

2021-2022

**Sustainability and
Climate Action**

BARNARD

www.barnard.edu/sustainability-climate-action

MAKING CHANGE

Dear members of the Barnard Community:

In 1997, environmental scientist Donella Meadows described leverage points as “places in a complex system (a corporation, an economy, a living body, a city, an ecosystem) where a small shift in one thing can produce big changes in everything.” Meadows imagined a series of levers, large and small, some very difficult to move and others easier to access, that can be pulled to change the paradigm — the basic values, goals, and shared understanding — within which we all function.

2021-22 was a year of change, a year when many in our country struggled over the levers of change. From transgender rights to legal abortion to gun laws to voting maps, this year has been about conflicting efforts to change the system. And through, above, behind, and beneath it all, our very ecosystem is changing rapidly, as landscapes parch, waters rise, and species disappear. We are manipulating the biggest levers of change, intentionally or not.

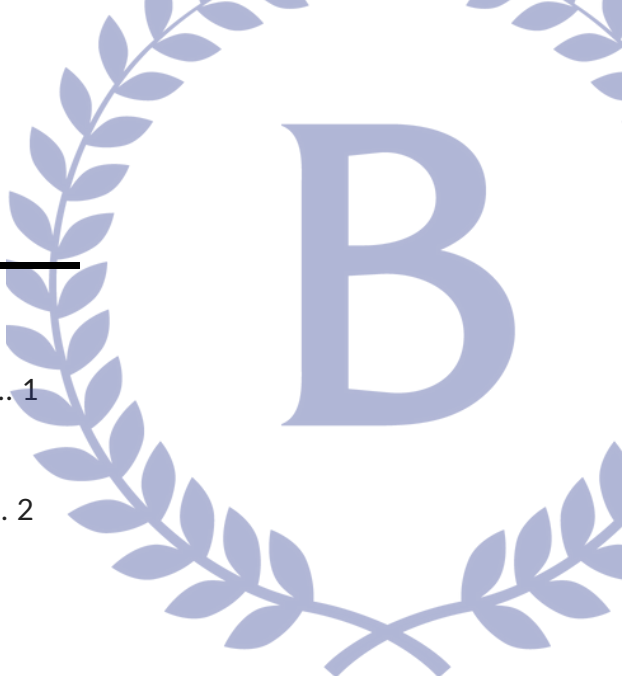
Through these turbulent times, Barnard is changing, too. Against a sometimes chaotic backdrop, we are working together to pull the levers — small and large — in our own campus system. We are linking our work on anti-oppressive pedagogy to our approaches to teaching sustainability. We are coordinating our planning for campus maintenance and renovations with our pathway to net zero. We are reducing our consumption through circular strategies that support student access and affordability and build community resilience. Working together, Barnard is pulling the levers to build a more sustainable and just future, on campus and off.

