

# Sustainability Council, Feb 2024

Madhu Khanna

*Alvin H. Baum Family Fund Chair & Director*



## iSEE

Institute for Sustainability,  
Energy, and Environment



UNIVERSITY OF  
**ILLINOIS**  
URBANA-CHAMPAIGN

[sustainability.illinois.edu](https://sustainability.illinois.edu)



## Agenda for Today

- Education
  - Sustainability General Education Requirement
- Green Research Program
- Plastic Waste Reduction (F&S and iSEE)
  - Updates
  - Discussion
- Carbon Credits
  - Background
  - Discussion

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# Sustainability Gen Ed Option





# Review

Proposal: Create a 3 credit-hour gen-ed category within Natural Sciences and Technology (NST), Social and Behavioral Sciences (SBS), and Humanities & the Arts (H&A) for a course in sustainability and environmental topics

- Will be an option in each of the three categories for all undergraduate students
- Initially passed as an Illinois Student Government resolution
- iSEE has been supporting student efforts to get this approved
- iSEE has met with the college Deans and held department head open houses





# Meeting with the Gen-Ed Board Chair

- ➔ Raised additional concerns to be addressed:
- ➔ There may not be enough courses to demonstrate viable stand-alone option;
- ➔ Any faculty concerns will be seen as a red flag;
- ➔ A precise definition of a sustainability course must be provided which must also make it distinct from the other options







# Additional Considerations

- ➔ Remove 300-level courses from analysis
- ➔ Explicate changes to EP.17.74
- ➔ Provide evidence (through literature review and peer institutions) the value of sustainability education
- ➔ Provide letters of support from faculty whose courses would be included





# Next Steps

- Submit proposal to Gen-Ed Board Policy wing for review on 3/19
- Resubmit the option proposal to college Deans
- Submit proposal to whole Gen-Ed Board
- Pass proposal through UC Senate committees
  - Educational Policy
  - Campus Operations
  - Senate Executive Committee
- Introduce final proposal to Senate floor





# Green Research Program

A focus on safe and sustainable research

Stephanie Hess, Director Division of Research Safety  
&

Jeremy Neighbors, Director of Safety & Compliance



# Green Research Committee Charge



Identify the best approach to green research that does not compromise safety..

- Charged by leadership in OVCRI, F&S, and ISEE.
- Chairs selected to highlight importance of maintaining safety.
- Diverse committee from multiple colleges/departments representing faculty, students, safety, and facilities.
- Propose a safe and practical green research program that:
  - is applicable to all research environments.
  - contributes to iCAP goals and commitment to sustainability.
  - establishes a process for “Green” status.



# Staffing and Support Framework



- 5-year pilot a partnership between OVCRI and F&S.
- Staffed by a Green Research Coordinator (GRC) and student workers reporting to F&S Associate Director for Sustainability.
- Continuous engagement with campus safety offices to ensure initiatives promote safety and environmental compliance.
- Supported by communications and IT staff, as well as volunteer Green Research Ambassadors from colleges, departments, and research groups.
- Primary duties of GRC will include:
  - liaison with stakeholders.
  - develop and deliver training and educational information.
  - track and communicate progress.



# Initiatives – Communication and Education



- Communications/marketing plan.
- Training curriculum that promotes safe implementation of research sustainability efforts.
- Transparency
  - success stories
  - metrics
  - recognition

Highlight the benefits of safe green research initiatives on successful research programs.



# Initiatives – Behavior



Hazardous waste  
at SMSF to be  
shipped

- **Reduce**, reuse, and recycle.
- Shut the sash, equipment timers, and other immediate changes that can be adopted.
- Promote assessment tools to help researchers identify areas of improvement.
  - Use in various research settings.
- Minimize barriers for participation.
  - Provide supplies and services to make participation easy.

Influencing behavior through education.

# Recognition



Recognition of contributions and innovative ideas will influence the success of a Green Research Program.

- Recognize outstanding colleges, departments, research groups through:
  - publication from various levels of campus.
  - monthly and annual events.
  - plaques and certificates.
- Green lab certification is a long-term goal.



