

UMCES - UMD - SU
PLASTIC STRAW REDUCTION
COLLABORATION EFFORTS
A SYSTEM-NESS APPROACH
12.4.2018



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USM SYSTEM-WIDE SUSTAINABILITY SUMMIT
December 4th, 2018



- Introductions
- A “**system-ness**” approach
- Efforts around UMCES
- Efforts at SU
- Efforts at UMD
- Questions

Image source: Plastic Pollution Coalition
www.plasticpollutioncoalition.org
(11/11/2015)

AGENDA



Helen Bailey

Associate Research Professor, UMCES

Helen Bailey mainly studies protected species in order to understand their movements and habitat use, and inform conservation and management. She has published 50 journal articles, **specializing in marine mammals and sea turtles**. She received her B.A. (Hons) in Biological Sciences from the University of Oxford, UK, and her M.Sc. in Oceanography from the University of Southampton, UK. Dr. Bailey was awarded her Ph.D. at the University of Aberdeen (UK) for her work on the habitat use of bottlenose dolphins. She subsequently studied the underwater sound levels and environmental impacts of offshore wind turbines on marine mammals. Dr. Bailey then received a National Research Council postdoctoral award to study migration pathways and hot spots of marine predators at the National Oceanic and Atmospheric Administration (NOAA) as part of the Census of Marine Life's Tagging of Pacific Predators project. She joined the University of Maryland Center for Environmental Science in 2010 where her research focuses on studying movement ecology, patterns of habitat use and behavior of marine species, and its application to management and conservation.

Current Projects:

- Dolphin Watch – Dolphins in the Chesapeake Bay
- Passive acoustic monitoring of marine mammals in MD Wind Energy Area
- The Lost Years: Leatherback turtle hatchling dispersal and movements



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Wayne Shelton

Director, Campus Sustainability & Environmental Safety, SU

Mr. Wayne Shelton directs Salisbury University's Sustainability and Environmental Safety Programs. He coordinates **SU's Climate Action Plan** and institutional **green house gas reduction efforts** among other programs. His most recent project was being in charge of installing the 541.8 kW DC **solar parking canopy system** comprised of 1,548 modules that will produce 765,100 kilowatt hours of electricity annually and provide electricity to three campus buildings. The system is expected to provide the equivalent of 100 percent of the electricity needed to power the combined annual operation of three SU residence halls: Manokin, Pocomoke and Wicomico.

Mr. Shelton has been actively engaged with many SU students and student organizations on trying to **minimize the single use plastic product usage at SU** through many different programs promoting sustainability.

Mr. Shelton also teaches laboratory courses on Introductory Chemistry through SU Henson School of Science and Technology.

Current Projects:

- Solar Parking Canopy at College Avenue
- Single-use Plastic Reduction Efforts at SU
- SU Bike Share Program



After graduating with her Master of Public Health degree in Spring, 2012 from the Maryland Institute of Applied Environmental Health, Ms. Allison Tjaden joined the UMD Dining Services team full-time. She coordinates the UMD's **Green Dining Program** – through which she spearheads projects that help connect Terps with their food such as the **Terp Farm**, **Farmers Market at Maryland**, and **UMD Campus Pantry**. She coordinates the Sustainable Food Commitment and helped UMD Dining Services achieve its goal of sourcing 20% sustainable food by 2020 well-ahead of schedule.

Waste reduction and recycling are core features of the Green Dining Program and include student-led food recovery, composting, and more. Ms. Tjaden has been actively engaged with many UMD students and student organizations on **minimizing single use plastic product usage at UMD Dining Services**.

Ms. Tjaden also teaches course on **Urban Agriculture**: Designing and Assessing Edible Landscapes through UMD School Plant Science and Landscape Agriculture.

Current Projects:

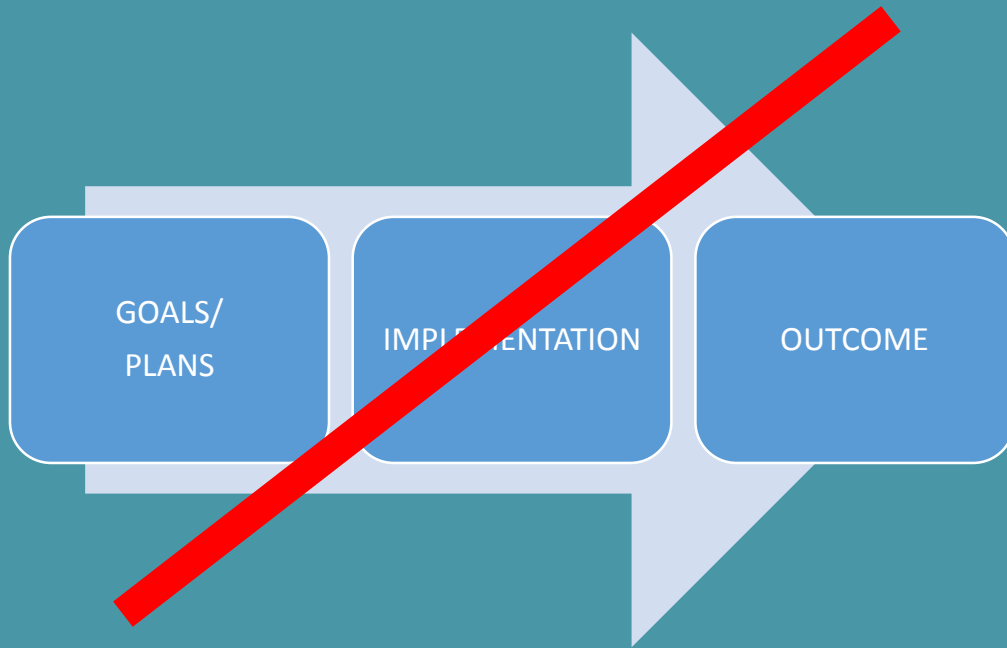
- UMD Green Dining Program
- Single-use Plastic Reduction Efforts at UMD Dining Services
- Menus of Change University Research Collaborative

