Create-a-Change Presentation

Presented by **Williams Without Waste**

THIS IS OUR TEAM

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Aspiring ambidextral

Magnus Herweyer

Dog and taco
Tuesday guy

Sarah Ryu

#1 fan of golden retrievers

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Proud Minnesotan

Ben Washburne

Big into spicy foods and football

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Proud mother of 2 pet turtles

OUR GOAL

How can we use principles from entrepreneurship, design thinking, diversity, equity, inclusion, and environmental sustainability to create ideas on plastic waste reduction here at Williams and abroad?

What ***Principles*** did we use to come up with ideas?

Design Thinking

Human centered problem solving that revolved around talk

Entrepreneurship

Interviewing stakeholders at Williams to absorb “customer” feedback

Environmental Sustainability

Idea origination was guided by what ideas are *sustainable*

Diversity, Inclusion, and Equity

Being conscientious when determining *who* our proposals will help **and** hurt

Market Research Conducted in the Process

Provost Love (Administrative)

Head of Dining

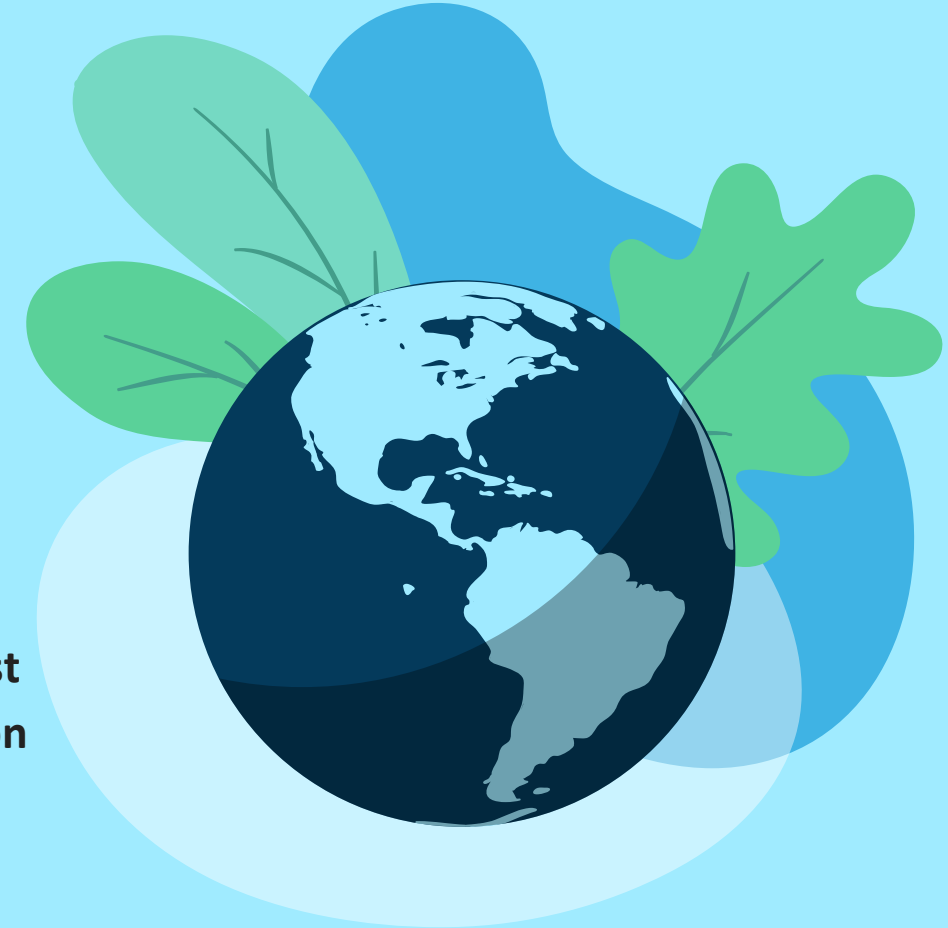
Head of OSL

Professors (tenured and untenured)

