



CLIMATE ACTION VISION 2019



LETTER FROM THE PRESIDENT



Dear Members of the Barnard Community,

Climate change is one of the most important and pressing challenges of our time. The urgency of this crisis demands action that redefines leadership, crosses disciplinary and intellectual boundaries, and addresses the structural inequalities that contribute to our current global predicament. As a college for women located in New York City, Barnard has a responsibility to address climate change – especially as it relates to issues surrounding gender, income, and race. Indeed, research is very clear that the consequences of climate change have a disproportionate impact on women, people of color, and those who are most economically disadvantaged in the U.S. and across the world. It is vital that the search for climate solutions include diverse viewpoints and prioritize those who have been and will be most affected.

Barnard's Climate Action Vision, the result of a campuswide collaborative effort over the past two years, outlines our 360-degree approach that prioritizes the role of women, people of color, and low-income communities in defining new paradigms for climate leadership. Our focus falls into three main areas: Barnard's academics, finance and governance, and campus culture and operations.

Academics: Barnard is already home to many programs and initiatives that promote climate action. As part of the greater Columbia University community, our faculty are pioneers in environmental research and are working diligently to help Columbia shape its next steps in this area. Importantly, our faculty are also engaged pedagogues, committed to preparing our students to mitigate the impact of climate change and serve as leaders in this global crisis. Case in point, Barnard graduates have gone on to lead important institutions such as the Natural Resources Defense Council (NRDC) and Greenpeace. Moving forward, Barnard is reexamining its general education requirements to explore the possibility of adding a requirement that all Barnard students take coursework centered on the environment, sustainability, and/or climate change. In 2017-18, our Willen Seminar on Sustainability began exploring sustainability across the curriculum, and in spring 2020, the Center for Engaged Pedagogy will continue this dialogue through a series of faculty workshops.

Finance and Governance: Barnard is committed to incorporating climate and sustainability into its decision-making, from capital improvements and our endowment to routine financial choices. In 2017, Barnard's Board of Trustees announced that the College would divest its endowment from companies that dispute climate science or otherwise seek to thwart efforts to mitigate the impact of climate change. We have released our Climate Science List, which evaluates oil and gas companies on their words and deeds. The Climate Science List is based on criteria developed by Barnard faculty, students, and staff in consultation with our partners at Fossil Free Indexes (FFI) and the Union of Concerned Scientists (UCS). Barnard is using this novel approach (and

the associated data) to focus its endowment on companies that recognize climate science and the risks posed by climate change. The College is also making the Climate Science List public. In doing so, our hope is to influence (and provide support for) other institutions' investment decisions.

Campus Culture and Operations: Barnard joined the NYC Carbon Challenge in 2009 and is proud to be one of the first NYC institutions to reach the initial goal of 30% emissions reductions from 2005 levels. In 2017, the College signed the "We Are Still In" pledge, underscoring our effort to meet the goals of the Paris climate agreement. But there is much more to do. We are currently developing a plan for emissions reductions across all three scopes¹ that meets the ambitious New York state and city standards with the goal of carbon neutrality. We have also worked to green our campus through everything from lawn care to internal reuse programs and organics collection. At the same time, our faculty, staff, and students are actively pursuing solutions to the social inequities that women and low-income communities experience as a result of climate change. Upcoming programming such as Beyond Barnard's "Dialogues for Change" and 2019's event "Women, Clothing, and Climate" explore these intersections.

This chart highlights what Barnard has already accomplished. It also lays out our specific goals moving forward and how we will continue to monitor and measure our success.

Barnard's approach to sustainability and climate action is rooted in its long history of breaking barriers for and with women who challenge the status quo. This is the work that climate change demands, especially with respect to involving voices that have historically not been heard. I am grateful to all in our community who have worked together, and individually, to support our efforts across the campus to reverse the growing threat to our planet and build a resilient and equitable future for all. Please join in as we continue this vital work.

With gratitude and commitment,

A handwritten signature in black ink, appearing to read "Sian Leah Beilock". The signature is fluid and cursive, with a long horizontal stroke at the end.

Sian Leah Beilock, President

¹ Scope 1: direct emissions from owned or controlled sources, such as onsite fuel combustion for heating and cooling or from campus fleet vehicles; Scope 2: indirect emissions from the generation of purchased electricity; Scope 3: all other indirect emissions, such as those released in daily commutes to and from campus, school-sponsored travel, trash disposal, the production of office paper and other purchased goods, and more.

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INTRODUCTION

Barnard's vision for climate action is rooted in its mission to prepare young women to "meet the challenges they will encounter throughout their lives." Equipping graduates to confront the challenges of climate change, while making the institution more resilient and a leader in this field, requires thoughtful and powerful responses to climate change that inform strategic planning, teaching and learning, operations, and everyday actions. The search for climate solutions can and must intersect with a commitment to the individual well-being of students and a commitment to a diverse and equitable society.

Given the collective failure to act in concert at the global level, the climate crisis demands new paradigms of leadership that Barnard women already define and embody, both on campus and after they graduate. The systems and modes of thought that historically excluded women and people of color are the same extractive systems that created the climate crisis; in defining and modeling a new paradigm of climate leadership, Barnard College can play a leading role.

Barnard's mission to "address issues of gender in all of their complexity and urgency" has direct bearing on its approach to climate action. Women are disproportionately impacted by the climate crisis and are critical to building successful solutions. Empirical research shows that women more often than men support and lead climate action and environmental activism.² Other research suggests that the exploitation of women and the exploitation of nature are linked.³ CO₂ emissions per capita are lower in nations where women have higher political status, controlling for GDP per capita, urbanization, industrialization, militarization, world-system position, foreign direct investment, the age dependency ratio, and level of democracy.⁴ This research suggests that work to improve gender equality around the world may simultaneously help mitigate pollution and climate change in general. To put it simply: Championing women helps the environment, and vice versa.

