Introduction

This Internship was created by Sodexo and the Office of Sustainability at Indiana University. With the growing interest of the University community to minimize environmental impact, Sodexo managers are interested in learning how their operations can be adjusted to fit Indiana's sustainability agenda. Food service at the IMU is a busy operation and there is a lot of opportunity for sustainability to be exemplified and promoted. The tasks of this internship will include working with the managers of the IMU food service and building to learn what operational changes related to sustainability will work for them. A key aspect that is revealed through this internship is the nature in which Indiana conducts business with Sodexo and how sustainability efforts of each entity can strengthen this relationship. Sodexo has been doing business with the University for () years and have developed a

The Interconnected Shift Towards Sustainability

Sustainability is defined by the 1987 Report of the World Commission on Environment and Development as "meeting the needs of the present without compromising the ability of future generations to meet their own needs." A more specific definition is "improvement in the quality of human life within the carrying capacity of supporting ecosystems (Goodland, R.)."
Examining the first part of the United Nations' definition should be the point to focus for achieving intragenerational equity is not possible without achieving intergenerational equity. This idea alone articulates the urgency for working towards environmental sustainability for a time limit is imposed on the very visible deterioration of life systems which support human life.

Our lives and the lives of future generations are affected by the decisions we make on a daily basis. The shift of humanity to a more sustainable way of life begins with individual efforts based on knowledge of the impact made of personal decisions on a wide scale. The economic concept of collective action stands as a significant reason for why environmental sustainability is so challenging. However another challenge is creating an understanding of the urgency for shifting humanity's way of life where there is still uncertainty in even the most advanced research in this emerging field. Achieving true sustainability is a process. Every aspect of this concept is interconnected and shifting human activity in one area towards sustainability often reveals several other areas that need to be addressed. Sustainability requires people to step out of their comfort zone. The way of life is challenged and what is seen as natural is suddenly unnatural. The 21 century pushes fast paced lifestyles in the United States and throughout other developed countries. Diffusing change towards sustainability in into the individual's lifestyle that is dependent on technology in such a way that it threatens comfortable survival is difficult but not impossible. Taking steps to catalyze the process to encourage people to foster sustainable living and keep it in mind as they go about their day is key. These steps have been put into motion in creative ways all over the world and will continue to pick up momentum as the finite nature of earth's natural resources become more visible in our daily lives.

Another aspect of sustainable development is the evaluation of what goals are feasible to reach under current circumstances such as budget and workforce capacity. Identifying acting on feasible goals is critical to the speed of development. To accomplish what is possible we must cease idolizing the impossible with regard to the current situation.

**Sustainability in higher education**

Communities of higher education have a responsibility address sustainability and have been called respond to the growing need to preserve natural resources. Educational institutions are in an important position to create
awareness and competency as new discoveries of human impact on the environmental. The idea of Campus sustainability was first recognized at a national level in 1978 at the UN International Environmental Education Programme.

"Universities, as centres for research, teaching and training of qualifies personnel for the nation must be increasingly available to undertake research concerning environmental education and to train experts in formal and nonformal education. Environmental education...is necessary for students in all fields not only natural and technical but also social sciences and arts, because the relationship between nature, technology, and society mark and determine the development of a society. (UNESCO-UNEP, 1977, p33)

Public participation in decision making encouraged by the issues of environmental degradation is imperative for effective promotion of sustainable development (agenda 21). Indiana University is in position and is on the path to carry out the objective of agenda 21 in providing accessible environmental education. Producing an

**Internship purpose**

The purpose of this internship is to gain an understanding about how environmental sustainability fits into a large contracted food service operation. Through this internship the Indiana University and Sodexo can compare sustainability efforts and align tactics for achieving goals of conservation. I have learned a lot about the Sodexo corporation and the relationship between a contracted service and sustainability. I first had to get acclimated to the way that the food service is managed in the Union. Steve Mangan, the director of food service and I established focus areas for me to address the status of and try to adjust with minimum investment. These areas are:

I. **Recycling**

II. **Composting**

III. **Green Cleaning**

IV. **Integrated Pest Management**

VI. **Local Purchasing**

I have found that there are ways mitigate environmental impact by simply creating an awareness among people. The staff at the IMU kitchens have
worked with me throughout the summer to make meaningful changes to their every day food preparing activities. They have been very supportive in Sodexo's goals to reduce the operation's impact. I have attempted to change a culture by bringing the IMU kitchen staff into the Bloomington community's sustainability initiative. It is in the best interest of Indiana University's, Sodexo, the Indiana Memorial Union and Bloomington to expand on their engagement with each other in becoming a more environmentally sustainable. Each entity is taking steps in the right direction by examining impacts and by align efforts they can strengthen relationships. The overall purpose of this internship is to help food service at the IMU progress out of the traditional linear economic structure where we extract resources, then into products and dispose of them in toxic ways. The overall goal of this internship as well as sustainability in general is to transform the linear structure of a business operation into a circular one. This involves changing a culture in a busy environment. It requires consistency and most importantly, patience.