Sincerely,

Sandra Goldmark
Director of Campus Sustainability and Climate Action

2021-22

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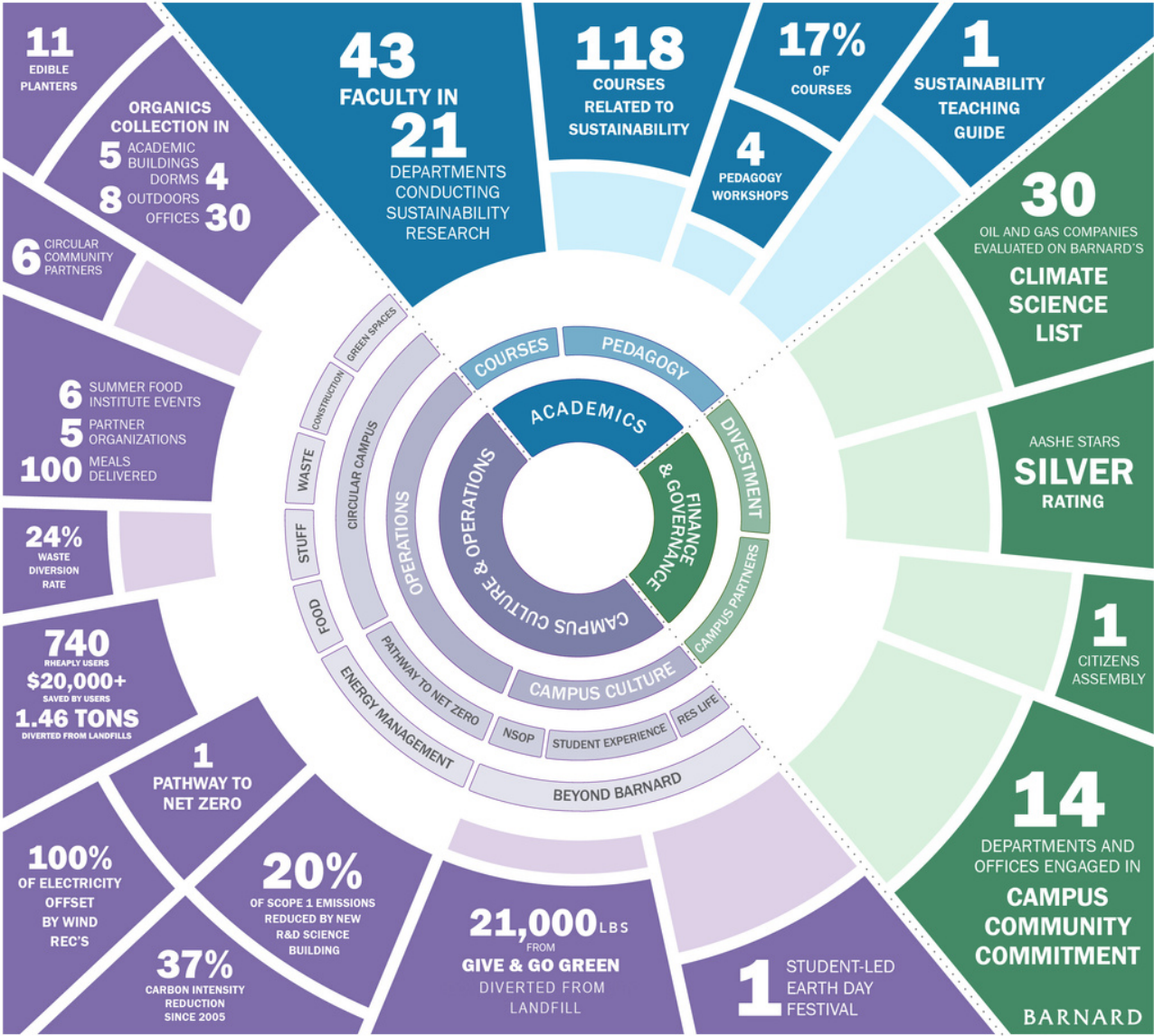
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360-DEGREE CLIMATE ACTION

Sustainability and climate action at Barnard spans the College: in academics, campus culture and operations, and finance and governance. Our aim is to reduce our own impact in alignment with global science-based targets while equipping our graduates to lead in building equitable climate responses, no matter their professional path.

At Barnard, every office and every department has a role to play; sustainability is possible when campus partners work together, each making the necessary changes within their own sphere of influence in order to achieve College-wide goals.





ACADEMICS

Barnard's climate and sustainability teaching spans multiple departments and disciplines. From Biology to Urban Studies, students are invited to explore the relationship between the physical world we inhabit and the society we build.

Each year, Barnard tracks climate- and sustainability-related teaching. Better tracking and increased pedagogical support for faculty has yielded a growing number of courses, from 37 in 2017-18 to over 100 courses today.

3,858

STUDENTS ENROLLED IN

118

COURSES FOCUSED ON OR
RELATED TO SUSTAINABILITY

17%

OF BARNARD'S TOTAL OFFERED COURSES

TEACHING HIGHLIGHTS



Students carried their personal trash around campus for a week as part of Professor Fowles' class.

Below are just two courses out of many that provide unique windows into a wide range of climate- and sustainability-related themes:



SEVERIN FOWLES

ANTHROPOLOGY: AMERICAN MATERIAL CULTURE

This seminar considers the central questions in modern material culture studies (namely, “What do things mean?” “What do things do?” and “What do things want?”). Among other instances of object-based research, students take a hard look at their own garbage — paper cups, cardboard boxes, plastic wrappers, foodstuffs, pens, toiletries, and more — to learn about themselves, the Barnard community, what is wasted, and what it means for all of us.



