University of Maryland sustainability council

Meeting Summary
March 3, 2023

Council Members Present (via Zoom):

Carlo Colella — Vice President & Chief Administrative Officer (Chair)
Scott Lupin — Assoc. Director, Environmental Safety, Sustainability & Risk; Director, Office of Sustainability
Maureen Kotlas — Executive Director, Environmental Safety, Sustainability & Risk
Colleen Wright-Riva — Interim Assistant Vice President for Living & Learning, Student Affairs
Eric Wachsman — Director, MD Energy Innovation Institute; Professor, Materials Science & Engineering
Bryan Quinn — Director of Technical Operation, Department of Electrical & Computer Engineering
Stephanie Lansing — Professor, Environmental Science & Technology
Giovanni Baiocchi — Associate Professor, Geographical Sciences
Jennifer Hadden — Associate Professor, Government & Politics
Thomas McMullen — Assistant to the Provost, Academic Affairs
Mark Addy — Executive Director, Systems and Networking
Susan Corry — Director, Engineering & Energy
Sabrina LaBold — Undergraduate Student Representative
Marie Panday — Graduate Student Representative

Guests:
Michelle Wetzel — Program Manager, Motor Transportation Services
Ken Riebert — Executive Director, Facilities Business Operations

Meeting start time: 1:00pm

Meeting Highlights

Fleet Electrification Overview – *K. Riebert, M. Wetzel*
Representatives from Facilities Management presented on progress towards fleet electrification, including the pilot study to monitor the use of existing fleet assets, a campus infrastructure study, and other topics. The fleet electrification process will consider both fleet assets like cars, trucks, and SUVs but also ShuttleUM buses and commuting vehicles. The representatives also discussed the first year of data from the fleet utilization overview, which captured an overall trend to have more department vehicles than needed, a campus-wide issue with vehicle idling, and new efforts to pool and limit vehicle access where possible through kiosks or fleet pool software. The utilization data is also informing replacement rates by identifying older, fuel inefficient models and replacement rates and costs.

Sustainability Fund Proposals – *S. LaBold*
Sabrina LaBold presented to the Council on the Sustainability Fund budget and proposals (Appendix B). The Sustainability Fund Review Committee has a current working budget of $700,000 and recommends funding for five proposals:

- *Hybrid Renewable Energy Proposal:*
    - This project aims to explore hybrid wind-solar renewable energy solutions to power EV charging stations. The proposal is phase 2 of a project previously funded by the Sustainability Fund. The proposal included many student engagement opportunities.
    - The Council discussed the other projects that should be connected to this effort and requested that the proposers update the language of the grant to the SECU stadium.
    - The Council **unanimously approved** this project proposal.
- *Glass Recycling Infrastructure:*
    - This project requests funding for six additional glass recycling dumpsters and collection infrastructure for locations across campus.
    - The Council had extensive conversation on this proposal, including a few logistical questions. A sub-group was suggested to verify proposed locations and suggest other potential locations (for example, STAMP or Dining Services).
    - The Council **unanimously approved** this project proposal on the condition that the dumpsters are placed strategically around high-volume locations.
- *Terp to Terp:*
    - This project requests funding for a second year of a pilot for the Terp to Terp Campus ReUse Store. The proposal includes more support for student positions, leadership opportunities, and continued effort to reduce waste through reuse.
    - The Council discussed the long-term funding for this resource, including nominal charges, resource-sharing, and the option of using work-study students.
    - The Council **unanimously approved** this project proposal on the condition that long-term funding solutions are explored.
- *Phase 2: Empowering Students through Sustainability Engagement and Leadership*
    - This project requests funding for five internships in the Office of Sustainability on programs like resident engagement, outreach events, green fraternity and sorority life, staff sustainability, and communications. The proposal also included a portion of the Outreach Associate position, matched by in-kind funding.
    - The Council discussed the intern selection process and the idea of line-item allocation or specialized funding sources for Office of Sustainability internships or other projects.
    - The Council **unanimously approved** this project proposal.
- *Assessment of how floral additions can offset negative impacts of land management practices to support pollinators and other beneficial organisms:*
    - This project requests funding for a pilot to research interplanted living mulch to prevent the use of insecticides. The funding predominantly supports undergraduate interns. This is a request for the first year of funding, the second year of funding must also include how the project impacted students and implications for further application elsewhere on campus.
    - The Council **tabled this project proposal** for further discussion.