**Indiana Memorial Union.**

The Indiana Memorial Union is considered the heart of Indiana University and is a central gathering place for students and community members.

**Mission**

*The Indiana Memorial Union:*

Serves as the community center for all members of the university community- students, faculty, staff alumni, and guests.

Serves as part of the educational program of the university by providing opportunities for student development through volunteer services, employment, and self-directed activity.

Serves as a conference center for the Bloomington campus of Indiana University.

Provides the services, conveniences, and amenities that are needed in daily campus life and in support of the mission of the university.

Serves as a unifying force-a point of identification-in the life of Indiana University

This year the IMU celebrates the Union Boards 100th year of existence. The Union building is composed of 500,000 sq feet and is one of the largest Student
union buildings in the world. There are priceless objects throughout the union including the Memorial room, equipped with 15th century stained glass where veterans are remembered for service. The Memorial Union values the preservation of the history of Indiana and the building itself. Practicing strengthened activities for sustainability in operations of the building are a crucial component to preserve this great old building. The IMU also values student education and development. There is opportunity for the development of the Office of sustainability through collaboration with Union management.

The IMU is in a unique position to support environmental sustainability literacy being the central gathering place of campus. It is in the best interest for Indiana University to use the Union as a hub for sustainability task force information distributing and promotion of their proposed paradigm shift. The Union could play a valuable role in creating a more centralized system for the evolution of the sustainability movement the University has recently launched.

**Sodexo and the IMU.**

Sodexo has managed food and retail operations at the IMU for the past 13 years. The company was founded in 1966 in Marseille, France. Their mission statement is:

> To create and offer services that contribute to a more pleasant way of life for people wherever and whenever they come together.

This company has recognized that sustainability is becoming an essential quality to doing business. Being more sustainable saves money, increases a business’s competitive edge, and there are environmental and social benefits. Simply put Steve Mangan, The latest version of Sodexo’s Corporate Citizenship report states in their section on Sustainable Food and Agriculture that the company values partnerships in sustainability. Last year Sodexo started their Sustainability Education and Expert Development SEED, which is an initiative to spread awareness and share insight about new tactics of environmental stewardship. I listened with Sodexo managers around the country with Steve Mangan to three webinars during my internship about new SEED programs and ideas that can translate to the specific needs of clients. Sodexo is now working with the American College and University President’s Climate Commitment ACUPCC to combine resources to improve sustainability efforts of University communities. Sodexo also as a corporation supports local procurement and works to find solutions specific to regional needs. Sodexo also has aspirations to buy 100% sustainable seafood certified by the Marine Stewardship Council and the Aquaculture Certification Council (ACC). Throughout the report there are many
examples and stories that testify Sodexo does works to stay ahead of the race for environmental stewardship.


**Scope of Operation**

There are several management Units within the IMU that I have learned about and have been collaborating with since the beginning of this internship. It took some time to learn the relationship of these units with each other and what the different managers are in charge of. Throughout my internship I have built working relationships with these managers as well as the rest of the staff. One component of this internship that is particularly unique is how Mangan gave me a position in catering when I started the internship. This has lead me to have a better understanding of the daily protocol for doing business.

Assessing the Status of Operational Sustainability

It was recommended by my mentor that I prepare a matrix that organizes my observations of the status of the food service at the IMU in terms of sustainability. The purpose of this was to establish a baseline for change and where there is opportunity to make adjustment to be more conservative.