# Advisory Board



Educational materials, initiatives, pilot programs, and metrics are to be reviewed by an advisory board consisting of:

- Faculty
- Campus-level safety
- Staff
- Students

Program components must be realistic and not put the University at RISK.

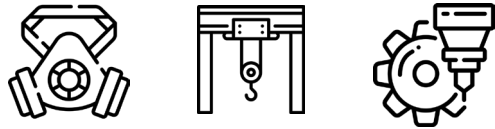


# Questions:



## Safety & Compliance

Jeremy Neighbors  
217-265-6084  
Jneighbo@illinois.edu



OSHS@illinois.edu

## Division of Research Safety

Stephanie Hess  
217-244-1360  
Sthess@illinois.edu

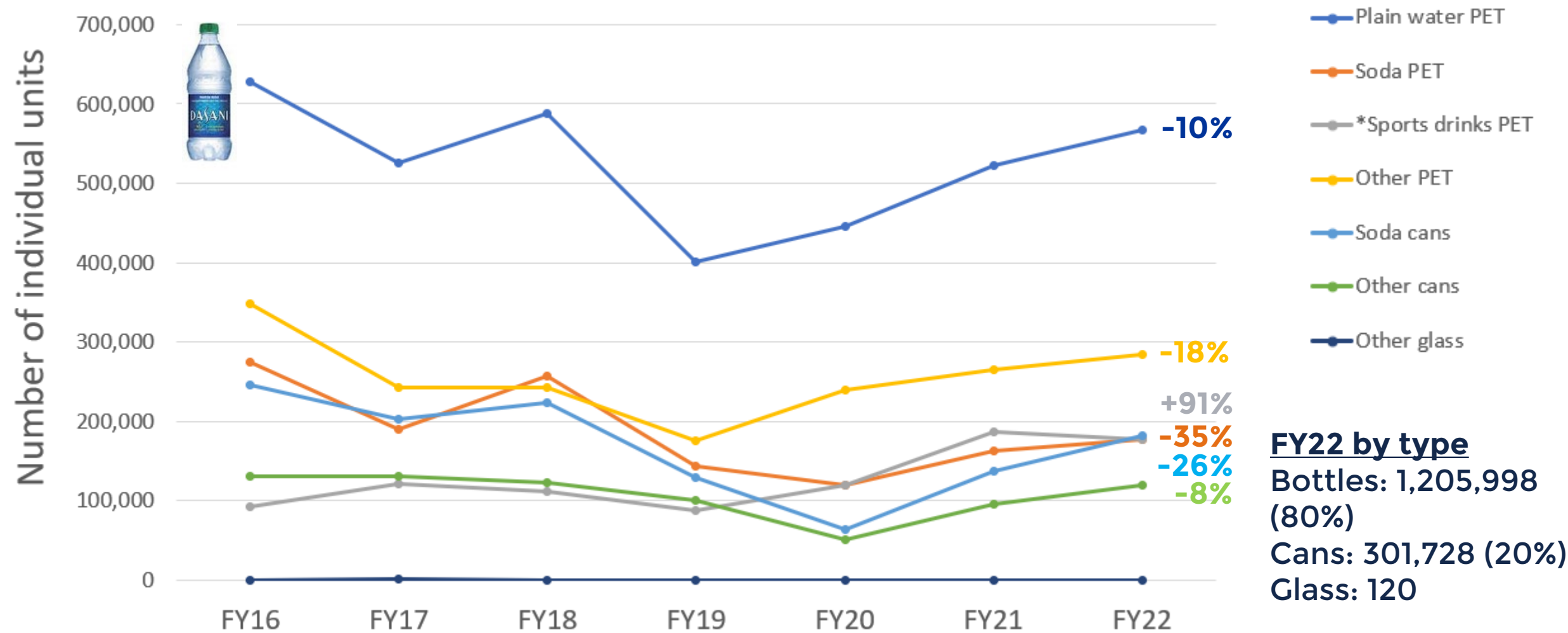


DRS@illinois.edu



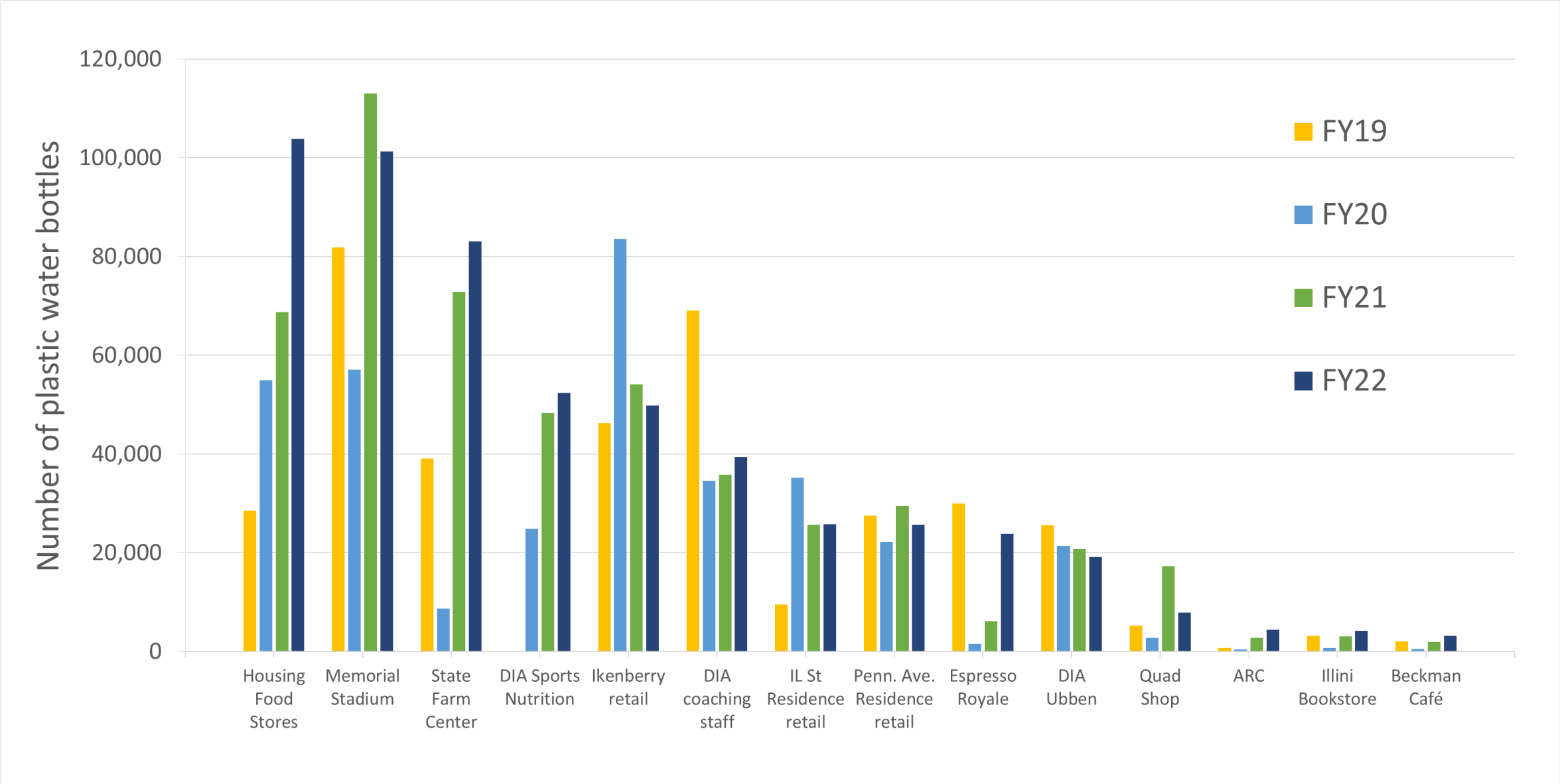
# Single-Use Plastic Reduction Efforts

# Continuing high demand for plastic bottled water





# Bottled water patterns driven by athletics, catering, and dining retail





# Plastic Waste Reduction Challenge for Athletics

- Lack of recycling infrastructure
  - Recycling bins at SFC, Memorial Stadium, football tailgate areas
- Need for clear communication and consistent application of new water bottle policy
  - Clear internal communication and external messaging to encourage use of reusable water bottles and recently added hydration stations
- Need for more DIA-led, front-facing programs that promote sustainability at athletic events