Students at Williams

Griffins Society

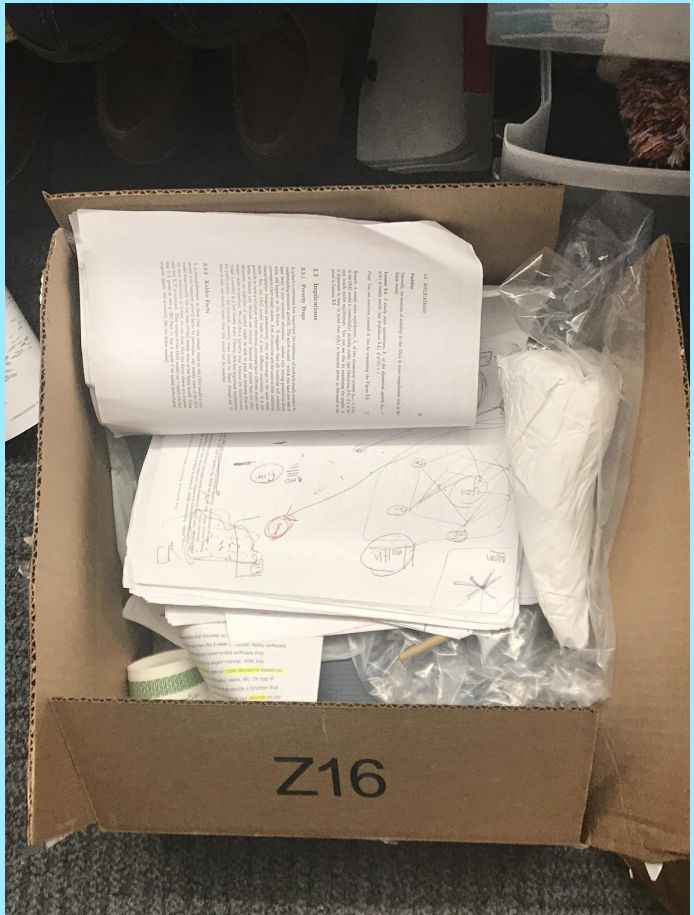
Category: Impact

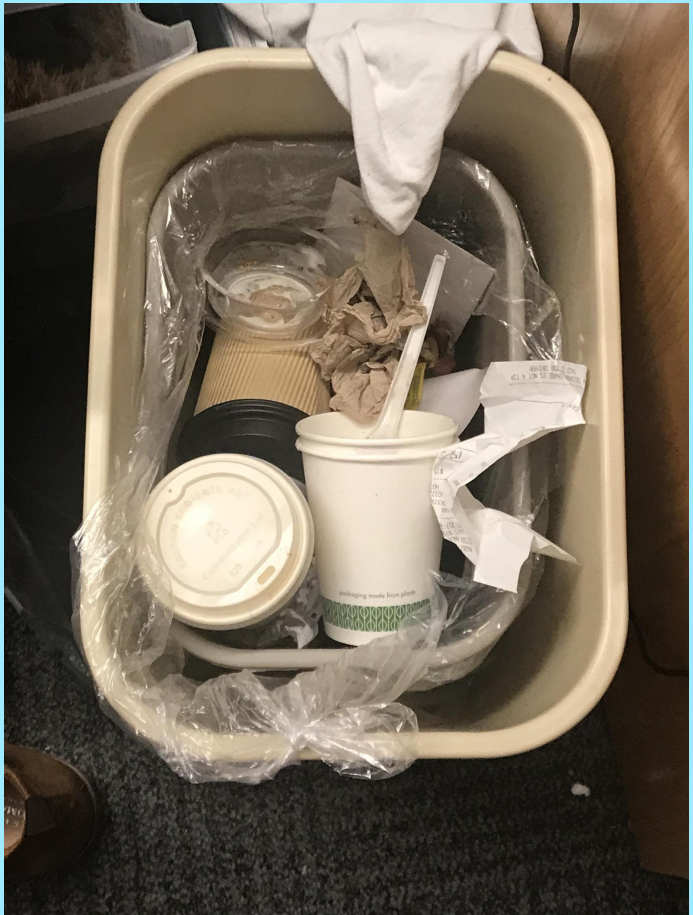


Question 1

What idea will lead to the “Highest impact at reducing plastic waste on campus if the idea works”?

