UNIVERSITY OF CALIFORNIA, SANTA CRUZ

Development of a Community Based Food Networking System and its Contribution to a Sustainable Food System

A Senior Thesis submitted in partial satisfaction
of the requirements for the degree of

BACHELOR OF ARTS

in

ENVIRONMENTAL STUDIES

by

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ABSTRACT: The worlds food system has proven to be a flawed system. It has been able to produce more than enough food to feed the world, however, food insecurity persists. There is a growing need to rebuild our food system in a way that promotes better livelihoods for everybody. The growing number of people in cities suggests that our model of growing food on an extensive large scale is not appropriate. Urban farming and gardening offer a unique solution to the worldwide food crisis. A class taught through the ESLP class at UCSC was able to demonstrate this as a solution. It also was able to influence a more sustainable lifestyle of its members and create a local food exchange network. The food exchange network provides an outlet for unused garden supplies or produce as well as creates a linked community around home gardens. The program has been set up to be ran autonomously by its community members, however has the potential to develop further in programs such as ESLP.

KEYWORDS: ESLP, Urban Farming, community based food networking, Sustainable food system.

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Background

Our modern industrialized agricultural system in the United States has proven to be a flawed system that relies upon large amounts of inputs and releases large amounts of pollutants that are damaging to the environment and peoples' health(Crinnion 2009). Apart from being environmentally damaging, it is damaging to people's livelihoods and more importantly culture(Pimentel and Greiner 1997). Urban agriculture has the unique opportunity to provide education about food production and a remedy to many of the problems created by the modern industrialized agriculture system . The urban landscape provides vast quantities of unused space that can be modified to grow food(Tuyttens et al. 2008). This can help aid in increasing food sovereignty and equity issues surrounding food. By bringing agriculture production into cities and educating consumers about the means of production, consumers will be able to make a more educated choice as to where they decide to buy food. Bringing food into cities can provide lower income residents with sources of fresher and more nutrient rich food sources(de Bon et al. 2010). It also offers a more efficient use of our current systems, yet most importantly it reshapes our relationship with food, it's production, and our knowledge about the natural world ultimately, creating a more sustainable world.

The 20th century brought about big changes in our agricultural system(Paarlberg 2009). There are many reasons why this shift has come about, ranging from the advent of petroleum based fertilizers and pesticides(Gliessman 2007) to promises to feed the world. Mixed-crop planting systems using local land races of plants and minimal inputs have been replaced by monoculture systems using large amounts of synthetic petroleum based inputs. This type of system promises high yields by maximizing the efficiency of growth and pays close attention to the needs of individual plants without close attention to the health of the ecosystem in which the cultivation is embedded. As a result many agricultural crop lands have been significantly altered

and degraded due to poor management(Fisher et al. 2006). Agricultural pests have increased in their overall numbers and resistances to crop defenses as well as chemical defenses, such as pesticides(Pimentel 1991).

The types of crops that are being grown have also been significantly altered to fit into the workings of an industrialized food system where large companies contract farmers to grow certain varieties, often to be processed into some other form of food or fiber. Because of this shift there have been great losses in genetic variety of our crops(Gliessman 2007). With that genetic loss, resistances to pests and environmental stresses have also been compromised(Gliessman 2007). Genetic modification by large biotech corporations has and is currently influencing our food crops in ways that the world has never seen before. Biotechnology has been able to incorporate foreign genes into crop plants that aid in crop resistance to stresses, increase crop yields, and even change the flavor of the crops. The corporations that create genetically modified organisms(GMO) promise that their technology can be used to feed the world, and that we "must" use their technology if we wish to cultivate enough food for the ever increasing population levels. However, according to these promises are often misguided and fail to address the larger issues at hand including the long term environmental damages that this technology creates and issues of equity and food distribution that are the underlying causes for malnourishment and starvation(Holt-Gimenez 2009).

There has been increasing concern over the safety of our food. This threat can happen at many levels in the food system: from the farm, to the processing plant, to the supermarket, all the way to the home, where consequences can range from upset stomach to death. Many of these threats can be significantly prevented using alternative techniques. For example, salmonella in chickens can be significantly reduced by allowing chickens to be raised in pastures where lower

densities can prevent spread of disease and immunities can be formed by the chickens own immune system(Tuyttens et al. 2008). Diverse soil systems have the ability to filter out bacteria and toxins that build up in soils. This demonstrates that the design of the production system can effectively eliminate potential contaminants if it is designed properly.

Environmental damage and degradation have been a major consequence of our modern agricultural system(Foley 2010; Gliessman 2007). Examples can be found throughout the world on small and large scales. On a small scale it may be the degradation and erosion of the soil on the farm, or on a large scale, the dead zone at the base of the Mississippi, which is due to the accumulation of eroded soil and more so due to leached fertilizers and pesticides in the Mississippi watershed. The use of synthetic fertilizers and pesticides solely solve problems in the present while discounting the future of the system. By relying on fertilizers instead of protecting soil quality and organic matter the resilience of the soil system is diminished. Pesticides may kill off your pest but it also kills off valuable predators that take longer to mature, allowing more time for the survivors of your pest community to grow nearly unchecked by biological control. There is always the risk of pesticide build-up in ecosystems surrounding agricultural land. However, there are many new techniques that have evolved out of the Integrated Pest Management paradigm that encourage no pesticide use, biological control, and cropping systems that prevent pests.