The Office of Sustainability was tasked with exploring options for permanent fund allocations for topics on research, UMD internships, and other options.

Open Forum

- At the suggestion of Bryan Quinn, the by-laws for the Sustainability Fund will be updated to include inclusive language (for example, changing language from “himself” to “themselves”).

Adjourn 3:00pm

Appendices:
Appendix A: Fleet Electrification Overview
Appendix B: Sustainability Fund Proposals

Fleet Electrification Update

March 3, 2023

Electrification Project Overview

General Update on Work Team - Ken

Project Components - Team

1. Fleet Vehicle Pilot at Severn
2. Campus Infrastructure Study
3. Bus Electrification
4. Fleet Utilization and Right Sizing
5. Fleet EV Implementation

Fleet Pilot Update

Pilot is funded for an estimated 50 EVs in FY23 for delivery in FY24

State is expected to provide EV pricing shortly

Acquisition of EVs will be dependent on manufacturer ordering windows

May be an opportunity with Ford to place orders for production that commercial orders have not come in for.

Trucks and vans make up approximately 80% of all road worthy Fleet vehicles. EV Vans are currently $50K and Pick Ups are $60K. At this pricing, the planned budget would allow for approximately 40-45 pilot vehicles.

Due to high demand, we are not seeing price parody between ICE and EVs in the market nor do we expect it any time soon.

Campus Infrastructure Study Overview

Study Goal: The requested study will provide Fleet vehicle replacement recommendation and implementation schedule. Additionally, recommendations for infrastructure upgrades and implementation schedule along with cost estimates for that infrastructure will be included.

Fleet Vehicle parking was bucketed into 3 general locations: the Campus, Campus Adjacent locations such as Severn and locations around the state such as Agricultural Experiment Station – Upper Marlboro. More granular data is available by Landmark such as Lot C or Severn_NE.

The campus and campus adjacent locations were separated due to different existing infrastructure. Other areas where UMD Fleet is housed are considered separately.

The Fleet was classified and prioritized with cars, vans, trucks, SUVs, etc as Priority 1 and buses as Priority 2. These are the primary focus of the study. Other Fleet assets will have a lower priority including Golf carts, utility vehicles, farm equipment, etc.

Fleet and Privately Owned Vehicles (POV) were assessed for overlap in parking locations and the study will take POVs into consideration if there is parking overlap.

Campus Infrastructure Study Timeline

Current Step: Issue Master On-Call For Zero Emissions Electric Vehicle Transition Studies RFP to pre-qualify Vendors – Post Date: 3/2/23

- Pre-qualification time-line: approximately 6-8 weeks

Next Step: Issue SOW for UMD Study to qualified Vendors

- Vendor selection time-line: approximately 6-8 weeks

Vendor Procurement: 60 days from Selection

Campus Study Kick-off: 15 days from contract signature

Bus Electrification

The Maryland General Assembly passed the Zero-Emission Bus Transition Act which requires all buses purchased by the Maryland Department of Transportation to be ZEV beginning in 2023. UMD intends to follow this guidance.

DOTS has placed an order for 2 EV buses which should arrive in about 18 months. The EV Buses are double the cost of ICE buses coming in at $1 million.

Infrastructure to support bus charging has not yet been funded.