Typical Student Trash





Typical Trash Room

Current Issue

Most, if not all, Williams students have only two bins in their rooms- **WASTE** and **PAPER**

In the current system we don't account for plastic in all student rooms

Plastics don't get put in the right bin in the trash room due to poor design of the current system

Current Design

The problem arises when students take their trash to the trash room

Student Room

"Taking the trash out"

Trash Room

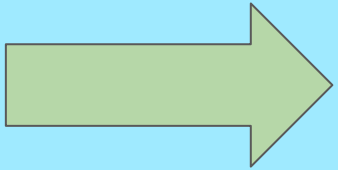
Where is the problem? (cont.)

Right now we assume students will dig in their waste bin to pull out plastics - is this reasonable?


NO, JUST NO.

Calculating Estimated Size of Inefficiency

Annual Plastic Use (lbs)	% of plastic put in right bin	Plastic put into Waste (lbs)
34,000	25	81,600.00
34,000	50	27,200.00



Range **of plastic misallocated = {27,200 lbs, 81,600 lbs}**

Findings

Realistically, targeting this issue can ***reduce*** plastic waste by 45,000 - 55,000 pounds **a year**, in some scenarios 75,000+ lbs, at Williams if we help fix the flawed system of student trash disposal

Multi-Step Solution

How we plan on getting plastic in the right bin

Step 1

Put an individual plastic bin in each room

Step 2

Add a plastic bin for each common room around campus

Step 3

Heavily educate students on the problem via posters, through First Days programming, and other means the college has to spread new initiatives.

Summary

- We do not account for plastic waste in student rooms
- From data gathered by the Zilkha Center, we see that tens of thousands of plastic are not being recycled

We have an opportunity to help reduce **{27,200 lbs, 81,600 lbs}** of plastic waste

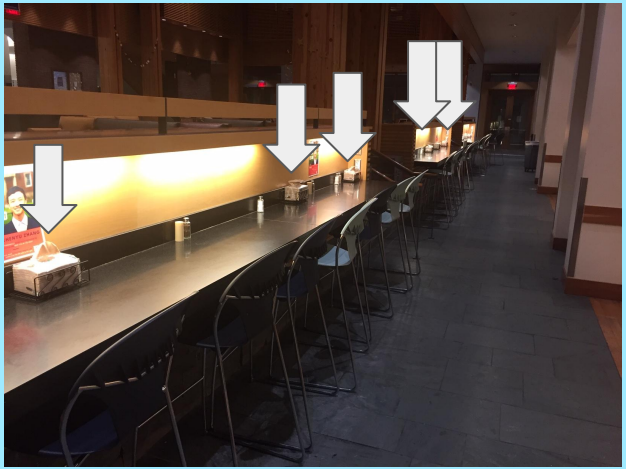
Category: Fastest to Implement

Question 2

What idea will be the “easiest and fastest to implement?”

Plastic-Wrapped Napkins

Whitman's Dining Hall Cafeteria



Observations

Each table has an *individual plastic-wrapped* napkin set.