Insert Matrix

1. **Recycling**

The staff are more aware of their waste. The managers have helped me tremendously in directing the staff to recycle. In order to make people aware I needed to explain the importance of recycling where it affects them personally. Recycling forces you to take responsibility for what you use.2

Status of recycling effort in June

In June very little was recycled inside the kitchens. Many steel cans, plastics containers, aluminum foil and aluminum casserole containers, and glass generated when preparing food were thrown in the garbage cans located around the kitchen. Recycling was available but the large red bins were inconveniently placed in a corner of the dish room where no food is ever prepared. In the busy kitchen environment the staff could not complete their daily tasks and incorporate walking back and forth from the back to the front of the kitchen to recycling the numerous items they went through. The trash is
carried to the trash compactor that is approximately 30 square yards large at the loading dock.

At catering events the staff did some glass recycling. However a problem I found when meeting with Fred Webb, a custodial manager for the IMU, was that separating the materials caused some problem. The glass container that would often get filled to the brim after a busy party weekend for catering and was extremely heavy and hard for the custodial staff to bring down the stairs and to the curb for pickup.

The first action I took was I did some research in recycling programs at other Universities and restaurants. I also wanted to further my understanding of the importance of recycling and reiterate it to the kitchen staff. It was necessary to fulfill the verbal communication metric of recycling for me to relate the importance to the circumstances of the staff. In a meeting with the staff I mentioned the closing of the Bloomington landfill due to mismanagement. I also talked about the pollution to our water ways that leachate from this landfill has potential to cause. Even though it was closed it still is a legitimate problem for the city to maintain.

The Second action I took was to address this problem I wanted to get an idea for a given day how many recyclables accumulate in the garbage cans throughout the kitchen in a typical busy day. Nick Mitchell the market manager and I pulled all the recyclable items from the cans, counted them and took note the percentage of room available in the cans once the recyclables were removed.

**Total cans and location**

6: Main kitchen
2:Tudor Kitchen
2: Solarium Kitchen

**Recyclable items found**

98 steel cans
54 plastic containers
28 aluminum items
23 paper board boxes
A number of paper items are also thrown in the trash. I did not recover these items because of the amount of food waste contaminating the paper. The steel cans used in the kitchen are most of the time the bulk ounces size. The steel category takes up the most space in the trash cans. The majority of the plastic items from this particular day were strawberry cartons. Plastic salad dressing and other sauce containers are also bulky and take up space. A result of this activity was that the removal of recyclables from the cans created 50% to 75% more space in the trash cans. By utilizing the large Hoosier disposal recycling bins the trash does not have to be as emptied as much. Space in the IMU kitchen is an important commodity. By using the recycling bins, not only is there a more efficient rearrangement of space usage in the kitchen, there is more space left for non recyclables in the trash compactor.

Once the Chefs agreed with me on space in the kitchen for the red Hoosier bins the amount of materials recycled in the kitchen changed dramatically. After I added signs to bins and communicated to the staff that all recyclable materials can go in either bin there was an even better influx of participation. The staff knew that the method of collection by Hoosier disposal had changed over to single stream but did not know why. I explained to them that Hoosier had just upgraded their Materials Recovery Facility in Indianapolis.

Although Hoosier Disposal’s five million dollar upgrade to their facility is a great addition to the recycling industry in Indiana, it created inconsistency with the Union’s recycling program. As described in Emmy Giovanni’s report the Union spent $150.00 a piece for their aesthetically pleasing recycling bins. Now their materials are separated by the visitors and students in the Union only to be combined in the Hoosier Disposal truck.

The debate between dual stream and single stream has only become more complicated with advancing technology with Materials Recovery Facilities.

**Metrics:**

1.) **Verbal Communication to the staff:**

The Staff were notified of the new recycling effort in a staff meeting. The meeting outline included an overview of recycling meeting outlineThe managers
and I also talked about the ways recycling could be improved one on one of the weekly Wednesday meetings.

2.) **Location of Bins in the Kitchen:**

The bins were moved to a more visible and convenient location in the kitchen. This was a key change that contributed to the improvement of recycling effort in the kitchen.

3.) **Signage:**

New signs were created for the staff with pictures and color. The chef wanted the signs to be simple and with few words so the staff could quickly read the signs and be aware of the effort. I also made signs with a quick explanation on why it is important for the containers to be washed out before they are put in the bins.

4.) **Method of Collection**

The method of collection was changed to model the way the materials are collected by Hoosier disposal themselves. A dual stream was collected when the Union began working with Hoosier disposal. Now Hoosier has upgraded to single stream. The debate The staff ceased separating their materials

5.) **End usage of recycled materials**

I contacted Hoosier disposal to get some information about where their recycled materials are sent. They have not contacted me back about this question. I want communicate to the staff the benefits of their effort by revealing what happens to their soup cans and other containers.