Barnard's commitment to a diverse and equitable society is a pillar of its approach to climate action. Climate change disproportionately affects communities of color, and any action to address the problem requires inclusive processes and diverse voices. Climate change is a major driver of social inequality, particularly as it affects well-being and mortality rates in the global south.⁵ Locally in New York City, environmental inequity affects residents who suffer significant health problems as a result of their proximity to such environmental hazards as waste treatment plants and power plants. Personal, public, and environmental health are interwoven, and by addressing these issues on campus and in NYC, the College will better prepare its students to address these issues on a global scale.

The rapidly accelerating pace of the climate crisis demands urgent, creative, interdisciplinary solutions. Given that the effects of climate change permeate nearly all realms of social, ecological, and economic activity, solutions will necessarily emerge from a wide range of disciplines. Solutions will come from thorough scientific research and urban study and planning; from new interpretations of our historical entanglements with nature; from original economic analyses that open ways of envisioning noncarbon futures; from social science inquiry on the effects of climate change on diverse

² Buckingham, 2010, Eisler et al., 2003, McCright, 2010

³ (Rocheleau et al., 1996)

⁴ (Ergas and York, 2012)

⁵ <https://digitalcommons.law.seattleu.edu/cgi/viewcontent.cgi?article=1631&context=faculty>

communities; from race, gender, and social justice perspectives on the inordinate burdens of a warming atmosphere sustained by women, indigenous peoples, and populations in the global south; and from the study of nonhuman species and their adaptation to changing environmental conditions.

Finally, Barnard’s location in New York City will inform its approach to climate action. As a coastal city, and one of the largest and densest cities in the U.S., New York faces severe impacts from climate change and can also serve as a model for solutions as global demographics continue to shift toward urban living. In addition to presenting specific challenges, New York offers the opportunity to engage across sectors, partnering with nonprofits, businesses, and city agencies to develop and scale solutions.

This vision is the product of a collaborative, communitywide effort. During the 2017–2018 academic year, the College hosted a “Campus Conversation” workshop series in which faculty, staff, and students worked together to tackle tough questions about the choices community members make individually and collectively on campus and about the social and political context of climate change. The workshops had more than 160 attendees from over 40 departments, majors, and offices. During the 2018–19 academic year, these ideas were incorporated into a draft document that has since been reviewed and revised by faculty, students, and staff.

The following pages outline a comprehensive vision for climate action at Barnard, with three areas of focus: academics; finance and governance; and campus operations and culture. This 360-degree approach prioritizes the role of women, people of color, and low-income communities in defining new paradigms of climate leadership. Realizing this vision will, by definition, be a collaborative and adaptive process that builds solutions, reduces the College’s emissions, and, above all, equips its graduates to meet one of the greatest challenges of our time.



Students made signs before joining 250,000 others for the Global Climate Strike march in New York on Sept. 20, 2019.

ACADEMICS

VISION

- All students graduating from Barnard engage with climate and sustainability from multiple perspectives in coursework and research across the curriculum.
- Barnard's interdisciplinary approach to climate and sustainability supports innovative research, fosters civic engagement, and builds practical solutions.

PROGRESS TO DATE

- Strong faculty research, especially in environmental science
- Major in environmental science, minors in sustainability in urban studies and in history, and related coursework in multiple departments
- Sustainability and climate course list published online since 2017, with 65 courses offered in 22 departments across the curriculum

NEXT STEPS

- Support new course development, expansion of existing courses, interdisciplinary teaching, and engagement with NYC partners through internal incentives, workshops, and external grants
- Develop reliable system for accounting of sustainability-focused and sustainability-inclusive courses
- Develop interdisciplinary minor or program for nonscience majors
- Consider incorporating climate and sustainability into Foundations requirements

ACADEMICS: PROGRESS TO DATE

Barnard has a strong history of academic excellence in climate science and sustainability in both coursework and research. Across disciplines, Barnard students are given the opportunity to engage with works that investigate the human relationship to the natural world, exploring stewardship, agricultural technology, resource extraction, industrial development, economic expansion, colonization, imperialism, war, politics, and more. Students grapple with how social and environmental trends have contributed to the problems of climate change in terms of both ecology and changing attitudes.

The Environmental Science Department has long been a leader in the field, in coursework offered and in faculty research. In 2017, the department created a new major in environment and sustainability. The Urban Studies program also fosters interdisciplinary teaching in this field and offers a specialization in environment and sustainability, while the History Department also offers a minor in environmental history.

In addition to groundbreaking work in the sciences, Barnard offers coursework in climate and sustainability across the curriculum, such as:

- In 2017, the Dance Department offered a course, taught by Professor Jody Sperling, that engaged with ecology, climate change, and practices of resistance through site-specific performance.

- Professor Belinda Archibong teaches a class called Environmental and Natural Resource Economics, which considers how to apply economic theory to environmental issues.
- Assistant professor of architecture Ralph Ghoche’s seminar City, Landscape, and Ecology examines attitudes toward nature over time, through land settlement and ecology, focusing on the artistic and architectural responses to these perceptions.
- In the 2017-18 Willen Seminars, Professors Maria Rivera Maulucci, Hilary Callahan, and Stephanie Pfirman led faculty discussions intended to facilitate dialogue and encourage cross-discipline collaboration on integrating sustainability into coursework.

