



TO: Students, Staff, and Faculty
UC Santa Barbara

FROM: Grant Making Committee
The Green Initiative Fund (TGIF)

DATE: December 2010

RE: TGIF Funding Applications for 2010-11

Supported by a quarterly lock-in fee paid by all UCSB students, The Green Initiative Fund (TGIF) provides funding for projects that enhance our campus' environmental, cultural, and economic sustainability. TGIF supports projects that provide renewable energy, increase energy efficiency, conserve water, reduce waste, educate the campus about environmental impacts, and facilitate strategic research to improve the campus' operational sustainability. The fund awards approximately \$150,000 total to 10-12 projects per year.

Any UCSB student, staff, or faculty member may submit a proposal for consideration. All proposals will be reviewed by a student-majority governance board that will select projects based on the following guiding principles:

1. UCSB students, staff, and faculty are able to submit project proposals, as long as they are under the umbrella of a campus department. Individuals and organizations outside the University are not able to submit project proposals.
2. TGIF funding will not support projects that are already mandated by law or UCSB policy/directive. TGIF will only fund projects that are not currently paid for by the University or through existing rebate programs.
3. TGIF is limited in its funds and is more likely to support projects which have secured additional funding through other sources such as grants and donations.
4. Projects shall reduce UCSB's impact on the environment.
5. Projects shall have publicity, education, and outreach components.
6. Student participation is encouraged in all projects.
7. Projects shall have received all necessary *written approval* by appropriate campus officials prior to consideration (if you are not sure if this is applicable to your project, contact Grant Keefe).
8. Preference will be given to projects that:
 - a. demonstrate the greatest reduction of UCSB's greenhouse gas emissions, water consumption, waste generation, and/or energy usage for the least cost.
 - b. can demonstrate short-term returns on investments.
 - c. are located on the main UCSB campus to enable transparency between the student body and the results of the projects they are funding.
9. Projects that are able to repay the fund are encouraged to do so when appropriate.
10. Project organizers/leaders must prepare a final poster presentation to the campus community.

If you would like to submit a proposal, please email the attached funding application to the TGIF Grants Manager, Grant Keefe, at grant.keefe@vcadmin.ucsb.edu by **January 25, 2011**. Also, feel free to contact Grant with any questions regarding TGIF or the review process.

The TGIF Committee looks forward to reading your proposals!



The Green Initiative Fund Funding Application

APPLICANT INFORMATION

Project Title: **Family Housing Composting and Trash Reduction**

Sponsoring Organization (must be part of a campus department): **ECONOMICS**

Primary Contact

Name: **Valentin Shmidov**

Title: **PhD Student**

Phone: **805.280.6888**

Email: **shmidov@econ.ucsb.edu**

Secondary Contact

Name: **Gary Charness**

Title: **Professor**

Phone: **805.893.2412**

Email: **charness@econ.ucsb.edu**

Start Date: **April 2011**

End Date: **Ongoing**

How did you hear about TGIF? **Economics Department Administration**

PROJECT DESCRIPTION

- (1) Give a brief overview of the project. *Please be concise (3-4 sentences)*
According to The National Recycling Coalition, on average, each American disposes of 1,200 pounds of organic garbage that can be composted. Currently, at the West Campus Apartments and Storke I Apartments Family Housing Complexes, no formal composting program is available to residents. With an average of three individuals per household and 550 units, family housing produces almost TWO MILLION pounds of trash that could be composted, but is diverted to landfills. The composting program could not only provide valuable compost to use in the resident's gardens, but also reduce the greenhouse gas emissions from the transportation and storage of family housing organic matter in landfills. This proposal is to begin a pilot composting program at family housing. The funding will be used to provide 12 Earth Machines compost bins to the West Campus Family Housing Garden and 12 Earth Machines compost bins to the Storke I Family Housing Garden. Residents of both housing complexes will be provided with an educational program about composting through written marketing materials and "block leader" individual outreach programs.
- (2) Please state specifically what the funding will be used for. *(3-4 sentences)*
24 Compost bins will be purchased at \$40 each (The County of Santa Barbara subsidizes an additional \$45 of the cost). Additional funding will be used for the transportation and arrangement of the bins at the campus housing garden locations. Allocated funding will be used for the printing and development of marketing materials. Furthermore, ten "Block Leaders" will be hired to provide information and encourage the use of the bins. Weighing

scales will be purchased to determine the amount of garbage composted relative to landfill diversion. Four individuals will also be hired, part-time, to check the weights of the compost bins weekly and conduct additional surveys with participant permission.