6.) **Managerial support**

Throughout shifts the managers support recycling efforts by working with me on where recycling should be collected at catering events. The managers are also willing to make suggestions on what works best for the many situations and opportunities the kitchen and catering staff has for recycling.

**Challenges**

- Motivating the staff to find time to rinse containers. This factor is important to integrated pest management as well.
- Currently the recycling bins get too full before Hoosier comes to pick them up. Though this shows that we are recycling more than we used to it leads the staff to throw things away if there is no room.
- Paper recycling in the kitchens
Communicating with Hoosier Disposal. It is hard to get a hold of them.

Recycling at events that are offsite

Recycling behind bars when there is minimum space

Using recycling bins that are aesthetically pleasing at fancy receptions.

Simply to go, which is a corporate program, requires stickers as labels. One of the staff members collected this paper over two days and handed me a box of about 2000 pages. Labeling for Simply to go requires a lot of waste generation.

**Next Steps**

- taking some kind of recycling bin with us to events offsite
- Find out from Hoosier Disposal what our recyclables are processed into to enlighten the staff on how their effort pays off.
- Communicate to the staff with signage and verbal instruction that paper should be recycled in the kitchens. Relate statistics of how much paper it landfilled in the US.
- Provide a receptacle for paper in the kitchens
- Contact the regional retail managers and SEED representatives about the Simply to Go packaging.

**II. Food Waste Management**

Managing the food waste is a particular interest of mine. To divert food waste from our trash compactor and save money on collection, Steve Mangan wanted to find on outlet for the IMU kitchen’s food waste.

I began this project of food waste diversion by contacting several community members who are known for their knowledge about composting. Lucil Bertuccio, David Hill and Jeff Mease are among these community members that I spoke with. I also researched different compost programs at other schools and reviewd some guides to commercial composting online. Educating those involved was an important step in starting up a program. Bart Perry, the catering manager, talked to me about a restaurant he used to work in where a pig farmer would pick up food scraps for feed. Steve Mangan was also interested in reselling bakery items at a discounted price as day olds. Three different types of outlets were being explored in order to divert from the landfill.

1. Day old sales.
2. Waste as Pig feed

3. Waste as compost

I went to the Farmer's Market and began asking around if vendors were interested in taking compost or food scraps. Most of the vendors were located too far away to be able to pick up a few hundred pounds of compost a week. I had a long conversation with Jeff Mease at the Market back in June about various outlets in Bloomington for a large amount of compost or pig feed.

I decided I needed to quantify the amount of food waste that was being generated after talking to vendors at the Market because every one of them asked me "well how much do you have."

Quantifying

- How much waste was being generated and where was it being generated?
  - In the main kitchen during food preparation
  - Plate scraping after an event.
  - Left over buffets during the day
  - Left over buffet after a nighttime event

- Three different waste streams
  - Left over buffet
  - Plate scraps (post consumer)
  - Preparation Scraps (pre consumer)

Left Over Buffets

The Tudor Room and Market left over buffet and the left over pizzas from Pizza Hut are picked up every day by the Hoosier Hills Food Bank. (quantities)

Post Consumer

By working in catering I began to get an idea of the amount of post consumer waste we were dealing with. I needed the quantities of this waste if we were going to be sending it to pig farm. I specified to the catering staff a trash can for food only. Every night after the Tudor Room closed and after any nighttime events the dish room staff would weigh these cans before dumping the waste in the compactor. Many staff members approached me with information about pig farmer around town. The main obstacle was a regulation in place about
feeding post consumer waste to pigs that required the waste to be reheated before being fed to the pigs at 180 degrees. This is a for health reasons to eliminate pathogens and bacteria.

The staff continued to help me quantify this by recording the weight at the end of every day. I have not been able to find an outlet for the time being. We weighed to waste long enough to get a sample and we will continue to open about any options that may arise for diversion.

**Pre Consumer**

The IMU orders a substantial amount of produce from Piazza Produce. In two months that have passed since I began quantifying food waste the kitchen staff ordered 50 cases of honey dew, 176 bunches of parsley, and 58 cases of pineapple. After becoming familiar with the kitchen I began to notice that there was a large amount of raw organic waste going in the trash just from preparation activities alone. I targeted this stream to capture for composting.