Barnard faculty are advancing climate and environmental science research from multiple perspectives, including:

- Professor Martin Stute of the Environmental Science Department has done significant work on carbon sequestration, climate reconstructions, and the environmental effects of hydraulic fracturing and is also involved in a project to determine the greenhouse gas footprint of NYC.⁶
- Professor Brian Mailloux, also in the Environmental Science Department, has analyzed lead levels in city soil and groundwater-borne infectious diseases.
- Assistant professor of biological sciences Jonathan Snow researches how honey bees sense and attempt to adapt to stresses at the cellular level, to better understand diseases affecting this crucial insect.

Beyond the physical sciences, Barnard faculty work on scientific and cultural concepts of “nature” and the environment from a range of perspectives. For example:

- Assistant professor of architecture Ralph Ghoche explores racism and the environmental movement.
- Associate professor of professional practice in architecture Kadambari Baxi creates multimedia projects that combine research on transboundary toxic emission flows, regulatory frameworks, and international governance on climate futures.
- Belinda Archibong, assistant professor of economics, studies the impact of climate-induced disease on human capital outcomes.⁷
- Orlando Bentancor, assistant professor of Spanish and Latin American cultures, explores the commodification of nature and the transformation of indigenous peoples into workers and colonial subjects through the Spanish Empire’s conceptions of matter.

Barnard’s support for student learning in climate action extends past the borders of its campus. Beyond Barnard assists students in defining career goals and pursuing jobs, internships, and experiences around the city, where they receive hands-on experience in the field. Beyond Barnard convened a “Sustainability Challenge” with Goldman Sachs in 2018, hosted a panel on sustainability at the 2019 Opportunities Fair, and is launching “Dialogues for Change: Careers in Climate” in February 2020.

⁶ Juerg M. Matter, Martin Stute, Sandra Ó. Snæbjörnsdóttir, Eric H. Oelkers, Sigurdur R. Gislason, Edda S. Aradóttir, Bergur Sigfusson, Ingvi Gunnarsson, Holmfrídur Sigurdardóttir, Einar Gunnlaugsson, Gudni Axelsson, Helgi A. Alfredsson, Domenik Wolff-Boenisch, Kiflom Mesfin, Diana Fernandez de la Reguera Taya, Jennifer Hall, Knud Dideriksen, Wallace S. Broecker. “Rapid carbon mineralization for permanent disposal of anthropogenic carbon dioxide emissions.” *Science* 10 Jun 2016: 1312-1314.

⁷ Archibong, Belinda, and Francis Annan. 2017. “Disease and Gender Gaps in Human Capital Investment: Evidence from Niger’s 1986 Meningitis Epidemic.” *American Economic Review* 107 (5): 530-35.

ACADEMICS: NEXT STEPS

In 2018–19, a working group of faculty, students, and staff analyzed climate, sustainability, and environment in the curriculum at Barnard and developed a set of recommendations designed to build on its strengths and expand opportunities for students. These recommendations include creating a reliable system to accurately track and flag courses on campus that focus on and/or include themes of climate and sustainability, increasing internal incentives and support for faculty in developing and expanding course content and research, and opening a robust internal conversation about the inclusion of climate and sustainability in the Foundations curriculum requirements.

A review of the sustainability course offerings at peer institutions demonstrates that, while the College has an impressive array of diverse courses, Barnard still has room to improve. For the purposes of this study, the working group used the AASHE definitions of “sustainability focused” and “sustainability inclusive” coursework. While Barnard may opt, at a future date, to customize these definitions, they are useful for assessing its current offerings and making comparisons with peer institutions.

There is currently no systematic, reliable way to identify or flag courses that have sustainability content. In 2017, the Sustainability Office began to track such courses by conducting a faculty survey and a biannual review of the course catalog. Best estimates to date indicate that 53% of Barnard departments and programs offer climate- and sustainability-related courses; these courses make up approximately 5% of the total number of courses offered. These relatively low numbers indicate that the current capacity to account for courses is not adequate – that is, it is likely that there are many more courses on offer that touch on these topics.

With support from the Provost’s Office and the Office of Institutional Research and Assessment, additional retroactive research is necessary to determine all of the already existing courses. Moving forward, however, a more reliable system is needed. A model for this exists in the work that was done in switching over from the previous “Nine Ways of Knowing” to the current “Foundations” requirements, which required the College to assign existing courses new designations. Capturing information for new courses would be most easily achieved by including a section on the Committee on Instruction (COI) form to flag new courses as “sustainability focused” or “sustainability inclusive.”

These course estimates indicate that, given the aim of broadening the conversation on sustainability to encompass all disciplines, one important step is to create internal incentives and pedagogical support for faculty to create new courses or adapt existing ones. Building on the 2017–18 Willen Seminar and the 2018 Campus Conversation series, in spring 2020 Barnard will host a workshop with the Center for Engaged Pedagogy to help faculty expand their existing coursework and create new courses that intersect with climate and sustainability. In addition, the Office of Sponsored Research has created a faculty guide to external climate grants. These steps will form the beginning of a concerted effort to support the development of new courses, research, and collaborations across departments and with New York City partners, with the goal of 100% of the College’s students engaging with climate and sustainability before they graduate, in courses across the curriculum.

While courses at Barnard that deal with sustainability and the study of the environment are rigorous and well enrolled, these topics are not currently reflected in the College’s curricular requirements beyond environmental science, urban studies, and history.