- (3) Will this project require ongoing maintenance or servicing? If yes, how will this be continually funded? Who will be responsible for conducting this maintenance/service?
No. The bins will be located in the individual family housing gardens and residents will be able to use compost directly from the bins in their gardens. Initial marketing materials and scales will only be necessary for the first year to gather data on usage patterns. Likewise, the "block leaders" and the individuals responsible for monitoring the scales will be hired on a part-time basis, for nine months to a year. The data from the project will then be compiled and assessed by Valentin Shmidov to provide future recommendations on composting and community outreach to housing administrators at UCSB.
- (4) How do the project goals meet the TGIF mission statement and guiding principles (see cover letter)? *(3-4 sentences)*
The project meets the goals of the TGIF by significantly reducing waste generation and the transportation of waste to an off-site landfill. Composting not only reduces UCSB's impact on the environment, but provides a valuable, nutrient rich resource for campus gardens. The project also provides a carbon offset to the University and provides several frameworks for educational outreach to campus residents. This can help university administrators to determine the best method of communication to increase composting on campus.
- (5) What specific environmental impact will this project help mitigate on campus? *(2-3 sentences)*
In the County of Santa Barbara, on average, 35 – 40% of food trash is compostable. Larger scale composting programs have been implemented by Mark Rousseau and campus housing in the university housing dining halls. This program can reduce the trash sent to landfills and mitigate greenhouse gas emissions released in the transport and disposal of campus trash. This can save UCSB up to \$50,000 in waste transportation and disposal costs and produce valuable carbon offsets due to the greenhouse gas reduction in the transport and storage of the waste.
- (6) How does this project support other sustainability efforts on the campus and help move the university beyond its current programs? *(3-4 sentences)*
The project can work as a pilot for larger individual composting and trash reduction efforts on campus. The program can be scaled to include individual offices on campus as well. Not only will data be collected and assessed, but the experimental design leads to observations comparing several outreach and education programs. Additional data collected throughout the course of the experiment will provide analysis of carbon offsets, greenhouse gas reduction, and individual participation on campus.
- (7) Is there an example of a similar project that has been completed or is currently being implemented at another institution? If yes, please elaborate. *(3-4 sentences)*
Yes. There is a larger scale composting program at UCSB in the residence dining halls. There is a small composting program in Ellison Hall. There are also composting programs at the Arbor, UCEN, and Coral Café. This program could build on the success of other composting programs on campus by offering an "individual" solution, whereas all of the other composting programs focus on bulk composting measures.
- (8) What sources of labor will your project use? Consider the labor involved in manufacturing and recycling any project materials in addition to the labor here at UCSB. *(3-4 sentences)*
The most important sources of labor will be the individuals providing information about the benefits of composting ("block leaders") and the individuals gathering composting weight data. I will compile the data and make recommendations as a portion of my doctoral dissertation.

- (9) What materials will you need for your project? Where do these materials come from and what are the plans for safe disposal of any products or byproducts of your project? (3-4 sentences)

Earth Machines Recycling Bins are the primary means of composting. These bins have a 20 year useful life and 10 year warranty. The subsidized bins are available for purchase from The County of Santa Barbara at the transfer station. The weighing scales also have a 5 year warranty and can be used for additional studies or recycled for other purposes on campus.

PROJECT TIMELINE

Please append a projected timeline for the proposed project. This timeline will be used by the TGIF Committee and Grants Manager to assess the project's ongoing advancement. You may choose the format of the timeline, but it should be as detailed as possible and include the following:

- a) Specific progress checkpoints or achievements that will occur prior to receiving funding (e.g. identification of vendors, permitting preparation, organizing team meetings, etc)
- b) Specific progress checkpoints or achievements that will occur after funding is allocated (around the end of June 2011) (e.g. purchase of supplies, publicizing the launch of the project, hiring employees, data analysis, etc)
- c) Estimates on the amount of time elapsed between project checkpoints and for the amount of time required to complete the project as a whole
- d) Designations for who or what entity is responsible for completing each portion of the project; please also include their contact information

EDUCATION AND PUBLICITY PLAN

- (1) Please give a brief overview of your educational and publicity program.
The educational and publicity program will provide three different methods of disseminating information to determine the most successful medium. Printed materials will be used in conjunction with campus "block leaders" that encourage the use of compost bins and provide a resource for residents with questions or concerns. An experimental design has been created to gauge the qualitative and quantitative success of all channels of communication to determine the optimal marketing mix.
- (2) Who is your audience, and what do you hope to communicate to them?
The audience is all residents of family housing in the West Campus Apartments and the Storke I Apartments. I hope to communicate the benefits of composting and the impact individual waste reduction measures can have when used within a comprehensive recycling program. I also hope to communicate the value of compost in the garden.
- (3) How will you engage UCSB students in the education and publicity components of your project?
UCSB students will be hired as "block leaders" and data collection agents. In addition, all residents of family housing will have the opportunity to participate in the program. Furthermore, I will present my findings, on campus, emphasizing the successful elements of the pilot study as well as aspects that still need improvement
- (4) Will there be a hands-on and/or service component?
Yes. All interested residents of family housing will be directed to the gardens to witness the process and tangible benefits