I went to Hilltop garden center, located 1.4 miles away from the Union, to discuss with Greg Spiecart whether or not Hilltop could take this stream. He had 6 5'5'5' wooden bins. I did not know the quantity of this waste but Greg was willing to work with me on collected and composting this waste.

I then went to Damian Esposito to figure out what he thought the best way collect the raw produce waste for his operation. I laid out some important components that can be summarized in the metrics for this category. Damian called a staff meeting so inform the staff of the changes in waste management. He suggested we start with using pickle buckets for the staff to collect food at their preparation counters.

We started collected this waste on July 20, 2009 and have diverted about 8000 lbs since that date. All the events we prepare food for and the daily market operations would be However with the beginning of the Fall semester the staff informed me that the amount of waste generated would double.

**Metrics**

1.) **Identify the target waste stream**
The target waste stream is the pre consumer raw produce waste. This stream is made up of all compostable waste and is easily controlled. The preparation staff are present on a daily basis.

2.) Communication and Explanation

A staff meeting was held to introduce the food waste program and reinforce the recycling program. I explained the importance of landfill diversion and gave the staff some startling statistics about waste in the U.S. "the United States creates enough food waste every year to fill the Rose Bowl stadium up three times."

I introduced Hilltop to the staff with a large poster full of pictures from Hilltop's website. I wanted the staff to be able to relate to the project personally. There are a number of children's programs at Hilltop and this was an easy way to capture the staff's attention.

3.) Collection

The green pickle buckets were set in place on July 20. The larger cans are used on busy days.

4.) Storage

The waste is stored in the main kitchen cooler in the storeroom.

5.) Transport

Every time I take compost to Hilltop I weigh it on a scale next to the store room.

Current Total: 7271lbs of compost diverted.

Randy and Kenny help me lift the each can on the scale and then we load them onto a truck used for catering and deliveries. Sometimes the Hilltop trip is incorporated into the daily deliveries to the Library. We drag the can to a designated spot and dump it. I check to make sure there is no contamination such as plastic, meats or dairy.

6.) Disposal

Proper disposal was a concern for the Environmental Health and Safety Specialist, Shane Modglin, who is in charge of the kitchen health inspections. Greg Speichart is in charge of managing the compost once it is at Hilltop. He
uses a layering method where it is not aerated but simply covered with woodchips once its dumped.

II. Local purchasing

Sodexo has a corporate wide goal to support their local communities. They in turn have many resources from their offices to support local procurement initiatives.

Local Food Definition, benefits and challenges.

Defining what is local is difficult whether it be state line, region within 100 miles, within 200 miles. The global food system is a complicated web. With the help of technology during the past 50 years it brought food from all over the world into grocery stores and restaurants to dinner plates. People in the US are accustomed to an immensely wide variety of foods that travel 1000s of miles through the supply chain. This web of transactions and handling is beginning to reveal itself through concern of food security, fossil fuel consumption, health related issues, and economic concerns. What we eat for nourishment and survival is often influenced by hundreds of other people involved in the growing, production, transportation, storage in the modern day global food system. Convenient is complicated. Buying local food is an important component of sustainability for the Indiana Memorial Union for the purpose of connecting the ever changing student body with the businesses and community members of Bloomington.

Local food procurement has many benefits however many challenges that prevent a company from buying locally have to be actively addressed and worked through before local procurement can happen. The IMU kitchen has acknowledged that they can play an important role in this movement.

Buying local food ensures closer connection between community members. It helps support the economy from within building relationships and promoting the sustainability of not just the environmental but of the community. This is without a doubt an important aspect of this subject. The food travels fewer miles and leads to fossil fuel savings and fresher product. Local food has been known to be more healthy and nutritious. The way that food is grown has influence in the amount of nutrients that are developed. Communities can have more confidence in a local food system because it is supported by their own members. The support is as inevitable as the need for people to make a living and nourishing their selves.

There are considerations that a large food service operation has to consider before making the commitment to buy local. Procuring from many different local farmers can be hard on ecological systems as well. Rather than getting food from 500 miles away from one company, to buy local a large operation may have to get one product from 10 places 50 miles away. There are also many
contractual issues involved with food service overseen by a corporation. One of the main problems for the IMU in particular is the fact that the slow season for academia, summer time, is the high season for produce. In the late fall and winter there are some items that are known to be available but many times the demand from the students is not aligned with available crops.

