

# An Opportunity to Lead Sustainably

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## The Benefits and Considerations of Student-Led Green Revolving Fund Projects

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In recent years, energy- and resource-reduction projects have compelled student leaders to create sustainability projects on campuses across the country. This paper examines the role that students play in green revolving funds, including identification, approval, and management. After speaking with numerous students on a variety of campuses, it is clear that students are more likely to be engaged in the GRF when it allows them to collaborate with campus allies and raise awareness of environmental issues. Active support from faculty, staff, and other campus organizations can help students pursue goals both strategically and collaboratively. Three case studies—St. John’s University (MN), Whitman College (WA), and the University of Montana at Missoula— illustrate a number of effective uses of the green revolving fund model and successful strategies employed by these students.

## Introduction

In the past decade, student leaders have become increasingly interested in incorporating sustainability into not only the academics, but the operations of their institutions. Though there are many potential ways to finance energy and resource-reduction projects (including through partnerships with utilities, soliciting alumni donations, seeking federal grants, and instituting student fees) the green revolving fund model provides an opportunity to leverage multiple sources as a means to address student demand for sustainability improvements on campus.

Recently, more attention has been given to student leaders across the country as they have sought out innovative financing mechanisms to implement such projects on campus. This paper looks at a sample of student-led initiatives. It also explores the stories behind how these students were able to create and launch projects on their campus, and importantly, how they garnered support from administrators and other campus departments to achieve success with their work. Though each campus has a different political and fiscal climate, as well as differing attitudes towards environmentalism, there are a few identifiable factors that have increased the projects' success: addressing an area of opportunity on campus, building a network of support on campus, and aligning with like-minded administrators to support the cause.

The GRF model can provide a new opportunity for students to achieve a lasting environmental impact on their campus. It also empowers students with novel learning opportunities and leadership responsibilities learned while advising and managing a GRF.

### *How Students Are Involved*

The students interviewed serve in a variety of campus positions. They sit on GRF governance committees, manage individual projects, and work alongside members of the facilities, finance, and sustainability offices. Students also work with energy engineers and outside consultants to prepare project proposals. The GRF model can provide interested students with new or unexplored opportunities to contribute to the technical and financial aspects of operating a campus under the guidance of appropriate faculty and staff. This experience can further both a campus' mission of educating students, as well as the students' goal to green their institution.

Students can be involved in a variety of projects on campus including water conservation, lighting efficiency, and resource-use reduction in dining services. For water and lighting efficiency, typical projects include upgrading to energy-efficient lighting such as LEDs or higher efficiency fluorescents, installing motion sensors in classrooms and common spaces, and installing low-flow showerheads and dual flush toilets in dorms and campus buildings.

Small-scale agriculture is also popular as an interactive project to increase green space on campus. Projects can come in the form of farm plots, rooftop gardens, or greenhouses. Schools have reported a wide variety of payback periods, estimating cost savings based on produce procurement by campus dining services. The following project spotlights—the first on St. John's University (Minnesota), the second on Whitman College (Washington)— demonstrate how GRFs can positively contribute to student-led food and dining initiatives on campus.

*Project Spotlight: Winter Greenhouse Hydroponics at St. John's University*

<b>Name of Institution</b>	St. John's University (SJU)
<b>Location</b>	Collegeville, MN
<b>Full-time Student Enrollment</b>	1,917 students
<b>Endowment Size</b>	\$144 Million

**The Fund**

St. John's Sustainable Revolving Loan Fund was created in 2010 with an \$100,000 allotment from available capital managed by the Board of Trustees.<sup>1</sup> The SJU fund is governed by a student representative (the president of the campus Sustainability Alliance), faculty representatives from the environmental studies department, administrators from St. John's Abbey and University Church, and personnel inside the campus' dining services.<sup>2</sup>

Stephen Johnson, a student inside the Donald McNeely Center for Entrepreneurship at SJU, used a loan from the SJU Sustainability Revolving Fund for a hydroponic garden project on campus. Entrepreneurial students within the Center are tasked with starting their own small business for class credit and are responsible for creating a business plan and conducting a feasibility analysis on a project of their choosing. Though not an Environmental Studies major, Johnson was initially attracted to SJU's Sustainable Revolving Loan Fund in order to provide seed capital for the hydroponic garden.