Allison Tjaden

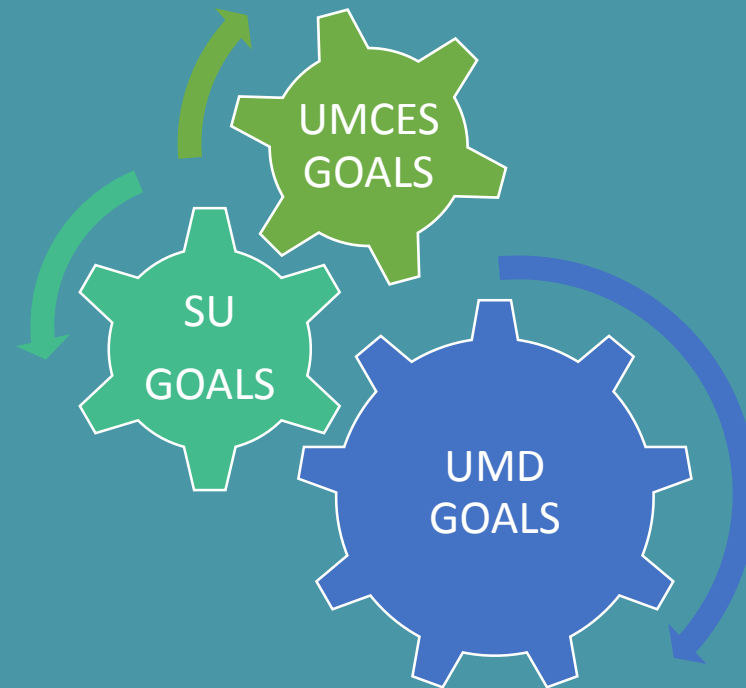
Assistant Director for New Initiatives - Dining Services, UMD

THE PROCESS

NON-LINEAR



COLLABORATIVE

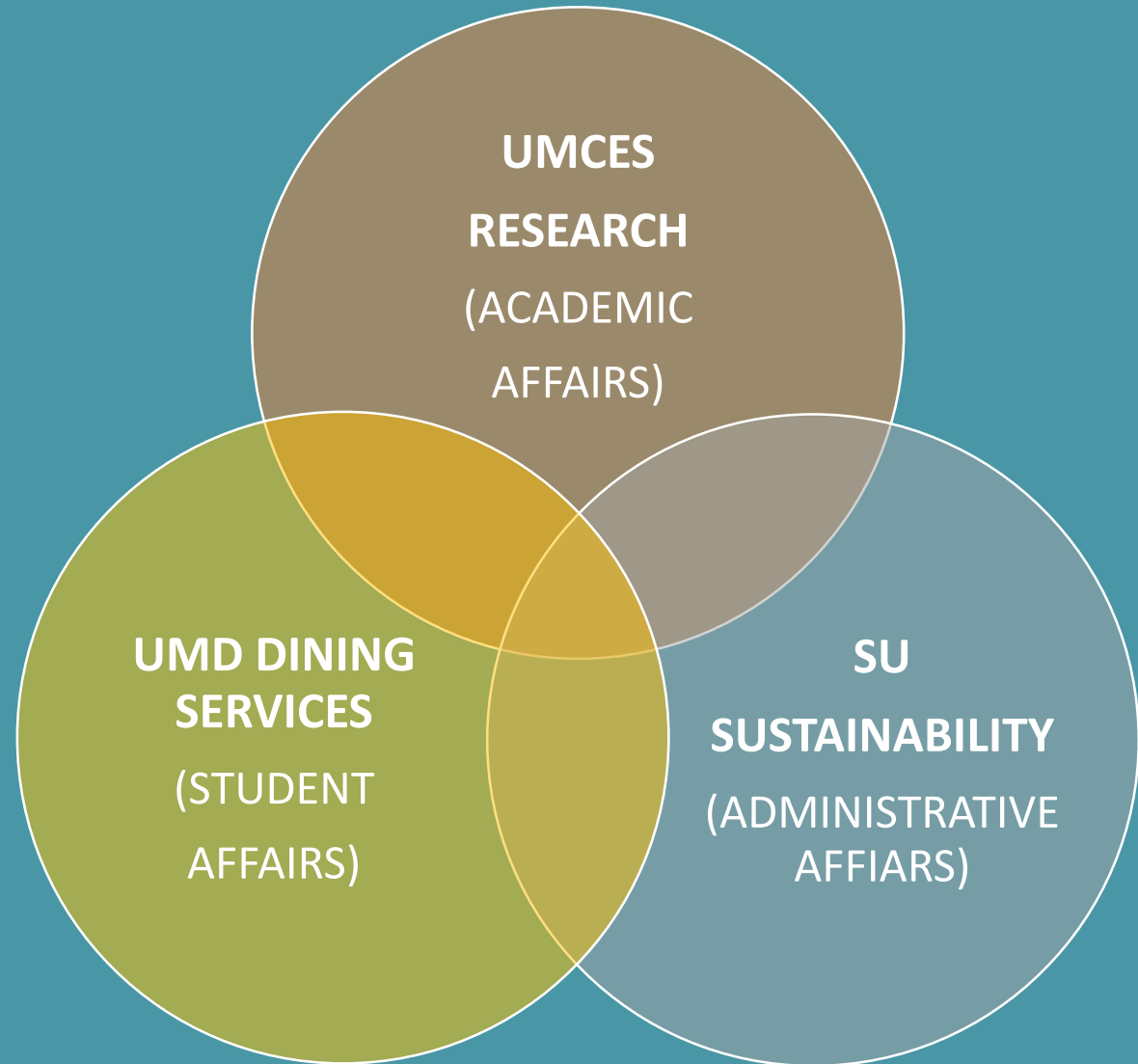


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PLASTIC STRAW REDUCTION COLLABORATION
A **System-ness** Approach

