2016 Manager: Ruth Ferre, Class of 2018 Sustainability Fellow: Jennifer Natyzak Sustainability Coordinator: Levi Rogers

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I. Planting Summary

a. CROPS

Below are notes on crops of the 2016 season. The crop is highlighted to indicate ease of growing. Green= easy, successful; Yellow= needs improvement; Red= did not produce this year.

Blueberries- Good, but small window- They fruited early and quickly. The netting was removed in early summer, and the berries quickly disappeared. The bushes closer to the compost did not produce any berries. I recommend a ton more acidifier and to build the beds around the blueberries and loosen the current soil. Maybe create a box for each plant so the netting is easier to work with. Companion with peppers, radishes, endive, parsley, and cilantro.

Peppers- Two batches were planted- one by the blueberries, which were eaten down to the stump, and another in a triangle bed. The triangular bed produced many peppers, and they were very small, as the plants themselves were about 1.5ft tall. The pepper plants which had been eaten to the base in spring came back just in time for fall. Just a couple plants produced dozens of peppers. In 2015 there was an abundance of hot peppers, and the dining hall called the garden manager to put the brakes on hot peppers. The hot peppers look very similar to sweet peppers and caused confusion in the past.

Cilantro- Excellent- A wonderful plant that was consistently able to be harvested. Harvest as soon as the leaves are ready to prevent bolting. Even if the plant does start to flower, the flowers can be removed to preserve the flavor of the leaves.

Basil- Excellent- Wonderful crop that was very successful. Started producing in early July and continued throughout the summer. A crowd favorite that has a wonderful smell, in plain and lemon basil varieties. Companion plant with tomatoes, beets, and sweet peppers.

Chard- Wonderful, easy to grow- The first round of chard was completely destroyed by voles and rabbits. The second round did much better in the same plot. The chard continued to do well and produce for the rest of the summer. Be sure to transplant once the chard is large enough to

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tolerate the heat. Also make sure to taste the chard because, like the lettuce, it becomes bitter. Companion plant with lettuce, celery, mint, radishes, beets, and carrots.

Bok Choy- a success in the spring- best the dining hall ever had. They were grown in fall in the back triangle of the garden. They were used in the Harvest Dinner salad.

Spinach- a success in the spring. In the fall, we planted a young batch of spinach in the same spot, but they did not like the fluctuating cold weather and were quickly eaten by the vole army. Try to stop the voles before planting something that is so young.

Tomatoes- Excellent- We had so many and they grew rapidly this year. I removed branches that I thought were suckers in the beginning of the season, so the plants grew horizontally and less straight. Mulching was difficult to keep up with. The plants produced a lot of fruit and were loved by everyone. They continued to produce throughout October. The heirloom tomatoes split periodically through the summer, as big rainstorms came and went. We gave the Spa 2 buckets of green tomatoes before we pulled the plants and had a great time working with them.

Garlic- The garlic scapes and bulbs were lovely. Ten bulbs were saved for the harvest dinner, fifteen bulbs were saved for planting (5 for elephant, 5 for petite, 5 for purple), and the rest were slowly sold to the dining hall over the year. The scapes were also harvested before they flowered, and were slowly delivered to the dining hall. New garlic was planted in the back of the garden in November and will be ready next semester.

Dill- Prolific and everywhere- it loves to pop up all over the garden. Trim the dill regularly to prevent flowering, and be prepared for some really tall dill. The dining hall especially loves a few bundles of this delicious herb. Companions with cucumbers, lettuce, eggplant, and brassicas.

Carrots- The first round of carrots was wonderful and grew very quickly in the surfboard beds. The next round of carrots in the front of the garden I thought had failed, but a few large carrots poked through in early November. Later sowing had lousy germination rates until (cooler weather). I recommend giving extra attention the beds that you know will have carrots in it when aerating them. Companion plant with tomatoes, beans, lettuce.

Parsnips- did not grow at all. I tried 3 different locations, but 2/3 had soil that was too tightly packed. I would recommend starting them earlier on and make sure they are in a bed that roots love if you are going to grow them.

Radishes- difficult to grow. The cherry belle radishes were wonderful and grew the best in both the spring and fall, while the daikon radishes did not grow well, likely because they were planted in a warm spell in the summer. Companion plant with peas, melon, tomatoes.

Arugula- I was a tad late to harvest it in the spring, and they quickly became bitter. Make sure to keep a close eye on them, I'm sure they will be wonderful in the future.