**I** College of Agricultural,  
Consumer &  
Environmental Sciences  
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN  
**SUSTAINABILITY & RECYCLING  
PROGRAM**



# Lack of infrastructure limits collection

- DIA, SFC, and Auxiliaries support purchasing 3-stream recycling bins for State Farm Center upper concourse (ZW011) but lack funding (\$40K).
  - Tailgate areas have 0 recycling bins
- 
- ☐ Propose buying inexpensive bins + covers for State Farm Center
    - ☐ Waiting for bin estimate
    - ☐ \$1100 for covers
  - ☐ Propose buying covers or painting 50% of existing barrels in lot 31
    - ☐ \$650 to cover 100+ barrels
    - ☐ Waiting for painting estimate







# Increased collection possible but requires education and outreach

- First Tailgate Recycling events, F&S-led
  - Sept 23: 1000 lb of waste diverted (3%)
  - Nov 11: 380 lb of waste diverted (1%)
- Bags are less convenient than bins; expectations unclear
- Many schools diverting 45-95%
- ☐ Staff/volunteers to assist with education and outreach to promote proper sorting methods
- ☐ Signage, announcements at events
- ☐ Sorting waste left in SFC arena or Memorial Stadium stands



Tailgate Recycling at Memorial Stadium



Recycling infrastructure at University of MI tailgate



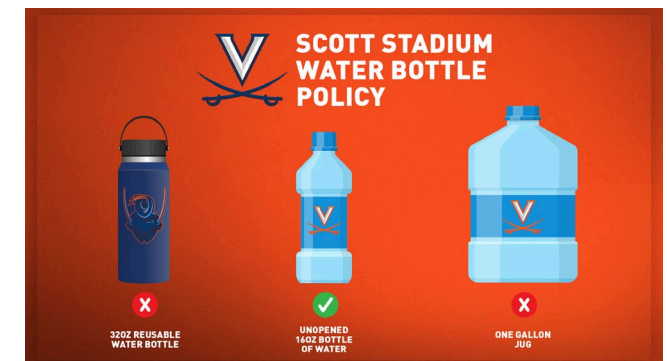


# Clear internal/external communication needed on water bottle policy

- Inconsistent, inconspicuous messaging
  - ❑ DIA is developing more consistent, clear messaging to encourage spectators to bring reusable water bottles
    - ❑ Infographics, social media, signage at facilities, videos, announcements
  - ❑ Continue educating staff about policy allowing reusable water bottles into facilities
  - ❑ Consistency across events, e.g., non-athletic events at SFC



Memorial Stadium



Examples of signage at other stadiums





# Plastic Waste Reduction Challenge for Catering

- Significant post-COVID increase in bottled water sales volume, partly driven by COVID response but also more catering business.
- ☐ Encourage event attendees to bring reusable water bottles
- ☐ Provide mobile drinking water refilling stations at outdoor events
- ☐ Do not offer disposable bottles



