings: faculty and students. The faculty survey was designed primarily to assess the impact of the new construction on teaching and research. The student survey was designed primarily to assess the impact of the multiple new learning spaces throughout the Complex: How often students visit the Complex, why they go there, what areas they use, and how attractive they find it as a place to study and meet others.

Sample

The faculty survey was administered to all tenured and tenure-track members of the affected departments and programs and, in addition, to all other faculty members who had taught in one of the new classrooms. Of 61 faculty contacted, 49 completed the survey, for a response rate of 80 percent. The student survey was administered to a stratified random sample, stratified by science/non-science major, of all students enrolled and on campus in spring 2013. A total of 500 students, 250 science and 250 non-science majors, were contacted; 245 students—152 science majors and 87 non-science majors (6 students did not report their major)—completed the survey, for an overall response rate of 49 percent.

Procedure

Both surveys were conducted through the Internet with the online survey tool SurveyMonkey. The student survey was carried out between February 13 and March 22 and the faculty survey between February 14 and March 28. In each case, we sent pre-survey letters to respondents via campus mail; the letters explained the purpose of the survey, provided the survey link, and assured respondents that the survey was voluntary and either anonymous (students) or confidential (faculty). We also enclosed an incentive of $2 in all student letters. One week after the letters were mailed, we contacted all respondents via e-mail, expressing thanks to those who had completed the survey and encouraging those who had not to do so. For students, this e-mail was followed one week later by a second e-mail reminder, and three weeks later, just before Spring Break, by a third. For faculty, we sent two additional reminders at two-week intervals.

Results

In designing STEM buildings, EYP establishes several goals. Some goals, worked out in collaboration with clients, are specific to particular projects; others apply to virtually all designs. Through the design of the Mars Center for Science and Technology, Wheaton College hoped to realize four general goals: connections, community, sustainability, and flexibility (see http://wheatoncollege.edu/mars-science/overview/). To be measurable, however, general goals must be broken down into statements and questions about concrete, observable outcomes. Therefore, EYP has devised a set of more specific goals and questions that can be linked to various kinds of data. Below we present survey findings as they relate to these specific goals. Then, we conclude by discussing what the findings tell us about the success of the Mars Center in fostering connections, community, sustainability, and flexibility.

Keep in mind as you read this report, that the full measure of a building's impact requires a range of methods applied before and after the building is completed. Surveys are a useful means of assessing occupants' perceptions and, to a lesser extent, their patterns of using the building. We need other methods, however, to determine many effects, such as whether the number of science majors has increased since building construction or if the building has achieved the highest level of energy efficiency.

Goal 1. Enhance the effectiveness of science teaching.

- Have the new classrooms and laboratories enhanced the quality of the teaching environment?
- Have the new classrooms and laboratories enabled instructors to change their teaching methods, introduce new courses, or teach new course topics?
- Have the new classrooms and laboratories enabled instructors to use the time devoted to teaching more productively?
- Are instructors more likely to become involved in collaborative teaching?

Table 1. Faculty Ratings of All New Mars Center Classrooms Combined in Percents (N=44)

Criterion	Very poor	Poor	Average	Good	Excellent	Mean*	S.D.
Flexibility in accommodating different teaching strategies	2.3	6.8	15.9	52.3	22.7	3.86	.930
Sight lines between you and your students	2.3	2.3	6.8	38.6	50.0	4.32	.883
Accessibility of technology to instructors	2.3	4.5	15.9	45.5	31.8	4.00	.940
Placement and visibility of blackboards and whiteboards	2.3	2.3	27.3	40.9	27.3	3.89	.920
Size or spaciousness	2.3	11.4	27.3	34.1	25.0	3.68	1.05
Quality of lighting	2.3	6.8	15.9	40.9	34.1	3.98	1.00
Quality of acoustics	2.3	0.0	15.9	45.5	36.4	4.14	.852
Overall quality as a teaching environment	2.3	0.0	15.9	63.6	18.2	3.95	.746
Average	**2.3**	**4.3**	**17.6**	**45.2**	**30.7**	**3.98**	**.915**

*Based on the assigned values of 1 = very poor, 2 = poor, 3 = average, 4 = good, and 5 = excellent.

Classrooms

The construction and renovation produced seven new classrooms: one outdoor classroom located outside the Davis Spencer Café on the southeast façade of the Mars Center; one flat-floor lecture-style room; and five seminar rooms. To assess the quality of the new classrooms, we asked faculty members to rate the new classroom in which they most recently had taught on several criteria. Table 1 shows faculty ratings across all new classrooms. On every criterion, the vast majority of instructors rated the new classroom in which they had taught as "good" or "excellent." Nearly 90 percent gave these ratings to the sight lines between instructors and students; and 75 percent or more assigned the same ratings to flexibility in accommodating different teaching strategies, accessibility of technology, quality of lighting, and quality of acoustics. Most importantly, as illustrated in Figure 1, over 80 percent rated the overall quality of the classroom as a teaching environment as good or excellent.

Figure 1. Faculty Ratings of Overall Quality of New Mars Center Classroom as a Teaching Environment (N=44).

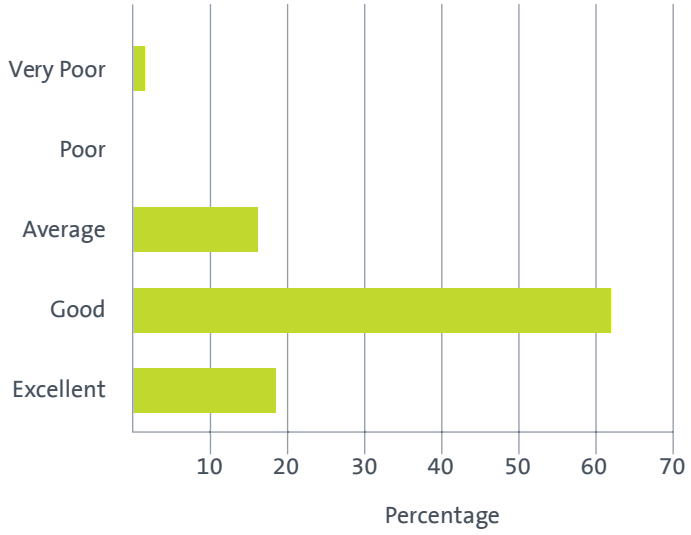


Table 2. Mean Faculty Ratings of Selected New Mars Center Classrooms

Criterion	Flat Floor Classroom[1]	Seminar Rooms[2]
N	8	25
Flexibility in accommodating different teaching strategies	3.88	3.88
Sight lines between you and your students	4.38	4.48
Accessibility of technology to instructors	3.75	4.28
Placement and visibility of blackboards and whiteboards	4.38	3.96
Size or spaciousness	4.00	3.80
Quality of lighting	3.63	4.28
Quality of acoustics	3.88	4.44
Overall quality as a teaching environment	4.00	4.08
Average	**3.99**	**4.15**

[1] SCMARS 1141.