LOGAN BRENNER

ENVIRONMENTAL SCIENCE: WORKSHOP IN SUSTAINABLE DEVELOPMENT

Students in the Environmental Science Department's Workshop in Sustainable Development worked with WE ACT for Environmental Justice as part of the Barnard Engages NY initiative funded by the Mellon Foundation. The students laid the foundation for a research project focused on measuring heat stress with wearable sensors. Students learned how to write an IRB application, develop consent materials, construct a project protocol, and write code to streamline future data collection.

GROWING THE CURRICULUM



MELISSA WRIGHT

Interim Executive Director, CEP

In November 2021, the Center for Engaged Pedagogy (CEP) hosted a workshop to develop co-teaching models at the college. Workshop leaders Alex Pittman and Angelo Cagliotti convened faculty to devise methods for team teaching, experimenting with “tandem,” “sidecar,” and “homeroom” models that will allow faculty to come together from multiple disciplines. This workshop will be expanded in Fall 2023 to support faculty in developing co-taught First-Year Seminars. This interdisciplinary approach is well suited to the knotty challenges of climate change and supports faculty development and mentoring.



ALEX PITTMAN

Associate Director, CEP

To further support faculty in climate teaching, the CEP collaborated with Barnard Sustainability, the Environmental Science Department, the Digital Humanities Center, and many instructors who emphasize issues of climate in their classrooms to compile a guide called “Teaching Toward Sustainability.” This guide will serve as a resource for instructors on how to incorporate sustainability into their courses in holistic and interdisciplinary ways.

**“THIS GUIDE IS A PROVOCATION TO
IMAGINE SUSTAINABILITY AS AN
INTEGRAL COMPONENT, A
FRAMEWORK THAT CAN GUIDE
PEDAGOGICAL APPROACHES.”**

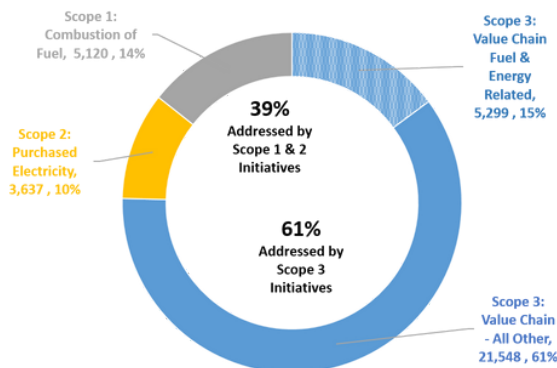
– CEP Sustainability Teaching Guide

CAMPUS CULTURE AND OPERATIONS

BARNARD EMISSIONS

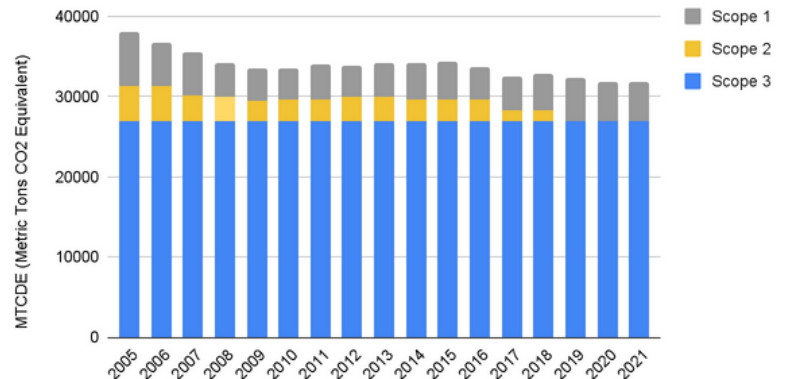
A major greenhouse gas study was completed this year with help from Energy Strategies. Using the Greenhouse Gas Protocol, a full emissions inventory, including scopes 1, 2, and 3, was conducted for 2019. Scope 3 emissions, often left out of many studies due to the difficult nature of the data collection, was found to be our greatest source, accounting for 75% of emissions. Scopes 1 and 2 accounted for 14% and 10%, respectively. Since 2005, we have reduced our scopes 1 and 2 carbon-intensity levels by 53%. While energy efficiency projects have been taking place across campus for years, switching fuel types in 2008 and purchasing Renewable Energy Credits starting in 2017 have been the main drivers. The next major drivers of emissions reduction will come from strategic efficiency and electrification projects (see next page).