There are many social injustices that are the result of our food system. The farmer is no longer regarded highly and farming has become a thing of the poor rural class. Because the methods of farming have much been reduced to an equation where input equal a product, cultural knowledge of land and systems is currently being forgotten, and with it a great amount of respect for the farmer and the occupation of farming has been lost. Many farmers now cannot make a

living wage from farming and must take on a second form of work. Presently farm labor is fueled by undocumented immigrants, many of whom are from Central and South America(Lopez 2007). Many of the immigrant farmworkers were previously farmers in their home country but have been displaced due to the agricultural policies of the United States. One such example is the North American Free Trade Agreement which has encouraged the migration of thousands of farmers from Mexico to the fields in the United States(Lopez 2007). Their presence in the US supplies a skilled labor force that is paid barely a living wage, allowing the US to continue unethical farming and labor practices.

The problem of hunger and starvation is a product of food distribution and availability not necessarily the amount of food produced. This problem occurs worldwide from cities like Oakland in California, to communities in Africa. Oakland for example is a large city, however a certain district is deemed a food desert(James 2009). This is because of the lack of grocery stores, especially ones that provide fresh fruits and vegetables. Examples of this are found worldwide primarily in low-income neighborhoods like the one in Oakland. As a result communities are hurt in many ways from the health of its individual members to the health of the community. Public planning, funding, and even crime are all the potential results from unfair distribution of food resources in low-income such as the ones above.

Ultimately this new age system is not sustainable. A sustainable food system is defined by a multifaceted set of indicators. These indicators are ecosystem health as well as social health and the well being of communities, including providing livelihoods for farmers as well as all dwellers in the community. Urban agriculture combined with agroecological knowledge can provide a foundation to support a more sustainable food system in all respects.

Urban agriculture refers to many scales of agriculture from backyard gardens to full scale farms. The one unique thing that they have in common is their close proximity to urban centers and often the involvement of community members in food production. There are a few primary types of urban farms according to the North American Urban Agriculture Committee(NAUA), which consist of commercial farms, community gardens, and backyard gardens(Brown 2003). These types of urban farms can inhabit a multitude of different sites from unused open spaces to roof-tops and hanging gardens.

Commercial urban farms differ from community and backyard gardens because their main drive is to produce an income from their goods. These farms rely upon farmers markets and CSA's(Community Supported Agriculture) to move their products around. Both of these sales methods offer benefits to the communities they are involved within. Farmers markets offer a unique alternative to supermarkets within communities by allowing members and consumers within to build valuable relationship and the eliminate the middle-man between the food supplier and the food consumer. By eliminating the middle-man and allowing the producer to sell directly to the consumer, more of the consumer's dollar is available for use by the producer. In this relationship, the producer is also upheld more for the quality of produce that they can grow, since they may risk losing customers through mismanagement of their fields or by the quality of produce. An alternative to the farmers market model, which has taken root within the past decade is the advent of CSA's. These are programs developed by farmers or co-ops that operate on a member basis. Consumers in the CSA model buy into memberships on a local farm where they are guaranteed a certain amount of fresh produce once or more per month. Programs like these help to link growers to consumers and build a more informed consumer.

Community and backyard gardens are also key components for linking consumers to producers. These types of urban farms vary tremendously in size and place. Backyard gardens refer to any gardens on one's property, whereas community gardens are located in unused urban spaces where local residents can become stewards of their own small parcel of land within the garden space. Community gardens offer a unique chance for the exchange of information on agriculture and the growing of food. They also help to build up relations within the community that lead to stronger communities through increased local government involvement and improved overall health of its members(Blake 2009; Henderson 2009). These gardens also offer a chance for members to supplement significant amounts of dollars that would otherwise be spent at the supermarket. Community gardeners have reported to save between $100 and $700 annually on groceries, while increasing the diversity of veggies that they consume(Brown 2003)

Urban Farming Operations Today

Throughout the United States Urban farms are springing up on many levels of operation. Some of the most noteworthy cities that this type of agriculture is developing in are San Francisco, Milwaukee, Philadelphia, Baltimore, Chicago, Oakland, and Detroit(Christian 2010). Levels of operation range from privately owned farms to community farms. Farms also range in levels of community involvement and stewardship.

Many examples of emerging community farms are based around creating stronger communities by providing jobs or food for low-income community members. Milwaukee has a great example of this. An ex-NBA basketball player, Will Allen, who grew up as a farmer has designed such a community involved farm(Royte 2009). He has managed to develop a farm containing 14 greenhouses on just 2 acres of land in the city of Milwaukee. Using innovative

farming techniques such as aquaponics, vertical farming, and an extensive worm composting system that creates around 100,000 pounds of compost every four months. Will has been able to create an extremely productive system which has received grants from unlikely sources including the Kellogg Foundation and the Ford Foundation. Ultimately, Mr. Allen distributes his produce locally to nearby impoverished communities lacking nutritious food sources.