**The Road to Implementation**

Johnson's path to a GRF-funded project began when he was introduced to Nicholas Moe, a Sustainability Fellow at SJU. It was Moe who introduced Johnson to the idea of receiving start-up capital as a loan from the Sustainable Revolving Loan Fund. With training in structural design and engineering, Moe and Johnson united efforts to design and install the garden. Through this agriculture project, Johnson aims to help the university purchase cheaper, locally-sourced produce, thereby reducing the campus' reliance on transportation to bring in the bulk of fresh vegetables.<sup>3</sup>

With a business plan in hand, Johnson applied for funding from a few campus sources to comfortably finance his project: \$5,000 in grant money from the SJU student government; a \$10,000 loan from the Center for Entrepreneurship; \$10,000 in alumni donations collected by the Office of Institutional Advancement for the project; and a \$10,000 loan from the SJU Sustainability Revolving Loan Fund.<sup>4</sup>

<b>Name of Green Revolving Fund</b>	Sustainable Revolving Loan Fund
<b>Year Established</b>	2010
<b>Project</b>	Winter Greenhouse
<b>Student Leader</b>	Stephen Johnson (2013)
<b>Total Project Cost</b>	\$40,000
<b>Funding Sources</b>	SJU Sustainability Revolving Loan Fund; SJU Office of Institutional Advancement; SJU student government; the Center for Entrepreneurship; SJU Dining Services
<b>Project Allies</b>	Sustainability Office; Center for Entrepreneurship; Physical Plant

### **Building a Network of Support: Connecting with Campus Allies**

Johnson built his network of support on campus by connecting with institutional experts who could offer strategic assistance with his project. As a student of the Entrepreneurial Center, Johnson had access to not only capital, but also to administrative help in the form of Terri Barreiro, Director of the Center for Entrepreneurship. As Director, Barreiro provides guidance for students to connect to resources both on-campus and off-campus. At SJU, building a structure like a greenhouse required input from many stakeholders on campus that were outside of the revolving fund board. Barreiro vouched for his commitment when meeting stakeholders, offering assistance when Stephen needed faculty and staff to take his pursuit seriously.

“Terri Barreiro became hugely important to the success of it, in advancing it, making people take it seriously,” said Johnson. “I wasn’t just a student; I had a faculty member that was with me coming to meetings.”

Johnson also met with Dave Schoenberg, SJU’s Director of Dining Services and a supporter of local agriculture. Schoenberg agreed to purchase 20 percent of the food that the greenhouse grew for campus dining halls in addition to as many dark greens as possible.<sup>5</sup> On behalf of SJU’s Dining Services, Schoenberg invested an additional \$5,000 in the project, as well as agreed to purchase the produce at 10 percent above market value in exchange for a guarantee that dining services would receive a majority of the greenhouse’s crop.

To build the greenhouse, Johnson teamed up with the college’s physical plant staff, who worked directly with local contractors throughout the installation process. The physical plant staff would also be responsible for connecting water and heat to the new building, as well as technical maintenance. Though Johnson was a student with little real-world contracting experience, the physical plant staff integrated him throughout the planning and installation phase.

“[The physical plant staff] have done a lot of work with contractors,” said Johnson. “They have helped lead us to several. They are not going to do the work for us, but they are going to give us guidance. And that is what they have stressed.”<sup>6</sup>

### **A Smarter Greenhouse**

Attending a university in Minnesota, Johnson recognized that vegetables and other local produce were not easily attainable during the harsher winter months. With the limitations of the region in mind, Johnson established the greenhouse to operate between the months of October and May to bring fresh produce to the campus.

In total, the project is estimated to cost \$40,000, accounting for the construction of the greenhouse and material costs including fertilizer, soil, labor costs, and heating. The greenhouse’s hydroponic method allows for efficient use of the structure, maximizing available space by hanging pots and stacks to grow the produce. Initially, Johnson plans to plant 600 plants in the greenhouse, focusing on dark greens, broccoli, and cauliflower. Based on projections from the manufacturer, Johnson estimates a sale of 300 heads of lettuce per month, for an annual profit of \$1,820. During the second year of operation, Johnson hopes to raise this to around \$2,000 by honing best practices and cultivating greater yields. Based on the \$20,000 in loan funding, this will equate to a projected ten year payback period.