Barnard Scopes 1, 2 and 3 Baseline Emissions (2019)
tCO₂e, % of Total Emissions



Barnard GHG Emissions 2005 - 2021

Estimated Scope 3



PATHWAY TO NET ZERO

The renovation and expansion of Altschul Hall, thanks to the generous support of Diana T. Vagelos '55 and Dr. P. Roy Vagelos, marks a major first step in Barnard's emerging pathway to net zero emissions. By strategically aligning emissions reduction with capital projects and maintenance, Barnard can lead in decarbonizing our New York campus, with its mix of historic and new buildings.



Key steps on Barnard's pathway to net zero involve converting all campus heating and cooling systems to electric sources, while ensuring efficiency of our pre-existing systems. This includes switching steam chillers to electric, connecting north and south campus heating and cooling systems, installing heat pumps, and electrifying on- and off-campus buildings. At the same time, Barnard will procure renewable Local Law 97-compliant electricity and continue to address scope 3 emissions through targeted procurement policies and circularity strategies.

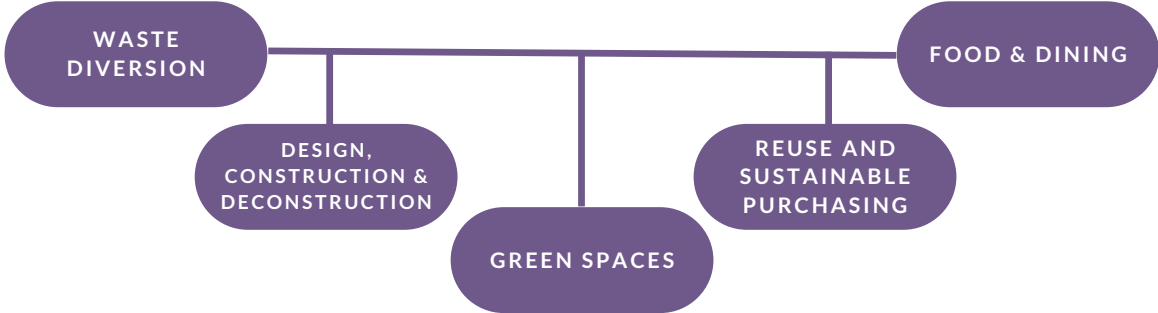
This process is challenging, not just for Barnard but for all of New York City, since many buildings have old steam radiators, space is tight, and the costs of retrofits can be high. For this reason, our work at Barnard is important – not just to reduce our own emissions, but to serve as a model for how the city as a whole can move forward.

THE R&D SCIENCE CENTER RENOVATION CAN
REDUCE BARNARD'S SCOPE 1 EMISSIONS BY

20%

CIRCULAR CAMPUS

Barnard is building a “Circular Campus”: a holistic, systems-based framework designed to reduce emissions, waste, and costs, transform consumption patterns on campus, increase access and affordability for students, and support the transition to a just, sustainable economy.



MORNINGSIDE COMMUNITY PARTNERS

Barnard is extending its Circular Campus initiative beyond the College. Alongside the Morningside Area Alliance and the exchange platform Rheaply, we are creating a Circular Community with the aim of establishing a reuse ecosystem with local community organizations, schools, and performing arts organizations, supported by educational materials on circularity, emissions reduction, and climate resilience.



