

Sustainability Efforts and Policy Goals at Macalester College

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The primary purpose of this report is to examine three factors, (1) student stances on the Sustainability Statement, (2) sustainability at Macalester, and (3) environmentalism on behalf of the student body. Macalaster College has developed a sustainability statement, but has not received much student input for the initiative. We created a random survey that serves both as a questionnaire and as a way to make the sustainability efforts on campus better known. From this student feedback, we attained data that will aid the Sustainability Office improve the Sustainability Statement. We began by selecting a random sample of Macalester students to take the survey. Student values and behaviors concerning on-campus sustainability are crucial to consider when assessing the Sustainability Department's current statement regarding environmentally concerned initiatives. Student concerns around fossil fuel and energy use as well as actions taken to reduce plastic and paper waste are of particular importance because these environmentally conscious behaviors will give the department greater insight on the general student body's values. If we consider these current behaviors, we will see where Macalester College's community currently stands on environmental consciousness along with where to promote future sustainable initiatives. Students, for the most part, feel that such environmental consciousness should play an integral part of the Macalester experience, but seem to be unaware of sustainability. Our analysis will also cover the need for greater education regarding several campus sustainability projects. Many of the abstract and off-campus projects have been banished to obscurity. This analysis will serve the Sustainability Office in their sustainability mission at Macalester.

Methods

In order to gather data from the large student-body population most effectively over a short period of time, we created a short online survey to ask students about their opinions on the

important issues facing the sustainability office. We used stratified sampling to collect our data by sending the survey to 100 students from each class (first-year, second-year, junior, senior) randomly selected by Institutional Research.

We asked participants in an email message that provided a link to complete a 15-minute online survey assessing Macalester’s Sustainability Goals. We anticipated students to respond out of feelings of connectedness to Macalester College—because they want their opinions to be taken into account when reevaluating campus-wide goals and action plans.

Results and Data Analysis

One of the primary purposes of this study is to determine the student body’s feelings towards the Sustainability Statement. As Chart 1 indicates, the majority greatly agree with the statement’s phrasing. This

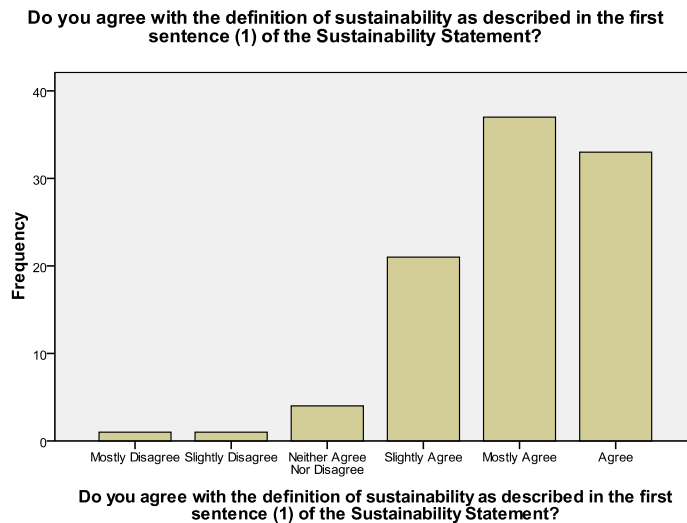


Chart 1

unanimous consensus may be attributed to the student body’s limited knowledge of Sustainability, which will be discussed later in the report. While this initial question seems to show that the Macalester student body is fine with the sustainability mission at Macalester, further data will prove that this stance is perhaps based on a lack of knowledge of the topic.

We asked our survey respondents whether or not they consider themselves environmentalists to assess differences in opinion between those who are actively concerned

with environmental issues and those who are not. Original responses were coded on a seven-point scale from “not at all” to “yes, I do.” These responses were re-coded into three variables for ease of analysis. “Not at all”, “rarely”, and “not very often” were re-coded as “no”. “Sometimes” remained “sometimes”. “On occasion”, “often”, and “yes, I do” were re-coded as “yes.” Responses show that 55% of Macalester students consider themselves environmentalists.