[2] SCMARS 1313, 1120, 1124, 2124, and 3120.

Table 3. Student Ratings1 of Mars Center Classrooms in Percents

Classroom	N	One of worst	Below average	Average	Above average	One of best	Mean	S.D.
Outdoor Classroom	4	0.0	0.0	0.0	50.0	50.0	4.50	.577
SCMARS 11412	64	1.6	1.6	9.4	45.3	42.2	4.25	.816
SCMARS 1313	33	0.0	0.0	12.1	30.3	57.6	4.45	.711
SCMARS 1120	14	0.0	0.0	14.3	50.0	35.7	4.21	.699
SCMARS 1124	27	0.0	3.7	11.1	33.3	51.9	4.33	.832
SCMARS 2124	15	0.0	6.7	0.0	60.0	33.3	4.20	.775
SCMARS 3120	21	0.0	0.0	0.0	61.9	38.1	4.38	.498
Average	**178**	**0.5**	**1.6**	**9.3**	**44.0**	**44.5**	**4.31**	**.746**

[1] Compared with most other classrooms at Wheaton, which of the following best describes the quality and feel of [this] classroom?

[2] Flat room classroom. All other rooms are seminar rooms.

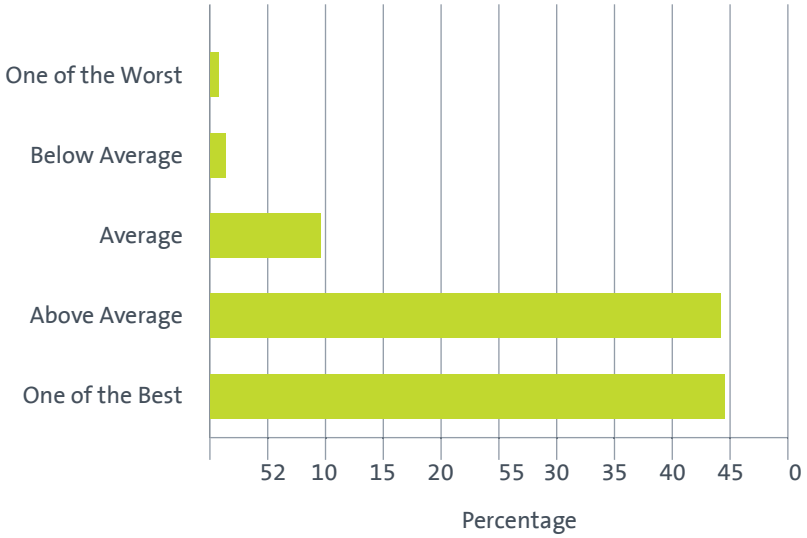
The outdoor classroom is limited to 20 students, the classroom with a traditional lecture layout (SCMARS 1141) seats 32 students, and each of the seminar rooms has a capacity of 17. With so few respondents, we cannot reliably compare ratings across all the new classrooms. Table 2 shows the average rating on each criterion for the flat floor classroom and for the five seminar rooms combined. Instructors generally rated the classroom and seminar rooms as "good" (4 on a scale from 1 = very poor to 5 = excellent), although ratings differed on some criteria. The seminar rooms were rated higher on access to technology and quality of lighting and acoustics, whereas the classroom was rated more highly on size or spaciousness and the placement and visibility of whiteboards.

These ratings indicate a high level of satisfaction with the quality of the teaching environment in the new Mars Center classrooms. The ratings do not tell us, however, whether that environment is an improvement over the classrooms they replaced. We therefore asked those who had taught in the old Science Center to compare the quality of the new Mars Center classrooms with that of the old Science Center classroom in which they most often taught. Of the 39 instructors with teaching experience in the old Science Center, 21 (53.8 percent) rated the quality of the teaching environment in the new Mars Center classrooms as "much better"; 5 (12.8 percent) rated it as worse.

Instructors tend to teach in very few classrooms; in fact, they often teach in the same classroom semester after semester. So, they have little basis for comparing one classroom with another. On the other hand, students have a solid foundation for making comparative judgments because they take courses in multiple classrooms across the campus. We therefore asked students whether they had taken a course in one of the new Mars Center classrooms and, if so, to compare the "quality and feel" of that classroom "with most other classrooms at Wheaton." Table 3 reports these ratings, and Figure 2 shows the average ratings across all rated classrooms. Overall, nearly half (44.5%) of the respondents rated the new Mars Center classroom as "one of the best classrooms at Wheaton," and another 44.0 percent rated the classroom as "above average."

Although students' ratings are quite similar across all classrooms, one small difference is worth noting. During value engineering, dedicated classrooms were eliminated from the project. Consequently, only two of the spaces—the outdoor classroom and Room 1313—were designed as classrooms. All the other rooms are future labs. Rooms 1120, 1124, 2124, and 3120, which are the same size and are similarly furnished and configured, are projected as future research labs; the larger room, 1141, is designed to be a future teaching lab. Knowing this, we are not surprised that Room 1313 received slightly higher ratings than the other "seminar" rooms, as these rooms are undersized for their 17-student limits. Indeed, when offering suggestions for improvements in the Mars Center, several students reported that they felt cramped and recommended increasing the size of the seminar rooms.

Figure 2. Student Ratings of New Mars Center Classroom (N=178) Compared with Most Other Classrooms at Wheaton.



We also asked instructors who had taught in a classroom in the old Science Center prior to the renovation and construction if the move had resulted in changes in their teaching. One person reported that he or she had taught a course with another faculty member as a result of the move; however, this rarely occurs at Wheaton, especially in the sciences. Of the 39 faculty members who had taught in both the old and new venues, five reported that he/she had introduced new topics within an existing course; three reportedly had taught a new course; and nine instructors (23.1%) indicated that they had changed their teaching methods.

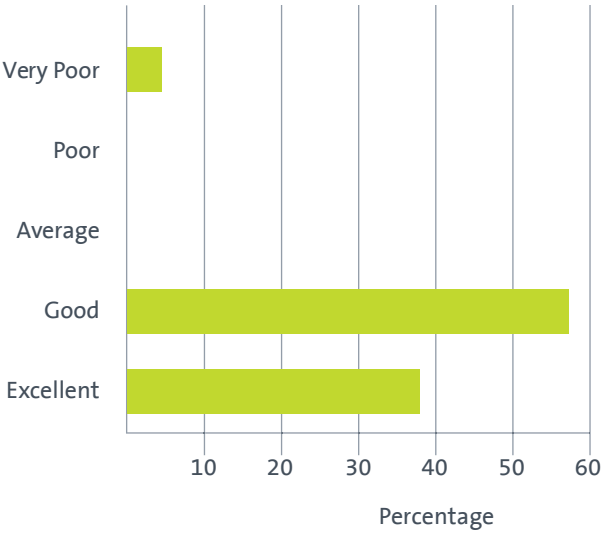
Among those who made pedagogical changes, four instructors were incorporating more lab work and problem-solving exercises in the classroom; three had introduced more collaborative or group work; and two others were making greater use of technology. The "configuration" of the seminar rooms, it was pointed out, was much more conducive to group work; indeed, one faculty member reported that he "already used a substantial amount of group work, but the new classrooms" made this much easier to do. Finally, more than a third of this group (35.9%) reported that, in comparison with the old classrooms, the new classrooms had enabled them to use class time more productively.