One important step is to open a conversation about whether and how to incorporate climate and sustainability into the Foundations curriculum. The Academics working group identified three potential pathways for including climate in the Foundations requirements:

- Introduce a new Mode of Thinking titled “Thinking Sustainably.”
- Introduce sustainability into some of the existing Modes of Thinking. The group proposed that “Thinking Locally—New York City” and “Thinking Through Global Inquiry” should make specific mention of sustainability and environment; “Thinking Locally—New York City” could be transformed to “Thinking Locally and Resiliently—New York City”; and “Thinking Through Global Inquiry” could be modified to “Thinking Through Global and Sustainable Inquiry.”
- Require all students to complete at least one “sustainability inclusive” or “sustainability focused” course in any one of the Foundations categories. So, for example, a student might take a history course or an architecture course that touches on environmental issues. A “Social Difference” course might consider race, migration, and climate, or a “Thinking Technologically and Digitally” course might review climate mapping. This approach would support and enrich the existing Foundations curriculum without placing an additional burden on students, while falling in line with the College’s emphasis on interdisciplinary thinking as key to climate studies and solutions.

“Climate change is already affecting my life now. Los Angeles County, where my town is located, as well as surrounding areas have been suffering from wildfire after wildfire. The most important thing Barnard can do is educate others on the effects of climate change and demonstrate the small ways we as individuals can help.”

— Iris L. ’22

Glendora, California, Physics Major



Environmental Science students with senior lecturer Terryanne Maenza-Gmelch.

FINANCE & GOVERNANCE

VISION

- Climate and sustainability are integrated into institutional decision-making and strategic planning at the highest levels.
- Stakeholders across campus, at all levels, participate in defining climate and sustainability goals and are accountable for meeting them.

PROGRESS TO DATE

- Created Climate Science List and innovative divestment approach
- Signed “We Are Still In” pledge in 2017
- In 2017-19, created two new positions: Director and Associate Director of Campus Sustainability and Climate Action, with dedicated office space in Milbank Hall
- Collaborations with Council on Diversity, Equity & Inclusion; Health Services; Beyond Barnard; Athena Center; CEP; and academic departments

NEXT STEPS

- Complete the Sustainability Tracking, Assessment & Rating System (STARS) process
- Outreach program to engage offices in developing internal goals
- Regular assessment of progress with senior staff, faculty, SGA, and Board of Trustees
- Internal accountability for meeting climate action goals, with regular progress reports to senior staff from each department

FINANCE AND GOVERNANCE: PROGRESS TO DATE

In 2017, Barnard joined a broad coalition of cities, states, and organizations in signing the “We Are Still In” pledge, committing to support the targets of the Paris Climate Agreement and building on its 2009 commitment to the New York City Mayor’s Carbon Challenge. This public stance is consistent with an internal commitment to considering climate and sustainability in the College’s decision-making. The complexity and interconnected nature of climate change means that every office and every department has a chance and a responsibility to identify opportunities, shape policies, and set – and meet – targets.

Recognizing the need for a comprehensive approach, in 2017 the College created a new position, Director of Campus Sustainability and Climate Action, and launched the 2017-18 Campus Conversation on Climate Action. In July 2019, the College created a full-time staff position, the Associate Director of Campus Sustainability, and a dedicated office space in Milbank Hall. The Sustainable Practices Committee, composed of students, faculty, and staff, is charged with defining sustainability priorities and initiatives and supporting and connecting initiatives across campus.

One recent initiative of the Sustainable Practices Committee is an “Office Outreach” program, designed to help administrative offices and academic departments learn best practices and identify specific, mission-based internal targets. For example, an outreach session with Beyond Barnard helped kick-start the February 2020 “Dialogues for Change:

Careers in Climate,” a roundtable discussion introducing students to climate leaders from a diverse range of industries and fields. Similar collaborations that target the mission or area of focus for each office or department have occurred or are underway with the Council for Diversity, Equity, and Inclusion, Health Services, the Athena Center for Leadership Studies, and the Design Center.

Barnard’s approach to divestment similarly reflects its commitment to targeted, mission-based action by all departments. In March 2017, the Board of Trustees approved the recommendation of the Presidential Task Force to Examine Divestment to divest the endowment from fossil fuel companies that “deny climate science or who otherwise seek to thwart efforts to mitigate the impacts of climate change.” A working group of Barnard faculty, students, staff, and Trustees, in partnership with Fossil Free Indexes (FFI) and the Union of Concerned Scientists, developed six rigorous criteria to indicate the extent to which a company’s words and actions support climate science. The resulting Climate Science List is a list of 30 fossil fuel companies that FFI and UCS evaluated against the criteria. The 30 companies were chosen from the Carbon Underground Oil and Gas 100, a list of the top 100 publicly traded oil and gas reserve holders globally compiled by FFI. The College will use the Climate Science List as a guide to focus its endowment on companies that recognize climate science and the risks posed by climate change. In addition to using this list as a guiding framework for its own investments, the College is making it public to provide a framework for other institutions to consider in their investment decisions.



Students participated in the “Women, Clothing, and Climate” design challenge in the Milstein Center’s Design Center on March 27, 2019.

FINANCE AND GOVERNANCE: NEXT STEPS

Barnard's capacity to build climate considerations into decision-making will rest on three foundations: tracking and measuring progress, shared accountability, and active engagement of its entire community.

Prior to 2017, the lion's share of sustainability data collection was undertaken by the Campus Services and Facilities Departments and was limited in scope, focusing mainly on emissions reporting for the Mayor's Carbon Challenge. While this effort has been critical to progress so far, there are many areas moving forward where accurate metrics will play a key role, including not only emissions data but also waste diversion, air travel, internal reuse, course offerings, and student engagement. In 2018, Barnard began completing the AASHE STARS report, a comprehensive tool that will allow the College to measure progress in these areas and compare its progress with other schools.