The IMU food service managers have indicated to Piazza Produce that they expect local products to be provided before non local products. Damian Esposito and I are working on a plan to communicate to farmers what we will be order next spring. We hope to find farmers to grow our specified amount food for the IMU.

1. **Communication to the distributor.**

Managers have made their desire to order more local food to their main produce distributor, Piazza Produce. In a meeting of Sodexo vendors and manager, Steve Mangan announced to Piazza that if they cannot provide more local foods IMU will find who can elsewhere.

2. **Making Community Ties Bloomingfoods and Fischer Farm, farmers personally, growers guild, food bank**

The IMU is developing an exciting relationship with Bloomingfoods. Bloomingfoods () Gerome met with Esposito and I to expand on local food ordered by the IMU. It was best to start small because of the quantity of ordering the IMU managers do on a daily basis. The Chef wanted to start with a one day a week locally procured menu. Every Wednesday the Tudor room serves local fruit vegetables from Bloomingfoods and local meat raised at Fischer Farms. My task was to find information about the farmers that Bloomingfoods orders from for the IMU and write short biographies about them to display to the guests of the Tudor Room on Wednesday. I have made an effort to contact these farmers personally and invite them for lunch at Tudor.

Dave Fischer farms is located in Jasper, Indiana and is managed by Dave Fischer. I had the opportunity to meet Fischer at a regional client meeting Steve Mangan and I attended. This meeting was focused on how Sodexo and their vendors can improve sustainability efforts.

The IMU gives donations to the Hoosier Hills Food Bank Every day. The left over buffet from the Tudor Room, and Market are picked up and recorded five days a week.

3. **Education to community about Community Farmers.**

Education to the community is an important component
1. plan to work to expand and bolster local market
2. corporate support

III. Green Cleaning

Over view of Green Cleaning in restaurants and why its important.

A green cleaning program aims to increase the quality of cleaning activities while keeping human health and the environment as a top priority. The cleaning industry is undergoing a transformation to move away environmentally harmful products. Annually the cleaning industry uses 8 billion pounds of chemicals and 4 billion pounds of paper. This fact demonstrates that the cleaning methods are a worthy target for sustainability efforts. Cleaning products used can have adverse health impacts. Employees, and guests of the Union spend extensive time indoors at the Indiana Memorial whether working, studying, partying, eating, meeting or sleeping in the hotel. A green cleaning program addresses indoor air quality. It is estimated by the US EPA that indoor air quality can be up to 5 times more harmful for people than outdoor air. In door air quality can in turn lead to allergies, asthma, infectious spread of disease such as swine flu.

A green cleaning program is not just about choosing environmentally friendly chemicals. Sodexo holds a corporate account with Ecolab and participates in the APEX program. It is important to outline the values of Ecolab and this program that Sodexo is involved in for the general knowledge of the University community. Even though Sodexo is in a contractual agreement to use Ecolab's products and most of them are environmentally sound, there are a number of ways that the IMU kitchen can further its involvement of the green cleaning movement. The IMU kitchen is on the right track towards a strong green cleaning program with the creation and implementation of cleaning schedules and audits earlier this summer. These measures will enrich Sodexo's participation with Indiana University's sustainability initiative.


As part of my internship I learned about Ecolab and spoke with their representatives who work with Sodexo. Founded in 1923 Ecolab has grown to be a global leader in the cleaning industry. The sustainability report of 2008 they state their commitment to conserving resources and enable their customers to be more efficient. They design products that reduce waste by
using the minimum packaging. Water conservation also a goal in engineering of cleaning products. Ecolab has received a number of third party recognitions including Forbes magazine, Ethisphere, and Jobs magazine. Their associations include the Global Environmental Management initiative, the Business Ethics Leadership Alliance, and the International Association for Soaps, Detergents and Maintenance Products (AISE).

The IMU kitchen made an important step in moving towards a green chemical program by participating in an audit and cleaning schedule. With the chef’s support and with the cooperation of the dish room supervisor I created a cleaning binder to help the staff delegate weekly tasks. Using Sodexos’ guide to their kitchen equipment on the web, I printed out procedure for equipment. These procedures include the frequency that the equipment needs to be cleaned whether it be weekly or daily. The Dish room supervisor and I divided up the equipment into groups that were in turn designated to a certain day of the week. When the supervisor makes the schedule every week he assigns a piece of equipment to members of the staff everyday. These tasks are signed off by the supervisor when the task is complete.