Beets- lots of experimenting required. Very particular about where you seed them in the garden. They seemed to prefer loose moist soil with lots of space. Make sure to keep them cool and aerated or else they will not bulb up correctly. Some were carrot-like in shape, as they were planted in soil that was too compact. Companion planted with kale, tomatoes, basil, and lettuce.

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Beans- fruitful and loved by everyone. The bush beans (purple, yellow, and regular) were planted with the eggplant in order to help with pests and their nitrogen levels in the soil. The beans did not choke the eggplant. The dining hall loves beans, so make sure to have plenty of space for them. Wax beans were planted next to the cucumbers. The young beans got large quickly but still had good flavor. Companion plant with eggplant, kale, peas, cucumbers, radishes, beets.

Cucumber- constantly check on, wonderful crop. The lemon and classic varieties were both delicious and were a ton of fun to check on. Try to make sure they are off the ground so they are not eaten as quickly by our lovely squirrels and voles. The new lean-to was great for this and this was where all cucumbers were grown. You can plant them a little closer together here. They were harvested at least twice a week. Companion plant with beans, tomatoes, radishes, peas, sunflowers.

Eggplant- wonderful and surprisingly hardy plant. Start early in the year. Mulch the eggplant early in the season. Young plants were often devoured by voles, and the mature plants leaves were stripped by insects. Placement of eggplant in the garden is very important as well as companion planting. Do not place the eggplant near the outside of the garden because voles and squirrels will strip the young plants of their leaves. The center bed of the garden adjacent to the lean-to worked well. Companion with beans, peas, marigolds, tarragon, peppers, tomatoes, or spinach.

Greens- These were surprisingly troublesome to grow and surprised me when they did grow. The endive was most successful around the eggplants and beans.

Kale- a great success. It was started from seed in spring, and later a second round started from seed. Each week there was always kale to be harvested. Make sure to always leave at least 5 leaves on the plant to allow the plant to survive all summer. The last harvest was in early November (after the first snow) for the Harvest Dinner. Much loved by the dining hall. Companion plant with beets, chard, spinach, lettuce, onion, and nasturtium.

Lettuce- needs lots of water. Do not be afraid to harvest a tad early. It will get bitter very quickly, so keep the soil damp as best as you can. Empty nooks of the garden may be put to use growing lettuce, such as underneath the cucumbers or beneath sunflowers. Do a taste test before harvesting each batch to ensure the leaves haven't turned bitter.

Nasturtium- Try seeding inside. Most seed did not germinate and the ones that germinated did not flower. This may be due to the soil being too basic and sandy. Companion plant with kale and peppers.

Brussel Sprouts- One patch of Brussel sprouts was completely wiped out by the voles, who ate the young plants leaves, and the other patch had trouble growing in the shallow soil by the picnic bench. We only had four successful stalks for the Harvest Dinner, and they made a great addition to the pickled medley. If you want to try to grow them make sure they are in a very well built bed that has a ton of shade. These are one of my favorite plants to watch grow no matter how they turn out.

Strawberries- A real crowd pleaser. The strawberry patch spread far beyond its bed, and we removed a lot of it all over the garden. The keyhole patch of strawberries was extremely

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productive. The dining hall made a wonderful spinach and strawberry salad and were so disappointed once the plant stopped producing fruit.

Peas- had no problems when growing and the dining hall did not complain about the large amount of peas that were delivered. Companion plant with cucumbers, carrots, beans.

Raspberries- One bush had some trouble with the Japanese beetles, and all bushes did a great job at attracting people to the garden. It was lovely to see people snack on some raspberries and then wonder around the garden.

Scallions- Wonderful. Each bundle of scallions was amazing!

Melon- The melons were medium sized on vine at the end of the summer growing on a tee-pee structure, but the squirrels took huge bites of them before I was back on campus for the fall. If you want to try to grow these, stick to only a few plants and box them similar to how I recommended the blueberries should be boxed.

Leeks- Amazing. They were planted mid-summer and harvested in October. They could've used more time in the ground and were thus a little small, but they were wonderful. They had no pest problems and just needed water.

Sage- Did a great job in both the main garden and the herb garden.

Sunflowers- Had a few problems after being transplanted- a few of their stalks snapped or were eaten through. After a few weeks they began to flower and did a wonderful job for the rest of the summer. Companion plant with cucumber and melon.