Just as the input of a broad cross section of the community has contributed to this vision statement, accountability for setting – and meeting – targets must be shared across campus. Regular assessment and reporting to senior staff, the Board of Trustees, faculty, and student government will help keep the collaboration active and the responsibility shared.

Finally, any chance of addressing the climate crisis will depend on a fundamentally collaborative spirit and a sense of shared purpose and mission. The 2016 Report to the Board of Trustees from the Barnard Task Force to Examine Divestment stated that:

Even as Barnard creates its own blueprint for sustainability, including structural and personnel changes, it is important to remember that climate change is a problem that touches every aspect of our lives.... To find lasting solutions no one office or person can be responsible, and no person or office can be exempt, from students to curriculum, facilities, dining services, and the financial and investment arms of the College. We all have a responsibility to tackle these problems in our own areas of expertise and our own spheres of influence on campus.



Students engage with ecology, environment, and climate in a range of departments, including Environmental Science.

CAMPUS CULTURE & OPERATIONS

VISION	PROGRESS TO DATE	NEXT STEPS
BUILDINGS AND ENERGY (SCOPES 1 & 2)		
<ul style="list-style-type: none"> Barnard achieves emissions reductions across all three scopes, in line with or exceeding the ambitious New York state and city standards. 	<ul style="list-style-type: none"> Accepted the Mayor’s Carbon Challenge in 2007 and, by 2013, reduced carbon emissions by more than 30% from 2005 base levels Offset 100% of purchased electricity with Renewable Energy Certificates (RECs) Energy efficiency projects implemented, including LED lighting conversions LEED certification for Milstein (anticipated) and Diana (2010) 	<ul style="list-style-type: none"> Clarify emissions reductions targets and develop clear pathway to achieving emissions reductions goals, in tandem with facilities condition assessment Determine appropriate timeline for achieving carbon neutrality Continue implementation of energy efficiency projects
CONSUMPTION AND WASTE (SCOPE 3)		
<ul style="list-style-type: none"> Barnard’s environmentally sound and socially ethical system of consumption on campus serves as a model for circular economy solutions. 	<ul style="list-style-type: none"> Innovative carbon footprint of Scope 3 emissions completed in 2015 Organics collection in all academic buildings and three dorms Internal initiatives to re-home furniture and support sustainable purchasing and internal reuse programs: Move Out, Green Sale, Rebear, Flip Library, etc. Collaboration between sustainability and student success/access programs 	<ul style="list-style-type: none"> Pilot carbon pricing Set targets for air-travel emissions reduction and price offsets Expand organics collection to all dorms and events, improve waste-sorting stations at Hewitt and Diana, and transition away from single-use service items Prioritize local and sustainable foods and reduce food waste Develop sustainable purchasing and internal reuse policy Pilot scalable internal reuse platform

VISION

PROGRESS TO DATE

NEXT STEPS

GROUNDS

- Outdoor spaces are pollinator- and local-flora-friendly, accessible to and cared for by the community, and provide a healthy oasis in the urban landscape
- Futter Field maintained by an organic lawn care service to limit toxins from synthetic fertilizers and pesticides
- Two community gardens: students' in Quad and faculty's in Cathedral Gardens
- Teaching spaces in Arthur Ross Greenhouse and Diana roof garden
- Expand space for hands-on coursework and community engagement in campus green spaces
- Conduct an accurate count of campus flora
- Expand organic/integrated grounds care campuswide and achieve pollinator-friendly certification
- Develop a landscape master plan to accommodate academic, climate, and operational considerations

CAMPUS CULTURE

- Barnard community encourages and engages with sustainability on campus and beyond.
- Campus initiatives on sustainability, diversity and inclusion, wellness, and other mission-driven values are integrated and mutually supportive.
- Student Climate Action Grant launched 2019
- Community events: "Women, Clothing, and Climate," outings, Rebear, NSOP, etc.
- Piloted "Office Outreach" program 2018-19
- Regular sustainability newsletters since 2017
- Annual updates to SGA
- Updates to faculty meeting and Faculty Caucus
- Continue to provide and expand formal and informal events and forums for students, faculty, and staff to engage with each other and climate issues
- Formalize relationships/overlap with other "core value" initiatives
- Continue Sustainability Office outreach and training in 2019-20
- Continue/strengthen programs such as Give and Go Green, NSOP, that reduce emissions and build engagement

BUILDINGS AND ENERGY (SCOPES 1 & 2 EMISSIONS): PROGRESS TO DATE

Barnard accepted the NYC Carbon Challenge for Universities in 2007 and was one of only a few institutions to achieve the first stage of the challenge ahead of schedule, reducing carbon emissions intensity, measured in pounds of carbon dioxide equivalent per square foot, by more than 30% from 2005 base-year levels. The reduction came from a combination of energy efficiency projects and switching from fuel oil to natural gas.

Building on that success, the College administration signed on to the next phase of the Challenge, extending its existing reduction goal by committing to a 50% reduction in carbon intensity by 2025. Barnard is also aiming for at least 85% reduction in emissions from 1990 levels by 2050, meeting or exceeding the ambitious standards of the NYS Climate Leadership and Community Protection Act and NYC Climate Mobilization Act.

In 2018, Barnard transitioned to offsetting 100% of its purchased electricity with wind RECs, up from 50% in 2017. In addition, the College has implemented a number of energy efficiency projects, including conversion to LED lighting in several buildings, window replacement, and roof upgrades. The Diana Center, completed in 2010, achieved LEED Gold certification, and the Milstein Center, which opened in October 2018, is expected to receive a LEED Silver rating.