Personal Vehicle charging on campus - 13 additional grant funded charging stations anticipated by Summer 23

Fleet Utilization Overview

Total Fleet: Approximately 1554 Vehicle assets (inc. Trailers, Specialty Vehicles and off-road equipment)

GPS Installed Fleet: Approximately 869 Installed Vehicle assets

9 of 21 Departments have at least 1 year of Utilization data

6 of 21 Departments have 100% of their department fleet assets installed

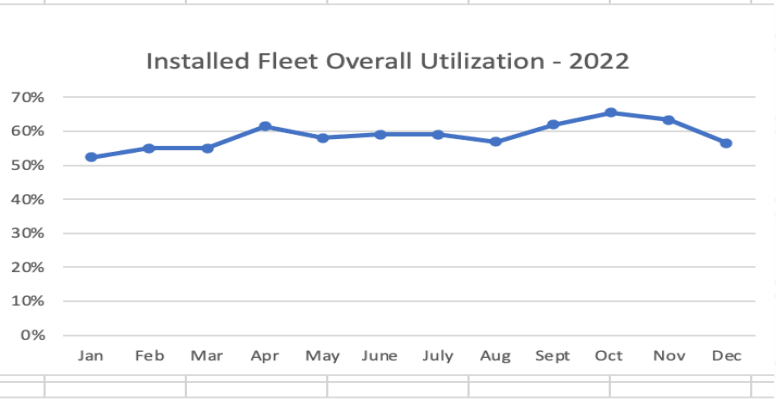
Average Monthly Utilization of Road-worthy Fleet Assets for 2022: 58%

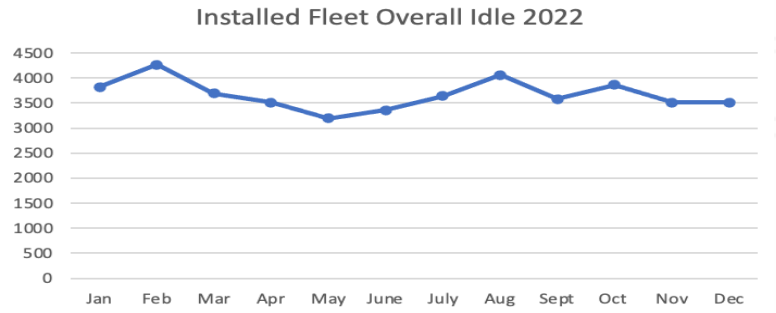
Average Monthly Emissions Hours for Road-worthy Fleet Assets for 2022: 3669 Hours @ approximately $7,576 monthly in fuel costs and $95 in GHG Cost

GPS Installed Fleet Findings

General Trends:

- Departments with larger fleets tend to keep more vehicles than they use
- Supervisor vehicles are underutilized across the board





Fleet Utilization Strategies

Vehicle Idling is primarily a behavioral issue for UMD. Idling is at its highest during the warmest and coldest months when folks sit with their vehicles running. Within FM, an awareness campaign helped reduce Idle time significantly.

Several departments who have been tracking utilization for 18 months or more have begun right-sizing their fleets by eliminating vehicles and/or pooling vehicles.

As we right-size, older vehicles are removed and replaced with newer more fuel-efficient vehicles.

UNIVERSITY OF MARYLAND

sustainability fund

GRANT RECOMMENDATIONS MARCH 2023

Sustainability Fund Budget for FY23

Revenue		Expenses	
FY23 Revenue	$504,028	Sustainability Mini-Grants	$0
Available Fund Balance	$204,410	Carbon Offsets for Carbon Neutral Undergrad Commuting**	$65,000
FY23 Working Budget	$708,438	Grants Issued to-date	$117,585.32
FY23 Total requested so far	$767,511.26	Today's Grant Recommendations	$172,186.04
FY23 Requests still pending	$6,000+	Remaining Balance if recommendations are approved*	$416,446

*Estimated **Maximum allowed

Sustainability Fund Budget for FY23

FY23 General Info		Expenses	
FY23 Working Budget*	$579,372.88	Sustainability Mini-Grants**	$20,000
		Carbon Offsets for Carbon Neutral Undergrad Commuting**	$65,000
Proposals Received		Grants Issued to-date	$117,585.32
FY23 Total requested so far	$767,511.26	Today's Grant Recommendations	$172,186.04
FY23 Requests still pending	$6,000+	Remaining Balance if recommendations are approved*	$204,601.52

*Estimated **Maximum allowed

Projects Recommended for Funding

1. Hybrid Renewable Energy

2. Expansion of Glass Recycling Infrastructure

3. Terp to Terp

4. Phase 2 Empowering Students Through Sustainability Engagement and Leadership

5. Assessment of how floral additions can offset negative impacts of land management practices to support pollinators and other beneficial organisms

Hybrid Renewable Energy

Requested: $13,100

SFRC recommendation: $13,100

Summary: Phase 2 of this project is meant to study the potential of employing hybrid wind-solar renewable energy solutions to power EV charging stations. They will do this by determining the hybrid energy density and storage capacity. They will leverage the outcomes/resources from Phase 1's focus on wind energy to shift to hybrid wind-solar energy.