The Mars Center has many glass walls intended to make science teaching and research visible to everyone. The walls are most evident in laboratories, but also exist in offices and classrooms. All the classrooms have glass along at least a portion of the corridor wall; however, this design feature was controversial as faculty members thought it would be distracting to them and their students. We therefore asked instructors who had taught in one of these classrooms (N=28) the extent which they thought their students were distracted by people peering through the glass walls into the classroom; 20.7 percent reported "moderately distracted," 44.8 percent "slightly distracted," and 31.0 percent indicated "not distracted at all." When asked how much they themselves were distracted, 6.9 percent reported being "moderately," 51.7 percent reported "slightly," and 37.9 percent reported "not at all." (One faculty member, the only person who rated the new classroom as "very poor" on every criterion, reported both he/she and his/her students as being "extremely" distracted.)

Table 4. Faculty Ratings of New Teaching Labs Combined in Percents (N=22)

Criterion	Very poor	Poor	Average	Good	Excellent	Mean	S.D.
Accessibility of laboratory instruments	4.8	9.5	4.8	28.6	52.4	4.14	1.20
Safety of working environment	0.0	0.0	4.8	28.6	66.7	4.62	.590
Flexibility in accommodating different teaching strategies	4.5	0.0	13.6	31.8	50.0	4.23	1.02
Ease of sharing lab space with other instructors/courses	4.5	13.6	18.2	31.8	31.8	3.73	1.20
Ease with which students can perform assigned tasks	4.5	0.0	4.5	45.5	45.5	4.27	.935
Size or spaciousness	4.5	4.5	4.5	31.8	54.5	4.27	1.08
Quality of lighting	4.5	13.6	0.0	27.3	54.5	4.14	1.25
Quality of acoustics	4.5	0.0	4.5	50.0	40.9	4.23	.922
Overall quality as a teaching environment	4.8	0.0	0.0	57.1	38.1	4.24	.889
Average	**4.1**	**4.6**	**6.1**	**36.9**	**48.3**	**4.21**	**1.01**

Figure 3. Faculty Ratings of All Labs on "Overall Quality as a Teaching Environment (N=22).



Teaching Laboratories

The new construction created 12 teaching laboratories. As with the new classrooms, we asked faculty members to rate the new lab in which they most recently had taught. Table 4 shows the ratings of all new teaching laboratories combined. Only in terms of the "ease of sharing lab space with other instructors" did a sizeable minority (36.3%) of instructors rate the lab as "average" or less than average. Otherwise, the ratings are very positive on every criterion. Averaged across all items, 85 percent of instructors rated the new labs as "good" or "excellent"; and, as shown in Figure 3, 95 percent (all but one respondent) rated the lab's "overall quality as a teaching environment" as "good" or "excellent."

Science laboratories differ markedly by discipline; and so, it is possible that faculty from some disciplines may be more or less satisfied with the new facilities than faculty from other disciplines. In Table 5 we present average ratings on each criterion for the three principal laboratory sciences: biology, chemistry, and physics. In general, the ratings are highly favorable, especially among the chemists. The biologists were least satisfied with the ease of sharing lab space with other instructors, the accessibility of laboratory instruments, and the size or spaciousness of their labs. The physicists were least satisfied with the quality of lighting. Otherwise, all ratings averaged "good" or better.

Table 5. Mean Faculty Ratings of New Teaching Labs by Department

Criterion	Biology	Chemistry	Physics
N	7	6	4
Accessibility of laboratory instruments	3.86	4.50	4.25
Safety of the working environment	4.43	5.00	4.50
Flexibility in accommodating different teaching strategies	4.00	4.33	4.75
Ease of sharing lab space with other instructors/courses	3.00	4.17	4.00
Ease with which students can perform assigned tasks	4.00	4.67	4.50
Size or spaciousness	3.71	4.83	4.75
Quality of lighting	4.43	4.83	3.25
Quality of acoustics	4.43	4.33	4.00
Overall quality as a teaching environment	**4.14**	**4.40**	**4.50**
Average	**4.00**	**4.56**	**4.28**

Table 6. Faculty Ratings of Research Labs Combined in Percents (N=18)

Criterion	Very poor	Poor	Average	Good	Excellent	Mean	S.D.
Accessibility of laboratory instruments	0.0	5.6	11.1	50.0	33.3	4.11	.832
Safety of the working environment	0.0	0.0	16.7	33.3	50.0	4.33	.767
Environmental control	5.6	0.0	11.1	50.0	33.3	4.06	.998
Ease of sharing lab space with other researchers	5.6	5.6	22.2	38.9	27.8	3.78	1.11
Ease with which students can perform assigned tasks	0.0	5.6	5.6	27.8	61.1	4.44	.856
Size or spaciousness	0.0	0.0	16.7	33.3	50.0	4.33	.767
Quality of lighting	5.6	0.0	11.1	50.0	33.3	4.06	.998
Quality of acoustics	5.6	0.0	5.6	50.0	38.9	4.17	.985
Overall capability of supporting a research program	5.6	0.0	5.6	38.9	50.0	4.28	1.02
Average	**3.1**	**1.9**	**11.7**	**41.4**	**42.0**	**4.17**	**.926**

Table 7. Faculty Comparison of New Research Labs with Old Research Labs in Percents (N=18)

Criterion	Disagree strongly	Disagree	Neither	Agree	Agree Strongly	Mean*	S.D.
It is easier to access laboratory instruments	0.0	11.1	16.7	44.4	27.8	3.89	.963
New laboratory is a safer working environment	0.0	0.0	22.2	27.8	50.0	4.28	.826
It is easier to share lab space with others	0.0	5.6	55.6	22.2	16.7	3.50	.857
It is easier to collaborate with other faculty	0.0	16.7	33.3	22.2	27.8	3.61	1.09
I have more options in designing research	5.6	11.1	22.2	38.9	22.2	3.61	1.14
Greater environmental control has increased reproducibility of exp'nts	5.6	11.1	55.6	16.7	11.1	3.17	.985
I carry out research more quickly and efficiently	5.6	11.8	29.4	35.3	17.6	3.47	1.12
My research output is greater	5.9	17.6	35.3	29.4	11.8	3.24	1.09
I have pursued new lines of research	5.9	17.6	41.2	23.5	11.8	3.18	1.07
Students are better able to perform research tasks	5.6	5.6	22.2	44.4	22.2	3.72	1.07
My new lab has given me renewed optimism about my research	5.9	5.9	17.6	47.1	23.5	3.76	1.09
Average	**3.7**	**10.4**	**31.9**	**32.0**	**22.0**	**3.58**	**1.03**

*Based on the assigned values of 1 = disagree strongly, 2 = disagree, 3 = neither, 4 = agree, and 5 = agree strongly.