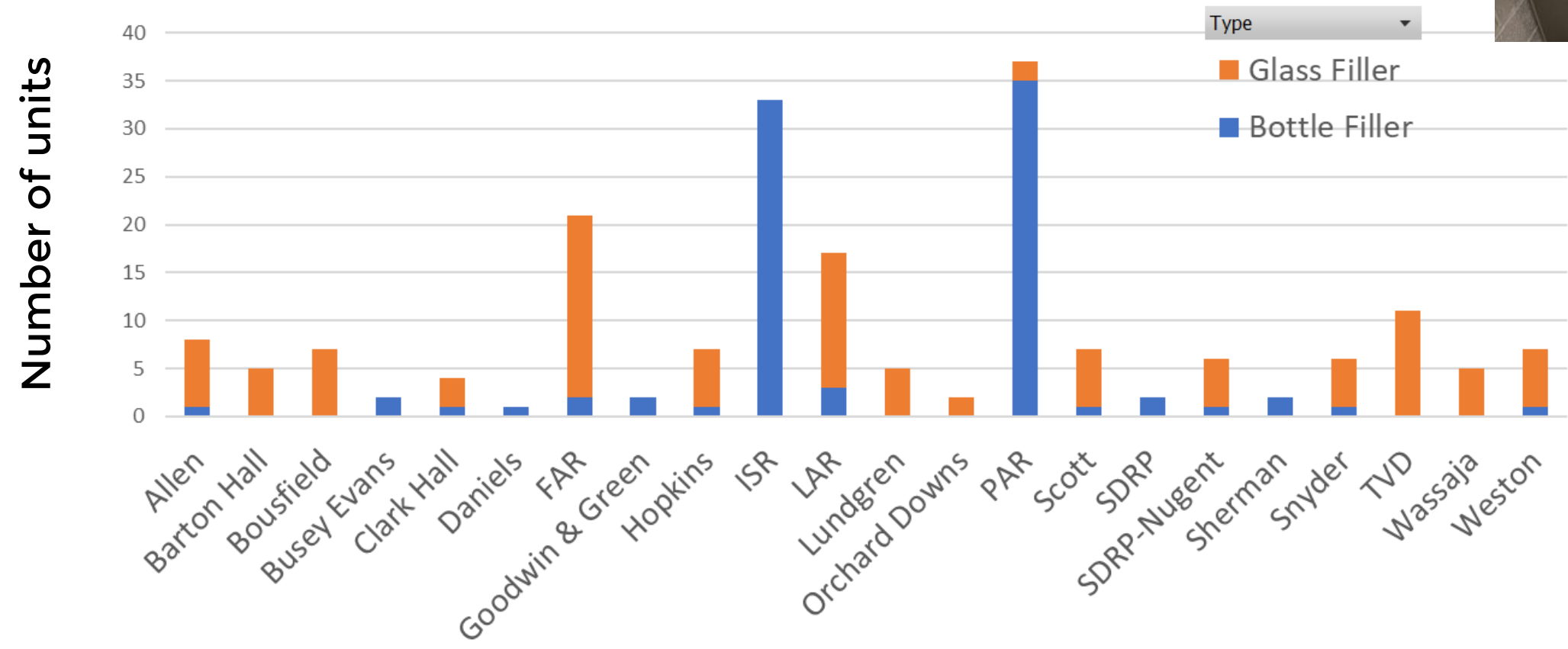


# Plastic Waste Reduction Challenge for Housing

- Good recycling infrastructure and access to glass fillers, but lack of bottle fillers
- Concerns about water safety
  - Survey data
  - Water quality testing



# Most residence halls have glass filler with spigot







# Beliefs about drinking water: Freshman Survey

- 91% of respondents report they prefer enhanced hydration stations (bottle fillers)




Basic



Enhanced

- Factors that would encourage greater use of reusable water bottles:
  - 25% said more conveniently located hydration stations (enhanced or basic)
  - 23% said more conveniently located hydration stations (enhanced only)
  - 22% said assurance of tap water safety

# Concerns about drinking water: Freshman Parents on Facebook


 **Ryan Salzwedel**  
August 16 · 🌐

Havn't seen this asked...are there filtered water bottle fill stations in the dorms? Wassaja Hall (or around) specifically? (Water bottle shopping today)


12 comments

Like Comment Send


Top comments ▼

 **Michelle Kassulat Sprague**  
I was shocked that Hopkins has old fashioned-not bottle filler water fountains! I mean for what we pay for her to live in that old dorm swapping out the water fountains should be easy enough to do!!