### **Working in the Garden**

To manage the greenhouse, two part-time paid students supervise greenhouse activity and maintain the growing process, ensuring proper access to sunlight and water distribution. The positions are 5-10 hours per week, with one student on campus over the winter and spring break. In addition, a student will fill the role of “Greenhouse Manager” as an unpaid intern, receiving course credit in lieu of payment. The Greenhouse Manager administers the accounting associated with repaying loans and selling produce to dining services. An SJU professor offers management expertise and oversees the greenhouse project.

Secrets to Success

Johnson credits the Center for Entrepreneurship for quickly connecting him to appropriate resources.

“The Entrepreneurship Center has been through the process multiple times before,” said Johnson. “They guided me through what had to be done and when.”

The Center helped connect him to the Center for Institutional Advancement, as well as Moe in the Sustainability Office. Later, after gaining a few allies in the community, Johnson learned to pursue leads himself.

“The biggest thing is just going for it. If I hadn’t met with Nick [Moe, Sustainability Fellow] a year and a half ago, I wouldn’t be doing this right now. It’s a big part of this whole thing- not being afraid to reach out to people. Ninety-percent of the time people are accepting,” recommended Johnson.

*Fund Spotlight: Whitman College's Sustainability Revolving Loan Fund*

<b>Name of Institution</b>	Whitman College
<b>Location</b>	Walla Walla, Washington
<b>Full-time Student Enrollment</b>	1,555 students
<b>2012 Endowment Size</b>	\$395 Million

### The Fund

Whitman College utilizes student sustainability leadership to run campus environmental projects and manage their \$50,000 Sustainability Revolving Loan Fund (SRLF). Two student sustainability coordinators sit on the SRLF Committee and act as executive leaders to interact with student sustainability groups on campus. The SRLF Committee is chaired by the college's Head of Development, though much of the board is composed of faculty that serve in strictly advisory roles. Due to its small size and lack of full-time sustainability staff, students are one of the main drivers of sustainability projects, management, and assessment at Whitman.<sup>7</sup>

### Microgreens at Whitman

Natalie Jamerson is a part-time student Sustainability Coordinator for the 2012-2013 academic year at Whitman College. The coordinator role has been a paid position and traditionally awarded to a rising senior since the fund's inception in 2007. If students are interested in beginning a project with the SRLF, the coordinator will speak to the interested parties, recommend faculty to serve an advisory role, and consult on the prospective project.

Like Stephen Johnson at St. John's University, Jamerson led an effort to build a garden on campus and sell the produce to campus dining halls. Jamerson, along with two other project leaders, negotiated space with the board of the Sustainability Revolving Loan Fund to use a rooftop greenhouse owned by Whitman's Biology department. Jamerson and her team also set up an agreement with Bon Appetit, Whitman's dining service contractor, to purchase produce that was grown in the garden. A \$600 loan from the SRLF purchased material goods including plastic trays, soil, seed, and plant racks. The team focused on planting microgreens, a class of vegetables that includes pea shoots, mustard greens and salad greens, in the rooftop garden.<sup>8</sup>

Since the project began in early 2012, pea shoots have been their most successful crop. Through the sale of the produce to the campus dining service contractor, the SRLF loan was paid back in less than a year.

Jamerson and her team received credit for an academic internship from Whitman for the management and operation of the greenhouse. Based on the success of the garden, the team plans to expand their scope to a small plot outside of campus.<sup>9</sup>

<b>Name of Green Revolving Fund</b>	Sustainability Revolving Loan Fund
<b>Year Established</b>	2007
<b>Project</b>	Rooftop garden
<b>Student Leader</b>	Natalie Jamerson (2013)
<b>Total Project Cost</b>	\$600
<b>Funding Sources</b>	Sustainability Revolving Loan Fund
<b>Project Allies</b>	Student Sustainability Co-Directors; Bon Appetit

### **Administrative Sign-Off**

Jamerson said that although Whitman faculty and staff were not interested in leading or working directly on the project, they were able to ensure administration support for student projects.