Twenty of the 22 instructors who taught in one of the new laboratories also taught a laboratory course in the old Science Center prior to the construction of the addition. More than half of this group reported that they had changed their pedagogy as a direct result of the move. The new labs enabled two instructors to introduce new laboratory courses and eight instructors to introduce new laboratory exercises or assignments within an existing course. Seven others indicated that they had changed the way they conducted the laboratory such as by engaging students in more class or group discussion and by making greater use of instruments. One faculty member noted, "The new space just makes what I was trying to do before about a bajillion times easier!!!" And, as one chemist elaborated:

The entire student experience is changed as now all of the experimentation is done in the hoods with designated writing areas. We have centralized areas for equipment, balances and other related materials. The flow through the lab is great. We now have computer projection in the lab so we can do safety training and additional web-based training right in the lab. Entire experience is wonderful!

Goal 2. Advance faculty research.

- Do the laboratories enhance scientists' ability to conduct research?
- Have the new laboratories increased scientists' level of productivity?
- Are faculty members more likely to become involved in collaborative research?

Eighteen faculty respondents, including five biologists, five chemists, and four physicists, currently have research laboratories in the Mars Center. These researchers reported that they had spent from 4 to 24 months in their new labs. All but three researchers reported that they had students working in the lab during the school year, and seven researchers had students in their labs in the summer. During the academic year, faculty members were in their research labs anywhere from 2 to 30 hours per week, with a median of 5 hours; during the summer, when classes were not in session, number of hours in the lab ranged from 0 to 50 per week, with 35 percent exceeding 14 hours.

As Table 6 shows, ratings of the research laboratories are strongly positive. More than 80 percent of the faculty respondents rated their labs as "good" or "excellent" on every criterion except one: "ease of sharing their lab space with other researchers." At least 50 percent rated their labs as "excellent" on four criteria: "safety of working environment," "ease with which students can perform assigned tasks," "size or spaciousness," and, most importantly, "overall capability of supporting a research program."

All 18 faculty members with a research lab in the Mars Center had a research lab in the old Science Center. When asked to compare the new lab with the old, this group reported that the new lab had had a positive impact in several ways (see Table 7). In terms of the operation of the new lab, two-thirds or more of the researchers agreed or strongly agreed that "it is easier to access laboratory instruments," the "new laboratory is a safer working environment," and "students are better able to perform research tasks." As indicators of enhanced productivity, a majority agreed or strongly agreed with these statements: "I have more options in designing research" and "I can carry out research more quickly and efficiently." Relatedly, over 70 percent believed that "my new lab has given me renewed optimism about my research." Finally, 50 percent found it easier to collaborate with other faculty.

Goal 3. Create a safe environment.

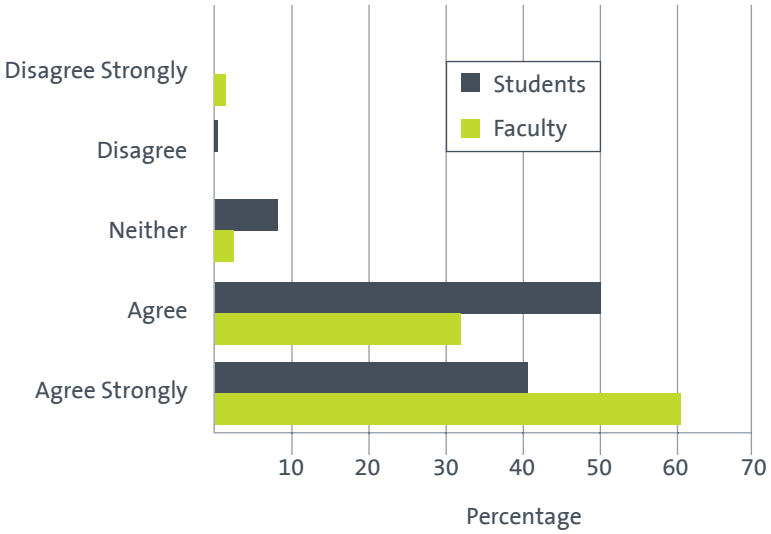
- Do users perceive the Mars Center science laboratories to be safe places to study and work?

As reported above, two-thirds of lab instructors, including 100 percent of those in chemistry, rated the safety of the teaching laboratories as "excellent," and 83.3 percent of the faculty rated the safety of their research laboratories as "good" or "excellent." We also asked students who had taken a laboratory course to tell us whether they were ever concerned about their safety while working in the lab. Nearly all (98.1%) of the 163 students who had taken a lab course reported that they were "never" concerned; three students, reporting on three different laboratory courses, said that they were "sometimes" concerned.

Table 8. Why Students Go to the Mars Center in Percents (N=213)

Purpose	Non-Science	Science Majors	Weighted Average
Attend class	70.0	96.1	73.5
Study or do homework alone	59.1	76.7	61.5
Study or work on group projects with others	44.5	63.1	47.0
Hang out with other students	16.4	19.4	16.8
Conduct independent research	1.8	36.9	6.6
Meet with a faculty member outside class	27.3	80.6	34.5
Purchase food or drinks in the Science Café	40.0	46.6	40.9
Work in a work/study job	7.3	24.3	9.6

Figure 4. Agreement with the Statement "The Mars Center for Science and Technology Is a Comfortable Place Study and Learn" (Students) and "The Mars Center . . . Is a Comfortable Place to Work" (Faculty).



Students also indicated that safety was one of the criteria that made the Mars Center an attractive place to study. Among 179 respondents, 81 percent indicated that it was "moderately," "very," or "extremely important" to them that the Mars Center was a "safe place to be."

Goal 4. Create a welcoming place to congregate, study, and learn.

- How heavily used is the Mars Center for Science and Technology?
- Why do students choose to come to the Mars Center?
- Do users perceive the Mars Center and spaces within it as attractive places to meet, study, and work?

As part of the construction and renovation, numerous study spaces were built in on each level; a café was added; and extensive glass and improved lighting created a sense of openness. Many of the study spaces (and teaching labs) are flooded with daylight and look directly out to an adjacent wetland, creating a strong visual connection to the natural world.

Although no systematic data exist on the use of the old Science Center, anecdotal evidence suggests that use of the new Center has exceeded that of the old. Data from the post-occupancy surveys further show that the Mars Center is a favorite destination for all Wheaton students, even those without classes or labs to attend. Nearly 85 percent of student respondents reported that they had been in the Center more than 20 times since coming to Wheaton; and during the current semester, 44 percent of these students reported entering the Center four to five times a week or more. While the majority of these daily visitors were science majors, more than half of the non-science majors reported visiting the Center at least two to three times a week.