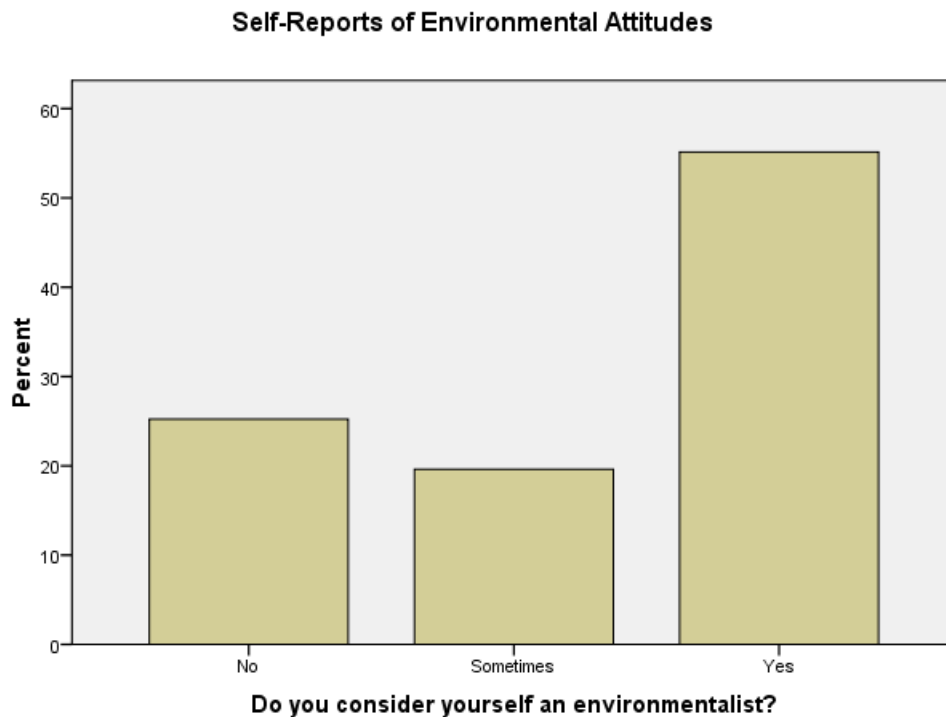


Chart 2

Based on these responses, we cross-tabulated whether students identify themselves as environmentalists with their reports of sustainable behaviors. The sustainable behavior questions (questions 19 through 23) were also originally ranked on a 7-point scale. Thus we also chose to consolidate these responses into three categories concerning how often students perform these behaviors: (1) frequently perform this action, (2) sometimes perform this action, (3) rarely perform this action in order to clarify analysis. We found that for all five sustainable behavior questions, students who self-identify as environmentalists are most likely to engage in

sustainable action. Peruse the following tables to observe the results. Percentages in bold in each table represent the proportion of self-identifying environmentalists who report performing environmentally conscious behaviors.

Table 1. Environmentalists and reduction of car usage (percent), Macalester College, 2009.

	Total	Consider self environmentalists	Sometimes consider self environmentalist	Do not consider self environmentalist
Reduce car usage	63.3%	86.1%	63.8%	30.8%
Sometimes reduce car usage	27.5%	5.6%	31.9%	50.0%
Do not reduce car usage	9.2%	8.3%	4.3%	19.2%
Total number	109	36	47	26

Table 2. Environmentalists and choice of tap-water over bottled-water (percent), Macalester College, 2009.

	Total	Consider self environmentalists	Sometimes consider self environmentalist	Do not consider self environmentalist
Choose tap-water	77.3%	94.4%	76.6%	55.6%
Sometimes choose tap-water	12.7%	2.8%	17.0%	18.5%
Do not choose tap-water	10.0%	2.8%	6.4%	25.9%
Total number	110	36	47	27

Table 3. Environmentalists and reduction of air travel (percent), Macalester College, 2009.

	Total	Consider self environmentalists	Sometimes consider self environmentalist	Do not consider self environmentalist
Reduce air travel	27.3%	47.2%	21.3%	11.1%
Sometimes reduce air travel	28.2%	22.2%	38.3%	18.5%
Do not reduce air travel	44.5%	30.6%	40.4%	70.4%
Total number	110	36	47	27

Table 4. Environmentalists and reduction of paper consumption (percent), Macalester College, 2009.

	Total	Consider self environmentalists	Sometimes consider self environmentalist	Do not consider self environmentalist
Reduce paper consumption	75.5%	91.7%	76.6%	51.9%
Sometimes reduce paper consumption	14.5%	8.3%	14.9%	22.2%
Do not reduce paper consumption	10.0%	0%	8.5%	25.9%
Total number	110	36	47	27

Table 5. Environmentalists and turning off appliances when not in use (percent), Macalester College, 2009.