In Santa Cruz, CA the homeless garden project operates for a similar purpose as Will Allen's urban farm in Milwaukee. The look of the farm is a stark contrast to Allen's greenhouses and piles of vermicompost. The homeless garden project resembles more of an average farm. It lies on the outskirts of Santa Cruz but is still considered an urban farm due to it's contributions to the urban community. Specifically, the farm has been designed to provide job opportunities to the city's homeless population as well as food for its CSA members according to a primer as compiled by the NAUA.

Urban farms can even spring up in unimagined places, such as the suburbs of Pasadena, CA. Here on 1/5 an acre of land a family has been able to cultivate a living off of selling produce locally to restaurants(Dervae 2010). Effectively farming on 1/10 of an acre of land this family has developed a highly productive system that has allowed them to produce on average 6,000 pounds of food annually which provides them with nourishment and an income. This family has been able take their efforts towards sustainability to levels that many are unwilling to undertake. The family does their own food processing, such as canning, and has eliminated the need for a majority of their electrical appliances.

These three examples provide insight to the varying scales that urban farms operate upon. They all have the underlying theme of providing fresh local food to their communities, however,

operate with different goals and systems. Urban farms like the Dervae's focus on selling to higher priced specialty markets, whereas Will Allen's farm focuses on providing nutrient rich produce to Milwaukee's low income residents. The design of the farming systems is very much dependent on the location as well as goals of the operation as these three systems demonstrate.

Experience with the Education for Sustainable Living Program

During the fall of 2009 Andrew Olbrycht, a classmate of mine, and I heard about the ESLP at UCSC and we discovered that it provided an outlet for us to both learn more about what we had been studying as well as allowed us to pass along some information that we thought would be valuable to our peers. We came up with the idea for our class directly from our studies and experiences. At the time we were enrolled in Agroecology: a class that takes a look at setting up and developing sustainable food systems, PICA(Program in Community and Agroecology) a class where we took a look at some of the issues surrounding the food system worldwide, and were both working on farms in Santa Cruz. The farm I worked at was Everett Family Farm, a 45 acre CCOF certified farm in Soquel, CA.

The two of us enrolled in the ESLP's winter training seminar during Winter 2010 where we were provided with time as well as support in developing our class topic and class project further. We worked with Professor Michael Loik who was a great help in developing the method in which we planned on executing our class lectures and discussions. He also helped us develop a syllabus as well as our class project.

For our class project we decided to create a "food trading network". One of my biggest inspirations for this came directly from my experience working at Everett Family Farms in Soquel, CA. I noticed when I was working there that there were a great deal of perfectly edible

crops that were not harvested because the farm could not sell enough. In my personal opinion it was because of the high price of some of their organic veggies. However, it was hard for me to believe that there were not enough people to eat these beautiful and delicious veggies and that their only fate should be to be tilled back into the soil.

This got me thinking about my experience with my own garden just a few months prior. After the summer I had so many tomatoes and onions, I did not know what to do with them all. I gave some away to my neighbors but I still even had extras that I could not use. I imagined that this may be the case with many vegetable growers in Santa Cruz and that there needed to be some sort of institution where gardeners throughout the city of Santa Cruz could communicate and trade. The creation of such a network has the potential to create a more sustainable city and community in Santa Cruz. There are many aspects of the program that we considered highly beneficial. They were reduced food waste, reduced material waste, increased communication, and the sharing of knowledge.

As the idea about food networking developed Andrew and I were able to find many examples similar to what we wanted to accomplish in the Santa Cruz area. The first one that we were able to find was a program started by a single girl in Oakland, CA ran under the title Forage Oakland(Brown 2009). Forage Oakland began as a young girls mission to collect unused fruits and veggies grown in Oakland. This is however not the limit of what she is pursuing. Through her methods of foraging by communicating with neighbors and trading good she has found in her own program that the biggest advantage of foraging is the community she has created for herself around foraging stating that "food binds us all, and it becomes a very simple way to connect"(Brown 2009).

This community around food is one of the biggest goals of the project, especially in relation to its contribution to a more sustainable Santa Cruz, and eventually a more sustainable food system. One of the most important factors in creating a more sustainable food system is to change our relationship with food and the community around it. In our current form of business and monetary exchange, one of the biggest voices we have is through our dollar and with whom we choose to support by spending it. For example, in Maine it has been reported that if everyone spent $10 in their local communities weekly it could potentially pump $104 million into the local economy(Brown 2003).

Preparing the Class

Both Andrew and I enrolled in the Winter Training Seminar(WTS) put on by ESLP for Action Research Teams(ARTs) where we learned a few dynamics about leading discussions as well as set up a curriculum for our students to follow. The WTS was not only a lecture series but it also included a few assignments that would lead us to developing our class and project in full. As a part of the curriculum of the WTS we were required to write a syllabus, a project proposal, an annotated bibliography of materials(texts, videos etc.), a vision and action plan, two lesson plans, and the execution of one lesson plan in our WTS discussion section. All of our work went through a grading by our ART leader Toshimi Barks as well as our independent study facilitator Michael Loik. The WTS proved to be a valuable learning experience for Andrew and I as we approached Spring quarter when we would actually implement our class.