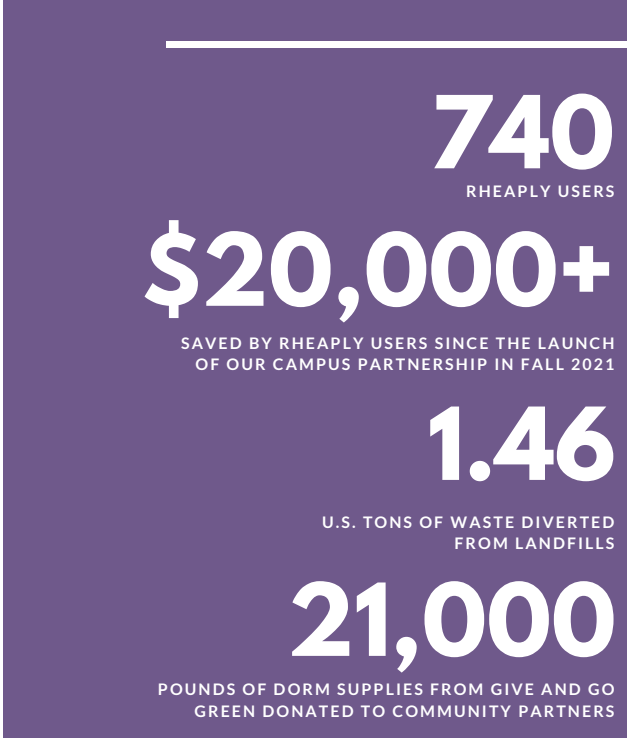
REUSE AND SUSTAINABLE PURCHASING



Mattress toppers from Give and Go Green get loaded up to be recycled.

Barnard is digging deep into scope 3 emissions and addressing waste at the source by supporting internal reuse. We launched our Rheaply reuse platform in the fall of 2021 and held our largest Give and Go Green move-out ever.

As part of the transition to Workday, Barnard’s new enterprise management system, we will be able to more accurately track scope 3-associated expenditures and help the Barnard community make more sustainable purchases.



NEXT STEPS

1. Create a sustainable purchasing policy
2. Rheaply training for department administrators and key personnel
3. Support exchanges with Circular Community partners

SUSTAINABLE FOOD



JAZMINE GARCIA

This spring, Barnard welcomed Jazmine Garcia as Sustainability Coordinator. Jazmine has a B.A. in environmental studies and plant studies. She has experience in community and hydroponic farming and environmental education and curriculum development.

Jazmine will develop co-curricular programming that explores healthy and regenerative food systems, on campus and off. She will develop metrics to track progress at Barnard and will work closely with Barnard Dining Services to support access to healthy and sustainable foods and reduce food waste.

SUSTAINABLE AND
REGENERATIVE
FOOD SYSTEMS

FOOD WASTE
METRICS: TRACKING
PROGRESS

FOOD JUSTICE
AND ACCESS

FOOD HEALTH
AND WELLNESS

NEXT STEPS

1. Sustainability and food programming for NSOP
 2. Piloting reusables program for dining halls
 3. Collaboration with Columbia Food Pantry and Hudson Valley Farms
 4. Community gardening programs
 5. Fall co-curricular opportunities
-

SUMMER FOOD INSTITUTE



Eat, Learn, and Grow with Makela Elvy, M. Ed.

This summer, the Office of Sustainability and Climate Action piloted the Summer Food Institute. This series of six events explored the life cycle of sustainable food through farm tours, environmental and food justice speakers, volunteering, composting, and more. This program aims to give the Barnard community the tools to understand the complexities and challenges of a sustainable food system. Through this program, we were able to reach Summer Research Institute students, pre-college program students, and summer class students.

Summer Food Institute 2022 events:

- Summer Movie Night featuring *The Biggest Little Farm*
- Eat, Learn, and Grow talk with Makela Elvy, M. Ed.
- Volunteering with Corbin Hill Food Project at Riverside Church
- Earth Matter Governor’s Island Composting Tour
- New York Botanical Garden visit to “Around the Table: Stories of the Food We Love”
- Brooklyn Grange Rooftop Farm Tour



GREEN SPACES



Keith Gabora and Jazmine Garcia on Earth Day

This year, Head Groundskeeper Keith Gabora grew seedlings under grow lights in Altschul Hall and invited students to plant them on campus at the Earth Day Festival. Keith, alongside Groundskeepers Margherita Casperson and Cory Lapp, hosted regular planting days this year and worked with Jazmine Garcia to install edible planters on walkways around campus. Together with Nick Gershberg from the Arthur Ross Greenhouse, Keith and Jazmine also actively support the student garden club. Last year, in pursuit of sustainability goals in groundskeeping practices, Barnard began transitioning to all-electric grounds care.