	Total	Consider self environmentalists	Sometimes consider self environmentalist	Do not consider self environmentalist
Turn off appliances	76.4%	91.7%	74.5%	59.3%
Sometimes turn off appliances	15.5%	8.3%	17.0%	22.2%

Do not turn off appliances	8.2%	0%	8.5%	18.5%
Total number	110	36	47	27

As exemplified in the above tables, on-campus environmentalists are taking the greatest steps towards a sustainable community. Reduction of car use is highly important to environmentalists and to a majority of Macalester students. Accordingly, the college should continue promoting alternative transportation such as reduced bus passes and Macbike. Our data shows that the majority of students feel subsidized bus passes and bike storage areas are important priorities for reaching sustainable goals.

The majority of students report choosing tap over bottled water when given a choice. Through reporting the percentage of students who consciously choose to reduce personal waste, the campus can use social norm statistics to promote reducing Macalester's contribution to landfills. Likewise, the majority of students report efforts to reduce paper and energy consumption. Again, if the Sustainability Department communicates the sustainable efforts to a majority of the on-campus community, it is likely that more students will be encouraged to be conscious of resource use. On top of this strategy, the college should continue giving students the choice to take the most sustainable actions wherever possible. As our data illustrates, the majority of students *will* make the sustainable choice.

When survey respondents were asked if they make an effort to reduce air travel, the majority of students reported not making this sacrifice. Even if we focus on the data from the self-reporting environmentalist group, less than half report consciously reducing air travel. We expect that this is due to the fact that transportation alternatives greatly increase travel time. Additionally, more sustainable methods of transportation may be unavailable to students who

live overseas. Macalester’s sustainability initiatives should promote alternative methods of cross-country transportation instead of air travel.

To assess whether student thoughts about on-campus policies might be a result of whether students identify as environmentalists, we analyzed the association between identifying as an environmentalist and support for different on-campus policies. As discussed above, after simplifying the environmentalist question, the data shows that 55% of the respondents identify as an environmentalist. We felt the comparison between environmentalists and non-environmentalists opinions on policy projects was crucial. Environmentalists’ opinions are important to the Sustainability Department because they represent the opinions of those who critically consider sustainability issues. Non-environmentalists, however, also make up a portion of the student body and their opinions must also be considered.

In order to produce a clear cross tabulation, we first simplified the variables of the questions to be addressed. For the question “Do you consider yourself an environmentalist?” we split the original seven variables ranging from 1 (not at all) to 7 (yes I do) into three (no, sometimes, and yes) as discussed above. We then simplified the six questions about priority, which originally ranged from 1 (completely unessential) to 7 (completely essential), into the three variables unessential, neutral and essential. The following tables exhibit the results.

Table 6. Environmentalists and opinions on subsidized bus passes (percent), Macalester College, 2009.

	Total	Consider self environmentalist	Sometimes consider self environmentalist	Do not consider self environmentalist
Subsidize bus passes	74.2%	77.1%	73.7%	68.2%
Neutral	12.4%	8.3%	15.8%	18.2%

Do not subsidize bus passes	13.5%	14.6%	10.5%	13.6%
Total number	89	48	19	22

Table 7. Environmentalists and opinions on bike storage areas (percent), Macalester College, 2009.

	Total	Consider self environmentalist	Sometimes consider self environmentalist	Do not consider self environmentalist
Create bike storage areas	78.7%	75.0%	84.2%	81.8%
Neutral	11.2%	12.5%	0%	18.2%
Do not create bike storage areas	10.1%	12.5%	15.8%	0%
Total number	89	48	19	22

Table 8. Environmentalists and opinions on charging for on-campus parking (percent), Macalester College, 2009.

	Total	Consider self environmentalist	Sometimes consider self environmentalist	Do not consider self environmentalist
Charge for parking	29.3%	35.0%	13.3%	30.0%
Neutral	24.0%	20.0%	33.3%	25.0%
Do not Charge for parking	46.7%	45.0%	53.3%	45.0%
Total number	75	40	15	20

Table 9. Environmentalists and opinions on charging for plug-in appliances (percent), Macalester College, 2009.