“The professors don’t have much time on their hands,” said Jamerson. “But to have their support in the first place is really awesome.”<sup>10</sup>

Although on some campuses students administering and managing projects independently could be a barrier to success, Jamerson views it as an advantage. Through established student leadership, incoming or interested students can quickly become familiar with independent student work that has utilized the GRF in the past while receiving support from willing staff and faculty.

“The education is something that the students also have to take on, independently,” said Jamerson. “Going into it, you have to have a really broad scope of what has to be done to make it a successful project.”<sup>11</sup>

### **Student-Driven Success**

Through the SRLF, students have accomplished a variety of successful projects at Whitman. Students in the Campus Climate Challenge group implemented a dual flush toilet project in one building,<sup>12</sup> and other students replaced paper towel dispensers with hand dryers in the Penrose Library to reduce paper waste, an \$8,000 project with an estimated payback period of 2.5 years.<sup>13</sup> Jamerson credits student-led environmental success to the open channels of communication facilitated by the coordinators.

“If a coordinator meets with the President of our College, he knows we are actually speaking for the students,” said Jamerson.



*The greenhouse at Whitman College.*

Although other schools may also have students that hold positions on their revolving fund board, Whitman places a significantly greater amount of responsibility on the student coordinators. This may be a product of the limited budget, which leads to a greater workload demand on faculty and fewer specialized staff positions. Such funding limitations may be a disadvantage to the student sustainability community on some campuses. For example, at Whitman the coordinators have no ability to compel faculty or staff to commitments due to their inexperience, and they are not as credible in their requests as a full-time professional. For this reason, combined with the relatively large workload, the coordinators are campaigning this year for a full-time sustainability staff member for campus.<sup>14</sup> Though it is still unclear whether this new role will replace or complement their current roles, Jamerson notes that the coordinators can accomplish the crucial first step where full-time professionals may not be able to: making the initial connection between students and potentially interested faculty.

“As students, we know what other students want,” said Jamerson. “We are the ones going to groups and engaging in conversations with our peers.”

Especially at Whitman, more direct communication between students and faculty can break down a barrier for students looking to begin a project.<sup>15</sup>

### **Connecting with Other Student Groups**

A well-informed student community allows for Whitman to have a collaborative culture around GRF projects and other sustainability efforts. Whitman employs four distinct sustainability-focused funds to encourage all types student participation: the SRLF, the Whitman Green Fund, the Service Learning Fund, and the Environmental Leadership Fund. Students have a variety of outlets to explore sustainability, and though the SRLF is the only fund dedicated to energy efficiency, the funds can work together to create a network of support among students with a variety of perspectives. At Whitman, greater opportunities for student involvement means a greater collective wealth of institutional knowledge to further projects, and importantly, greater leadership opportunities.



*The Smart Buildings Initiative at the University of Montana at Missoula*

<b>Name of Institution</b>	University of Montana at Missoula
<b>Location</b>	Missoula, Montana
<b>Full-Time Student Enrollment</b>	14,207 students
<b>Endowment Size</b>	\$944 Million

**The Fund**

The University of Montana’s Kless Revolving Energy Loan Fund (KRELF) is financed by both student fees and the university general budget. To date, the fund stands at \$200,000 and provides the means for improvements on campus for student-led projects.<sup>16</sup>

**A Focus on Energy Efficiency**

Zachary Brown, President of the student body and member of the class of 2013, began investigating building efficiency at the University of Montana at Missoula in 2010 after participating in a national forum for student environmental leaders. After the conference, Brown came back to the University of Montana students with an idea to improve its environmental work, as he felt that the University was in an ideal position to contribute to greater campus operational sustainability.

Brown’s first attempt to reduce the campus’ carbon footprint came in the form of advocating and organizing around the installation of a biomass generator on campus. The generator would replace a natural gas power plant at the U of M. To achieve this result, Brown partnered with a local engineering company to plan the project. The idea generated much debate in the Missoula community, though the project ultimately failed because of concerns about dropping natural gas prices and increased local pollution. Brown then shifted his priorities to making buildings more efficient to reduce the campus’ reliance on burning natural gas for energy.<sup>17</sup>