BUILDINGS AND ENERGY (SCOPES 1 & 2 EMISSIONS): NEXT STEPS

There is a clear need to further define Barnard's emissions targets and develop a clear pathway to emissions reductions, including procurement, operational efficiency, generation and distribution strategies, and end use consumption. Barnard commissioned an Energy Master Plan in 2013, which, combined with the reporting for the Mayor's Carbon Challenge, can serve as a starting point for this process. In 2020, the College will launch a facilities condition assessment, which will also contribute to its understanding of emissions reduction needs and opportunities. One critical component of an emissions reduction plan will be to define a pathway to and timeline for achieving carbon neutrality.

Barnard's buildings range in age from the Milstein Center, which opened in 2018, to Barnard Hall, which dates to 1896. The resulting collection of disparate heating, cooling, and infrastructure needs presents unique challenges for emissions reduction, as retrofits must be fine-tuned for each building, and opportunities for on-site energy generation, such as solar and wind, are limited. At the same time, New York is home to an array of emerging options, including community solar and other energy innovation possibilities.

In coordination with efforts to engage its community with sustainability goals on campus, Barnard can improve communication among faculty, staff, students, and facilities to increase heating and cooling efficiency. As one example of curricular and operational intersection, students in Professor Peter Bower's Environmental Science Energy Resources class investigated a real-time feedback system in which people could report "too hot" or "too cold" to provide more data to determine appropriate temperature set points.

Altschul Hall is a significant source of emissions on campus and is in need of renovation for programmatic reasons as well. This major renovation represents a significant cost for the College and also affords significant opportunities. Retrofitting an existing building to meet today's stringent climate standards will be a tall order. Meeting this challenge, however, represents an opportunity to set the standard for urban science center renovations and to provide a home for the College's science departments that reflects the groundbreaking work they have done in the fields of climate and sustainability.

CONSUMPTION AND WASTE (SCOPE 3 EMISSIONS): PROGRESS TO DATE

Barnard is in a unique position to take a leadership role in reducing consumption and waste, particularly in developing and modeling circular economy solutions. As an urban campus within a city that has committed to zero waste by 2030 and is actively pursuing circular economy solutions, Barnard is perfectly situated to be a leader in this area.

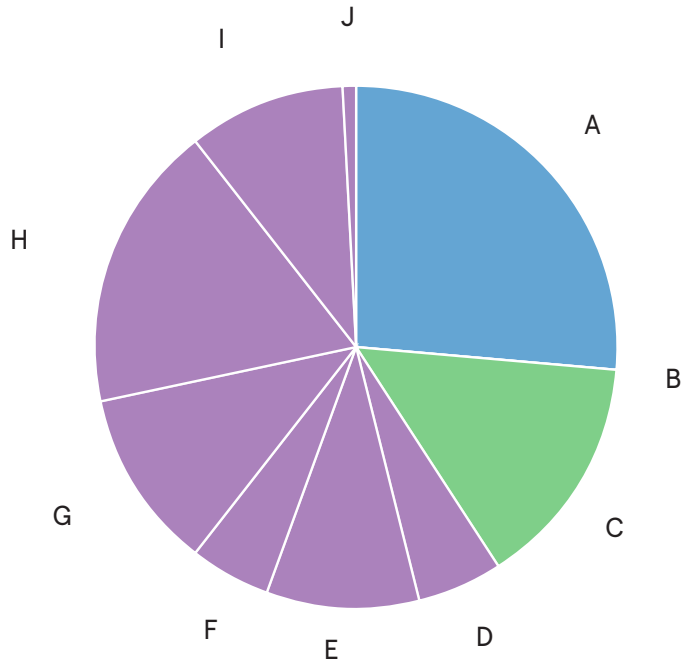
In fact, Barnard has already begun to address Scope 3 emissions. In 2018, Barnard introduced organics collection across campus, and in 2018 the Sustainable Practices Committee received a composting and organics collection grant from the Citizens Committee for New York City to help with the costs of expanding Barnard's organics collection system. Yellow food-scrap bins can be found in three dorms, five academic buildings, and more than 25 office or department suites and are now being piloted at events. Barnard provides single-stream recycling in all locations, and the campus sustainability work-study team has conducted numerous audits and "garbology" studies of the College's waste and recycling stream. However, recycling and other "end-of-pipe" strategies are not enough. Barnard will continue to move toward a circular system that encompasses reuse, repair, and thoughtful purchasing as a pathway to waste reduction.

In the arena of reuse and circular economy initiatives, Barnard is home to a number of programs. Barnard Sustainability hosts Rebear, a used clothing sale that features mending stations and design challenges, in conjunction with the Design Center. Barnard Sustainability also partners with student groups to operate Give and Go Green and the Green Sale, which are Move In/Move Out reuse initiatives. In 2018, Barnard collaborated with Grad Bag to provide free dorm supplies to low-income students at Barnard and from across Manhattan. The 2018-19 Give and Go Green reuse program prevented more than 21,000 kg of carbon-equivalent emissions by reducing the need for new purchases, while also reducing costs for students. Barnard Sustainability also partnered with the FLIP Library, the Architecture Department, Student Life, and Student Success offices to find ways to promote reuse and support affordability for students.

Barnard recently contracted with Chartwells, a new dining services provider as of summer 2019. Chartwells' sustainability statement says it is committed to sourcing practices that are humane and help to improve the environment via reducing waste to landfill, buying local, promoting fair-trade products, and more. Barnard's business services department also has green practices in place, including efforts to "re-home" used furniture, to promote internal reuse, and to identify "greener" products, as well as the introduction of 100% recycled paper in its copiers.

