2nd Place Winner: A Better "One Mizzou": How Permaculture Can Change the Campus Climate

By **Artifacts** • Sep 5th, 2012 • Category: **Culture**, **Energy Efficiency**, **Featured**, **Food Science**, **Health and Society**, **Issue 7**, **Missouri Food**, **Soils**

By Melanie Mazuc

Walking into campus dining halls for a fulfilling dinner, college students usually have the following options: a hot dog, highly processed and covered in processed cheese substitute, a cheesy pasta with a side of "grilled" vegetables that are slimy and covered in oil, some frozen, mushy fruit, full of high fructose corn syrup, or a salad, complete with limp, browning lettuce, expired cucumbers and dirty celery sticks. It's no wonder that undergraduates are notorious for gaining the Freshman 15 in their first year of college, courtesy of all the times we chose the hot dog or pasta instead of a salad. Many college dining services are plagued with these problems with food that is too expensive and doesn't satisfy the students' taste, cleanliness or freshness expectations.

A University of Massachusetts at Amherst student aids the effort to create a permaculture garden in the Franklin Dining Commons. After laying down compost, they added recycled university woodchips for the top layer. This is the first of three permaculture projects on the campus. (Photo courtesy of Shaina Mishkin and UMass Permaculture.)

At some campuses, though, it isn't this way; at all campuses, it doesn't have to be. Ryan Harb, a University of Massachusetts at Amherst graduate, is proof of this. After a near-death experience and a vow to make a positive impact on the world, Harb entered a master's program called "Green Building" at his college and became the first student in the nation to graduate with a master's degree in "Green Building" (57). Still intent on changing the world, he started by changing his front yard into a permaculture (a contraction for permanent agriculture) "yarden," as he calls it, which soon became well known as the "Amherst Permaculture House" (Harb 57). He was then commissioned by the university to do something similar in a grassy area on campus, and that's where his story took off, making history and gaining him national recognition for his ideas.

On his **UMass Amherst Permaculture Initiative page** for the Campus Champions of Change Challenge, a White House project to recognize students making differences on their college campuses, his project is described as "a unique and cutting edge sustainability program that transforms grass lawns on the campus into diverse, edible, low-maintenance, and easily replicable gardens" (UMass Amherst Permaculture Initiative). In the site's description, permaculture is defined as, "ecological design for sustainable communities that involves people working together to care for the planet," and UMass Amherst is the only public university currently using permaculture, the most sustainable form of gardening, to grow food for the dining halls on campus (UMass Amherst Permaculture Initiative). This project won the challenge with almost 60,000 votes, and Harb's ability for community engagement is evident in that massive number (for reference, the second-runner up out of 25 groups had less than 25,000 votes).

I propose making this change on the University of Missouri campus, a place famous for its beautiful landscaping and ripe with open, grassy areas to convert into gardens. Though UMass Amherst was the first public university in the country to implement permaculture, it shouldn't be the last. We can't afford for it to be the last. With the incoming freshman class the largest Mizzou has ever seen, changes have to be made. Among those changes, in addition to a growing environmental crisis, college students are finding themselves frustrated with the costs involved in financing a university education, and universities are struggling to keep costs low while satisfying student needs and wants. Though it may not be a solution to every problem, planting a permaculture garden on campus will help protect the environment and allow campus dining to provide healthier, tastier food at a lower cost to students.

The University of Missouri's **Campus Dining Services** currently finances its operation in a very typical way for colleges: with one main distributor, which is supplemented by a number of other, smaller distributors. In an interview with CDS Executive Chef Eric Cartwright, he explained that the operation works with a Group Purchasing Organization, which negotiates with food manufacturers in order to lower prices in exchange for business with operations such as CDS. Through this GPO, different prime vendors bid on a contract with the foodservice operation, and one is contracted for a certain dollar amount of Campus Dining's budget. The remaining amount can be spent elsewhere. The benefits of this business model are competitive prices and the fact that most items offered by the vendor are offered in a selection of different brands, so Cartwright said he can choose between several different brands to select the best one. On the contrary, other items are only offered in one brand, so there is no opportunity for choice when purchasing. The obvious detriment to this model is that there is little purchasing freedom because the budget is mostly confined to one vendor.