A few of the required assignments during the WTS we were required to perform individually. They were the Vision and Action Plan as well as the annotated bibliography. The Vision and Action Plan was a statement we gave at the beginning of the quarter where we set

goals and desires for the outcomes of the WTS, for ourselves, and for our the class we would be teaching in the Spring. The annotated bibliography was a documentation of the research that Andrew and I were doing during the WTS, it also included brief summaries of what the articles we planned to use as material for our class.

The majority of the work required from Andrew and I during the WTS we were able to split evenly between the two of us. Our idea for the project was a collaborative effort, which we discussed and tweaked each week until we had a plan that was approved by Michael Loik. As I discussed earlier we used this time to develop our plan to create our food trading network emphasizing sustainability and community building. During this period we also collected articles and information about urban farming and homesteading and used them to develop our syllabus. Our syllabus outlined what we thought was necessary for the quarter and each topic for each class session was left to Andrew and I to decide.

As part of the WTS discussion session we were required to present our class with an hour-long lecture. For this Andrew and I chose to have the class read a few articles prior to our meeting session and we led a group discussion about some issues concerning urban farming as well as a discussion about food foraging and everybody's personal opinion on the subject. We planned a game as our break between our two discussion topics. This was a technique that we learned may help to increase blood flow and engagement in the room. We related our game to food foraging and asked the class to forage for different ingredients that we hid around the classroom. The class was then asked to communicate with and trade with others to formulate a dish of their choosing.

The execution of our first lesson went very well. At the beginning Andrew and I were a bit nervous and we did fumble over a few things, however, once we started getting into the lesson that all cleared up and we had an incredible discussion where everybody contributed and we got a lot of brainstorming done. Our biggest problem was that we had actually planned too much for our one-hour allotment and were therefore rushed at the end. We received valuable feedback from our classmates, most of it being positive. The improvement comments dealt with the amount of time we planned for each activity as well comments about how we had a rough start. Overall, this experience was extremely beneficial both in terms of seeing whether or not we could develop an effective lecture and in boosting my confidence in leading a class.

Creating Change

At the end of the quarter Andrew and I collected the individual assignments that we asked our class to submit. The assignments consisted of a weekly journal as well as a homesteading project. In the journals we asked our students to write about their experience with ESLP once a week. This was meant to be a reflection of themselves and the information that they had acquired each week with ESLP. In our other assignment, which we called the "homesteading project" we asked our students to actively pursue an act of sustainability at their own home. We offered suggestions ranging from knitting to starting a garden or even to prepare an entire meal from scratch. The project was mostly left up to the students to decide upon.

I found the homesteading projects to be profoundly inspiring. Each student,(with the exception of one who did not turn in the homesteading assignment), had talked about their wonderful experiences trying something new. One of the ones that stood out was a top bar bee-hive that a student had started for the project. The student reported that our class helped to drive

her to start this project. Another student began baking her own bread for her homesteading project, which she brought to class on a few occasions. She spoke about how making bread had become s new hobby of hers. The theme was one of pride and drive. All the students were proud of what they had accomplished and gave prospects of keeping up such a way of life and relying less upon what others have made for them.

It was incredibly inspiring to read our student's projects and see what they had done. The most inspiring thing, however was the feeling that this assignment actually inspired our students to take more control over their lives and role in the world. Many of them adopted new skills that they will be able to carry with them for the rest of their lives. These skills include brewing beer, bread making, gardening, and even honey production.

This project has great potential in helping to drive us towards a more sustainable future. I foresee this class as an on-going project that can be taken up by future ESLP ART leaders. The class content in the future can remain similar to how we designed our class. The focus was more directly tied into the social aspects of urban farming, with some techniques presented. A future program could run off this same guideline perhaps introducing more techniques for our students to build their own Urban Farm.

Our project also has potential to be worked on in the future. The site was able to get launched by the end of the spring quarter, as a consequence it did not obtain a huge following. A future ART may be able to work on developing the site further and focus more on outreach to the community. For example, the future ART program may want to focus more on advertising the site and community action. Community action may be in the form of outreach to our community. Perhaps the ART could work in conjunction with the Santa Cruz Homeless Garden

Project. Students in this perceived ART could work on food collection and distribution to those in need. Or perhaps the future ART could use Forage Oakland as their model and involve kids in after school programs. Forage Oakland has been able to recruit willing teens to bike and walk around town collecting from individuals who have produced more food than they can consume. The kids then redistribute the food to elderly who are in need of vitamin and mineral rich foods. This is sort of program has great may contribute to sustainability in a number of different ways. It reduces food waste in our cities, it redistributes otherwise wasted food to people in need of rich food sources, and it also has two educational components, educating young adults about our the importance of reducing food waste and educating ESLP students how to lead others towards a more sustainable future.