These initiatives are a strong starting point for a comprehensive and innovative approach to Scope 3 emissions. While Scope 3 emissions can be difficult to track and measure, a preliminary investigation indicates that these emissions represent a significant portion of Barnard's emissions. In 2016, Barnard worked with Gotham 360 to conduct an assessment of emissions across all three scopes. Barnard's emissions for fiscal year 2015 amounted to 17,576 metric tons of carbon dioxide equivalent (MT eCO₂), which is roughly the same as the annual emissions of 3,732 cars. The chart and table below detail the study's initial findings: 26% of Barnard's carbon footprint can be categorized as Scope 1 emissions, 14% Scope 2, and 59% Scope 3.

In 2016, Barnard partnered with Gotham 360 to assess emissions across all three scopes.



Scope Type	Labels	Emissions Source	FY15 Metric Tons
Scope 1	A	Stationary Combustion	4,594.60
	B	Fleet Vehicles	29.7
Scope 2	C	Purchased Electricity	2,529.30
Scope 3	D	Commuting	913.7
	E	Directly Financed Travel	1,681.90
	F	Study Abroad Air Travel	872.3
	G	Solid Waste	1962.2
	H	Food	3,101.30
	I	Stuff	1,734.90
	J	Scope 2 Line Losses	156.30
		TOTAL	17,576.20

Given these figures, a further exploration of Barnard’s Scope 3 emissions is warranted. In addition to the sizable proportion of its total footprint, Scope 3 emissions are significant because they touch on the daily lives and habits of the College’s entire community. Policies related to food, waste, purchases, and travel emissions help to connect the dots between our individual habits and the larger global context of climate change.

CONSUMPTION AND WASTE (SCOPE 3 EMISSIONS): NEXT STEPS

Scope 3 emissions, with the exception of travel, which will be discussed separately, can be addressed in large part through circular economy strategies. The circular economy rests on the idea that by changing the way we design, manufacture, use, maintain, and dispose of resources, we can keep materials in use for as long as possible. By reducing the use of nonrenewable materials and energy and prioritizing closed-loop cycles for materials and products used across campus, Barnard can move away from a linear, single-use model and exemplify a circular campus.

The College's current waste diversion rate stands at 19%. Improving Barnard's traditional recycling is the first step toward increasing this figure but must be supported by a comprehensive assessment of what the College purchases and how it manages its food and goods. The College is currently working with Chartwells to determine targets for local food sourcing and food waste reduction. Food-service items also represent an opportunity for improvement; important first steps will be to transition away from single-use plastic service items in the dining halls and at events, to prioritize reusable items, and, in limited circumstances, to provide single-use compostable items. Currently, however, the College's organics collection stream is not equipped to handle compostable items, making an assessment of waste handling and carting systems a priority.

Another crucial step is the development of a sustainable purchasing and internal reuse policy, with reliable data tracking, so that the College can set targets. Barnard's current system of reuse has many components but is largely informal and disconnected. There are several paths to streamlining, prioritizing, and scaling reuse on campus, including the use of innovative peer-to-peer technology platforms.

One potential strategy the Sustainable Practices Committee is investigating is a carbon pricing plan to target Scope 3 behaviors, which are difficult to measure and change. Currently, a group of Athena Scholars is working with the Athena Center to research and pilot a carbon pricing model for Scope 3 emissions, including air travel. Air travel represents a significant portion of Barnard's Scope 3 emissions; tackling these emissions will require a robust conversation with stakeholders across the community. Accurately measuring travel and piloting carbon pricing are important first steps.

GROUNDS: PROGRESS TO DATE

In an urban environment, green space is crucial. Research⁸ shows that what the College does with its small portion of green space in New York City has the potential to deeply benefit the community; time spent outdoors has been shown to improve happiness and mental health, making Barnard's green spaces all the more impactful.

In fall 2018, students collaborated with the Barnard Greenhouse to establish a student-run community garden in the Quad, and, in 2019, the Sustainable Practices Committee and Campus Services began working with faculty to build a small community garden in Cathedral Gardens. In 2019, Barnard upgraded to a 100% organic lawn care service for Futter Field.

⁸ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5663018/>

GROUNDS: NEXT STEPS

In 2018-19, a Sustainable Practices Working Group conducted a review of current grounds practices, both in-house and through vendors. The group identified several opportunities, among them boosting the percentage of native flora on campus, creating a pollinator-friendly green campus, and increasing community engagement with campus grounds through courses and other hands-on activities.

A large-scale review of Barnard's grounds and green spaces is an important long-term step, and in the short term, the Sustainable Practices Committee is working to facilitate faculty engagement with green spaces as part of coursework. The Campus Services department aims to develop a landscape master plan focused on promoting native and organic plants across campus and assessing the feasibility of a fully organic and pesticide-free program. Once a sustainable habitat for pollinators is achieved, Barnard can apply for Bee Campus certification.

CAMPUS CULTURE: PROGRESS TO DATE

Although life at Barnard is closely linked with the energy and opportunities of New York City and to the resources of Columbia University, Barnard is a tightly knit community of undergraduates who, together, define the shared values of the community. From Barnard's president to its first-year students, members of the entire community have taken an active role in shaping and supporting climate action policies and priorities that reflect the remarkably diverse interests of students. The Sustainable Practices Committee is working to ensure that campus initiatives on sustainability, diversity and inclusion, and wellness are integrated and mutually supportive.

In order to communicate sustainability as part of campus culture to incoming first-year students, Barnard Sustainability has increased its presence at the New Student Orientation Program (NSOP). Barnard Sustainability provides incoming students with a written guide to living sustainably at Barnard, and during the week of NSOP hosts an information session and waste-sorting game, operates the Green Sale for incoming first-years and returning students, and trains student representatives to teach other students how to properly sort waste in the dining halls. Student organizations on Barnard's campus include the Student Government Association Sustainability Committee, Sprout Up, Barnard Community Garden, and the Sunrise Movement.