As for buying locally, Cartwright said that CDS has begun to buy a lot more food from local vendors, even joking that he had to crunch some numbers to make sure he hadn't gone over the purchasing limit outside the prime vendor. While he said that people encourage chefs and businesses to save the world and go green, he said, "my main job is to provide the best-tasting food I can," and the most expensive food is not always an option. He explained that, when looking simply at the dollar amount, food from the prime vendor is almost always a better value. Looking at numbers, Cartwright said that local food was overall 14 percent more expensive. He also said that, when taking into account other factors, such as stimulating the local economy, the food's taste, quality, shelf life, and the relationship between his staff and the local vendors (which causes the staff to treat the food with more care) it isn't such a black-and-white issue when it comes to the overall value.

Since students who live on the Mizzou campus are required to purchase a meal plan, they are being forced into buying and eating food that, for a college student, breaks the bank, even with

the efforts CDS makes to offer fair prices. There are a number of other options besides the current business model that could aid Campus Dining Services in providing better food to students at more affordable (or even the same) prices. The first option, which has become popularized lately around the country, is to buy more local food. According to a **research study** by Janet Parker, a researcher at the University of Wisconsin-Madison Center for Integrated Agricultural Systems, which was published as a research brief titled *Dishing Up Local Food on Wisconsin Campuses (Research Brief #55)* on the **CIAS website**, six out of nine Wisconsin college campuses have felt pressure by students and/or faculty and staff to purchase more local food. Parker was quoted in the brief as saying that even larger college campuses can buy local. "UW-Madison decided to feature local, organic meals in single dining halls rather than offer such meals in all four dining halls simultaneously. This shows that all sizes of schools can tailor their local food buying efforts to the availability of local food, labor for processing, and budget" (qtd. in *Dishing* 2001). UW-Madison has about 12,000 more students than Mizzou. The benefits of buying locally are obvious: better-tasting, higher quality food with a longer shelf life, a boost to the local economy and a lesser environmental impact, but CDS, in its temperate climate, would also have to wrangle with the difficulties of buying seasonal items and the overall availability of some items.

Another, more viable option for Campus Dining Services comes with a generally low price tag and many more benefits: grow your own using permaculture. In an article titled *Is There a Need for a More Sustainable Agriculture?* by Tiziano Gomiero, David Pimentel, and Maurizio G. Paoletti, three professors at Padova University in Italy, they explore actions towards more sustainable agriculture. Permaculture is listed as putting "the emphasis on management design and on the integration of the elements of a landscape… to produce an efficient, low-input integrated culture of plants, animals, people and structure" (Gomerio, Pimentel, and Paoletti 16). Gomerio et al. argue that the problem with permaculture is "that biomass from surrounding areas is used to fertilize the permaculture area, [which] is depleting resources in the surrounding areas" (16). While this may be true, using resources from other parts of campus to create a permaculture area in one part of campus won't necessarily harm the surrounding areas if there is no planned agriculture being performed there in the first place. Also, with the integration of theories from agroecology, organic agriculture, perennial crops and precision agriculture, measures can be taken to preserve the surrounding areas and make sure no resources are excessively depleted.

A simple explanation of permaculture is offered in an article by Rachel Sullivan in science magazine *ECOS*, which explains that permaculture is hitting its third popularity surge in thirty years. The article explains that the design principles "are modeled on interactions seen in natural ecosystems, and on achieving maximum gain for minimal energy expenditure… The products of one element feed the needs of adjacent elements, reducing energy consumption all round" (*ECOS* 9).