	Total	Consider self environmentalist	Sometimes consider self environmentalist	Do not consider self environmentalist
Charge for appliance use	21.6%	16.7%	21.1%	33.3%
Neutral	10.2%	8.3%	15.8%	9.5%

Do not charge for appliance use	68.2%	75.0%	63.2%	57.1%
Total number	88	48	19	21

Table 10. Environmentalists and opinions on installing more water fountains (percent), Macalester College, 2009.

	Total	Consider self environmentalist	Sometimes consider self environmentalist	Do not consider self environmentalist
Install more water fountains	32.6%	35.4%	21.1%	36.4%
Neutral	21.3%	14.6%	31.6%	27.3%
Do not install more water fountains	46.1%	50.0%	47.4%	36.4%
Total number	89	48	19	22

Table 11. Environmentalists and opinions on installing non-automatic flush toilets (percent), Macalester College, 2009.

	Total	Consider self environmentalist	Sometimes consider self environmentalist	Do not consider self environmentalist
Install non-auto flush toilets	47.7%	45.8%	50.0%	50.0%
Neutral	14.8%	12.5%	22.2%	13.6%
Do not install non-auto flush toilets	37.5%	41.7%	27.8%	36.4%
Total number	88	48	18	22

From observing the above tables, student opinions on subsidizing bus passes and bike storage areas show that the overwhelming majority of students want these two policies to be in place at Macalester considering our current sustainability goals. When the students considered

being charged themselves for unsustainable behaviors such as parking a car on campus or plugging in appliances in dorm rooms, student opinions displayed more variation. In light of these two variables, the data does not provide significant differences in opinions between environmental and non-environmental students. Generally, students do *not* want to be charged for taking non-sustainable actions. We hypothesize that students may interpret being charged as a form of punishment. It follows that students do not want to be punished for unsustainable behaviors that are already in place.

Regarding institutional changes, students do not feel more water fountains are needed. Perhaps this is because the college already has a number of fountains around campus. On the other hand, students *do* want auto-flush toilets to be removed from campus. It is interesting to note here that more identifying environmentalists (then non-environmentalists) do *not* want auto-flush toilets installed. This might be because environmentalists took the energy costs of installing new toilets into account. In the data we collected, we are missing external control variables with which to analyze the causes of this difference in opinions between environmentalists and non-environmentalists and thus should be wary of making causal conclusions.

The next question analyzed (Question 29) asks students if environmental sustainability is an important aspect of a liberal arts education. We cross-tabbed this question with questions pertaining to sustainability at Macalester College. This was done in order to determine how respondents feel the college compares with their stances on the importance of sustainability in a liberal arts education.

The first question cross-tabbed is Question 4 (Do you think sustainability is compatible with Macalester's academic resources?). The majority of respondents who believe that sustainability is significant to a liberal arts education believe that Macalester is

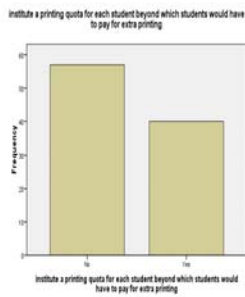
currently compatible with sustainability, to some degree. There were a few respondents who, believing that sustainability is mostly important to a liberal arts education, that feel that Macalester is slightly incompatible with sustainability, but these act more like outliers. What this cross tabbing says overall is that those who believe sustainability is important to a liberal arts education feel Macalester College is highly compatible with these goals.

The following three questions with which Question 29 is cross-tabbed are in regard to Macalester's three pillars (internationalism, multiculturalism, and service to society) and how they are compatible with sustainability. The results for all three cross-tabs prove similar, showing high compatibility across the board. Most respondents who replied to Question 29 with some level of importance feel that sustainability is compatible with the three pillars. This suggests that sustainability is seen not only as a significant part of a liberal arts education, but also an integral part of Macalester College's goals.

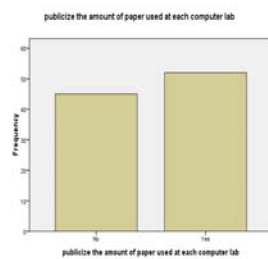
This being said, the majority of individuals who feel that sustainability has some level of importance in a liberal arts education feel that the Sustainability Statement needs to be changed to some degree. However, this cross-tabulation has shown something far more significant. For the greater part, Macalester students don't just believe in sustainability, but think that it is a crucial aspect of Macalester life. This is a significant note for the Sustainability Office. The Macalester student body is more than willing to aid in sustainability goals, but needs to be made more aware of the Sustainability Office's efforts on campus.