THE PROCESS

*Collaboration between UMCES
faculty expertise on marine
impact of single use plastic
pollution & application in
settings of combined student
population of approximately
50,000+ between UMD and SU
Dining Services*



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THE PROCESS:

Harnessing Team Science Approach

- COMMUNICATION
- LOGISTICS
- DATA / INFORMATION
- IDEAS
- COLLABORATION
- COST IMPLICATIONS
- TIMELINE / SCHEDULE
- PUBLICATIONS / REPORTS



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PLASTIC REDUCTION EFFORTS AROUND UMCES



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PLASTICWATCH



Helen Bailey

Nicole Barbour, Carys Mitchelmore, Michael Gonsior, Sarah Brzezinski, and Jeane Wharton

Acknowledgements

- Thank you to Kimberly Hernandez for providing help and support for this project.
- The PlasticWatch project is funded by the Maryland Department of Natural Resources Coastal Zone Management Program through the Coastal Zone Management Act of 1972, as amended, administered by the Office for Coastal Management, National Oceanic and Atmospheric Administration.



Outline

- Motivation
- Approach
- Current progress
- Next steps



PLASTICWATCH



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PLASTIC STRAW REDUCTION COLLABORATION
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The Leatherback Trust

"A gentle book of subtle magic, this poetic little story is a fine way to introduce young minds to the ocean world and our role in it."
—Dr. Carl Safina, author of *Voyage of the Turtle* and *Beyond Words: What Animals Think and Feel*

"Simple, mysterious leatherback turtles are among the most beloved ocean creatures. In *The Grande Turtle Adventure*, readers will find themselves charmed and entertained, but also deeply educated. Now, more than ever, these magnificent turtles need our help."
—Susan Casey, author of *Voices in the Ocean: A Journey Into the Wild and Haunting World of Dolphins*

"Stories of epic explorations light up a child's brain with empathy, imagination, and wonder and stay with us as guides all our life. The great adventures of two sea turtles named Tica and Tico take readers on a deep dive and do serious good for the oceans too."
—Dr. Wallace J. Nichols, author of *Rise Mind*

"The Grand Turtle Adventure highlights in telling details the life cycle of the critically endangered leatherback sea turtles and the many threats they face on land and sea. Bringing forth 25 years of research, The Leatherback

"Un agradable libro de seis cuentos, esta pequeña historia poética es una hermosa manera de introducir a los más pequeños en el mundo del océano y nuestro rol en relación a él."
—Dr. Carl Safina, autor de *Voyage of the Turtle* y de *Beyond Words: What Animals Think and Feel*

"Entre las criaturas preferidas del océano se encuentran los nobles y misteriosos tortugos baulas. En *La Grande de las Aventuras de las Tortugas Baulas* se a cautivar y entretener a los lectores, pero también les va a enseñar mucho. Ahora, más que nunca, estas magníficas tortugas necesitan de nuestra ayuda."
—Susan Casey, autora de *Voices in the Ocean: A Journey Into the Wild y de Haunting World of Dolphins*

"Las relatos de exploraciones épicas fundamentan en el corazón infantil la empatía, la imaginación y el asombro, que perduran por los siglos durante toda la vida. Las fabulosas aventuras de dos tortugas marinas llamadas Tica y Laurita, sirven a los lectores a una experiencia profunda, también en su favor de los océanos."
—Dr. Wallace J. Nichols, autor de *Rise Mind*

"Las aventuras de las tortugas baulas revelan los detalles del ciclo de vida de las tortugas baulas en peligro crítico de extinción y las muchas amenazas que enfrentan en mar y tierra. Es un gran mérito de la Fundación para la Conservación de la Tortuga Baula

It's a big ocean for two baby leatherback turtles! Join Laurie and Tica on their adventure as they search for food together and try to find their way home. Will they make it?

100% of the proceeds from the sale of this book will support sea turtle research and conservation through The Leatherback Trust www.leatherback.org

Acompaña a las tortuguitas Tica y Laurita en sus aventuras para alimentarse y para encontrar el camino de regreso a casa en medio del vasto océano. ¿Lo lograrán?

La totalidad de las ganancias obtenidas con la venta de este libro serán destinadas al patrocinio de investigaciones sobre tortugas marinas y su rescate, a través de The Leatherback Trust www.leatherback.org/es

THE GRANDE TURTLE ADVENTURE

BAILEY/SHILLINGER/DORSEY/CHAN-FON KUNG



How you can help:

- 1) Reduce, re-use, recycle. Plastic and other trash can hurt turtles because they think it is food. Try to reduce the amount of plastic you use, re-use shopping bags, and recycle any waste.
- 2) Skip the straw! Try not to use plastic straws or utensils because sea animals can get injured by choking on them.
- 3) Clean up your beach. Pick up any trash on the beach.
- 4) Avoid releasing balloons into the air. Once deflated, they can end up in the ocean. Turtles can get hurt eating balloons or become tangled in the strings.
- 5) Turn out lights and close curtains near the beach. Lights can confuse nesting turtles and hatchlings.
- 6) Tell your friends what you have learned about turtles and how to protect them.