It is going to take multiple approaches on all levels from grass roots organizations to legislation to develop a morally just and sustainable food system. Individuals and communities are beginning to take back their power on the food system in many ways, of which urban farms and community sharing networks are becoming increasingly important. These, often small scale operations, are cumulatively having an ever increasing impact on the well being of communities and the members within it. With help from these operations communities have been able to reunite over the very fabric that connects us all, our need for nutritious food. One of the most important factors that has played into this shifting paradigm in the food system has been education and the power of the individual to affect change. This is why ESLP has been such an important player in driving the change that needs to occur. As laid out, this class has a been an invaluable contribution to the sharing of knowledge between students and may continue to develop for years to come.

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Works Done for ESLP

Vision and Action Plan
Quarter and Year

Mike Hayes

I. **Personal Quote**: Personal quote can be whatever saying or textual inspiration that represents you

"You must teach your children that the ground beneath their feet is the ashes of your grandfathers. So that they will respect the land, tell your children that the earth is rich with the lives of our kin. Teach your children what we have taught our children, that the earth is our mother. Whatever befalls the earth befalls the sons of the earth. If men spit upon the ground, they spit upon themselves."

"Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect."

-Chief Seattle

II. **Personal Statement**: General overview of your thoughts, desires and inspirations regarding the work you are doing for ESLP or in your everyday life. What do you generally hope to achieve through your ambition and hard work?

The first and foremost goal I have is to learn more about urban gardens, agricultural systems, and techniques to live a less material dependent life. I hope to gain an understanding and appreciation for teaching. I feel that learning how to teach a class will help me to learn how to learn better. I hope to draw from this experience later in life and use the lessons I learned through the curriculum writing process and through teaching. I also hope that the experience will help to give me guidance as to where and what I might like to do after I graduate from UCSC.

III. Personal Mission: This is more specific than the Personal Statement. It is designed to prepare a foundation for your work during the quarter. Although this is more specific than the Personal Statement, it is a general overlay for the specific tasks you will be completing this quarter

I will participate in preparing lesson plans and ideas for each class session. I have already started and will continue to search for reading and discussion material for the class. I want to design a class where we have a communal discussion as well as apply the methods and things we have talked about. I plan on trying out some of the techniques that I am learning through the research process. I will also try to make a point to talk to people about gardening and build off of community experience as well as scientific knowledge and techniques.

IV. Mission Statement for ESLP: Education for Sustainable Living Program: The Education for Sustainable Living Program (ESLP) is a student-initiated, collaborative interdisciplinary effort to realize sustainable community throughout the University of California. Students participate in a weekly speaker series and form Action Research Teams (ARTs) in partnership with guest lecturers, faculty, administration, and community members to implement tangible change. Such experiential learning inspires participants to internalize the concept of sustainability, and carry it in practice beyond academia into greater society.

V. Primary Responsibilities

A. General Responsibilities (Two or Three basic points about what your job entitles)

-Find materials for readings and generate ideas for discussion
-Develop a curriculum, a sylabus, and lesson plans
-Learn more about my subject as well as practice techniques to some extent

B. Quarter Responsibilities (Bullet points on how you are going to achieve these responsibilities and a more specific breakdown of your exact responsibilities for the quarter)

-reasearch online for articles using web of science and other databases
-talk to local gardeners
-try to attend any gardening workshops that I can
-walk around looking for good home garden systems in Santa Cruz
-develop goals and objectives for each class meeting
-learn teaching skills and develop my knowledge of urban gardening and homesteading

VI. Goals/Desired Outcomes of Your Role

A. Personal/ Process Goals (Personal Goals you would like to achieve or maintain this quarter)

-be more oraganized
-don't procrastinate
-develop my speaking skills and confidence in the subject
-work in a timely manner and spread the workload throughout the quarter

B. Content Goals (relevant to ART Facilitation)

-learn more about gardening techniques
-come up with ideas for our class project
-make connections with individuals of certain skills ex:// someone who is capable of creating a website

VII. Anticipated Time Commitments Per Week

-4-6 hours reasearching articles for readings, coming up with discussion ideas, researching gardening techniques
-2-5 hours practicing gardening techniques at home where I can
-2-4 hours developing curriculum and lesson plans for each class
-1-2 hours discussing ideas with my partner
-1-2 hours finding examples of good gardens in Santa Cruz
-5 hours attending ESLP classes
Total 15-24 hours

PROJECT PROPOSAL

ART Facilitators: Mike Hayes, Andrew Olbrycht

Title: *Urban Farming and Homesteading*

Vision Statement: Our *urban farming and homesteading* ART will focus on the benefits they have towards making our food systems more sustainable, bringing communities closer to the foods they eat and to the people who produce them. We will spend the quarter focusing on how homesteading and urban gardening can go hand in hand to make our individual lives and homes more sustainable along with our communities. We will spend a few days learning about the basics of urban farming and homesteading and then will discuss their importance and how we can contribute. Throughout the rest of the quarter we will visit and do a little work on an urban farm and have small hands-on workshops. We will finish the quarter with a group project, developing an online network of UCSC students who are willing to trade the food grown in their backyards and possibly other goods. We hope this online network will eventually spread to the

entire Santa Cruz community over the years. Half the UCSC student population lives off campus, some already have front and back yard gardens. This network will allow students to acquire food and specialty items on a more communal and sustainable level.