1. **Stakeholder Agreement: varying degrees- within Sodexo, in the Union, with contractor** (Ecolab)

   - What’s in it for them:
     - Occuapan satisfaction
     - Marketing benefits
     - Risk reduction

2. **Cleaning chemical inventory**

   Product, manufacturer’s name and where its located in the building

   To begin the process of moving towards a green cleaning program I made an inventory of all cleaning chemicals used. The cleaning substances are located in a cabinet next to the chef’s office on the ground floor of the Main
Kitchen. This is the central supply cabinet. The equipment closet is located not far from the cabinet next to the bakery. There are other locations where cleaning chemicals can be found due to the inconvenience of the central location to the other locations throughout the building. This includes in the Tudor room kitchen by the cold counter next to the garbage disposal and in the dish area in the Solarium kitchen.

Inventory

- Wash and walk floor cleaner  
  Green Seal certification  
  Procedures on the wall in the mob closet, some liquid leaking on the floor
- Orange force Oasis 137  
  Ingredients: D-limonene, Sodium Lauryether, ethyoxysulfate
- Medallion  
  Ingredients: Mineral seal oil, diethylene, glycol, butylyether
- Grease Strip Plus  
  Ingredients: Sodium hydroxide
- Dip it XP  
  Sodium carbonate, sodium metasilicate
- Glass cleaner Plus  
  Propoxypropanol
- Mr muscle plus  
  Monoethanolamine
- Spartan consume bio bowl  
  Citric acid, alcohol ethoxylate
- Multiquat sanitizer  
  Alkyl, dimethyl benzyl ammonium chloride
- Lime Away  
  Methae sulphonic acid

3. Cleaning Schedule and Log Book Created

Binder was put together for the main kitchen with collaboration from Chef Tom Bernati. He offered the log that the Corporate Office gives the Head Chef and suggested I look through the list of equipment with the Dish Room Manager to fit the standard log to our specific situation in the IMU kitchen. Chef Tom also provided me with procedures that the Corporate office puts together that provides what cleaning substance to use on what piece of equipment, how much to use, and break down directions. The dish room manager and I looked over the list of equipment and identifies what needed to be cleaned on a weekly basis. We then assigned a group of equipment to be cleaned on a designated day every week. The dish room supervisor assigns staff members to the
individual pieces of equipment for. The Chef looks over the assigned
groups and reinforces the activities once a week.

4. Assessment of cleaning supplies used

When wiping down surfaces the staff use reusable white rags that are
washed with other laundry in the IMU Laundry room. There is a mop
closet on the ground floor, next to the bakery, where other floor cleaning
equipment is located. The trash bags used are (). The IMU buys toilet
tissue and hand towels from Kimberly-Clark who has just recently
announced their commitment to use either all recycled content or
methods approved by the Forest Stewardship Council in their paper
manufacturing by 2011. It is important to note the location of the MSDS
book which is right next to the Executive Chef’s office.

A list of all products used is still needed. To make a more extensive
effort in the Green Cleaning effort of the Union there needs to be an
assessment of the building custodial activities and laundry room.

5. Recycling program

This is essential to a green cleaning program. This metric is a cross
cutting theme in sustainability and food service like many others. The
recycling effort of the staff has improved tremendously since last June.

Challenges

- contract with Ecolab

Next Steps

Though the dish room supervisor does manage staff effectively enough to get
complete the daunting task of washing all the dishes the kitchen uses every day,
there could be a more focused effort on nightly cleaning. The staff members
have admitted to not having enough to do. I believe this is because they are
not trained in professional commercial kitchen cleaning procedures. The
General Manager of food service, Steve Mangan and his staff are looking into
hiring a cleaning steward. This could help tremendously with oversight of the
nightly cleaning. I am listing a few ideas about where to go with our next
steps.

- Something for the management to consider would be to have a third
party who is knowledgeable in Green Cleaning procedure come in to
assess cleaning activities in the kitchen. I have come into contact with a
local green cleaning company called “The Clean Greeners.” They have
expressed interest in coming to the kitchen to share their green cleaning
knowledge with the IMU staff. I believe this would be a good thing for the IMU’s public relations.