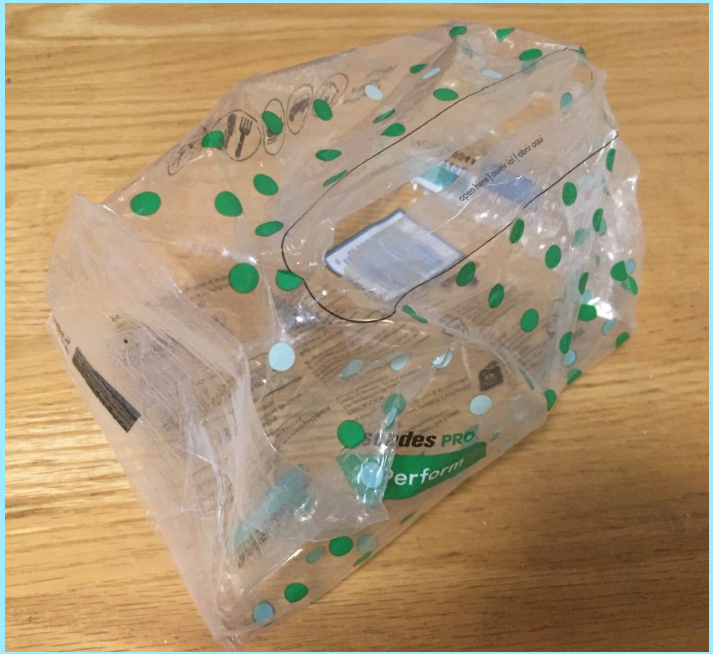
Pros of the Current Solution:

- Compostability
- Price
- Quality of Product

Cons of the Current Solution

Each napkin wrapper is made of Type 4 plastic→Not recyclable→Plastic waste source

5 gram/wrapper ≈ 0.01 lbs/wrapper
2+ napkins used/student/meal
94 student meals/wrapper
1500+ meals served/day
250 days
375,000 meals/year
4000+ wrappers/year!
40+ lbs of plastic waste/year!



Proposed Solution

Bulk Purchasing of Napkins without Plastic Wrapping

Option 1

Option 2

Comparison

Current Solution	Option 1	Option 2
Plastic Wrapping	**Paper Wrapping**	**Paper Wrapping**
$72.39/shipping unit **$0.012/napkin**	$48.95/shipping unit **$0.008/napkin**	$40.95/shipping unit **$0.007/napkin**
Interfold-style	Full-fold style	Full-fold style
12.6 x 8.5 in	12 x 17 in	12 x 12 in

All three choices are made from 100% recycled fiber from the same company→**Compostable**

Easy Implementation

Driscoll-Style Solution

Different napkin products and new bins can be ordered **tomorrow**!

Category: Most Scalable Idea

Question 3

What idea “could spread most easily and widely to other campuses?”

Removing Single Use Water Bottles

Success at Williams:

How did Williams do it?

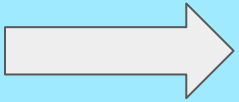
1. Provost Love identified the plastic water bottle inefficiency
2. The 5 gallon water jug solution was determined
3. Discussions between administration, dining, and others ensued
4. Williams College implemented water jugs as the water source at on-campus catered events
5. Shifted culture against plastic water bottle use (Reinforced by on-campus education)

How big is this problem?

Every year, **50 billion** water bottles end up in landfills.

Only ~90 (out of 5,300) college campuses have banned sale of bottled water

Number of Students	Average Consumption (per person)
10,000,000	25 bottles a year



~8,800,000 lbs *of plastic per year*

How do we implement this at other schools?

- Create a succinct recap of what Williams did
- Spread awareness of the success on our own campus
- Reach out to provosts and head of dining at all other schools
- Communicate what is at stake and the Williams College solution
- Fire up students at other schools to ensure other school administrations follow through and the student body is educated

Consideration of Equity and Inclusion

Why would students be hurt when plastic bottles are reduced?

→ Students will now be pressured to use multi-use bottles they might not own

Who will be hurt when cheap and accessible water bottles are reduced for students?

→ ***Low income students*** who might not have $5-$20 to use on a policy pushed onto them

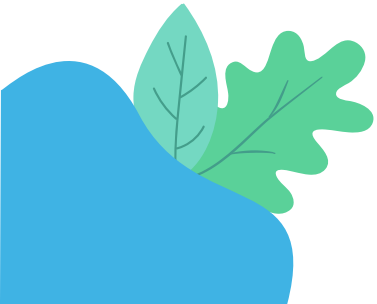
What can be done to aid low income students?