The results from question 17 are relatively clear. While students favor increased visibility for the costs and quantity of paper use, they do not wish to actually pay for the act of printing. This is shown in graphs one (institute a printing quota for each student beyond which students

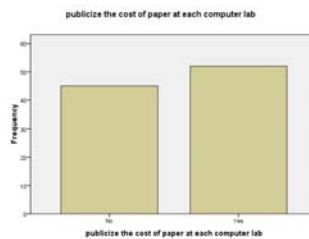
would have to pay for extra printing) and four (charge students for printing) where the discrepancies in the two x-values are relatively large. In graph 4, the disdain for printing costs is shown almost universally with only five participants supporting the creation of a printing charge. In graph two, the results are less skewed, but they still show 57% of the student sample as supports publicizing the amount of paper use. This conclusion is further supported by graph 3 (publicize the cost of paper at each computer lab) as the results are almost identical.



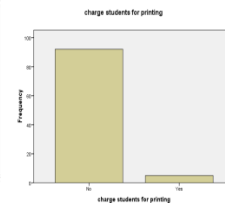
Graph 1



Graph 2



Graph 3



Graph 4

The last question addresses document margins, and from the results we have gathered, it seems as if the student body is fairly divided. Although the results lean slightly in favor of not shortening document margins, the difference between the two values is minimal. The following table shows this division over margins as well as the percentages of students who agree with the various variables.

Table 12. Paper Waste at Macalester College

<u>Statement</u>	<u>Percentage who agree with statement</u>
Publicize the amount of paper used at each computer lab	56.6%
Publicize the cost of paper at each computer lab	55.8%

Shorten document margins	47.8%
Institute a printing quota for each student beyond which students would have to pay for extra printing	41.6%
Charge students for printing	4.4%

Finally, we addressed Question 30. This question is pivotal for our overall objective of illuminating students' awareness of Macalester College's sustainability efforts.

Specifically, this question inquires about individual sustainability programs affiliated with the college. Respondents were asked to rate their knowledge of the chosen projects from "I have never heard of it" to "I am both aware and actively involved in it." The following chart illustrates our results.