Sea turtles



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Impact on marine life



2015:

https://www.youtube.com/watch?time_continue=486&v=4wH878t78bw

2014: Sei whale died from a broken piece of a DVD case and stranded in St. Julien's Creek, off the Elizabeth River, a tributary of the Chesapeake Bay



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From Land to Ocean

Plastics are the most common form of marine debris. They can come from a variety of land- and ocean-based **SOURCES**, **ENTER THE WATER** in many ways, and **IMPACT** the ocean and Great Lakes. Once in the water, plastic debris never fully biodegrades.

COMMONLY FOUND PLASTICS



HOW TO HELP?



PLASTICS IN THE OCEAN



<https://marinedebris.noaa.gov/>



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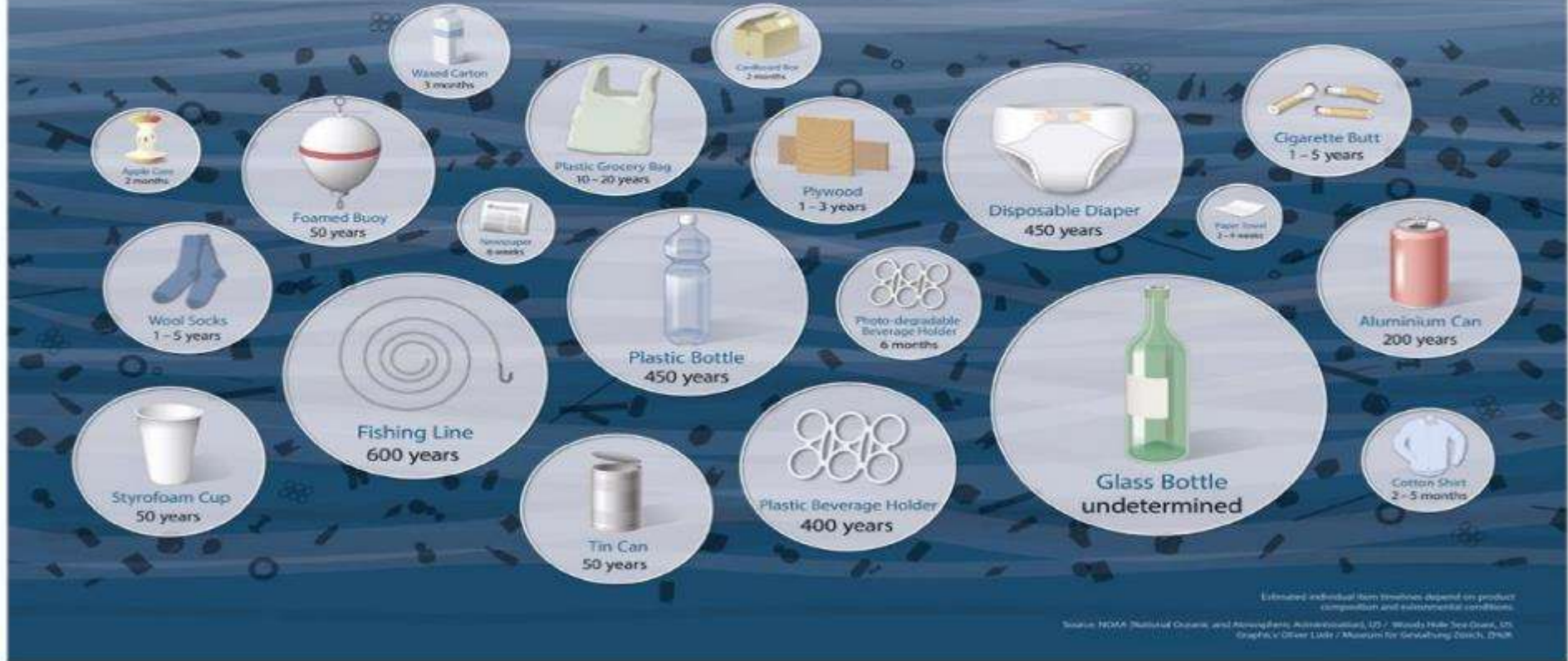


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HOW LONG UNTIL IT'S GONE?

Estimated decomposition rates of common marine debris items



Degradation



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“I have sensitive teeth and need a straw”

“I forgot to ask the waitress for no straw”

“I feel uncomfortable bringing my own straw to a restaurant”

“I asked for no straw, but the waiter still brought me one”

Behavior Change is Difficult!

“I am afraid I will spill my drink if I don’t have a straw”