Project Proposal: There will be two projects for our ART. The first will be an individual homesteading project that students will be able to work on outside of class. We will ask students to step outside of their comfort zones and try something new. One possibility is for the students to create something from scratch in their own homes that can be of beneficial use for them or someone else. A list of homestead project suggestions will be passed out on the first day of class One of the workshops we will possibly host will teach students how to can food for later consumption. The second project will involve the entire class developing an online food trading network that will first be used by UCSC students and hopefully later on the entire Santa Cruz community. Tasks such as website/forum templates and flyers will be divided up and worked on during the last couple of classes. The goal of our project is to connect students off campus, allowing them to grow and trade goods on a very sustainable and community level. We will be working with Devin Cormia (SEC website intern) for technical aspects of the project, unless there is a student with website design background.

Our discussion setting will involve readings on urban farming and homesteading and success stories around the world. We will discuss a variety of methods and even do further individual research throughout the course.

Projected Timeline:

Week 1~2: Discussions on Urban Farming and Homesteading – Success stories, Importance, How we can contribute. If we decide to have a class garden we will be doing that the first couple weeks

Week 3~4: We will discuss the logistics of the group projects and introduce ways we can take control of our lives on the home front.

Week 5~6: We will begin our workshops: e.g. composting, planting, canning

Week 7: Field Trip to a Santa Cruz Urban Farm (Meder ST Farm)
Field Trip to community gardens and maybe a farmer's market

Week 8~10: Implement our Group Project

Needs Statement and Budget:

We will need a classroom with a projector and a DVD player. We will also need $60 in funding for our canning workshop.

Annotated Bibliography 1

"NYTimes.com - Life (Mostly) Off the Grid." ***YouTube*****. Web. 3 Mar 2010. <http://www.youtube.com/watch?v=3Q-6eDQ8c-A&feature=fvw>.**

"CNN - Urban Homesteaders." ***YouTube*****. Web. 3 Mar 2010. <http://www.youtube.com/watch?v=JuLKE89a_HM>.**

These two videos document the Dervae family and what they call "The Path to Freedom." They are modern urban homesteaders in Pasadena, Ca. On their property they have taken modern homesteading to a new level. They live almost completely off the grid with very few exceptions such as water. On their small piece of land they have been able to grow enough food to sell to local restaurants and make a living. The class will discuss these videos and their context in the greater sustainability movement.

"Urban Agriculture and Community Food Security in the United States: Farming from the City Center to the Urban Fringe." *Community Food Security Coalition's North American Urban Agriculture Committee* (2003): 1-29. Web. 3 Mar 2010. <http://www.foodsecurity.org/PrimerCFSCUAC.pdf>.

This article discusses urban agriculture in the U.S. It discusses all aspects of urban agriculture with statistics as well as methods, definitions, potential problems, and how to implement agriculture into urban settings. We will most likely be using exerts from this document because of its length. We will use the article to facilitate discussions about urban agriculture and what it means to us and how we can implement it.

Aida, F, Shuhaimi, M, Yazid, M, et al. (2009). Mushroom as a potential source of prebiotics: a review. Trends in food science & technology, 20(11-12), 567-575.

We will incorporate a lecture on mushrooms. This article documents how mushrooms are beneficial to our health and how they act as prebiotics. Mushrooms are fascinating and often under appreciated for their value especially as medicinals. We want to give our students a little introduction on their medicinal properties and how we might be able to incorporate them into our lives.

Sanchez, C, & Sánchez. (2010). Cultivation of Pleurotus ostreatus and other edible mushrooms. Applied microbiology and biotechnology, 85(5), 1321-1337.

This article describes how to grow mushrooms and the basic science behind it. I believe that mushrooms can make an excellent addition to home gardens. They are relatively easy to grow and produce a lot of fruit in a short period of time. I hope that this article will give our students more of an understanding of growing mushrooms and confidence to maybe try to grow some mushrooms.

"How to can fruits and vegetables from your garden" http://farmgal.tripod.com/

This article is a "how to" article on canning fruits and vegetables. It is a practice that can be implemented as a modern homesteading practice. We will read this article as a possible homesteading option and I will be holding an optional canning class off campus where we will actually be able to can some of our own fruits!

Annotated Bibliography 2

Brown, Katherine H., and Anne Carter. "Urban Agriculture and Community Food Security in the United States: Farming from the City Center to the Urban Fringe." Community Food Security Coalition's North American Urban Agriculture Committee. October 2003

(2010). A growing Concern. Earth Island Journal, 25(2), 56-.

The North American Urban Agriculture Committee presents a background of urban farming in the United States—what it is and who is involved. It also goes more into detail, covering the different types of urban farming, its potentials, and also its challenges. The document concludes with ways of capitalizing on urban farming's potential via policy change.

Brown, Emma. "Changing How We Live and Eat, One Fig at a Time." San Francisco Chronicle 2 Feb. 2009: E-7.

This article is on food foraging and community food networking in Berkeley California. It tells the story of Berkeley resident Asiya Wadud starting an online blog for food foraging and food trading. The blog, Forage Oakland, has proven to be successful in connecting neighbors and community members around the food they grow and/or produce at home. Forage Oakland presents an interesting alternative that does not require a monetary resource.