Marigolds- Had trouble seeding directly into the soil throughout the summer. Half a dozen grew successfully around the garden.

b. HERB GARDEN

Herbs were seeded in the spring. Some seeds had trouble due to the heat and lack of attention, but overall the garden was very successful. The chives, oregano, and sage were the best herbs there.

Suggestions: make an effort to walk by the herb bed on a weekly or bi-weekly basis. Remember to water during dry spells.

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c. PESTS



Flea beetles (Bok Choy, basil, eggplant, radishes)

The worst damage was to young eggplant, but they also affected greens and radishes. These bugs are very difficult to remove and did not respond to any of the pest repellant used. The beetles would kill young plants, but mature eggplants had enough leaves to be largely unaffected. I think these bugs were one of the reason a large amount of greens did not grow since they were planted around the eggplant.

Japanese beetles (raspberries, sunflowers, rhubarb, beans) These persistent beetles are ½ inch in length with copper backs. In June you will begin to notice them swarming the garden when they are laying their eggs in the soil. These beetles take a huge toll on the garden by skeletonizing leaves (see image). Soap and cayenne sprays were effective on the beetles. I also removed them by hand picking them off leaves and added them into a water and soap solution. Other methods of removing them include planting geraniums or row covers.





Aphids (eggplant, peppers, tomatoes, peas)

These small pests are all approximately ½ inch long that come in a wide range of colors. They usually feed in large groups and can develop wings once they mature in crowded areas in order to start a new colony. An affected plant will have misshapen, curling, stunted, or yellow leaves. Check the undersides of leaves for crawling aphids. A simple way to remove aphids is by simply watering the plant with cold water. In addition, they can be removed by using soap, tomato, or cayenne sprays. If leaves are heavily infested, they should be removed from the plant to prevent spreading. Companion planting with nasturtium, garlic, and chives will also repel aphids.

Cabbage Worms (tomatoes, kale)

These larvae are known to cause great damage to brassica and other cabbage family crops. The wasps from a biology project in the garden were trained to hunt for these pests.



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<u>Voles</u>- They were so cute for the first week as they burrowed through the compost and made themselves a lovely nest under the shed, but they quickly became destructive. These balls of brown grey fur quickly made the garden a battle ground. They eat everything, especially young plants that were left leafless and unproductive. The voles set up camp in the strawberry patch, under the shed, the compost bin, a straw pile, and in random holes all over the garden. Since they are active 80% of the time and can breed all year, I have a feeling they will be a returning threat.



<u>Rabbits</u>- Only saw a few bunnies over the summer and posed few problems compared to the voles and squirrels.

<u>Squirrels</u>- Just let squirrels be squirrels. They are adorable when you watch one try to carry a giant tomato across the grass and up a tree. They took a lot of bites of tomatoes and cucumbers.

d. PEST CONTROL

Crop Rotations

Rotating between crops that are not host plants each year prevents the buildup of large populations of pathogens. Try to rotate between brassicas \rightarrow legumes and onions \rightarrow fruits \rightarrow roots each year. Reference http://www.ufseeds.com/Vegetable-Companion-Planting-Chart.html for more information.

Tomato Vinegar Spray

This is effective in killing aphids and mites due to the alkaloids in the tomato leaves. Use the suckers from the tomato plants and let them sit in water overnight in a large container. Strain out the leaves, add vinegar, and spray on the desired plants. I accidentally let my spray sit for too long and a terrible odor formed, but it still worked just fine.

Soap Spray

This year we used Garden Safe Insecticidal Soap and a Dawn soap solution with water. The homemade solution was 1 tablespoon of Dawn to a gallon of water. Both had the same effect of removing aphids, mites, and beetles.

Cavenne Pepper Spray

Mix cayenne pepper with water and use a spray bottle to apply to the plants. This is effective for a number of hours, depending on the humidity and rain.

Bird Netting

This was not effective in stopping birds from feeding on the blueberries. It's a hassle to put up and detangle from weeds.

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CDs tied to string

CDs were also used to deter birds from eating the blueberries by creating an irritating movement for the birds. This was not completely effective, because some birds were occasionally sighted on the fence. Next year I recommend caging the blueberry plants-building a frame around them and then connecting netting. This would decrease the chance of something getting stuck in the netting and also decrease the chance of any large animals eating the plant.