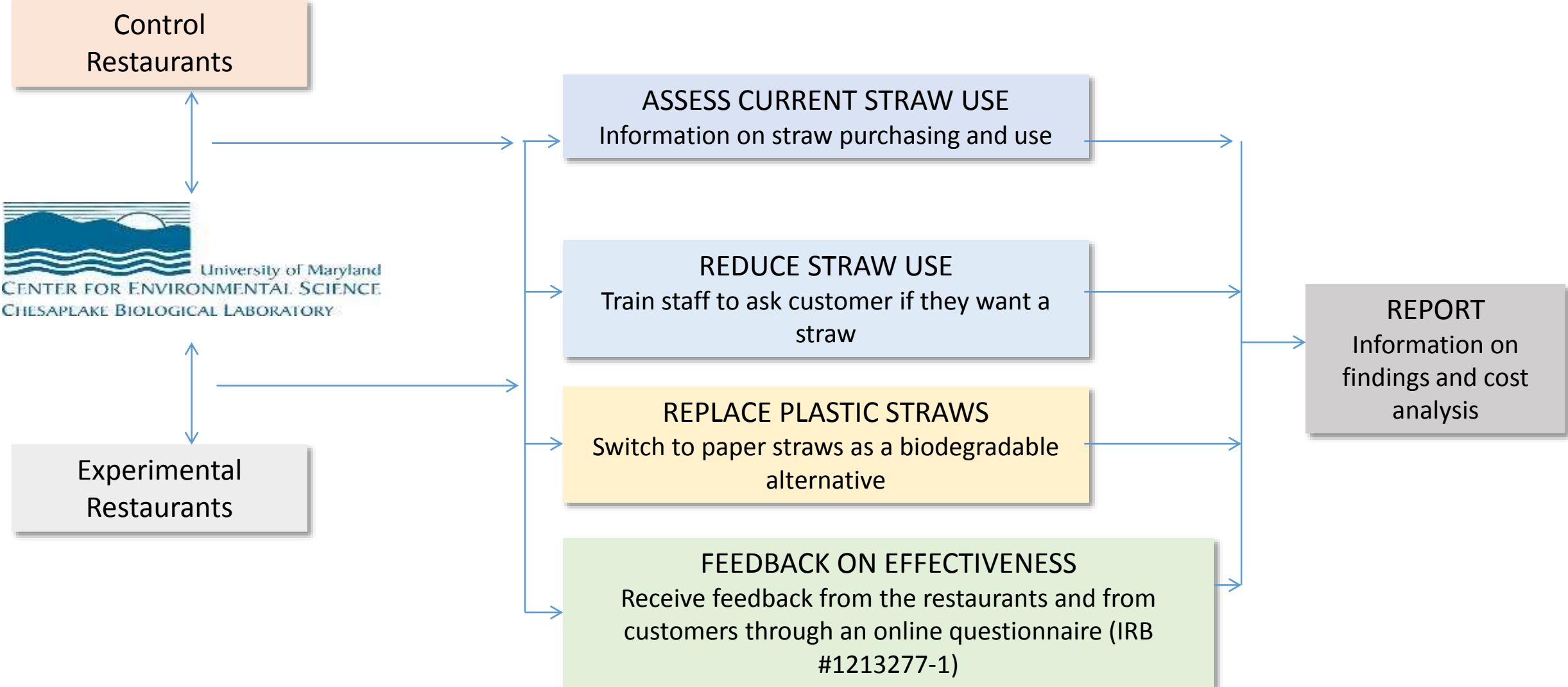
“I forgot to bring my reusable straw”

“When they put ice in the cup then I need a straw”

“I don’t think you can clean a reusable straw properly”