→ Grants, financial aid, endowment

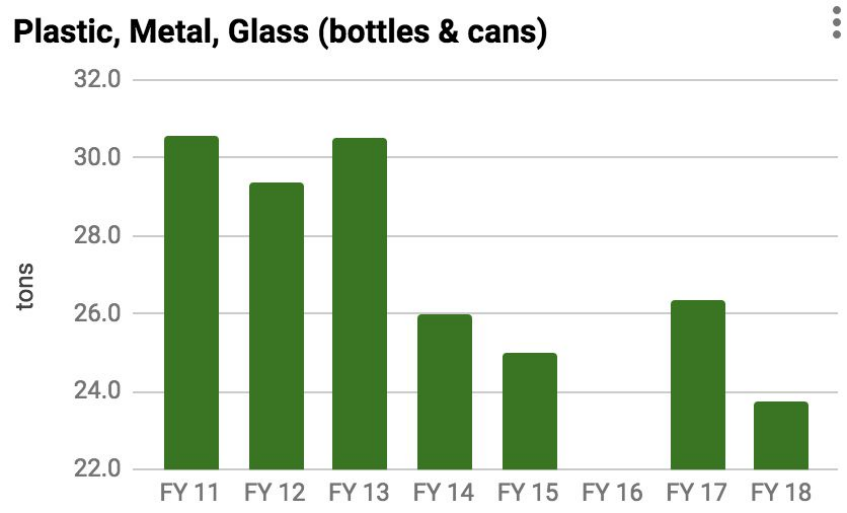
Summary

- First, we identify a lack of plastic recycling bins in dorm rooms that provide an opportunity to reduce **tens of thousands of pounds** of plastic waste
- Then, we propose new, plastic free, napkin holders as an **immediately** implementable solution at Williams
- Finally, we suggest spreading the Williams College policy regarding single-use plastic water bottles to colleges nationwide targeting **millions of pounds** of plastic waste

Questions



Appendix 1: Explanation of Plastic Misallocation for Question 1(slide 14)



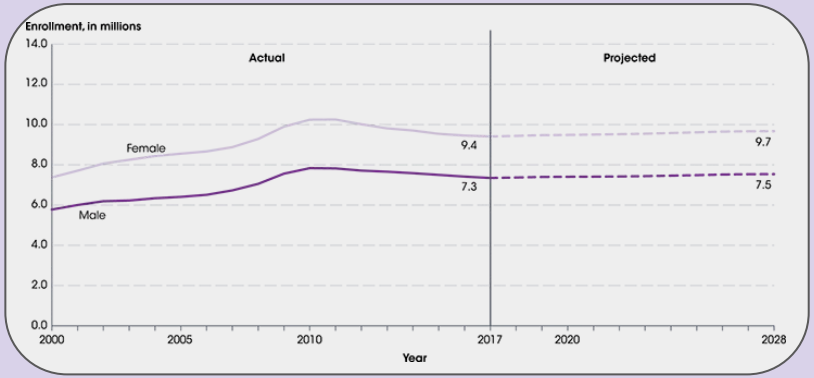
Student Misallocated Plastic =
0.8*[34000 / (Properly Allocated Decimal) - 34000]

0.8 = Percent of Student Plastic
34000 lbs of plastic are being properly recycled:
70% of total recycling (24 tons) from Zilkha Center Data
70% is from student discussions

Appendix 2: Justification of Water Bottle Reduction Figure (slide 30)

Student Estimate

10,000,000 students is a clear under estimate (conservative)



(National Center for Education Statistics)
https://nces.ed.gov/programs/coe/indicator_cha.asp

Bottle Estimate

Provost Love reported that Williams has reduced 50,000 bottles

Extrapolating water consumption nationwide would suggest the following:

$$\frac{\textbf{50,000 bottles}}{\textbf{2,000 students}} = \textbf{25 bottles per student per year}$$