13w Like Reply 3

 **Rania Golemis**  
**Michelle Kassulat Sprague** 2nd floor definitely has them. What floor is your kid on?


13w Like Reply

 **Michelle Kassulat Sprague**  
**Rania Golemis** really? That's the floor she's on! I guess we needed to walk all around-we found one old gross one & stopped!


13w Like Reply 🤔

 **Rania Golemis**  
Yeah, we saw two on the side my son is on. He's on the lower 200's side. There's one right by the elevator. (But you're right, the water fountains themselves are pretty ancient)


13w Like Reply Edited


 **Teresa Montemayor Bazan**  
I can speak to Wassaja from personal experience, but DD has one a couple of doors down from her room in Babcock (PAR). I would hope that is a fairly standard amenity in all the forms.

13w Like Reply 1


 **Rania Golemis**  
Hopkins has water fountains with water bottle spout (or whatever it's called) but I don't think it's filtered. We got a small, 5 cup Brita for the fridge

13w Like Reply 1

 **Melissa Holder**  
Found the map.



13w Like Reply 3

 **Mary Mitsdarfer Lenehan**  
**Melissa Holder** [https://sustainability.illinois.edu/.../AP\\_0016...](https://sustainability.illinois.edu/.../AP_0016...)  
I couldn't read your pic but thanks for this!

13w Like Reply



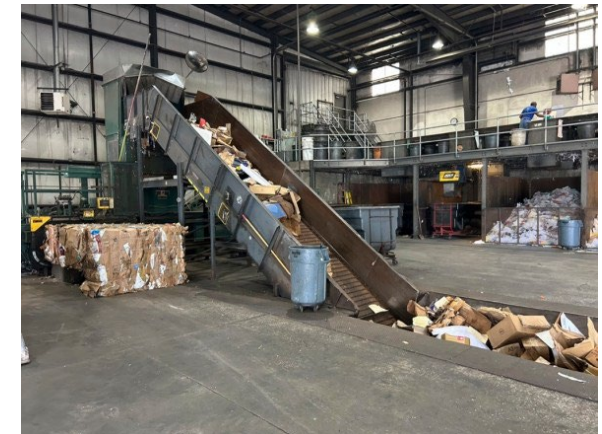
# Water Safety

- The university monitors water quality daily at five metered feeds and at eight points within the campus distribution system, and not at individual buildings
  - Nearly all enhanced hydration stations lack filters
  - Tap water meets EPA regulations but limited testing at individual buildings
- 
- ☐ Consider water testing in residence halls to support decision-making on filters, inform messaging campaign
    - ☐ CEE 449 – Environmental Engineering Lab
  - ☐ Phase out basic hydration stations over time and replace with enhanced stations



# F&S continues to promote waste reduction

- Education and awareness
  - Recycling video
  - Tours of waste management facilities
  - Class presentations
- Research programs
  - Seed funding to develop a sort-line using an AI model and near infrared spectroscopy
- Waste audit (SSC funded)
  - 2023 update to assess waste and identify opportunities for waste reduction
- New and improved baler for recycling







# Discussion and takeaways

## Recycling

- Inexpensive bins + covers for SFC, covers (or paint) for barrels in tailgate lots
- Sort waste left in seating areas at SFC, Memorial
- Education and outreach to promote recycling



## Reusable Water Bottles

- Clear, consistent signage and messaging on reusable water bottle policy
- Consistent application of water bottle policy by event staff
- Consider replacing glass fillers and water quality testing in residence halls



# Recent developments regarding plastic waste and bottled water

- New York Attorney General filed a lawsuit against PepsiCo in Nov 2023 for “endangering the environment and misleading the public about its goals to eliminate single-use plastic in its packaging.”
- A successful lawsuit could compel companies to provide financing for plastic cleanup and collection.
- Coca-Cola has consistently produced more plastic waste than PepsiCo.
- Potential implications for future contract with Coke.