Submitted by: Peter Sandborn, Mechanical Engineering

Hybrid Renewable Energy

- Results of this project will have direct impact on energy reduction for EV charging stations and will have practical implications for decreasing power consumption and improving the environmental performance of campus
- 35+ students from 5+ disciplines participated in the project for the first phase and they expect to have similar participation for this phase
- Students will have the opportunity to engage in various learning activities:
    - Obtain wind/solar data; determine wind/solar densities for EV charging; determine most suitable hybrid systems; determine cost-effectiveness; develop software models; help prepare final report
- Department of Residential Facilities has given support to help explore safe and reliable methods for installing solar panels
- Funding will be spent on instrument installation, data acquisition equipment, and operation costs

Hybrid Renewable Energy

Type	Notes	Cost
Equipment	Anemometer systems, booms & mounts, cables, hybrid solar-wind system, battery storage bank	$5,500
Installation	Facilities for systems installation, structural drawings	$4,200
Remote data acquisition system		$1,200
Other costs	Student work supplies, transportation, labor, permitting	$2,200
Total		$13,100

Expansion of Glass Recycling Infrastructure

Requested: $13,358

SFRC recommendation: $13,358

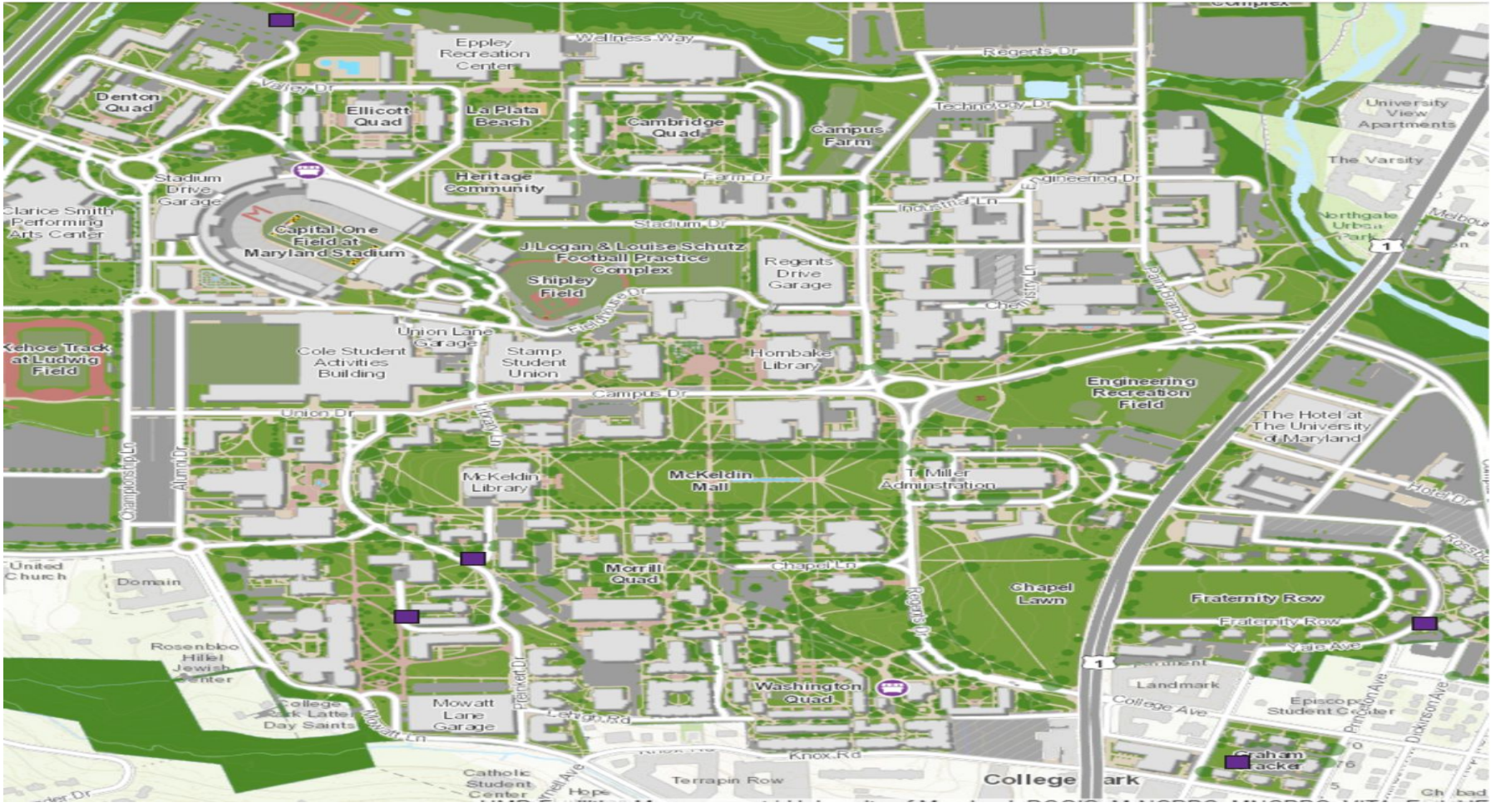
Summary: Existing glass recycling program wants to expand on campus by adding 6 additional glass dumpsters to supplement the 3 already on campus. Purchasing of containers would come from the fund, but Facilities Management would cover annual expenses of tip and hauling fees.