Students go to the Mars Center for many reasons. Table 8 shows the percentage of students who reported going to the Center for nine different purposes. To estimate percentages for all currently enrolled students, we calculated a weighted average that adjusts for the oversampling of science majors.

Four purposes demand that students come to the building to accomplish a specific task: attend class, conduct independent research, meet with a faculty member outside class, and perform a work/study job. For all other purposes, students choose to come to the Mars Center rather than some other place on campus. Thus, almost two-thirds (61.5%) of Wheaton students who frequent the Center use it as a place to study alone, 47 percent use it to study or work with other students, 16.8 percent hang out there with others, and 40.9 percent go there to get something to eat or drink.

Again adjusting for the oversampling of science majors, we found that an estimated 87.8 percent of Wheaton students consider the Mars Center as either "a good place to study" (58.8%) or one of their "favorite places to study" (29%); and 40.8 percent of Wheaton students study in the Center once a week or more. Sizeable percentages of students also describe the Center as either "a good place to meet" (77.2%) or one of their "favorite places to meet others" (11.6%).

Responses to other questions confirmed that students and faculty find the Mars Center a welcoming place to study, learn, and work. An estimated 91 percent of Wheaton students "agree" or "agree strongly" with the statement "The Mars Center for Science and Technology is a comfortable place to study and learn." Similarly, 94 percent of faculty respondents "agreed" or "agreed strongly" with the statement "The Mars Center . . . is a comfortable place to work." (See Figure 4.) Further indicative of the Center's attraction, when we asked respondents to make suggestions for improving the Center, the most frequent responses were to keep the café open later, to keep classrooms and labs open at night, and to add more study spaces or study rooms. In other words, students wanted greater access to rooms within the Center and they wanted more of what it provided.

Table 9. Where Students Most Often Study (N=182) and Meet Others in Mars Center (N=176) in Percents

	Study	Meet others
Davis Spencer Café tables/chairs	43.4	68.8
Level 1 open study lounge adjacent to café	18.1	12.5
Level 1 closed study lounge adjacent to café	12.6	9.1
Level 1 open study lounge in corner	26.4	14.2
Level 2 chairs next to stairs	13.2	9.1
Level 3 chairs next to stairs	12.6	6.2
Room 2139 study area	26.9	14.8
Room 3139 study area	28.0	15.9
Some other area	43.4	36.9

Table 10. Importance of Various Features in Making the Mars Center an Attractive Place to Study in Percents (N=180)

Feature	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Import	Mean	S.D.
Availability of food and drinks in café	12.8	22.8	28.3	22.8	13.3	3.01	1.23
Convenient place to be before and after class	5.0	9.5	24.6	38.0	22.9	3.64	1.09
Comfortable furniture in public spaces	1.1	4.5	18.0	46.6	29.8	3.99	.873
Good artificial lighting	2.2	4.4	25.0	43.3	25.0	3.84	.926
Views to the outside	2.2	8.4	22.9	35.2	31.3	3.85	1.03
Natural light	1.7	3.9	19.0	35.8	39.7	4.08	.945
Generally quiet	0.0	2.2	8.9	37.8	51.1	4.38	.741
Safe place to be	2.2	5.6	11.2	31.8	49.2	4.20	.997
Pleasing décor	2.2	14.6	27.0	31.5	24.7	3.62	1.08
Openness and spaciousness of public spaces	4.4	10.0	27.2	32.2	26.1	3.66	1.10
Many friends go there	24.4	20.0	26.1	17.2	12.2	2.73	1.33
Average	**5.3**	**9.6**	**21.7**	**33.8**	**29.6**	**3.31**	**1.03**

Given the multiplicity of common areas in the Mars Center, we were interested in where students tend to go. Table 9 shows the general areas where students reported that they most often study and meet with others. Students most often chose the café tables and chairs as both a place to study and to meet others. The café was by far the favorite meeting place. Besides the café, the first floor study lounge and the enclosed study rooms on the second and third floors also were popular for studying. Most importantly, however, study areas varied, with students tending to choose many areas throughout the Center, on every level. Of the relatively large percentage of students choosing "some other area," we suspect that some are using the areas outside faculty offices, particularly the Math/CS offices where there are couches. Others may be using the write-up spaces outside the research labs and some of the labs and seminar rooms to study alone and in groups. Indeed, as we document below, it is the assortment of study areas that appears to make the Mars Center such an attractive place to study and meet others.

The data clearly show that students are drawn to the Mars Center. To find out what draws them, we asked students to rate the importance of several features "in making the Mars Center for Science and Technology an attractive place to study" and "meet with other students." As Tables 10 and 11 show, most students deemed every aspect of the Center at least "moderately important" in attracting them. The Mars Center's most important aspects as a place of study were that it is a safe place and is generally quiet, followed by its natural light and comfortable furniture. Quiet, safety, and comfortable furniture also were important factors in making it appealing as a place to meet others. In open-ended comments, such as the following, students also referred repeatedly to the number and variety of public spaces:

"I like that it . . . has a lot of cool places to study."

"It . . . provides a lot of self-study or teamwork space with very friendly equipment such as writing boards. Usually, walking through the Science center, I can find a place to do my stuff within 3 mins."

"I really enjoy that there are different spaces to use throughout the building. I like the open spaces, windows, and study spaces. It's a welcoming space."

"I like the openness and appearance of the building along with the labs, classrooms, and study spaces. It is a conducive . . . for learning and studying on an individual basis as well as on a group basis."

Table 11. Importance of Various Features in Mars Center an Attractive Place to Meet with Other Students in Percents (N=169)

Feature	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Import	Mean	S.D.
Availability of food and drinks in café	16.6	11.2	30.8	23.7	17.8	3.15	1.31
Convenient place to be before and after class	6.5	7.1	21.9	41.4	23.1	3.67	1.10
Comfortable furniture in public spaces	0.6	4.7	23.1	41.4	30.2	3.96	.882
Good artificial lighting	4.2	11.3	36.3	28.0	20.2	3.49	1.07
Views to the outside	7.1	11.9	29.2	30.4	21.4	3.47	1.16
Natural light	5.4	8.9	26.8	32.7	26.2	3.65	1.21
Generally quiet	4.1	8.9	20.1	35.5	31.4	3.81	1.10
Safe place to be	6.0	3.6	23.2	32.7	34.5	3.86	1.12
Pleasing décor	4.2	12.0	32.9	32.3	18.6	3.49	1.06
Openness and spaciousness of public spaces	4.1	5.3	27.2	39.6	23.7	3.73	1.02
Many friends go there	14.2	15.4	29.6	23.1	17.8	3.15	1.28
Average	**6.6**	**9.1**	**27.4**	**32.8**	**24.1**	**3.58**	**1.12**

Table 12. What the Faculty Like Best about the Mars Center (N=38)

	N	Percent of Cases	Percent of responses
Science laboratories	8	21.1	11.4
Brightness/natural lighting	7	18.4	10.0
Aesthetically pleasing	6	15.8	8.6
Welcoming, pleasant place to work	6	15.8	8.6
Public spaces	6	15.8	8.6
Spaciousness/openness	5	13.2	7.1
Classrooms	4	10.5	5.7
Overall design/layout	4	10.5	5.7
Office space	4	10.5	5.7
Glass walls	3	7.9	4.3
Safe environment	3	7.9	4.3
Showcase for Wheaton	3	7.9	4.3
Davis Spencer Café	2	5.3	2.9
Other	9	23.7	12.9
	70	**184.3**	**100.1***

*Does not add to 100 due to rounding error.