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EDIBLE PLANTERS

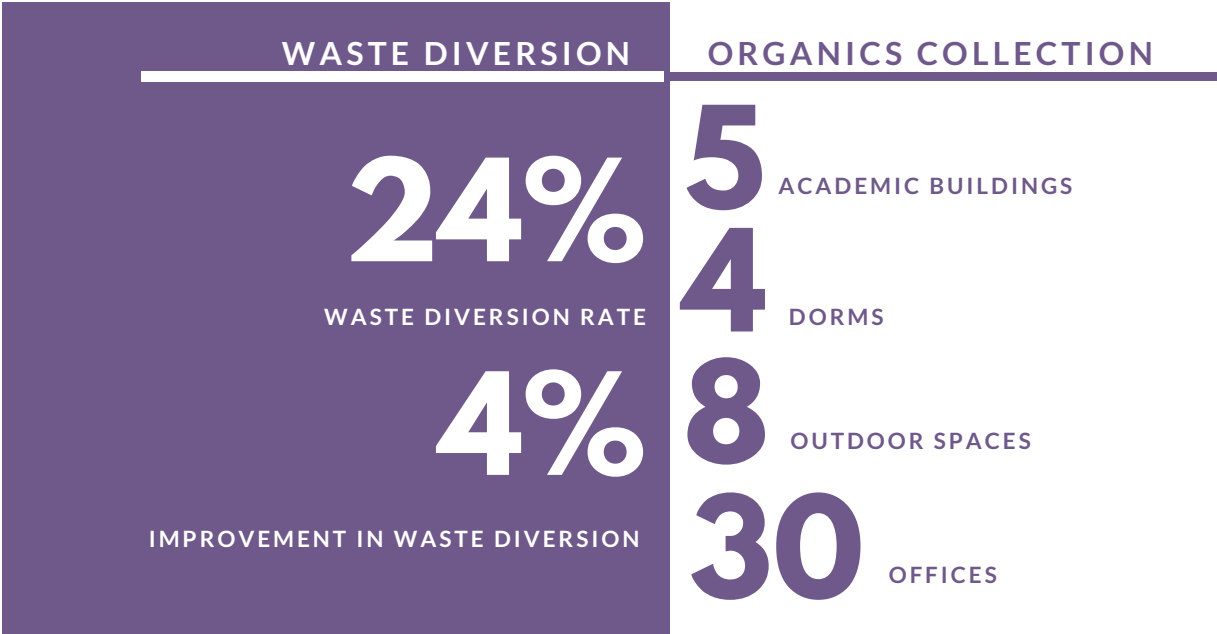
WASTE



LINO MACHADO
Director of Custodial Services

This year, Barnard redesigned and replaced signs above waste stations and added and reorganized bins across campus to increase access to correct waste-sorting stations, including added food-scrap stations in hallways and outdoor areas. In addition, food-scrap collection was resumed in food-prep areas. Finally, the College has laid the groundwork to transition from a biodigester to compost collection in the fall, which will allow for proper processing of compostable service items.

Under the leadership of Lino Machado, and in collaboration with the Purchasing Office and Barnard Sustainability, Barnard Facilities continues to find ways to rehome and donate used supplies and furniture to a wide range of partners, including a summer 2021 asset digitization process on Barnard’s new Rheaply site.