Submitted by: Adrienne Small, FM Recycling & Solid Waste

Expansion of Glass Recycling Infrastructure

- Recycling and Waste Unit has seen success within this program with containers requiring service about twice a year since placed on campus in 2020.
    - They also receive questions continuously about the location of the dumpsters, indicating that there is a strong campus desire to responsibly recycle glass.
- Glass is a heavy commodity and providing more options for recycling will significantly impact the campus diversion and recycling rates.
- Recycling will also reduce the need for raw sand and limestone, i.e. the raw materials of glass.
- New locations are being placed to provide further accessibility for on campus and off campus students/staff
- Letters of Support from Residential Experience and Department of Fraternity & Sorority Life

Expansion of Glass Recycling Infrastructure - Proposed Locations



Expansion of Glass Recycling Infrastructure

Type	Notes	Cost
6 Dumpsters	$1,912/dumpster	$11,472
Shipping Cost for Dumpsters	One time shipment	$1,850
6 Stickers	Informational sticker explaining what can/cannot be recycled ($6/sticker)	$36
Total		$13,358

Terp to Terp

Requested: $29,633.04

SFRC recommendation: $29,633.04

Summary: Year 2 pilot proposal for the Terp to Terp Campus ReUse Store. All UMD students have free access to essential needs through the ReUse Store. The funds will continue to employ two Program Assistants to support daily operations and fund two Student Managers who will focus on implementing and refining the capacity-building projects initiated in year 1.

Submitted by: Lisa Alexander, ResLife Coordinator for Sustainability Programs

Terp to Terp

- ReUse store collects and distributes unused or gently used clothing, small appliances, cooking/kitchen items, and other supplies donated by students, faculty, and staff.
- Major findings from Year 1:
  - Student populations wants more hours of availability for store appointments
  - Faculty, staff, and students want more donation drop-off opportunities
- Goals for Year 2: increase student usage by 25%; implement a year-round donation/collection process; execute an engagement and outreach plan
- Generally speaking, by supporting Terp to Terp, UMD can divert up to 12,000 lbs (6 short tons) from entering the waste stream.
- Matching and in-kind funding from Resident Life
- Strong interest from UMD students in developing sustainability programs and initiatives where students have direct oversight