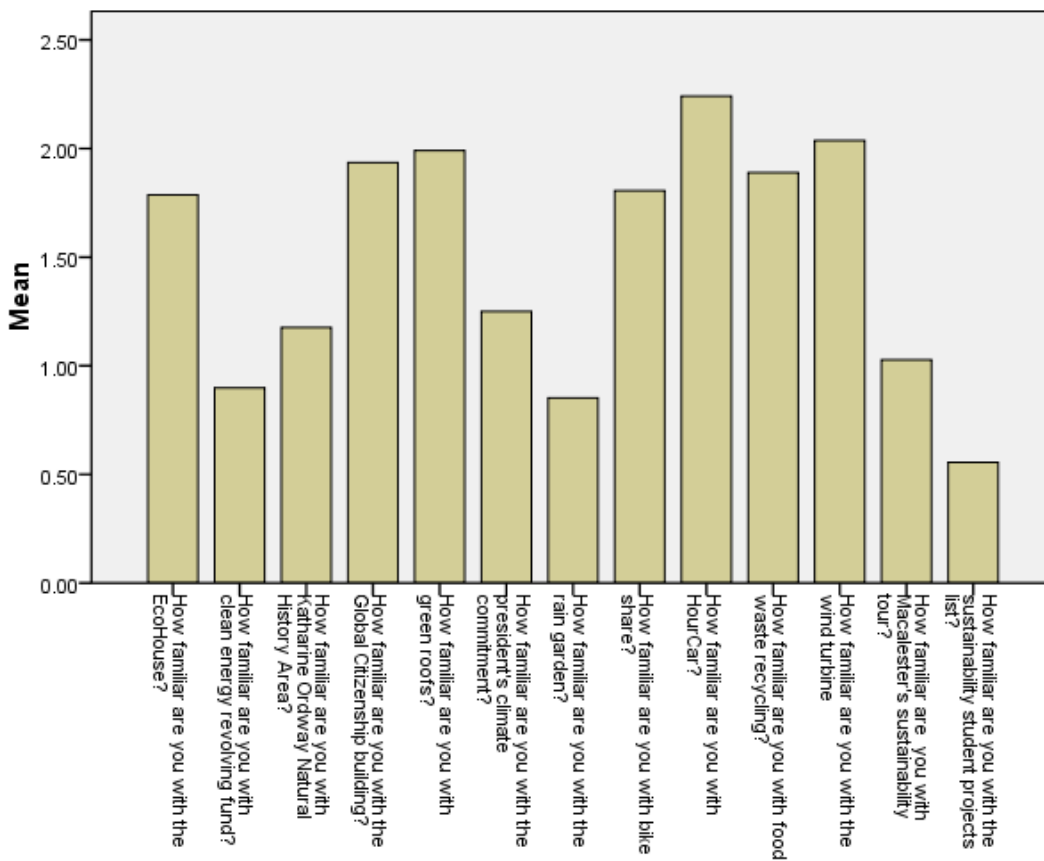


Chart 3

A preliminary analysis of this data yields a fairly simple conclusion. Essentially, the projects can be divided into two groups: projects that students have absolutely no knowledge of and projects that students have a general knowledge of. In the former group are the Clean Energy Revolving Fund, the Katharine Ordway Natural History Area, the President's Climate Commitment, the Rain Garden, Macalester's Sustainability Tour, and the Sustainability Student Projects List. The latter group includes green roofs, Bike Share, HourCar, food waste recycling, and the wind turbine. The projects that students are not aware of have several distinguishing characteristics. Namely, they are located away from campus like the Katharine Ordway Natural History Area and/or they are abstract like the Macalester's Sustainability Tour. On the other hand, the projects that students are aware of either involve transportation, like the Bike Share, or are visible symbols on campus, like the wind turbine.

The Final Countdown

After analyzing the data and discussing the results of our survey questions, our group has reached several key conclusions pertaining to environmentalism and its applications at Macalester. Students are relatively oblivious to some of the environmental programs and opportunities presented at Macalester. This being said, there is a solid foundation from which environmental awareness could grow. Although there was some disagreement with certain aspects of the Sustainability Statement, a more unambiguous statement, pertaining more to Macalester College, could be the base which environmentalism on campus could center around. The analysis leading to this finding was not included in this report, but preliminary data compilation led our group to reach this conclusion.

As shown in question 30 (which asked students to list how familiar they are with certain environmental projects), students are only aware of the programs that are extremely visible on campus and effect high numbers of individuals. The on-campus environmentalist community is present, but providing information on local, sustainable, resources should be a main goal for Macalester's future. If people are not aware of local programs or do not have the resources to seek out these programs, they cannot participate in them. If students are under-utilizing environmental projects, the environment will not benefit and the community will not thrive.

Another key observation that our group made pertains to the necessity for an increased emphasis on changing one's daily practices. Many of the routine energy saving behaviors addressed in questions 19-23 are simple activities in which a large proportion of students partake. A simple solution to institute these changes is to publicize information and encourage behavioral change. For instance, energy-use statistics in the "table tents" of Café Mac along with behavioral strategies promote sustainable responsibility. By simply emphasizing existing social proof that other students are taking environmental responsibility, Macalester can encourage a more active and aware student body. Through providing informative resources, those who do not identify as environmentalists are not alienated, but are made aware of the opportunities available to them.

Another key issue which students are passionate about is paper consumption. Although there is no quick solution to the problem, it is apparent (from a student's perspective) that paper waste is a "hot topic" on campus. Students do not want to be charged for printing and thus a new solution is needed to help remedy the situation. Something as simple as encouraging electronic submission could be effective as well as reusing readings so that future classes do not need to reprint material. Student projects are currently being conducted on campus to reduce paper use,

but more communication is needed between the administration and students to hasten campus-wide sustainable changes.

As a whole, Macalester students are very receptive to the idea of environmental programs. The problem, however, is not the lack of interest but instead the lack of accessibility and publicity. Students are aware of the Institute for Global Citizenship because it blocks their way to class, but few people actually understand the building's purpose. With more resources and options, changes to make Macalester more ecologically friendly can occur.

In light of aforementioned initiatives for behavior change at Macalester College, the Sustainability Department should consider the present student body. If sustainable behaviors are communicated via an environmentalist lens, this will exclude non-identifying environmentalists and thus encourage change in just over half of the Macalester community. Future on-campus research should be conducted to evaluate what students currently know about appropriate steps to take to reduce environmental impact. Providing relevant information to increase awareness of Macalester's impact along with current statistics regarding students who are already employing sustainable actions will together work to promote a sustainable campus.