Brown used the U of M’s 2020 climate neutrality pledge to rally the student body to support on campus for energy-efficiency projects by collaborating on the Smart Buildings Initiative (SBI). SBI intends to create a dynamic community of public universities throughout the state of Montana to share best practices around building efficiency. To achieve this, Brown leveraged KRELF funding to implement real-time energy monitoring systems, an important step to accurately measure building operations and create metrics which can later be used to measure energy and cost reductions. Brown intends to use the data recorded through the meters to reveal opportunities for improvement on the Missoula campus.<sup>18</sup>

Brown realized that without real-time energy monitors, it would be difficult to demonstrate the financial and environmental benefits to the campus. In the past, student groups had installed low-flow showerheads, solar panels, and efficient lighting at various places around campus, but without energy monitoring systems the cost savings could only be estimated.

With the Smart Buildings Initiative, Brown intends to reach many campus stakeholders, an act that he recommends as necessary to achieve its success.<sup>19</sup> Brown met with representatives from Missoula’s

Facilities who sought to secure more funding for the initiative. The additional funding would enable the team to begin new building efficiency projects and hire engineers to assist with the work.

“We were able to first go to our administration as students and talk about the next step in this process,” said Brown, of the Smart Buildings Initiative. “We had our facilities folks, our engineers, and our sustainability staff on board.”<sup>20</sup>

### **More Allies for Greater Strength**

In January 2012, Brown began communicating with the student body president at the U of M’s rival, Montana State University, to explore networking possibilities. MSU’s Blake Bjornson and his vice president, Bryn Hagfors, combined forces with Brown with the goal of greater building projects for both campuses. Though the campuses traditionally have a fierce rivalry, Brown saw SBI as an opportunity to create a landmark network around energy efficiency that could serve as a model for other public universities and systems. For these universities, SBI is mutually beneficial in a few ways: resource sharing and collaboration around common barriers, publicity around environmental initiatives, and access to industry experts.

To build support, the group met with the Commissioner of the Board of Regents for the Montana University System. The Commissioner shared SBI’s vision, and supported the significant student involvement to establish a working relationship with the group, which Brown plans to introduce with the first project, the installation of energy monitors in campus buildings. The Montana University System Board of Regents also provided a staff liaison to direct students to appropriate university and industry contacts.

Through SBI, Brown worked with the University of Montana’s KRELf Committee to apply for funding that could fund the purchase of energy monitor. The project would not have a direct payback to the loan program as it would only record usage data and not influence reductions in resources or energy inside buildings.

Over the course of the 2012-2013 academic year, project proponents like Brown will apply for a \$100,000 commitment from student dollars inside the KRELf fund. The project will also grow through matching donations from UM Administration, the Montana Department of Environmental Quality, and a state utility company, adding \$200,000 to the project for a total of \$300,000.<sup>21</sup>



*In the photo, the University of Montana's Brown worked with students at Montana State University's Environmental Student Alliance to install solar arrays.*

### **On-Campus Support**

To ensure that proposal would be well received by campus administrators, Brown's main strategy was to highlight the financial benefits of efficiency projects for Missoula. To assist with the guidance of identifying and implementing promising projects, the University plans to hire two additional engineers to handle an anticipated increase in projects to augment the campus' one environmentally-focused engineer.

"As student leaders, we have a lot more access to our administrators, regents, and the leadership across the system than to the staff members," said Brown. "We were able to go to Facilities and say, 'What do you need to do more of this kind of work, and do it better?' They told us, and we started advocating for it."<sup>22</sup>

Brown's team will provide the background information for efficiency projects to be completed, compiling a list of potential projects identified from the metered energy data. His collaborations with the newly hired engineers and Facilities staff will give students access to two authorities on efficiency. Brown plans to use the energy monitors as a bridge between student opportunities and to achieve the reductions outlined in the University's 2020 Presidents' Climate Commitment. Additionally, a class on environmental citizenship will generate a shortlist of projects to utilize KRELF funding, a task that Brown said would become even more popular and reliable with accurate building data.