Study Approach



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Participating restaurants

Experimental

1. CD Cafe



2. Lotus Kitchen



3. The Pier



Control

Kingfishers



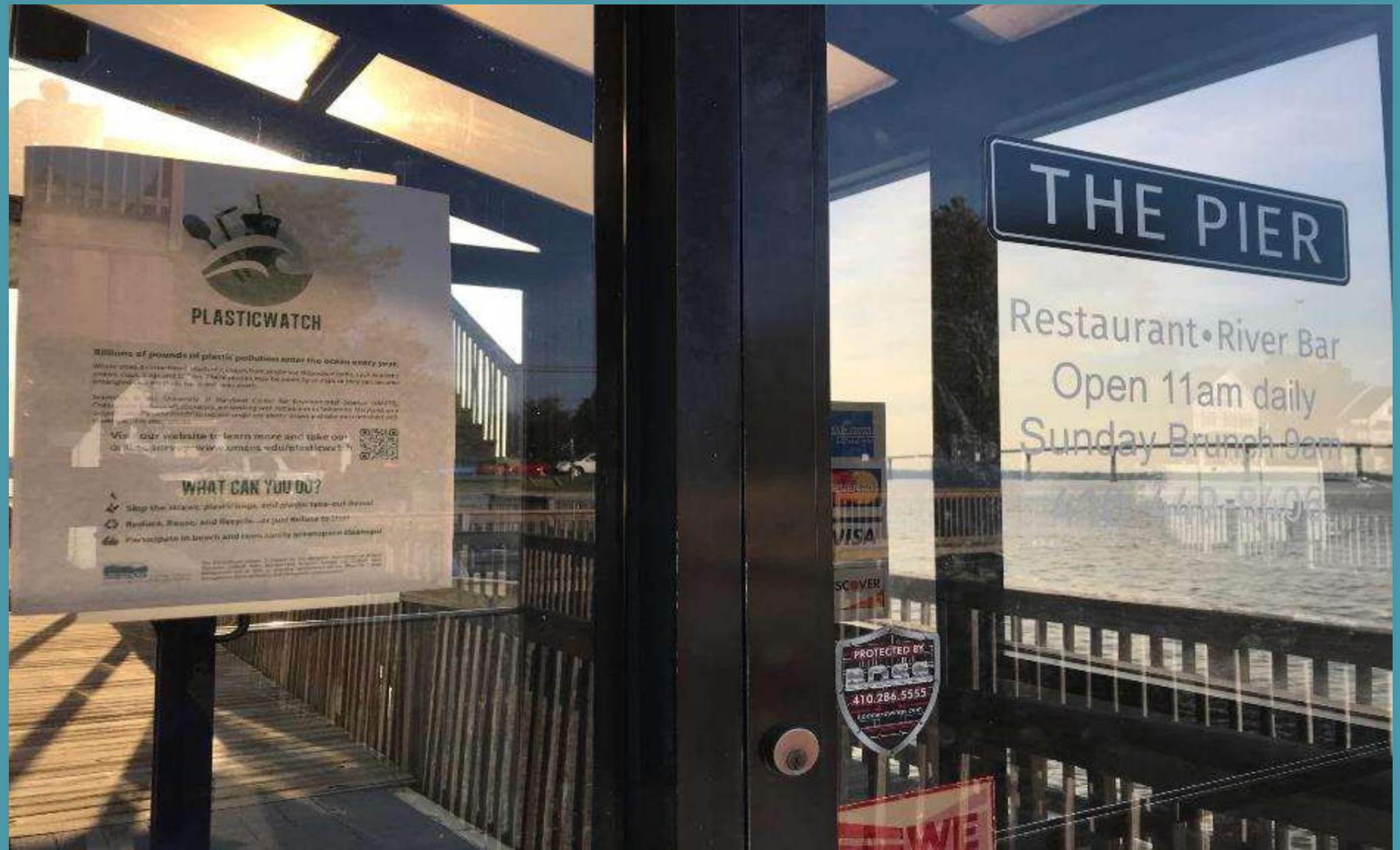
Island Hideaway



Ruddy Duck



The Pier restaurant



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CD Cafe



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Current Progress

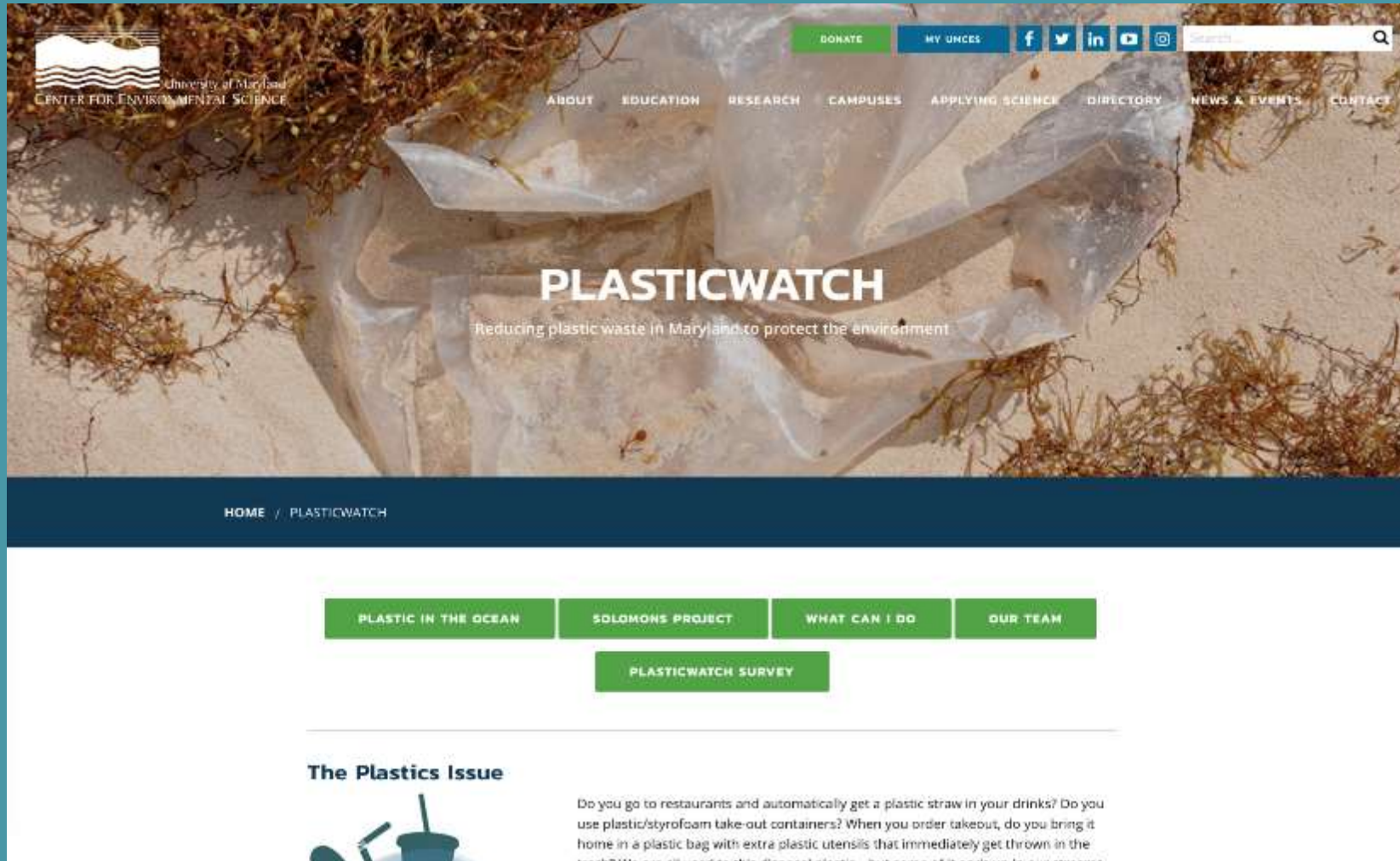
- Interviewed the restaurants, obtained current information on their straw and take-out container use and needs.
- Have supplied the experimental restaurants with paper straws and posters describing why they are switching from plastic.
- Working with restaurants on encouraging staff to only provide a straw upon request.
- Created website and questionnaire at:
www.umces.edu/plasticwatch
- Creating educational outdoor signage to be installed on Solomons boardwalk.



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PlasticWatch website



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Restaurant Comments

- “Asking customers if they want a straw dramatically reduced our straw use”
- “We created a stamp card so if customers refuse a straw a certain number of times they get a free drink. We really want to do what we can!”
- “We looked into paper straws in the past, but didn’t switch because of the extra cost. We are really interested in the findings of this study”



Challenges

- Recent publicity about plastic straws has led to rapid increase in demand. Production has struggled to keep up and the American supplier Aardvark straws currently has a 5-month delivery time.
- Take-out containers tend to have a lining so not solely paper/cardboard.
- Calvert County does not have an industrial composting facility, which is necessary for the plant-based plastic products to degrade.