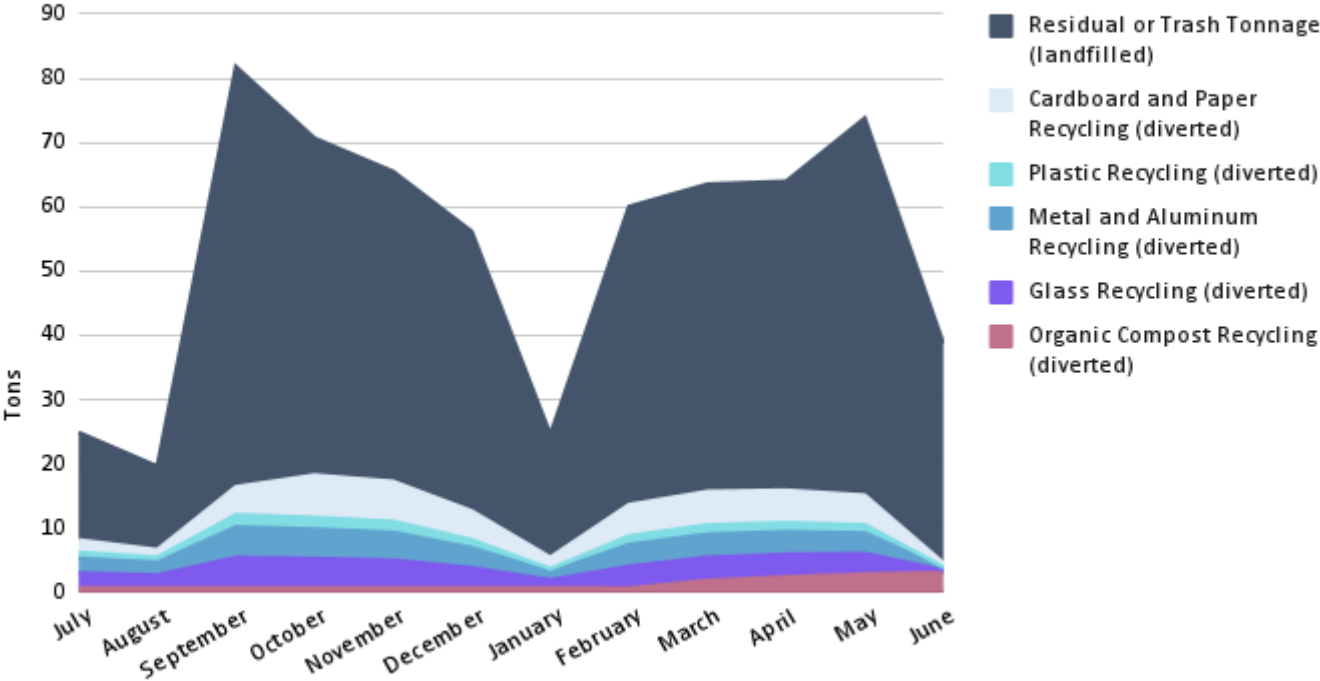


WASTE

The return from the pandemic – during which our waste reached an all-time low – marked a challenging year in terms of waste on campus. Despite a total overhaul of bins and signs around campus, our community produced more total waste this year than ever before, although diversion rates did improve slightly. In addition, accurate waste data tracking continues to be a challenge. Barnard tracks different municipal solid waste streams. Below is the breakdown of these streams over the 2021-22 fiscal year:

Total Municipal Solid Waste

July 2021 - June 2022



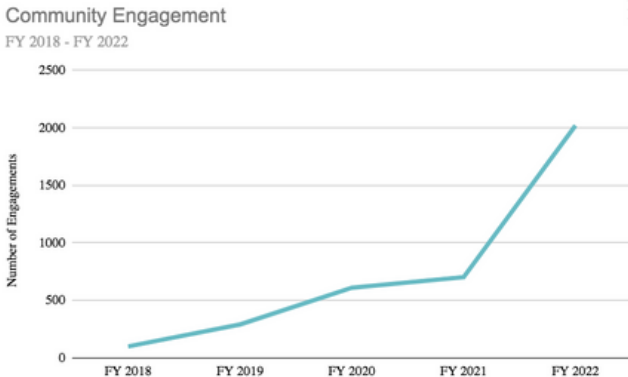
1. Convert from organics collection for biodigester to more robust compost collection
2. Add compost collection to front-of-house dining hall sorting stations and events
3. Waste-sorting education campaign
4. Address single-use service items
5. Improve waste data collection processes with haulers

ENGAGEMENT



Give and Go Green with GradBag

Sustainability-related events on campus this year spanned a range of topics and audiences. A few examples: a talk co-hosted by Architecture, Urban Studies, and Barnard Sustainability on “Mobilizing Communities for Climate Justice”; a volunteer day with Fabscrap, a local textile recycler; a student-led eco-poetry gathering; and our annual Give and Go Green move-out programming.