# Carbon Credit Sales



# Some history

UIUC committed to reach *net-zero GHG emissions by 2050* when Chancellor Richard Herman signed the American College and University Presidents' Climate Commitment (ACUPCC)

Since 2008, *campus reduced carbon emissions by 43%.*

Reductions have been achieved through energy conservation efforts, led by F&S, and renewable energy.

- Energy conservation examples:
  - Retrocommissioning, recommissioning, and deferred maintenance
  - Energy performance contract
  - Heat recovery chillers
- Renewable energy examples:
  - Two solar farms and rooftop solar installations
  - Wind power purchase
  - Biomass boiler
  - Geothermal installations

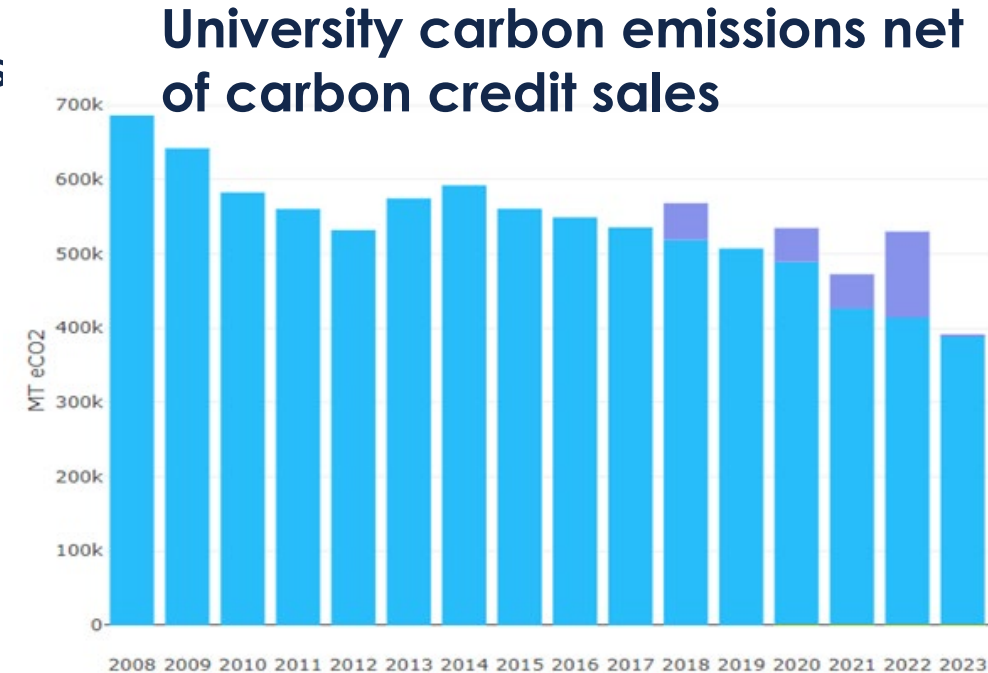
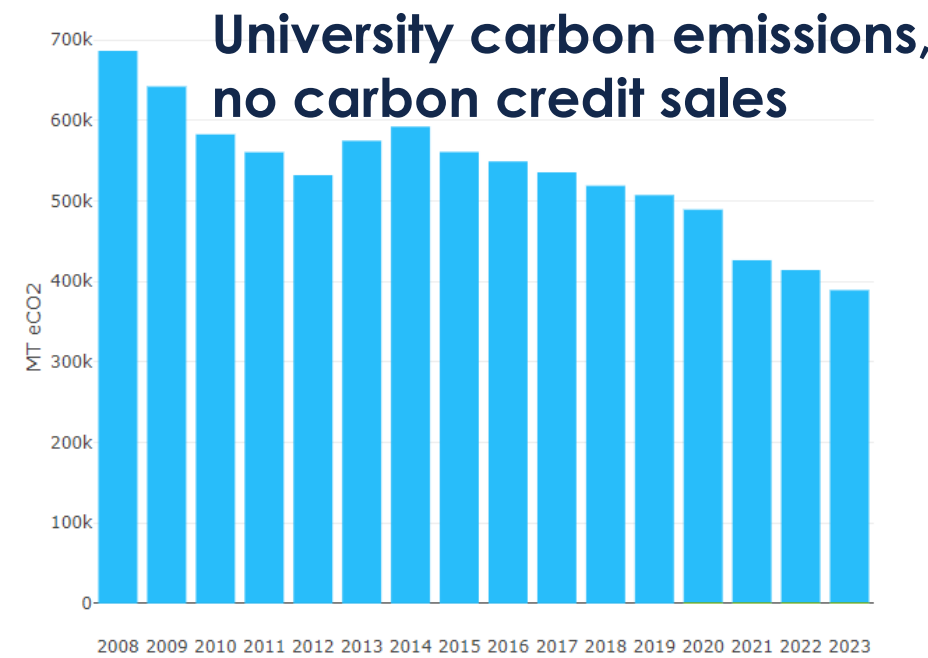