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PLASTIC REDUCTION
EFFORTS AT SU:



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SU Dining Services Profile

- 8700 students
- Main dining hall
- 9 Satellite (retail) locations
 - 3 national brands
 - 1 regional brand
 - 5 SU brands



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SU Dining Services Initiatives

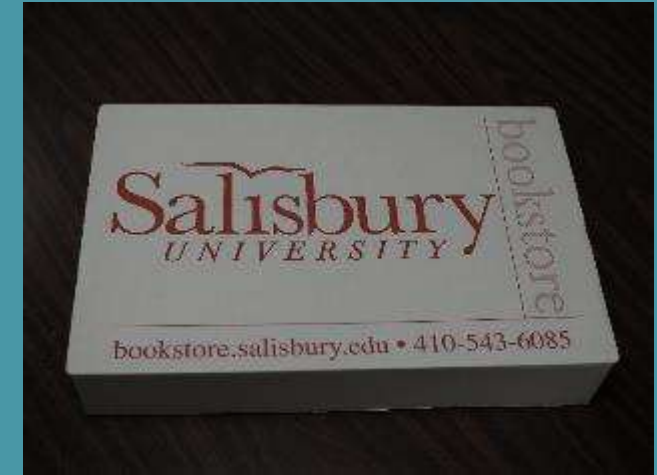
- FY12 food waste composting
- FY13 Mug refill discount at retail locations
- FY14 rooftop herb garden
- FY17 dining hall goes trayless
- FY19 paper straws in SU branded retail location



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Bookstore Initiatives

- Discount for bringing reusable bags
- Textbooks in recyclable cardboard boxes
- Plastic bag use down 50% over last 2 years
- Graduation gowns made from recycled plastic bottles



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Student – Faculty Initiatives

- FY16 Green Fund sponsored purchase of sporks for retail locations
- FY19 Green Fund sponsored stainless straws, brushes for retail locations
- FY19 Housing recycling initiative



Student – Faculty Initiatives

- FY18 Environmental Studies class performs a waste audit of residence hall trash
- FY19 Zero waste initiative for the National Folk Festival in Salisbury



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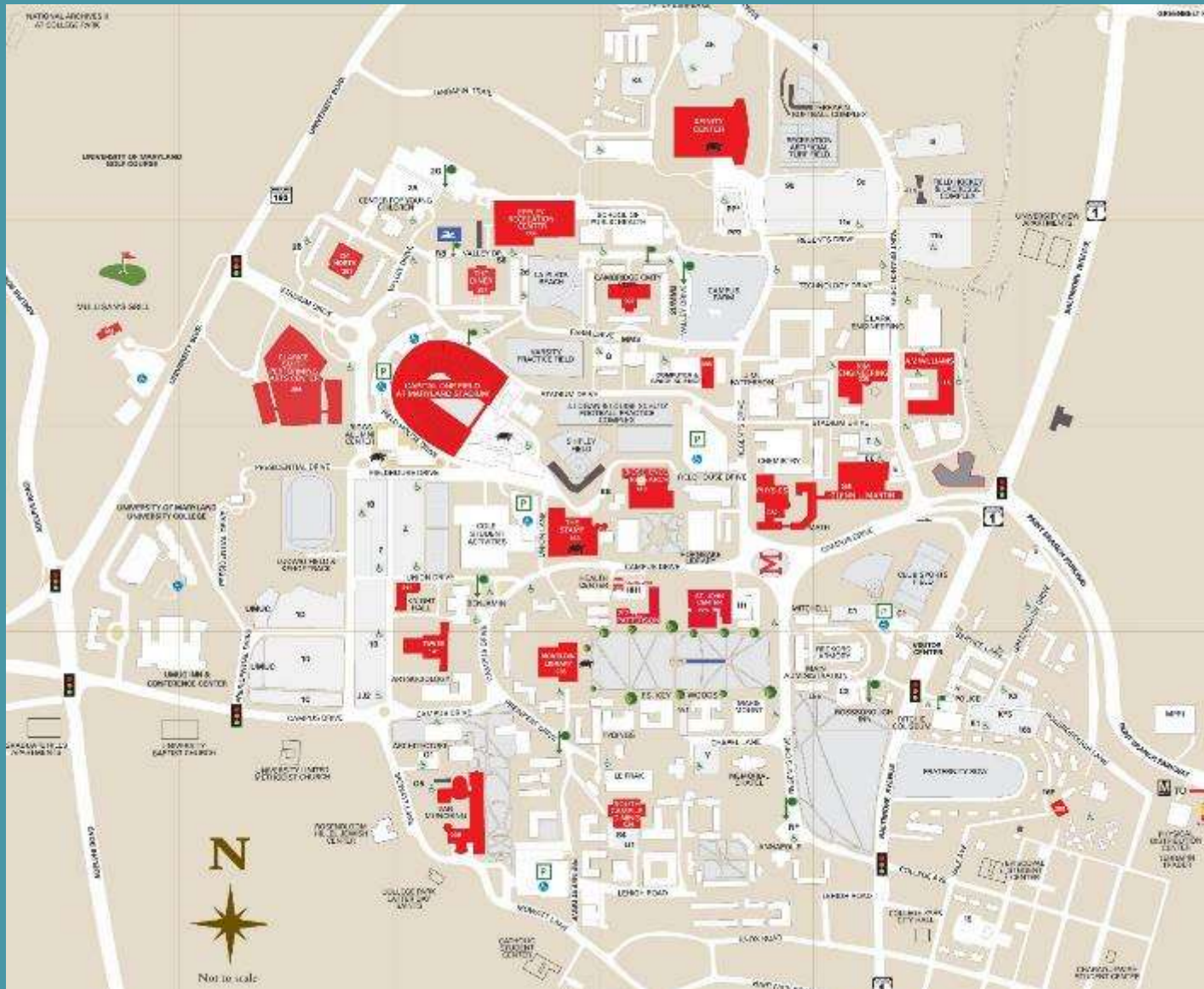


PLASTIC REDUCTION EFFORTS AT UMD:



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Meet the UMD, College Park Department of Dining Services



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Trends in Sustainability at UMD Dining Services

Our goal: Offer food choices that celebrate flavor and menu-variety while being attentive to environmental, economic, social and nutritional well-being.