Royte, Elizabeth. "Street Farmer." The New York Times Magazine July 2009: MM22

Will Allen, a retired professional basketball player, started and runs Growing Power Farms in Milwaukee, WI. Growing Power Farms utilizes an intense and complex urban greenhouse farming operation—involving hydroponics, terraced farming, chickens, tilapia, and more. His first focus for his urban agriculture contribution is to utilize as much food scraps from the city as possible and then turn that into valuable compost for his intensive growing operations. Other focuses include providing fresh food to low income families that are located in areas of the city where access to fresh food is sparse. The final goal is to incorporate the educational component into public schools as well as provide paid and volunteer work for minorities.

Tortorello, Michael. "The Spotless Garden." The New York Times Feb. 2010: D1

This article researches the successful use of greenhouse farming via hydroponics. Provides description of such a system and goes over the benefits of using water fertilized by fish waste versus traditional methods. It also includes stories of successful use throughout the U.S. and resources available to set up an affordable system.

The Garden. Dir. Scott Hamilton Kennedy. Documentary. 2008

The film tells the story of the largest community garden established in south central Los Angeles in the early-mid 1990's. Includes the great benefits the garden brought to one of the most socially and economically challenged neighborhoods of the U.S. The story goes on to describe the challenges the farm faced by the city and its politics that lead to the ultimate destruction of the garden. However, this did not happen without the story behind the farmers and community members that fought against the city and the developer. Great source for showing the political and social challenges urban farming faces on a large scale.

Campus Resources

Program in Community Agroecology-PICA- on campus community agriculture and living
Michael Loik: ENVS Faculty (ESLP Faculty Mentor)
Steve Gliessman: ENVS Faculty (Has valuable information and connections dealing with sustainable agriculture and food systems)
Margaret FitzSimmons: ENVS Faculty (Has valuable information and connections dealing with sustainable agriculture and food systems)
UCSC Gardener's Alliance (student organization focusing on campus and community gardening)

Local and International Resources

San Francisco League of Urban Gardeners (one of the U.S.' largest urban gardening programs—close to Santa Cruz)

Urban Farming & Homesteading Action Research Team
Education for a Sustainable Living Program
CLEI 161 Spring 2010 Syllabus

Facilitators: Mike Hayes, mhayes@ucsc.edu, (650) 759-5300
Andrew Olbrycht, aolbrych@ucsc.edu, (415) 307-1074

Course Page: http://groups.google.com/group/urban-farming--homesteading-eslp-2010

Course Time & Location: Mondays 2-4:40PM (location TBA)

Introduction

"To grow your own food gives you a sort of power and it gives you dignity. You know exactly what you're eating because you grew it. It's good, it's nourishing and you did this for yourself, your family and your community." (Karen Washington)

With approximately 80% of America's population living in metropolitan areas, the idea of integrating food production into our most dense living environments has become widely considered a crucial step towards increasing our food security, making our food systems and environment more sustainable, and our lives healthier. The United States began as an agrarian society, yet today the majority of Americans don't have a connection with the food they eat. We have lost the experience and knowledge of growing our own food and producing things from scratch rather than buying them from the store. In addition, most of us don't even know a farmer and how or where our food is produced. In a city you have the opportunity to implement farms/gardens in several places: schools, rooftops, abandoned lots, backyards, and parks. So many of our cities have the potential to integrate sustainable urban agriculture, and the best part is every individual can contribute.

Purpose, Goals, and Desired Outcomes

The purpose of this class will be to gain a broader understanding of urban farming and homesteading. We will explore ideas about the topics and discuss our opinions of their importance, practicalities, and ideas for implementation. We hope the participants will learn about gardening at home and in their communities along with at-home solutions as opposed to going to the store. Our class project will build a trading network among UCSC students and staff, centering on homegrown fruits and vegetables, as well as other home-made items. In doing so, we hope to build a strong community stressing sustainability, knowledge, and communication of ideas. As a student-run educational program, we expect our project to be kept up and further developed by future "ARTS" and eventually integrated into the general Santa Cruz community.

Evaluation and Grading Policy

- *Curriculum—Assignments, Readings, etc. (35%)*

  Readings will be assigned for most of the classes to stimulate discussion and a flow of ideas. The days that require students to complete readings before attending class are indicated under each day of the course schedule. Readings are located on the class Google-page. Students will also be expected to keep a journal of at least one entry per week. The journal should consist of reflections of the readings, class discussions, or of anything related to sustainability or community. Students will also be expected to make something at home that they would normally buy pre-made, this can range widely from canning, to knitting, to building something in their garden. There are unlimited possibilities. Students will be asked to then write a two page (double spaced) paper of their experience; success, failure, or anything in between. Potential project ideas and prompt for the paper will be given out at the first class. The journal and project reflection paper will be collected on May 24th.
- *Project (45%)*

  Students will be working with the facilitators to design and implement a trading website. We will especially focus on developing the online resource (making available spatial maps of UCSC backyard gardens around Santa Cruz) and as well as begin finding participants (students, faculty, staff). We encourage our students to start gardens and begin to participate in trading on the website. We hope it will grow into a widely used trading website where people will trade anything from excess fruits and vegetables to excess building materials or compost. It will also contain information about food foraging with information to hot spots. Our project will leave the potential for future ARTS to maintain and expand our project into the general Santa Cruz community.
- *Participation (5%)*

  Students are expected to take part in the discussions and are very much welcomed to offer their knowledge to the rest of the class to help build the overall knowledge in our class community.
- *Attendance (15%)*

  Students will be expected to attend all of the Monday night lecture series along with this course. Please try your best to get to class on time. Some of the classes will not last the entire 2 hours and 40 minutes. In addition, some classes will be meeting outside or at locations other than the designated classroom. It is imperative to keep up with your email so you are aware of such adjustments.