Table 13. What Students Like Best about the Mars Center (N=157)

	N	Percent of cases	Percent of responses
Lighting/brightness	38	24.2	11.9
Numerous places to study	28	17.8	8.8
Comfortable/inviting	24	15.3	7.5
Laboratories	22	14.0	6.9
Spaciousness/openness	20	12.7	6.2
Newness of building	19	12.1	5.9
Davis Spencer Café	18	11.5	5.6
Eco-friendly	17	10.8	5.3
Clean	16	10.2	5.0
Classrooms	16	10.2	5.0
Quiet	15	9.6	4.7
Nice place to study	12	7.6	3.8
Aesthetically pleasing	11	7.0	3.4
Design/layout	10	6.4	3.1
Up-to-date labs/equipment	9	5.7	2.8
Water bottle fountain	7	4.5	2.2
Makes a favorable impression	6	3.8	1.9
Study rooms	6	3.8	1.9
Other (less than 3.0%)	26	16.6	8.1
	320	**203.8**	**100.0**

*Does not add to 100 due to rounding error.

Shedding further light on what makes the Mars Center attractive to students and faculty are responses to the open-ended question: What do you like best about the Mars Center for Science and Technology? As shown in Tables 12 and 13, faculty and student answers overlap a fair amount. For example, among the top six best-liked features identified by faculty and students, five are essentially the same: Both like the Center's natural lighting and brightness, its welcoming and inviting feel, the availability of public spaces, its spaciousness, and the new science laboratories. Some faculty members and students also find the Center aesthetically pleasing and like its new classrooms and overall design and layout.

As noted above, many student respondents liked the numerous places to study in the Center; similarly, looking at it from a different perspective, faculty members reported that they liked the public spaces best, referring to these as "spaces for conversation" and "nice quiet spaces where I can concentrate."

Goal 5. Promote interaction among students and faculty.

- Do the public areas in the Mars Center for Science and Technology facilitate interactions among students?
- How often do students use public areas in the Mars Center as learning spaces?
- Do the public areas in the Mars Center facilitate interactions among the faculty?
- How often do faculty members interact with colleagues?
- How often do faculty members meet with students outside their office, classroom or laboratory?

The only valid means of estimating the impact of the Mars Center on student and faculty interaction is to compare patterns of interaction before and after its construction. Short of that, we asked faculty respondents the extent to which they agree that "public areas in the Mars Center for Science and Technology make it easy to socialize with colleagues" and "easy to socialize with students." Over 80 percent of respondents "agreed" or "agreed strongly" with both statements; only one person disagreed.

We further found that faculty respondents often use these public spaces to meet others. Eighty percent reported meeting students in the Mars Center outside their office, classroom, or laboratory; over one-half did this at least a few times each semester. In addition, over 80 percent reported interacting with a faculty colleague from another department. Not surprisingly, faculty members with offices in the Mars Center were far more likely to report meeting with others in the Center's public spaces. Thus, 100 percent of those with Mars Center offices, as compared with 60 percent of other faculty respondents, reported that they had interacted with students in public spaces in the Mars Center.

The most popular meeting place was the Davis Spencer Café, where two-thirds of the respondents met with colleagues and students. To determine the extent to which faculty interactions went beyond mundane greetings and exchanges, we asked faculty members how often their conversations with colleagues in the Mars Center were about research, teaching, or some other scholarly subject. Over 90 percent reported that this occurred at least once or twice, and over 40 percent reported that it happened a few times a month or more.

Table 14. Estimated Frequency of Students' Engaging in Various Co-Acting or Group Activities in Mars Center in Percents (N=173)

Activity	Never	Rarely	Some of the time	Most of the time	Always
Work on group project for a class	15.9	21.3	30.9	28.8	3.1
Study or work on problems together	12.9	20.7	34.1	29.6	2.8
Study on your own	9.4	15.0	29.7	35.3	10.5
Discuss ideas from class	14.1	37.7	37.2	9.4	1.6
Just hang out	21.9	30.8	31.2	14.9	1.2
Get a drink or something to eat	16.5	36.6	29.3	16.0	1.5

We also asked students what they do when they get together in the Mars Center. As reported earlier, an estimated 85+ percent of Wheaton students consider the Center to be a good place or their favorite place on campus to get together with other students. Students who had met others there reported that they engaged in several activities. Adjusting for the oversampling of science majors, Table 14 presents frequency estimates for all Wheaton students on campus in the spring semester.

When getting together with others in the Center, students are most likely to study independently or work with others on problems or on group projects for a class. An estimated 46 percent of Wheaton students also spend at least some of the time discussing ideas from class. In short, a good deal of learning takes place in the Mars Center as students meet informally outside the classroom. Furthermore, students acknowledged this in their comments about what they liked best about the Center, describing it as "a comfortable environment to work and study in" and "a very comfortable place to study and learn even if what one is working on is completely unrelated to science."

Although we cannot say whether informal interactions were more likely to occur as a result of the increase in common areas throughout the Mars Center, the data show that students and faculty are making extensive use of these areas to meet others.

Goal 6. Enhance students' interest in and attitude toward science.

- Do students have a more favorable attitude toward science?
- Does the visibility of laboratories and scientific instruments pique students' interest in science?

Without knowing student attitudes toward science prior to construction, we cannot know for sure how much the Mars Center has affected those attitudes. We do know that the vast majority of students, including non-science majors, find the Center a comfortable place to study and learn. And while there, they can see science in action as they peer into the glass-walled laboratories. To get some sense of how much the Mars Center kindles students' interest in science, we asked respondents how much they agreed with two statements: "Seeing students working in the science labs arouses my interest in science"; "Being in the Mars Center for Science and Technology inspires me to learn more about science." Over half of the respondents "agreed" or "agreed strongly" with each of these statements; most of the remaining students were neutral, and few disagreed. One student commented, "Being in [the Mars Center] really makes me want to learn science more and reinforces my love for the subject."