Wasps

Small wooden boxes were installed around the garden to house paper wasps as a biology research project on biological pest control with Professor Monica Richter. These wasps were trained to find cabbage worms around the tomato plants and kale. Our site was very productive for young nests- at one point there were about 40 in one box. We had 3 different species of wasps. Some wasps made a nest in a fence post. The wasps are likely to return next year to recolonize and research/collaboration with Monica is likely to continue.

e. WORK PARTIES

Work parties in the spring were often poorly attended. A good day would be two or three people. Posters are very effective to get information out about the garden. Many people see the Facebook posts and emails, but that does not ensure that they will come. I mostly used Facebook events as outreach. When I sent emails I tried to organize a list of all the upcoming events at the end of the message. To recruit more volunteers, I suggest talking to professors who require participation in environmental events or other professors who have classes oriented towards food/sustainability/agriculture. Working with other clubs or groups on campus could also be beneficial, such as Peer Health Educators (PHE), Environmental Action Club (EAC), or a food club.

In the summer, work parties were fairly successful. Most students on campus are busy with courses or research and do not get out of their activities till around 5. I would recommend changing the meeting time to fit around their schedule more.

I mainly used posters to spread the word about events, but the best way to get people engaged is just talking to them as they walk past the garden. Just by letting people know that the garden is open to them and how nice and relaxing it is to work with the soil or just harvest can increase people's awareness of the garden and then they try to show up. Also, using food is a great way to get people's attention, don't be afraid to hand out some strawberries- trust me you will have plenty.

Attending the club fair is a must, and remember to bring a laptop so people can sign up for the email list. The fall semester started off strong with attendance; there were as many as 8-10 people for the first 2-3 weeks. After September ended only about three people would come to the garden consistently. I used email, Facebook, and posters to spread the word and reached out to other groups like EAC and PHE. Numerous times I scheduled Wednesday work parties, and students in the environmental courses enjoyed that schedule. Consider middle of the week work parties- more people are around and not everyone can make it on Sunday.

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II. Dining Services

Who: Mark Miller, Joe Greco, Pat Girard, Chef James Rose

Asked for: variety, salad garden, no excessive amounts of a single produce item, few hot peppers

Communication: Remember to constantly check in to make sure the quality (washing or size) and quantity (too much or too little) of the produce brought in is ok.

Pricing was developed by visiting the Farmer's Market and evaluating prices from a number of vendors.

III. COMMUNITY OUTREACH

Camp Northwoods

During the summer, camp Northwoods hosts local elementary-age kids. They annually visit the garden with their classes, typically 20 in a group. We had two days of activities:

- (1) Meeting the garden: name game, garden tour, 2 simultaneous groups where one weeds and the other plants kale.
- (2) Learn how to compost and weeding relay race.

Tips:

- Maximize time
 - For younger kids, they just want to see the plants, taste everything and play some games outside of the garden
 - For slightly older kids: they can get their hands dirty in the garden and you can make weeding into a relaxation break or a relay race.
 - For older kids: they can do more detailed work and love to ask questions, feel free to have an open discussion with them while casually working in the garden

ES100

- Offer a few key big projects that need to be done for that day (bed building, planting, harvesting) and let them chose
- Really great to work with and those who are interested ask a ton of great questions

If you have time, try to work with other groups on campus like the peer health educators to show the benefits of gardening (meditation, weeding, tea making, exercise).

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IV. Networking

Emails

- See Gmail account to review old emails
- Emails were not sent very often, but had a lot of detail in them. Event sign-ups were coordinated using google docs, operated through the Gmail garden account.
- Email structure
 - o An update on what's happening in the garden (what's growing)
 - o Main topic (upcoming event- what it is and what needs to done)
 - o Facebook reminder
 - List of upcoming events

Facebook

- If you plan on communicating with Facebook, have a laptop open at the club fair showing people the Facebook page and encourage them to join the group.
- Post events and work parties at least a week ahead of time.
- Harvest dinner had event page

Posters

See Netshare → 2016 for posters

V. Events

Beats for Beets

- An annual garden event that features live music, free food, and raises money.
- To prepare, I met with Sustainability Reps two weeks in advance to place an order for the tables and equipment. Soon after, I got in touch with five musicians/bands and 9Miles East.
- Set-up was easy and included collection bucket for money, a sign about stickers and shirts, and the stickers and shirts themselves. A ton of people made it out to have some free food, donate to the garden, buy a t-shirt, listen to music and enjoy the garden.
- Tip: make sure to have enough t-shirts and stickers for the next one.