Barnard Communications provides strategic internal and external messaging about these initiatives, working to make the community aware of work going on across campus and providing opportunities for further engagement. Since fall 2017, the Sustainable Practices Committee has published a regular newsletter and social media posts and provided regular updates to the faculty, senior staff, and student government.

"I think about climate change a lot because I am from South Florida. The stakes are really high for my family if things do not change. Climate change has already affected me. Last year, my family's home was destroyed in a storm. These hurricanes are being worsened by climate change."

— Phanesia P. '21

Representative of SGA, works with theatre groups on campus

CAMPUS CULTURE: NEXT STEPS

Barnard's goal is that 100% of students participate in a sustainability event or class each year. The Sustainable Practices Committee will support this by working with each department to define climate action goals – for example, collaborating with Beyond Barnard to launch a "Dialogues for Change" series, developing a Design Challenge with the Athena Center, and launching a Student Climate Action Grant.

The College's response to climate change must intersect with and support Barnard's commitment to a diverse and inclusive community and to the health and wellness of its students. Sustainability, inclusivity, and wellness are interconnected and interdependent. Barnard can continue to expand collaborations in these areas, building on successes such as the 2018 and 2019 Community Outings, co-sponsored as part of the "Feel Well, Do Well" campaign by Barnard Sustainability, the Council on Diversity, Equity, and Inclusion, the Dean for Faculty Diversity and Development, and Barnard Health Services. The complex and daunting challenge of climate change requires a collaborative, synergistic approach that considers the wellness of each individual, the health of our social fabric, and the health and wellness of our shared environment as inextricably connected.

"Since Barnard's start, it has been defying the odds of women receiving first-class education. This progressive mindset, and the acknowledgment that something is wrong in the world, must be applied to Barnard's outlook on climate change. Barnard should become a leader in climate change."

— Nadia G. '22

Bronx, New York, Governing Board, Neuroscience Major



Students help run reuse and circularity initiatives like the annual Green Sale.

CONCLUSION

The reports issued by the Intergovernmental Panel on Climate Change (IPCC) as well as the recent report by 13 U.S. government agencies highlight the urgency of the climate crisis and serve as a clarion call to further action on an issue that is already a priority for Barnard College. Barnard has a responsibility to equip its graduates to meet that challenge in the coming years, while taking concrete action on campus today.

Barnard seeks to motivate a new generation of environmental leaders who will dedicate their careers to the search for creative and sustainable solutions to climate change. More than this, the College seeks to educate students to be savvy stewards of the environment, not only those who become scientists but also those who become lawyers, artists, activists, politicians, homemakers, and leaders of all kinds, who will exhibit an abiding dedication to wise and sustainable choices in their professional spheres, as well as in their homes and local communities.

Historically, women, people of color, and low-income communities have been systematically excluded from positions of power and thus decision-making regarding climate change. In developing climate solutions, these groups must have an active role in the decision-making processes of our future. As an urban, women's college, Barnard is uniquely equipped to model this process. In order to build innovative solutions and define new leadership beyond its gates, the College must come together and commit to a coordinated strategy on campus. Given the need for communitywide investment, this Climate Action Vision statement was crafted with the input of as wide a cross section of the community as possible.

Barnard students are introduced to topics of sustainability, climate science, environmentalism, ecology, and related issues across departments. The College's world-renowned faculty are expanding their research in climate-related topics while establishing ways to incorporate these topics into their curricula, from architecture to zoology. Barnard is the first college to create a Climate Science List that identifies fossil fuel companies that deny or otherwise thwart the consensus science of climate change as a tool for managing its endowment. This work extends from strategic planning to day-to-day operations, and this approach depends on the shared commitment of faculty, staff, alumnae, trustees, and students working together to create – and achieve – shared goals.

This Climate Action Vision Statement acknowledges what Barnard has accomplished already and defines what needs to be done to make real and lasting progress in sustainability and climate action. This is a road map that will be continuously redrawn as the College adds and adapts recommendations. As a vibrant, forward-thinking college for women, Barnard has a responsibility and an opportunity to define new paradigms of climate leadership. In the face of one of the most daunting challenges of our time, Barnard is grateful for its entire community's contributions thus far and conscious that much remains to be done.

TRACKING PROGRESS

This vision must, by definition, be a living document that grows and evolves over time. The Sustainable Practices Committee will work with senior staff to determine timelines and structures for regular review and reporting, including an annual end-of-year update to the community.

SUSTAINABLE PRACTICES COMMITTEE MEMBERSHIP 2017-2020

Katelyn Dutton, Special Assistant to the President

Severin Fowles, Professor of Anthropology

Kathryn Gerlach, Director of Media Relations

Ralph Ghoche, Assistant Professor of Architecture

Sandra Goldmark, co-chair, Associate Professor of Professional Practice in Theatre, Director of Campus Sustainability and Climate Action

Terryanne Maenza-Gmelch, Senior Lecturer in Environmental Science

Roger Mosier, co-chair, Vice President for Campus Services

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

Leslie Raucher, Associate Director of Campus Sustainability and Climate Action

Jonathan Snow, Assistant Professor of Biology

Ariana González Stokas, Vice President for Diversity, Equity, and Inclusion

Julia Wang, Director of Campus Services

Caroline Cutlip '20

Aastha Jain '20

Shelly Lim '19

Sylvie Rosen '19

Izabella Shealy '20