PROJECT INDICATORS

- (1) How will the success of the project be measured? Consider both quantitative and qualitative measures.
Success will be measured quantitatively through waste diversion to the compost bins and qualitatively through survey results. Contingent valuation measures will be employed with respect to the surveys.
- (2) Can you provide or develop a quantitative baseline prior to beginning the project and then reassess these measurements after its completion in order to show the impact of the project? If yes, please explain the methodology.
Yes. Mark Rousseau and I are currently creating a baseline quantitative trash index to compare the waste generation post compost-bin to the current trash diversion. I will also provide qualitative results via pre and post compost bin surveys to residents participating in the pilot study. The methodology will compare pre compost bin trash generation to the trash generation of individuals reached via print marketing materials and individuals contacted through the hired "block leaders".
- (3) Do you anticipate the project will result in Greenhouse gas reductions? If yes, use the CO₂ calculation spreadsheet available on the TGIF webpage and include it with your application.
Yes. The sheet is also included. This calculation is for all of family housing, not just the pilot. It shows the potential of the program if the pilot is successful.
- (4) Can you provide quantitative or qualitative data or reports demonstrating the success or achievements of similar projects at other institutions?
I do not have data for similar projects at other institutions.
- (5) Describe the projected cost savings to the University and describe which entities on campus will benefit from these savings. (3-4 sentences)
UCSB Housing and Residential Services will benefit the most initially. The cost savings on trash disposal and transportation is around \$50,000 annually if all individuals in the family housing complexes participate. This is based on a disposal cost of \$50 per ton of compostable trash. Additionally, the price of compost is between \$28 - \$32 per ton. If all campus gardens and landscaping services used the compost, this could produce between \$55,000 and \$63,000 in annual value.
- (6) What is the estimated return on investment or payback time in years? Please provide details on how you calculated this ROI.
The estimated return on investment for the pilot project is 18% annually and the payback period is 5.6 years. This is calculated by measuring the capacity of the 24 bins, which is 24 tons of compost and multiplying the 24 tons by \$80 (\$50 savings per ton in garbage disposal costs and \$30 per ton for compost purchases). The \$1,920 is then divided by the cost of the project, \$10,800, to get the ROI. This return does not include the carbon offsets through the reduced fossil fuel dependence for transportation and landfill use reduction. Additionally, this ROI number does not include the value of the data analysis in helping to create a larger composting program and improve recycling communication on campus.

APPROVALS

- (1) What approvals are needed to ensure project implementation? (Example: Campus Planning Committee, Design Review Committee, or Department approval)
**Economics PHD Committee
 UCSB Housing and Residential Services
 UCSB Office of Research Human Subjects Committee**

(2) If your project requires modification or additions to existing campus structures, have you contacted Design and Construction Services for input and "real cost" estimation? If yes, please attach documentation.

No.

(3) Do you have confirmed written support from all departments involved in the project?

Yes.

Please include all letters of support with your proposal, if applicable. Applications missing them will be considered incomplete.

The Green Initiative Fund

Budget Form

If this project has been ongoing or occurred before, please describe previous years' budgets, including total amount spent and sources of funding. Please also include any justifications for increasing previous years' budgets and seeking funding from TGIF as oppose to using only the previous years' funding sources.

Please keep these questions in mind: If you are funded, will your project need any on-going funding after the completion of this grant? What is your strategy for supporting the project after this initial period to cover replacement, operational, maintenance, and/or renewal costs? *Please note: TGIF is unlikely to renew funding year to year for the same project.*

Use the following spreadsheet to list all budget items for which funding is being requested. Include cost and total amount for each item requested. Attach additional pages if necessary. Due to limited funding, TGIF is reluctant to employ Graduate Student Researchers (GSR) or other positions that pay student fees/insurance, and encourages projects to utilize student assistant positions instead. TGIF is also reluctant to provide funding for food or drinks for events.

PROJECT BUDGET		
ITEM	COST	REQUEST
Infrastructure (Capital expenses, etc.)		
Earth Machines Compost Bins with Chicken Wire Lining	1400	1400
Scales	2500	2500
Transportation	300	300
Education (Outreach, publicity, etc.)		
Marketing materials – Flyers and Posters	600	600
Block Leaders Instructional Materials	500	500
Personnel (Salary/wage, worker's compensation*, etc.)		
Block Leaders	1500	1500
Data Gatherers	2500	2500
Data Analysis	1200	1200
Labor to arrange the bins	300	300
	TOTAL	\$10,800

**Make sure the salary request includes take-home pay + worker's comp benefits.*

OTHER FUNDING SOURCES

(1) List all sources of funding (pending and approved) for this project including grants, volunteer efforts, and in-kind donations. Please include the following information: a) Fund description, b) Date submitted and status, c) Amount received that applies to this proposal.

UCSB Campus Housing – Pending approval.

(2) Is your project scalable? Please explain.

Yes. Most of the current funding is oriented at understanding the dynamics of composting in family housing to develop the best method of expanding the program and reducing trash

diversion and greenhouse gas production on campus. Compost bins can be provided at a relatively low cost to the family housing resident gardens without the marketing analysis and educational outreach program.

- (3) Would your project still be viable if it does not receive *complete* funding from TGIF? **Yes. The project can be implemented on a smaller scale and without education, if necessary. Even a few bins at each location would be beneficial to the gardens. UCSB housing has expressed interest in the composting campaign as well and the decision on funding is still pending.**
- (4) What is the minimum amount of funding required for a successful project? **\$1,000**