Such views are likely to be tempered by pre-existing attitudes toward science. To get a sense of how attitudes may affect the impact of the Mars Center, we created an "attitude toward science" index by summing responses to three items, to which respondents indicated their level of agreement: "I enjoy taking science courses"; "Science is boring"; and "I am not very interested in science." As expected, science majors and those with more positive attitudes toward science were much more likely to report that the labs aroused their interest in and the building inspired them to learn more about science. Yet, perhaps indicative of the building's positive impact, nearly 40 percent of non-science majors also were inspired.

The physical environment, especially the glass-walled laboratories (and classrooms), also positively affects the faculty. Similar to piquing students' interest in science, almost three-quarters of faculty respondents agreed or agreed strongly that "glass walls in the Mars Center create a stimulating place to work."

Goal 7. Create an energy-efficient, sustainable environment.

- Are users aware of sustainable measures employed in the Mars Center for Science and Technology?
- Do instructors use the Mars Center to teach about sustainability?

According to the Wheaton College website, "the Mars Center for Science and Technology was designed, from its inception, to earn LEED certification" from the U.S. Green Building Council. The Council has "established nationally recognized standards for the design, construction and operation of buildings that meet the

Table 15. Percent Faculty (N=47) and Students (N=234) with Knowledge of Sustainable Measures Employed in Mars Center

Sustainable Measure	**Faculty**	**Students**
Exterior shading used to reduce energy consumption	77.1	66.2
Daylight and views to regularly occupied spaces	85.4	83.3
Energy recovery wheel	19.1	17.1
Low-flow fume hood system	46.8	49.1
High-performance lighting system	58.3	70.7
Reflective roof to reduce heat gain	41.7	52.6
"Living plant" roof to reduce energy consumption	78.7	72.2
Storm water management system	40.4	27.0
Average	**55.9**	**54.8**

highest green building and performance measures." Thus, EYP designed the Mars Center to achieve the highest level of energy efficiency and environmental responsibility. By incorporating an energy-recovery wheel for the laboratory exhaust system as well as several other design elements, the Center succeeded in earning a LEED Gold certification, emblematic of buildings that promote a healthy environment.

The LEED Gold certification validates the success of the building design in accomplishing the general goal of sustainability. As an educational institution, however, we believe the College would want the Mars Center to educate users about sustainability by making students and faculty more knowledgeable of sustainable practices in building design. To gauge faculty and students' knowledge of the Mars Center's sustainable features, we asked if respondents were aware of eight sustainable measures employed in the Mars Center. Table 15 shows the percentage of faculty and students professing knowledge of each measure. The general level of awareness is similar for faculty and students, with each group reportedly knowing between four and five of the measures we identified. Respondents were least aware of the energy-recovery wheel, which is hidden from view on the top floor of the Mars Center, followed by the storm water management system. They were most aware of the savings on energy consumption provided by natural lighting, exterior shading, and the "living plant" roof.

On every item but one, student science majors were more likely to report awareness than non-science majors. Although the overall level of professed awareness was about the same for students and faculty, students were more likely than faculty to report that that the Mars Center had increased their "awareness of strategies and actions that may be taken to promote a healthy environment": 65.1 percent of students, as compared with 39.6 percent of faculty, indicated that their awareness increased "somewhat" or "a great deal." Only two faculty members reported that they had used the Mars Center's sustainable measures to teach about sustainability. On the other hand, two-thirds of the faculty agreed that "sustainable measures employed in the Mars Center for Science and Technology make it a better environment in which to work."

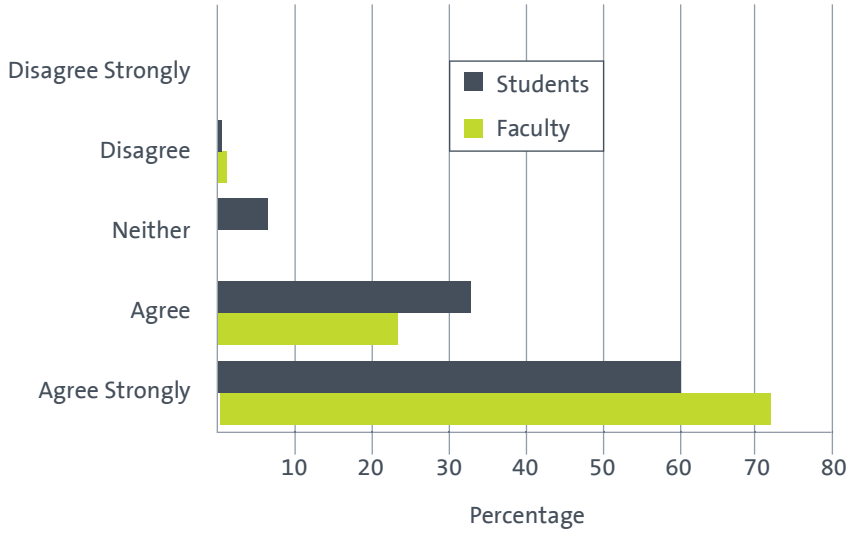
While a few students may have learned about the building's sustainability through coursework or by visiting the Project LEED website (http://wheatoncollege.edu/mars-science/leed-certification/), we suspect most students, faculty, and others entering the Mars Center become aware of its sustainable features through their interaction with the building. For example, daylight harvesting of lighting is evident in laboratories, classrooms, and offices as lights turn on or off depending on exterior conditions; an accessible green roof serves as the main building entrance from the upper campus; and the bottle filling station (mentioned by several students as what they liked best about the building) points out how many plastic bottles have been saved.

The eco-friendly nature of the Mars Center was frequently identified as what students like best about the building. The following two comments show just how important students think this is.

> The new science center was a smart, responsible and even necessary move to step up our game. In the coming years, more and more students will be looking for sustainability as deciding factors at colleges. If the school wants to attract these students -- who are often innovative, goal-oriented and hard working -- Wheaton needs MORE buildings like this one.

> [T]hat the Mars Center for Science and Technology is LEEDS certified . . . shows that Wheaton is committed to reducing its impact on the environment. When I was applying for college, I saw this as a very attractive quality.

Figure 5. Faculty (N=48) and Student (N=236) Agreement with the Statement "The Mars Center for Science and Technology Projects a Favorable Image of Wheaton College."



General Impressions

Beyond survey items that addressed specific goals and questions, we included a few items that measured general impressions of the Mars Center. Thus, we asked faculty respondents, "How satisfied are you with the new Mars Center for Science and Technology overall?" Eighty-five percent reported that they were either "very" or "extremely satisfied"; 95 percent reported that they were at least "moderately satisfied." Summing up her/his feelings about the new building, one faculty member wrote:

The spaces flow nicely and it is a pleasure to walk from one end of the building to the other. I feel more connected to the outdoors, and can easily gesture during class to phenomena happening out the window. I immediately noticed a more positive attitude in my students while teaching in the new spaces. I no longer feel trapped in a dusty prison, and the level of convenience in many aspects of my life has gone up. The building has many nice quiet spaces where I can concentrate. It has already been a fabulous recruiting tool for new science students and new faculty members.