To demonstrate the emphasis permaculture places on plant integration, Mark Hoffman, owner of the eco-friendly Greenhouse Bed and Breakfast, which is located in Illinois, explained that this sour cherry tree produced few cherries for seventeen years until he planted some horseradish beneath it. Since then, the tree has produced ample amounts of cherries, and the horseradish prevents most weeds from growing, making the tree and its surrounding area much easier to maintain. (Photo courtesy of greenhousebed.com)

With the manipulation of these elements, permaculture is a self-sustaining garden that can provide food for humans and animals alike while also protecting the environment and creating a beautiful landscape. According to Sullivan, the Brookman family in South Australia has turned over 37 acres of difficult land into a bountiful **Food Forest** that "produces more than 150 organically grown varieties of fruit and nuts, wheat and vegetables, free-range eggs, honey, carob beans, Australian native foods, nursery plants and timber" (9). The permaculture has also greatly improved soil fertility and saved water (Sullivan 9).

In addition to the success of permaculture for the Brookman family, the World Wildlife Federation, in conjunction with the government of Abu Dhabi, has planned to create **Masdar City**, a completely green city with no carbon output, no waste and no cars (Sullivan 10). One of the creators of permaculture, David Holmgren, said that visions like Masdar City are "affecting every level of the global economy" (qtd. in Sullivan 10). He also emphasized that, as the world's available oil and energy peak, "people can make small-scale adaptive changes that will help them focus on doing something positive" (qtd. in Sullivan 10). This article, which also includes tips for permaculture on a broader scale, demonstrates that permaculture and its principles are an effective, low-cost way to improve the quality of the environment and provide food for humanity. On the UMass Amherst campus, its first permaculture garden was estimated to provide 1,000 pounds of vegetables for campus dining by Ken Toong, the UMass director of dining and retail services (Pfarrer 2010). According to the USDA, the average person eats about .7 pounds of vegetables per day. This provides enough vegetables for an average of over 1,400 meals at UMass Amherst. The university has now expanded to three permaculture gardens.

The increase in permaculture's popularity has allowed for additional information on how to manage a permaculture landscape. In an article in *Communities* magazine, Elizabeth Barrette explores the main benefits of permaculture and ways to incorporate permaculture into a landscape while saving money. Explaining that "no matter how depleted your local environment may seem, you actually have quite a lot to build on," she emphasizes the importance of such cost-cutting measures as using perennial plants instead of annual ones and taking advantage of a compost pile to provide organic, enriching materials for the permaculture garden's soil (Barrette 152). Campus Dining Services often emphasizes the high amount of food students waste per year. With this, a compost pile of scraps from the kitchens would do a wealth of good for all the campus landscaping already, and could come to include a potential permaculture garden.

While some schools, such as the University of Bradford in the United Kingdom, have implemented expensive measures to increase sustainability on their campuses, it isn't necessary. According to an article in *Ecologist* titled *Ecoversity: Putting the Eco into University,* the University of Bradford

has “put in place a requirement that all our courses across the University have to commit to teaching about sustainable development in order that we create a new generation of sustainable literate graduates” in addition to its more costly efforts (*Ecoversity* 71). Creating a pro-sustainability curriculum would not necessarily cost Mizzou any revenue, but it could encourage students to get involved in permaculture and related measures on campus.

“Stacking” is a concept in permaculture that means to increase the productivity of an area by integrating different components into it for the mutual benefit of all of them. Oregano and eggplants, which work well together, surround this young persimmon tree and, Greenhouse Bed and Breakfast owner Mark Hoffman explained, are an aesthetically pleasing combination. Hoffman’s bed and breakfast, located in Illinois, emphasizes its focus on permaculture and other ways to be eco-friendly. (Photo courtesy of greenhousebed.com)