<b>Name of Green Revolving Fund</b>	Kless Revolving Energy Loan Fund
<b>Year Established</b>	2009
<b>Project</b>	Smart Buildings Initiative
<b>Student Leaders</b>	Zachary Brown (University of Montana) and Blake Bjornson (Montana State University)
<b>Project Cost</b>	\$600,000
<b>Source of Seed Funding</b>	Kless Green Revolving Fund; Administration Budget; KRELf fund; the Montana Department of Environmental Quality; and a Montana state utility
<b>Project Allies</b>	Facilities Department; Montana Board of Higher Education

**Student-to-Student: Recommendations for Student-Led Projects**

*Fund Management Factors*

Oftentimes, there can be untouched capital that may be ripe for a GRF or other energy-efficiency work inside the university campus. Some of the sources listed above, including financial support from dining services and the Office of Institutional Advancement, may also be available at your school. Connecting with administrators can be an effective way to identify additional sources, as well as reach out to students at peer institutions that have launched similar programs. Working with university experts, whether in the form of professors, facilities personnel, or administrators, can also offer support for students that may lack the technical expertise to launch and manage projects.

Many student funds utilize a competitive application process for projects by encouraging friendly competition and thereby resulting in an increase in project proposals. This approach requires extensive marketing and education to the campus community about the fund to be successful.

*GRF Accounting*

Some aspects of operating a GRF, including estimating an accurate payback period and tracking cost and energy savings, may be outside the purview of the typical university student. Because of these barriers, students may turn to grant-based funds on campus as means to avoid the tracking and assessment necessary to repay a project loan. However, this way of thinking may create additional obstacles for some campuses because the sustainability work will lack a tradition of standardized, consistent, and reportable success. To counteract these potential concerns, internal personnel are often the best source for consulting on specific project ideas or programs inside the university. By gathering a committee of administrators, professors, and other environmentally-minded university staff to manage GRF

operations, students can ensure that many stakeholders are committed to the success of a project, and importantly, that the responsibility of the project does not fall to the student alone.

### *Targeting the Right Projects*

Student-led sustainability projects typically focus on projects that have high visibility, such as a campus garden, recycling program, or renewable energy. But there are many projects that can reduce a university's environmental impact, including projects that target greenhouse gas emissions and cost savings. Many of these projects can work well within the priorities of campus engineers or administrators, and some may already be on the docket for future campus work.

However, it is important for students and the staff that work alongside them be clear about their objectives for projects, and whether or not a green revolving fund is the appropriate financing vehicle. The GRF model derives a lot of its strength from the tracking and reallocation of cost savings back to the fund. Projects that do not produce cost savings, or produce them on a very long payback period (such as a wind turbine) may not fit within a fund's project criteria, or may not allow for the fund to be replenished quickly. The student experience with GRFs and more visible projects suggests that it is important to be clear about when and how a GRF will support environmental initiatives that produce little or no cost savings.

### **Conclusion**

GRFs can be a key resource to fund new opportunities for students interested in sustainability and enacting tangible environmental change on their campuses. Certain strategies, such as collaborating with campus administrators, staff, or other student groups, can help create a diverse and strong network and ensure project success. Historically, GRF student projects have been visible and educational in nature, demonstrating the desire among student leaders for projects that make a lasting impact on their campus while creating opportunities for student leadership that improve the university's use of resources, carbon footprint, or greenhouse gas emissions.

Given a student's limited career on the university campus, successful student projects should take into account scope of work, student's availability, and available internal supporters who can assist with the implementation and management of a GRF or other sustainability project. Students themselves are ideal candidates to be involved with the GRF process, as they often have close connections with a variety of stakeholders, including other student groups, supportive professors, and select administrators and staff. Students can play a unique role in raising awareness of the fund, driving project proposals and student-body approved ideas on campus, and creating new funding and leadership opportunities on campus.