- Communicate to Ecolab the desire to green cleaning procedures and see if they have any options that we have not been offered. Also it would be good rally the support of the entire region of Sodexo’s contracts who share the Corporate Contract of Ecolab to encourage green cleaning practices.
- Communicate to the IMU and IU the support of green cleaning. Find out whether there are any ways for these three entities to collaborate on some campus wide changes.
- Look into materials used to make our cleaning supplies and whether or not there is a way to buy supplies made of post consumer content.
- Let employees know that a health inspector comes regularly and give some incentive to motivate staff who have to stay late at night to clean thoroughly. I have learned firsthand that it is easy for staff to get in a hurry at night when it is the weekend and people work 8-10hrs as late as between 1:00am and 2:00am.

V. IPM

Definition

Importance of IPM in food service
- Pest management is a realm of sustainability that is directly related to health
- Controlling german cockroaches with IPM has been proven to reduce allergens associated with roach infestations
- Resistant genes become part of the surviving population and insects are able to evolve in a matter of years
- The modern trend of pesticide use has a goal of maximizing control while optimizing results
- Tight economy calls for reduced spending on pesticides

Studying the conditions.

Range of operation as it relates to IPM:

- Predominant pest problems

  American cockroaches
  German cockroaches

○ Issues in the library
  Basement: picture of where the problem is
  Library
  Counter by the cashregister
Dish room
Soda syrup area

- Issues in the IMU
  Kiva
  Basement of the IMU

- Rats burrows found around the building outside

Started exploring an IPM program opportunities earlier this year with Marc Lame

**Monitoring.** Systematic sampling of pest population levels by trained personnel has traditionally been considered as one of the most critical and defining aspects of the IPM process (National Academy of Sciences 1969, Glass 1975, Bottrell 1979).

General Manager on board to cooperate
Work with pest management professional Don to change application methods
analysis of documents as they relate to pest management.
Talking with managers about what has changed since the pest program started.
Talk to pest management professional Don about what he has done differently
Savings on pest management? And pest application

*Reduced pesticide use is not the only measure of success of any IPM program-*

*(methodology)*

(Ideology)- pesticide reduction centered goal as a measure of success”

“Rather than minimization of pest damage, the focus is on minimization of pesticide use, risk, and waste (U.S. Environmental Protection Agency 1993, Hom 1999), all of which are often implicitly included in the word “use” (sensu lato).”

-The union should adopt a ideological IPM program that promotes the stewardship of the infrastructure of the Union as well as environmental consciousness
-effective pest management is dependent on administrative and physical support system

-IPM is always an ideological concept, reflecting public concern with environmental degradation
in general, and specifically with the impact of pesticides on human health and nontarget organisms (Flint et al. 1991, Brenner et al. 1998, Rambo 1999). As such, added to the diverse pool of IPM stakeholders who approach the process as a public policy Prst and a good pest control practice second, are the managers of administrative agencies charged with statute implementation (Buchholz 1993). Accountable to both clients and supervisors for program efPcacy, these ofPcials (some of whom, like the senior author, ironically began their professional careers as methodologists) must pragmatically focus on policy or regulatory “drivers” when selecting measures for evaluating results.

Is the incentive there with Ecolab

Been working with Marc Lame:
Update from last report and progress from Stephanie Redick's report
Show monitoring stations are now being used
Show the sanitation is improving
Sanitation schedule - elimination of food sources
Ecolab and corporate website
does marc feel he is involved enough?
Should Sodexo and thr IMU consult with other professionals
Work orders to seal cracks and crevices and repair leaky equipment

Challenges

Structure of the Union

The Union being a very large and old building poses many challenges to the structure component of IPM. There is a basement that is underground right next to the Jordan River where the maintenance staff has a hard time controlling cockroach infestations. Renovations and reorganization is needed in order to practice IPM in the basement. The Kiva is located adjacent to this basement and has experienced cockroach issues since started this internship. There is a disagreement on where the problem’s source is.
· There is so much traffic coming and going from that building every day that doors are constantly opening.
· Several pieces of equipment in the kitchens are no longer in use and need to be removed. Their removal will allow the staff to clean with more ease. Removal however involves a lot of protocol for the technical side as well as the bureaucratic side. There is maintenance involved with the uninstallment process.
· Two different management entities running separate operations within the walls of the Union create a big challenge to IPM. There is a lack of communication between the management. This is an essential challenge to over come in order to implement a true IPM program in the Union. The two entities have differing pest control methods and schedules.
· There is activity involving food preparation from very early in the morning to late in the evening. This poses a problem for IPM because there is contently food out being cooked or prepared. The floors are not cleaned until the night time when the cleaning crew comes in after the other staff leave.