# Carbon accounting

- Our emissions reductions generate *carbon credits*, which can be sold to third-party buyers.
- UIUC's first sale of carbon credits was in 2015 to Chevrolet, which retired the credits on behalf of the environment.
- The Carbon Credit Purchasing Program (C2P2) was then formed by Second Nature with investment from Chevrolet.
  - C2P2 offers multiple benefits for universities
  - UIUC contracted with C2P2 from 2018 to 2023.
  - UIUC sold over *500,000 carbon credits* for a value over of over *\$3M* from 2015 to 2023.
  - Funded projects for innovation in clean energy and energy efficiency, including the biomass boiler, anaerobic digester to compost food waste, mini agrivoltaics system, and others





# Concerns about selling carbon credits

- It dilutes our iCAP goal to achieve carbon neutrality on campus and lower planetary emissions by a corresponding amount
  - If entity purchasing our credits chooses to:
    - either increase its own emissions or not reduce its emissions as much as it might otherwise
    - claim it is also meeting net zero emissions goals - implying double counting of emissions reductions
  - could lead to claims that we are engaging in greenwashing
- Sale of carbon credits could be appropriate if
  - the purchaser agrees to retire those credits and not claim it to achieve its own carbon mitigation goals
    - unclear if a binding contract could be negotiated and enforced
    - if we do not claim it as emissions reductions to achieve our carbon neutrality goals
  - Purchase offsets at a lower price than the one we sell our credits for
    - Challenge of proving the offsets are additional



# Carbon credit sale by other campuses

Other Big Ten schools do not appear to be selling carbon credits generated through their emissions reductions.

- University of Indiana at Bloomington specifically committed in its Climate Action Plan to pay for emissions reduction activities through university funds, *not* through carbon credit sales.

The two other universities participating in C2P2 are Ball State University and University of Wisconsin-Milwaukee.

- Ball State states it will stop selling carbon credits once the campus achieves carbon neutrality.



# Implications of sales of carbon credits

- Reputational: Loss of claim of benefiting the climate immediately vs after we achieve carbon neutrality; potential risk of greenwashing
- Revenue to finance innovative sustainability projects on campus that could be invested more aggressively and to purchase cheaper offsets to speed up reaching our goal of achieving carbon neutrality
- Minor impact on our AASHE Gold star rating
  - Current score is 73.25 (gold rating range 65-85)
  - GHG emissions score is 3.15/8
- Current contract for carbon credit sales with Second Nature has ended in 2023- will need to explore avenues for verifying and selling carbon credits
  - Based on feedback from Second Nature, a new contract would require a clearly defined emissions reduction project beyond ongoing energy conservation measures





# Potential Next Steps

- Conduct a deeper analysis
  - of the potential financial implications and contractual ramifications of future sales
  - costs of achieving carbon neutrality
  - identify potential emissions reductions projects that could generate carbon credits (e.g. geothermal energy)
  - extent to which carbon reduction is feasible and ways to accelerate using potential carbon credit sales revenues
  - role for carbon credit sales and offset purchases for timing of carbon neutrality
- Explore potential avenues for contractors that will purchase carbon credits, costs of verification, carbon prices

# Discussion



THANK YOU!



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