As Figure 5 further shows, 99 percent of the faculty respondents and 94 percent of the students agreed or agreed strongly with the following statement: "The Mars Center for Science and Technology projects a favorable image of Wheaton College." In a similar vein, the Center evoked a sense of pride in many students, who commented:

I believe that this building really makes Wheaton feel more like a college. It is really nice and the fact that it is green makes me proud to be at Wheaton.

I like how clean and modern [it] is, which indicates how Wheaton is focusing on improving their science facilities and improving the experience and education of science students, which means a lot to me.

It is a great attraction for the school and my friends who take science courses really think that Wheaton's program and Science Center is an outstanding place to learn.

Table 16. Student Suggestions for Improving the Mars Center (N=86)

	N	Percent of cases	Percent of responses
Keep café open later	12	14.0	11.4
Keep classrooms and labs open at night	12	14.0	11.4
Add more study spaces or study rooms	10	11.6	9.5
Increase size of seminar rooms	8	9.3	7.6
Provide more comfortable chairs	8	9.3	7.6
Increase use of building (e.g., hold more classes there)	5	5.8	4.8
More accessible printers and computers	5	5.8	4.8
Improve temperature control	4	4.7	3.8
Provide maps or signage for easier navigation	3	3.5	2.9
Expand/improve café menu	3	3.5	2.9
Reduce café food prices	3	3.5	2.9
Add artwork and color	3	3.5	2.9
Provide easier lighting control	3	3.5	2.9
Other	26	30.2	24.8
	105	**122.2**	**100.2***

*Does not add to 100 due to rounding error.

Table 17. Faculty Suggestions for Improving the Mars Center (N=24)

	N	Percent of Cases	Percent of responses
Provide greater lighting control in classrooms	5	20.8	16.1
Improve temperature control	4	16.7	12.9
Renovate the old science center	3	12.5	9.7
Office enclaves are isolated	3	12.5	9.7
Improve classroom technology	3	12.5	9.7
Alleviate crowding in classrooms	2	8.3	6.5
Other	11	45.8	35.5
		129.1	**100.1***

*Does not add to 100 due to rounding error.

Suggestions for Improvement

When we asked, "What suggestions do you have for improving the Integrated Science Complex?" we got divergent responses from students and faculty. Only a minority of respondents offered suggestions; but some common responses indicate issues that the College should consider addressing.

As shown in Table 16, students' suggestions centered on extending the Mars Center's resources. Given the long hours they spend in the Center, students want to be able to get food and drinks at any time. And because the café closes at 3:00 p.m., several respondents suggested that the College extend its hours. Students also wanted classrooms and labs to be open later. Currently, classrooms generally are locked around 6:00 p.m. Other suggestions for enhancing resources included putting in more study spaces and study rooms and providing additional computers and printers. Having "only a few study rooms," one student explained, "causes many people to be left without a place to study, especially since non-science majors use the facilities too." Reflecting the views of several students, one respondent wrote: "It is a treat to study there but whenever I need to print something I have to go to the library. If it had a printer available to students I would study there more often."

Several students also complained that the seminar rooms "felt cramped." For some, class sizes seemed too big for the available space; for others, the arrangement of tables contributed to this feeling. As one student elaborated, "the arrangement [of the tables] . . . makes it difficult to move around and find a seat, and the professor often has to squeeze by students to write on the board." There also were several references to uncomfortable chairs, in the café and elsewhere. Students reported that "a lot of the chairs look cool" or "make the building look more 'modern'," "but they are not very comfortable."

Table 17 summarizes suggestions for improvement made by faculty respondents. The most frequent suggestion was to make it easier to control the lighting in the classrooms and labs. One person recommended: "Rewire the lighting in each and every room to allow for zones (on or off) rather than dimming/ brightening the entire room." Another suggestion was to improve temperature control in certain areas of the building. In particular, some complained that classrooms were too hot and offices were too cold.

A few faculty members mentioned problems with classroom technology. In one case, this had to do with the computer setup. As the person explained: "The computer never seemed to be set up for the wireless keyboard/mouse. And, once the setup was made, there was a challenge of where to have the keyboard." Finally, two faculty respondents echoed student concerns about crowded classrooms. With specific reference to Room 1124, one person thought the room felt a bit too tight with the four table configuration. Students were scattered to the edges, and it was difficult to move the chairs around -- it was even difficult for some students to get to their seats once others had sat down. I'd recommend using smaller seminar style tables to bring the class closer in.

Conclusions

Findings from post-occupancy surveys at Wheaton College indicate that the new Mars Center for Science and Technology has had a very positive impact on students and faculty. For students, the Center is a favorite destination and campus center of learning. Almost two-thirds of the student body use it as a place of study, and many students go there to meet or work with others, or just hang out and get something to eat or drink in the café. Indeed, students find the Center so attractive that they want it to be open later and they want more study areas.

Likewise for faculty, especially those with offices nearby, the new Mars Center has become a welcoming place to meet students and colleagues. As important, new classrooms and teaching laboratories have enriched the teaching environment; and, based on comparisons with the old laboratories, new research laboratories have created safer working environments, enhanced productivity, and renewed faculty optimism about their research. Faculty members tend to be very satisfied with the Center. Further, both faculty and students almost unanimously agree that the Mars Center projects a favorable image of Wheaton College.

Findings from these surveys strongly support the four goals set forth by Wheaton College in designing the Mars Center. Data on student and faculty impressions of the new classrooms and labs speak to Wheaton's goal of flexibility. With its state-of-the-art facilities, the new building facilitates the accommodation of ongoing changes in science and technology. This is supported by faculty members' reports that the new labs make it easier for students to perform research tasks and for them to collaborate with other faculty and incorporate changes in their teaching methods. In the brief period that the Center has been open, over one-half of respondents have made pedagogical changes that they attribute to the new facilities. Further, they generally see themselves as having more options in designing research and as more efficient in carrying it out.

Data on use patterns support Wheaton's goal of community. Attracted by the abundant public spaces throughout the Center, students' and faculty members' use of the building extends well beyond scheduled classes and labs. Faculty members find it easier to socialize with students and colleagues; an estimated one-half of Wheaton students go there to study with others or work on group projects.

In addition to the evidence that the Mars Center has become a favorite campus destination to study and meet others, data showing that the visibility of science has kindled students' interest in science have fostered the Wheaton goal of connections.

Finally, while the goal of sustainability is supported directly by the Center's LEED Gold certification, survey data further show that the building has increased students' awareness of sustainable measures and their appreciation of environmental conservation.

Acknowledgments

This assessment of the impact of the Mars Center benefited greatly from the helpful feedback we received from several Wheaton staff and faculty as we prepared and pretested the questionnaires and as we analyzed the findings. We especially thank Michael Berg, Susan Bergeron, Linda Eisenmann, Tommy Ratliff, Gail Sahar, and Pat Santilli.

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