**Appendix A. A Sample of Student-focused GRFs**

<b>Name of Institution</b>	<b>State</b>	<b>Name of Fund</b>	<b>Size of Fund</b>	<b>Sample Project(s)</b>
Carleton College	MN	Sustainability Revolving Fund	\$41,190	Vending Machine Optimization; Drying racks in student dorms; Low-flow shower heads in student dorms; Lighting upgrades
Rice University	TX	The Rice Endowment for Sustainable Energy Technology	\$15,000	Weatherization of campus dormitory; High-efficiency toilets; Weatherization of buildings; Solar water heater; Motion sensor lights; Bike share program
St. John's University	MN	Sustainable Revolving Loan Fund	\$100,000	Hydroponic garden; Installation of Insulation at Eco House
Oberlin College	OH	Green EDGE Fund	\$90,000	Low flow shower heads in campus dorm; Vegetable oil tractor conversion; Lighting retrofits in gymnasium
Oregon State University	OR	Sustainable Energy Revolving Loan Fund	\$600,000	Refrigerator upgrades
University of Minnesota at Duluth	MN	Green Fund	\$100,000	Refrigerator-exchange program
University of Montana at Missoula	MT	Kless Revolving Energy Loan Fund	\$200,000	Low-flow shower head project inside one campus dorm; Purchasing Energy Star freezer and refrigerator; Multiple solar panels; Efficient lighting at Rec Center; Efficient Washing Machines
University of Virginia	VA	Green Initiatives Funding Tomorrow	\$20,000	Recycling bins inside Greek system; electricity-generating fitness bikes; solar-powered EV charging station
Vanderbilt	PA	Vanderbilt Green Fund (grant)	\$75,000	Solar panel array; Bike share program; Lighting retrofits
Whitman College	WA	Sustainability Revolving Loan Fund	\$50,000	Rooftop garden; Hand Dryer Installation; Solar Panel

## Appendix B. Methodology

From June through August 2012, SEI sent a survey concerning student-led energy- or resource-reduction projects was sent out to 25 number of schools in the United States and Canada. From that survey, 17 schools indicated that had full or partial student involvement in the creation, management, or operation of GRF projects. As of August 2012, nine of these schools had completed at least one student-led project, with three funds still in the process of formation.

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<sup>1</sup> "Sustainable Revolving Loan Funds." Sustainability at St. John's. <http://www.csbsju.edu/SJU-Sustainability/What-Were-Doing/Staff/Sustainable-Revolving-Loan-Funds.htm>.

<sup>2</sup> "Sustainable Revolving Loan Fund." Sustainability at St. John's. Accessed 12 July 2012. <http://www.csbsju.edu/Documents/Sustainability/Revolving%20Loan%20Fund%20SJU.pdf>.

<sup>3</sup> Johnson, Stephen. Personal Interview. 26 July 2012.

<sup>4</sup> Ibid.

<sup>5</sup> Moe, Nicholas. Personal Interview. 3 July 2012.

<sup>6</sup> Johnson, Stephen. Personal Interview. 26 July 2012.

<sup>7</sup> "Sustainability Revolving Loan Fund (SRLF)." Whitman College Campus Sustainability, Whitman College. Accessed 13 July 2012. [http://www.whitman.edu/about-whitman/campus-sustainability/sustainability-revolving-loan-fund-\(srlf\)](http://www.whitman.edu/about-whitman/campus-sustainability/sustainability-revolving-loan-fund-(srlf)).

<sup>8</sup> "Saving the planet, one "edible" rooftop at a time." Whitman College. December 14 2009. Accessed 23 June 2012. <http://www.whitman.edu/content/news/edible rooftop>.

<sup>9</sup> Jamerson, Natalie. Personal Interview. 10 July 2012.

<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

<sup>12</sup> Meints, Claire. Personal Interview. 28 June 2012.

<sup>13</sup> "Sustainability Revolving Loan Fund (SRLF)." Whitman College 2012. Accessed 3 July 2012. <http://www.whitman.edu/content/about/environment/srlf>.

<sup>14</sup> Jamerson, Natalie. Personal Interview. 17 July 2012.

<sup>15</sup> Jamerson, Natalie. Personal Interview. 17 July 2012.

<sup>16</sup> "Kless Revoloving Energy Loan Fund Overview." Greening UM, The University of Montana. Accessed 17 December 2012. <http://www.umt.edu/greeningum/KRELF/Kless%20Revolving%20Energy%20Loan%20Fund.aspx>.

<sup>17</sup> Brown, Zachary. Personal Interview. 22 June 2012.

<sup>18</sup> Ibid.

<sup>19</sup> Ibid.

<sup>20</sup> Brown, Zachary. Personal Interview. 2 July 2012.

<sup>21</sup> Brown, Zachary. Personal Interview. 22 June 2012.

<sup>22</sup> Brown, Zachary. Personal Interview. 2 July 2012.