Polo

- The polo dinner is an annual event held by Skidmore to benefit the Palamountain Scholarship Fund for Skidmore students. The event is held at the Saratoga Polo Association and features a polo match and a dinner focused on local organic ingredients.
- Chefs gave a couple days notice this year, and there was just a crate of lettuce and some radishes to give.
- Tip: improve communication to know at least a month in advance what they are looking for.

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Harvest Dinner

- An annual fundraising event hosted by the garden with tons of vegan and vegetarian fresh local food with live music. Donations encouraged.
- Chronological to-do's
 - 1. Set the date and came up with ideas for the menu in September
 - The menu was heavy with items produced by DHall (cornbread, chili, pumpkin bread), which allowed for easier prep and decreased labor needs of volunteers
 - 2. Met with the chefs to discuss menu and time, we met October 4th
 - a. Review what the volunteer time will be used for- what kind of meal prep is necessary with this menu? Will there be more harvesting in the garden to do?
 - b. Recall that last year sound was amplified, and it made it nearly impossible to have a conversation in the SPA. People left quickly because it was too loud.
 - 3. Secure a band
 - a. John suggested his son's band, Cutting Ice, to play the event, and we said yes. The band featured a saxophone, drums, and electric guitars.
 - 4. Called farmers and then met with them at the market two weeks before the event.
 - a. Review the list of farmers used the year previous, found in the Harvest Dinner folder in gmail. People will remember!
 - b. It would be very helpful to bring a card with your contact information and the date/time of the dinner on it.
 - c. Clearly explain that you are from Skidmore College. Give them a concise explanation about the Harvest Dinner, namely that some food is sourced from the student garden you manage, that the dinner is made by students, and it's the annual fundraiser.
 - 5. Spread the news to students via facebook, email, and posters
 - a. Emails went out in mid-October. This was a long email with full details on how many volunteers were needed the Friday, Saturday and Sunday of the event. Reference the Harvest Dinner file on Gmail account for details.
 - b. Posters were posted only a few days ahead of time
 - i. Next year, post two weeks ahead of time.
 - c. The photographer I found was an acquaintance, and she didn't have a camera suitable for the low-light of the SPA and she didn't share photos promptly.
 - i. Find someone from the Communications Office.
 - d. See if the S-Reps want to table for anything at the dinner. If anything, they can be back-up to help during the dinner.
 - 6. One Sundays before Harvest Dinner, we picked up hearty vegetables from the farmers. This will include potatoes and kale and some lettuce.
 - a. Bring Garden crates to carry things!
 - b. Remind Chris and DHall folk to find the knife training video. Perhaps ask for a copy so it's easy for students to watch it before volunteering. Watching this video is indeed mandatory to work in the kitchen.

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- c. We stored everything in DHall's downstairs freezer and dry storage area. Be sure to label everything.
- d. Print thank you cards that attendees can sign at the dinner
- 7. The weekend of Harvest Dinner
 - a. We made the last trip to the Farmer's market on the Sunday of the dinner, and we got more greens and a few potatoes for roasting. We ended up buying some extra sweet potatoes to supplement what we have.
 - b. Be cautious of what's ours and what's not! We ended up dicing a bunch of butternut squash that was DHall's.
 - c. Set up the room—we rearranged the SPA tables so the small rectangles formed a long rectangle toward the stage and the circle tables were on the left and right. There were two tables by the hallway for the S-Reps to talk to people passing in line to sign "Thank You" cards and offer educational material. We used the salad bar—super convenient to serve, albeit there was a lot of mess on the floor. There was not a clear line of traffic for people picking up dirty dishes to take them to the kitchen- perhaps it'd work to go outside?
 - d. We ran out of food by 7:30. Pumpkin bread and lettuce were gone first. There were some of braised greens left over. There was a small amount of cornbread and apple with streusel left.
 - e. Clean-up crew is key. There was a DHall foreman available to help wash dishes and that was incredibly helpful.
- The overall event was a success with over 250 people attending.
- Tips:
 - List your contact information on emails and give volunteers reminders. Expect
 1/4 of volunteers to offer last minute cancellations.
 - o Increase production. The chili, roots, and salad fixings all went very quickly.
 - The salad bar was a great success! Easy access for diners, no servers required.
 - Chef recommended requiring people to pay a small fee to come. The
 donations were considerably more this year because the family of Cutting Ice,
 the band, attended and gave a lot of \$20's.
 - o Chris suggested moving the dinner to an earlier time.
 - The event could be more educational, and thus incorporate signs and notes about sustainability and local food.
 - We had small signs by each of the food items with information on what farms the vegetables were from.