Terp to Terp

Type	Notes	Cost
2 Undergraduate Student Managers	10 hours weekly for Fall and Spring semesters 2023-2024 at $15.50/hour with fringe benefits	$12,008.16
2 Undergraduate Program Assistants	10 hours weekly for Fall and Spring semesters 2023-2024 at $15/hour with fringe benefits	$11,620.80
1 Undergraduate Program Assistant	20 hours weekly for Summer 2024 at $15.50 with fringe benefits	$6,004.08
Total		$29,633.04

Phase 2 Empowering Students Through Sustainability Engagement and Leadership

Requested: $53,315

SFRC recommendation: $53,315

Summary: Calls for the renewal of current Office of Sustainability internship positions as well as the funding for a new position.5 interns for Fall 2023 and 5 interns for Spring 2024. Internships are with the OS, ResLife, and DFSL (Fraternity/Sorority Life).

Submitted by: Taylor Brinks, Office of Sustainability

Phase 2 Empowering Students Through Sustainability Engagement and Leadership

- Various anticipated outcomes such as providing more unique opportunities for students to work in sustainability; expanding student's education on sustainability initiatives; providing professional development opportunities; and bolstering partnerships between different departments on campus.
- Data from the outreach and education programs will be published on the SustainableUMD Progress Hub website.
- Matching and in-kind funding for the Sustainability Outreach Associate, intern positions and outreach efforts are provided from OS, DRL and DFSL.
    - Sustainability Associate will be an essential asset for the internship program and the overall OS outreach and education programs
- Letter of supports from past student interns summarizing the value of participating in the OS internship program

Phase 2 Empowering Students Through Sustainability Engagement and Leadership

Type	Notes	Cost
Undergraduate Student Interns (5 per Fall & Spring semester)*	Interns work 8-10 hours a week for 16 weeks at $15/hour with fringe benefits	$22,726
Sustainability Outreach Associate**	½ annual salary (other half provided by OS)	$29,590
Non-Labor Training Costs		$1,000
Total		$53,315

* Intern position names: (1) Resident Engagement; (2) Outreach Events; (3) Green Greeks; (4) Staff Sustainability; (5) Communications

** Recent college graduate with a focus on sustainability during undergrad

Assessment of how floral additions can offset negative impacts of land management practices to support pollinators and other beneficial organisms

Requested: $62,780

SFRC recommendation: $62,780

Summary: Department of Entomology research project aiming to offset negative impacts of land management and increase floral diversity amongst crops. Project is on its third and final year and is requesting funds for undergraduate research assistants.

Submitted by: Kathleen Evans, Graduate RA, Department of Entomology

Assessment of how floral additions can offset negative impacts of land management practices to support pollinators and other beneficial organisms

- Field experiments involving pollinator/pest presence based on floral diversity will be conducted in 2023 at the UMD Beltsville Agricultural Research Center.
- To reach the project's goal, they will quantify the effects of 2 types of commonly-used methods for enhancing floral diversification (wildflower strips and flowering clovers) on pollination and pest control within a crop and the surrounding habitat to protect food supply
- Results of the research will be shared in outreach activities to other scientists, food producers, undergraduate sustainability courses, 4H youth, and gardeners.
- Students will gain experience in biological science and research, including exposure to scientific protocols and methods, and data collection, data processing, and data analyses, all while being integrated in a dynamic and inclusive working group
    - It will also provide opportunities for students to take on individual parts of this large project, to gain experience in leadership roles, co-authorship on peer-reviewed publications, and be involved in community-oriented activities

Assessment of how floral additions can offset negative impacts of land management practices to support pollinators and other beneficial organisms

Type	Notes	Cost
Undergraduate RAs (3 per Fall & Spring semester)	20 hours a week for 15 weeks at $15/hour with fringe benefits	$29,052
Undergraduate RAs (5 for Summer)	30 hours a week for 13 weeks at $15/hour with fringe benefits	$31,473
Summer vehicle rental	May-October rental meant to be used to reach research stations	$2,255
Total		$62,780