Back at the University of Massachusetts at Amherst, the permaculture gardens are thriving. A permaculture committee and a permaculture gardens project have been instituted on campus. The permaculture project has already won more than five awards, including the White House award mentioned earlier (UMass Permaculture Committee). On its website, the UMass Permaculture Initiative states that the initiative “is a unique and cutting edge sustainability program that converts unproductive grass lawns on campus into ecological, socially responsible, and financially sustainable permaculture landscapes that are easy to replicate” (UMass Amherst Permaculture Initiative). This type of program is a solid model for what Mizzou Campus Dining Services, and the university campus, needs. For example, there are at least three “unproductive grass lawns” on

campus that fit the bill for what UMass Amherst has already done: Dairy Lawn, Peace Park, and the space behind the Virginia Avenue residence halls, among others. Some may argue that Peace Park is a park, and therefore should be left untouched, but the beauty of permaculture is its ability to be effective in any environment. It would be possible to implement permaculture in the area without disturbing its park aspects.

This is the first of several relatively low-impact steps needed to get permaculture started on the Mizzou campus. After choosing a location and getting it approved for a garden, CDS could start a partnership with a variety of sustainability groups on campus, whose responsibility it could be to install the garden. An on-campus group called **Tigers for Community Agriculture** has already started researching sustainable agricultural practices, and has even planted at nearby Bradford Farms, but they have yet to make the connection with Campus Dining that is needed to expand the effort. Due to the recent boost in publicity from the success of the UMass Amherst initiative, there is plenty of research online for students to create their own garden without previous experience. In addition, there are classes offered around the country at colleges and in communities so people can learn how to start their own permaculture gardens. Combining these efforts with several other actions mentioned by Gomiero et al. in *Is There a Need for a More Sustainable Agriculture?* including perennial crops and agroecology, Campus Dining Services could have a fully functioning permaculture garden within a year or two.

Once a garden has been established, the food could be harvested for use in the dining halls. The shelf life, quality and taste of something grown a block away is undoubtedly better than something grown across the country or across the world. Waste scraps from the food could be composted for recycling in the permaculture garden, and the cycle would continue to produce a healthy garden and healthy food for students. According to Sullivan's article, permaculture efforts have changed "the lives of Kalahari Bushmen, Zimbabwean schoolchildren, indigenous Brazilians and tsunami-affected Acehnese" by providing them with food (Sullivan 8). While a few small gardens will not entirely feed the student body, they can definitely increase satisfaction and decrease costs for Campus Dining Services.

In Phase I of its construction, volunteers help to complete the sheet mulching of Franklin Dining Commons Permaculture Garden at the University of Massachusetts at Amherst after spreading compost across the area. Sheet mulching involves placing clean cardboard on top of the compost to control weed growth, which is followed by covering it in a layer of mulch. They used recycled campus woodchips. (Photo

courtesy of Will Szal and UMass Permaculture.)

Possible challenges include funding the project and getting students involved. Many sustainability groups on campus, including Tigers for Community Agriculture, have already inched towards this movement. They just need a push in the right direction from a larger group such as Campus Dining. These groups also sometimes have their own budgets, which could contribute to the expenses of plants for a garden. It would be up to Campus Dining Services whether to fund the project, depending on whether they saw it as cost-effective, but other options include applying for grants to create a more sustainable campus. Some schools, such as the University of Bradford in the UK, have helped to fund massive sustainability measures that cost thousands of dollars, but Mizzou could start small. The UMass Amherst project emphasizes that permaculture landscapes are perfect for campuses because "they are replicable, scalable, and adaptable to anyone, on virtually any budget, in almost any climate" (Background). This statement alone defeats nearly every argument put up against permaculture, and it comes from a team of people who have made permaculture happen effectively. Another challenge includes the different harvesting seasons, many of which are during the summer, when students are not in school. However, it would be possible to plant things that are harvested in August and September, when school is just getting started. There are also summer school students who would benefit from plants during the less busy months.