FY 19: Menus of Change Initiative, Reduce plastic waste across campus, Continue & enhance ongoing sustainability & wellness programs

FY 16 through FY 18: Anytime Dining Implementation & Improvements, Enhancements to Sustainable Food Action Plan, Continue campus efforts such as Terp Farm, Campus Pantry and Farmers Market

FY 14 through FY 16: Terp Farm Project (3 year pilot), Campus Pantry Initiative, Increase sustainable produce and seafood purchasing, Expand and improve waste minimization programs, Enhance Farmers Market at Maryland

FY 12 and FY 13: Hire a Sustainability Coordinator, Reusable To-Go Packaging Waste Management Strategies, Sustainable Food Committee, 251 North, Food Recovery Network Collaboration

FY 09 through FY 11: Eat-INitiative and To-Go Packaging Changes, Composting



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Waste Reduction: Residential Dining



Accomplishments to Date

- Eliminated Styrofoam disposable packaging in FY09
- Introduced compost collection and compostable disposable packaging FY09
- Piloted reusable carryout FY12
- Eliminated all single-use disposable packaging and products FY16



6.3 million disposable items eliminated from campus annually!



Waste Reduction: Retail Operations



BYOB:
Reusable
Chico Bag
\$7

Reusable Bag Discount Available
at the Shops at Maryland!

5¢ discount for using a reusable bag
when purchasing 3 or more items
with a total minimum value of \$5.
Works with any reusable bag.



sponsored by

Maryland Parent's Association, Dining Services, and SGA Sustainability Committee

**20¢ OFF FOR
BRINGING
YOUR OWN**



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green  dining

**20¢ OFF FOR
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green  dining



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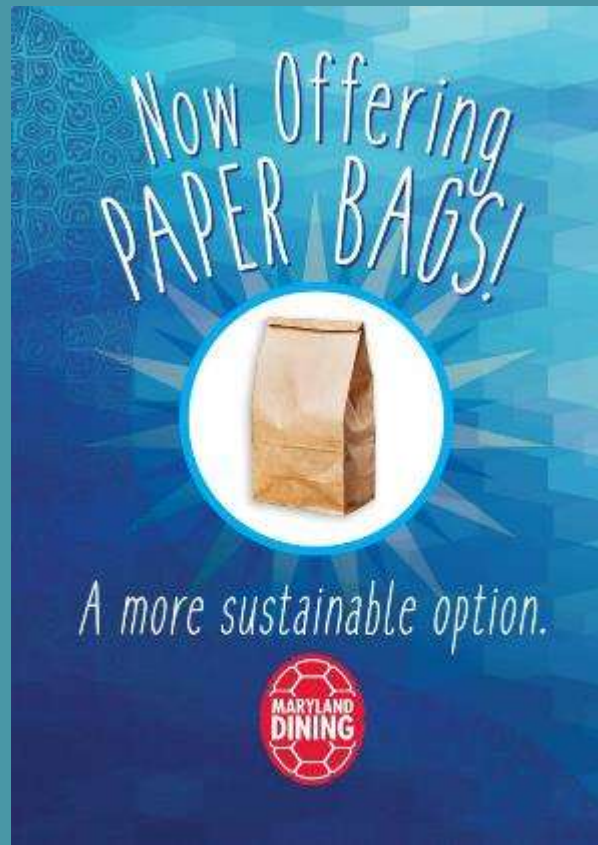


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Plastic Waste Reduction: Phase II Pilot

Our goal: Create an ocean-friendly campus



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Plastic Waste Reduction: Phase II Pilot

Paper straw pilot at UMD Dairy



MARYLAND DAIRY

PAPER STRAWS

These straws are both compostable and marine degradable!

We only get one Earth. Terps Leave Small FOODprints!

Learn more about why we're using new straws:



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Plastic Waste Reduction: Phase II

Goal: Become a national leader in the effort to reduce plastic waste and pollution by replacing and reducing non-recyclable single-use plastic items from 24 UMD-DS retail locations

Targeted locations: The Dairy and Coffee Bar in the Stamp Student Union, all campus convenience shops, all cafes on campus, and Mulligan's Grill and Pub

Targeted disposable products: Replace plastic straws, plastic bags, plastic utensils, individual creamer-cups, and plastic stirrers with paper straws, paper bags, compostable utensils, bulk creamer, and wooden stirrers

Outreach & Education: UMD-DS will also implement a campus-wide educational and outreach campaign to support plastic waste reduction to not only replace items, but reduce their use over time

Project status: UMD-DS submitted Sustainability Fund Grant in October 2018 to support initiative



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Plastic Waste Reduction: Phase II Pilot

Student endorsement and involvement



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Culture of Waste Reduction

- Behind-the-scenes:
 - Menu planning, inventory & food management
 - Batch cooking & chef's choice
- Front-of-the-house:
 - Trayless dining
 - Smaller portions
 - Smaller plates and bowls
 - Student-led food waste audits
 - Waste sorting & collection
- Back-of-the-house:
 - Food recovery
 - Compost & recycling collection



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THE PROCESS:

Harnessing Team Science Approach

- COMMUNICATION
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QUESTIONS / COMMENTS ?