30+
EVENTS

2,018
PEOPLE REACHED THROUGH EVENTS
AND PROGRAMMING

12x
INCREASE IN ENGAGEMENT SINCE 2017

EXTERNAL PARTNERS AND EVENTS

In addition to on-campus programming, Barnard hosted or participated in events with partners from around the world, ranging from local nonprofits to the United Nations. Highlights included a talk by journalist Cynthia Barnett to celebrate World Water Day and the Barnard Year of Science, a yearlong celebration of all things STEM on campus.



President Sian Leah Beilock and journalist Cynthia Barnett on World Water Day in March 2022

FINANCE AND GOVERNANCE



Offices across campus are expanding capacity and engagement in sustainability leadership and programming. Juan Placencia joined the College this spring as Associate Vice President for Sustainable Buildings and Campus Infrastructure. Lino Machado, Director of Custodial Services, has played a leading role in improving waste-collection processes on campus. Emma Wolfe, Senior Advisor to the President, hosted a leadership development session on sustainability and change management for Barnard staff. Laura O'Connell, Associate Vice President for Facilities and Capital Projects, and Joanne Liou, Director of Capital Projects, worked closely with planning and design teams for the Francine A. LeFrak Foundation Center for Well-Being and the R&D Science Center to build sustainability goals into key campus improvement projects.



DEPARTMENTS
AND OFFICES
ENGAGED IN
CAMPUS
COMMUNITY
COMMITMENT
SUSTAINABILITY
LEADERSHIP
WORKSHOPS

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2021-22 CLIMATE ACTION COMMITTEE

Sandra Goldmark, Chair, Associate Professor of Professional Practice in Theatre, Director of Campus Sustainability and Climate Action, and Senior Assistant Dean for Interdisciplinary Engagement, Columbia Climate School

Laura O'Connell, Associate VP, Facilities & Capital Projects

Leslie Raucher, Associate Director of Campus Sustainability and Climate Action

Jazmine Garcia, Sustainability Coordinator

Delaney Michaelson '24, Student Government Representative for Sustainable Initiatives

Rachel Elkis '22, Student Government Representative for Sustainable Initiatives

Severin Fowles, Professor of Anthropology

Angelo Caglioti, Assistant Professor of History

Kathryn Gerlach, Director of Media Relations

Terryanne Maenza-Gmelch, Senior Lecturer in Environmental Science

Katelyn Dutton '14, Director of Family Engagement and Special Assistant to the President

Mary Joan Murphy, Executive Director of Student Health and Wellness Programs

Lino Machado, Director of Custodial Services

Deby Finkelstein, Director of Auxiliary Services

Livia Drake, Resident District Manager, Chartwells

SUSTAINABILITY STUDENT TEAM

Grace Brennen BC '22 - Programming & Research

Bri Brown BC '24 - Programming & Research

Kate Purdum BC '22 - Programming & Research

Batoul Saad BC '22 - Programming & Research

Maya Weed CC '22 - Programming & Research

Amanda Armstrong BC '24 - Worldwide Teach-In

Harrison Gerson CC '25 - Grants

Marion Linde BC '24 - Communications

Ana Cardenas GS '23 - Circular Campus

STUDENT LEADERSHIP: EARTH DAY 2022



The Barnard Student Government Association, along with student leaders from the CEP and Barnard Sustainability, lead a community-wide Earth Day Festival for over 200 students, faculty, and staff, with the participation of over 20 businesses, seven Barnard departments, and 10 student organizations. Attendees enjoyed a used clothing sale, sampled displays of eco-friendly products and produce, planted seedlings on campus, tasted honey from Professor Jon Snow's bees, and spoke with representatives from local community organizations — all followed by remarks by President Beilock and Karenna Gore, Executive Director of the Center for Earth Ethics.



Student leaders (l. to r.) Sumayya Mokit '24, Delaney Michaelson '24, and Amanda Armstrong '24 with President Sian Leah Beilock (second from right)