With many empty wallets staring the university and its students in the face, Campus Dining Services has to consider alternative methods to their current business model. As scientists continue to emphasize the environmental crisis, food prices continue to climb, and college students continue to be dissatisfied with their dining plans, permaculture, too, seems to be staring at us as a viable option to improve the campus climate, literally and figuratively. Students would like permaculture for its healthier, fresher, better-tasting food, its positive impact on the environment, its potentially positive impact on their wallets, and its potential for creating a campus project they could rally around together. The university would benefit through positive publicity and a more aesthetically pleasing campus. Finally, Campus Dining Services would most definitely benefit, with a better reputation for improving the environment, cheaper or equally expensive costs for them, higher quality, better-tasting food, more satisfied customers and publicity for being a sustainable foodservice operation. The long-term benefits of permaculture are healthier students, a healthier campus and a healthier budget for everyone. Permaculture has already worked across campuses nationwide and across the world. From every angle, we can't afford to continue on the same path. Something must be done, and while permaculture may not solve every problem, it's a leap in the right direction.

Works Cited

"Background." *UMass Permaculture*. University of Massachusetts Amherst, 2012. Web. 23 Apr. 2012. <http://www.umasspermaculture.com/students/about/>.

Barrette, Elizabeth. "Permaculture on Low to No Budget." *Communities* 153 (2011): 33-35. *Academic Search Complete*. Web. 23 Mar. 2012. <http://proxy.mul.missouri.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=69653150&site=ehost-live>.

Cartwright, Eric. Personal interview. 16 Mar. 2012.

"Dishing up Local Food on Wisconsin Campuses." *Center for Integrated Agricultural Systems*. North Central Region SARE Program, Jan. 2001. Web. 07 Apr. 2012. <http://www.cias.wisc.edu/farm-to-fork/dishing-up-local-food-on-wisconsin-campuses/>.

"Ecoversity: Putting the Eco into University." *Ecologist* 39.2 (2009): 70-71. *Academic Search Complete*. Web. 12 Mar. 2012. <http://proxy.mul.missouri.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=37170333&site=ehost-live>.

"Factbook." *U.S. Department of Agriculture*. Web. 23 Apr. 2012. <http://www.usda.gov/wps/portal/usda/usdahome>.

Gomiero, Tiziano, David Pimentel, and Maurizio G. Paoletti. "Is There a Need for a More Sustainable Agriculture." *Critical Reviews in Plant Sciences* 30.1-2 (2011): 6-23. *Academic Search Complete*. Web. 8 Mar. 2012. <http://proxy.mul.missouri.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=60294107&site=ehost-live>.

Harb, Ryan. "UMass Amherst Permaculture: Leading by Example." *Communities* 153 (2011): 56-76. *Academic Search Complete*. Web. 23 Mar. 2012. <http://proxy.mul.missouri.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=69653159&site=ehost-live>.

Cartwright, Eric. Personal interview. 16 Mar. 2012.

Pfarrer, Steve. "'Permaculture Garden' at UMass Gives New Meaning to the Phrase Fresh Vegetables | GazetteNET." *GazetteNET*. Newspapers of New England, 5 Nov. 2010. Web. 23 Apr. 2012. <http://www.gazettenet.com/2010/11/05/quarter-acre-experiment-0>.

Sullivan, Rachel. "The Living Culture Whose Time Has Come." *Ecos* 144 (2008): 8-10. *Science Reference Center*. Web. 23 Mar. 2012. <http://proxy.mul.missouri.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=sch&AN=34389913&site=ehost-live>.

"UMass Amherst Permaculture Initiative." *Campus Champions of Change Challenge*. The White

House. Web. 18 Apr. 2012. <https://campuschallenge.uservoice.com/forums/148562-campus-champions-of-change-challenge/suggestions/2619301-umass-amherst-permaculture-initiative-ryan-harb->.

"UMass Permaculture Committee." *University of Massachusetts Amherst*. University of Massachusetts Amherst, 2012. Web. 23 Apr. 2012. <http://www.umass.edu/livesustainably/groups/umass-permaculture-committee>.

Artifacts is a publication of The University of Missouri.
Email this author | All posts by **Artifacts**

Leave a Reply