*****NOTE: This syllabus is tentative and subject to change as class progresses. Any changes will be notified to the students ASAP*****

Course Schedule

Week 1: March 29	ESLP Intro Night -ART presentations and sign-ups.
Week 2: April 5 *Reading*	Course Overview/Introduction -Group and Individual Project Logistics
Week 3: April 12 *Reading*	Urban Farming -Technologies and Innovations: Hydroponics, Vertical Farming, Greenhouses, Rooftop Gardens, Composting
Week 4: April 19 *Reading*	Food Foraging and Guerilla Farming -Tour of campus gardens
Week 5: April 26	The Garden (movie screening) -Challenges urban/community farms are facing
Week 6: May 3 *Reading*	Homesteading -The Basics: How we can get involved.
Week 7: May 10	Urban Farm Field Trip -We will be visiting a local Santa Cruz farm (Wear old working clothes) meeting location: TBA
Week 8: May 17 *Reading*	The Next Step -How our individual efforts can be combined to produce sustainability on a macro level. Networking Project -Online forum/website development. -Advertisement: flyers
Week 9: May 24	Networking Project -Finalize forum/website. Finish advertising project Course Review and Conclusions

Assignments Due: Journal and Individual Homesteading Project Reflection Paper

Week 10: May 31* Memorial Day
Canning workshop: time and place TBA

**Denotes days when class will not be held*

Intro to Urban Farming and Food Foraging Lesson Plan

A. Check in Question. If you were foraging for food in Santa Cruz where would be your first stop?

B. Agenda Review
* Last Monday night's lecture series: Comments? Questions?

C. Readings & Discussion

Did everyone do the first reading about Urban Farming?
Yes: Thoughts or concerns, any disagreements?
No: Can someone give a brief summary to update the students that didn't read it.

Summary: The potential for urban farming (in America, and the rest of the world)
Who is growing food in cities?
Types of urban farms- commercial, community, backyard

So we all know there is a huge generational gap in American Farming (twice as many farmers over 65 than under 35 yet there is a growing number of new farmers. What are some things that may have caused this?

Several Environmentalists consider urbanization negatively affecting the environment and limiting our relations with the land, yet integrating food production into urban landscapes has the potential to reconnect us with our land. There is a vast potential for American cities to grow more food in or around them.

Where do you side on this argument? Is it a viable solution or would you rather not have such intense urban environments?

In the world: Havana city-- Over half of the food consumed is grown in community gardens.

Let's brainstorm ways we can make urban density more efficient via urban agriculture

How would you picture your ideal sustainable urban environment?

D. Activity:
Common foods you can grow in a Santa Cruz backyard and common items around the house Goal: to combine more than one item to make something (dish, sauce, etc.) There

shouldn't be any items left over. Salsa, Pesto, Beer, Margarita, Arnold palmer, applesauce, salad, breakfast.

E. Food Foraging in Berkeley:

- What were your thoughts on the article and community food networking?
  * Creating relationships between neighbors and other community members focusing around food.
  * Foraging and Trading
- Does this food foraging network have the potential to work in most American cities?
  - If not, what are some of the deterring factors?
- How can we implement an ideal food trading/foraging community network?
  Who should be involved? Benefit?
  What are some guidelines our members should follow?

D. Closing

* Last-minute questions
* Go over next week's assignments and/or readings

Street Farmer Lesson Plan

I. Check in Question
- If you could be anywhere right this instant, where would you be?

II. Agenda Review
- Last Monday night's lecture series: comments? Questions?

III. Reading
- Street Farmer, NY Times.
- Summary given by a student if everyone has not read it
- Discussion: Comments?
  a. What did you enjoy most about this remarkable story?
  b. Thoughts on such an intense setup, 2-acre $250,000 a year, compared to a 3 acre Santa Cruz farm bringing in 60-70k.
  c. Focus on re-using city's food scraps, intense Composting.
  d. How this was made possible, huge grants from corporations not exactly helping out the environment, thoughts?
  e. Food Desserts; no access to fresh food, urban farming a solution?
  Example: Oakland
  f. Can this model be replicated everywhere? Roadblocks?

IV. Activity
- Get up and move around exercise

V. Lesson: Constructing Urban Gardens; how everyone can participate.
PowerPoint presentation:

- Types of Urban Farming in the U.S. and around the world.
- Strategies of Constructing Urban Gardens
    i. Setups: backyard, vacant lots, under freeways or overpasses, rooftops, patios etc.

VI. Closing
- Last-minute questions
- Go over next week's assignment/reading