Academic and Co-curricular Integration

"Environmental stewardship and consciousness are at the core of Wellesley's mission to educate women to make a difference in the world. Creating opportunities for future generations can only be possible if the principles of sustainability infuse all that we do as a college community." - H. Kim Bottomly, President of Wellesley College

As an academic institution, Wellesley College recognizes the importance of incorporating sustainability into the curriculum and the greater Wellesley College community. Wellesley College has a proud tradition of environmental consciousness that extends from the incorporation of the academic study of natural and built environments into its curriculum to the implementation of sustainability programs and practices that foster a culture of environmental stewardship across the campus. There are many groups at Wellesley that aim to foster a culture that values sustainability as an important facet of daily life. The Botanic Gardens (WCBG) is incorporated into the curriculum through biology classes, but goes even further to engage with students and community members. The WCBG hires interns and supports the Botanistas student organization, both of which do outreach events to promote botanical and environmental literacy. The Office of Sustainability similarly works on projects and events that promote sustainability across campus. The Office of Sustainability hires several student Sustainability Interns who focus on campus sustainability projects, and eco-reps who promote sustainability in student residential halls.

Initiatives to address environmental issues and promote sustainability on campus have also been led by several student organizations. These organizations include Wellesley Energy and Environmental Defense (WEED), Regeneration, El Table Food Cooperative, Slow Food and Going Beyond Green. WEED hosts several lecturers and events during the year, runs campaigns and holds events to enact college-wide policy changes on issues related to climate change and sustainability. Regeneration runs a small-scale farm near campus. Slow Food promotes the growth of natural, nutritious produce. There is also the Sustainable Living Cooperative (SCoop) where students choose to opt-out of the campus dining plan and live in a sustainable manner. Going Beyond Green is an environmental and green justice group at Wellesley.

Sustainability is a multi-faceted issue that can be approached from a variety of disciplines, and Wellesley offers various courses from the entire curriculum that integrate sustainability in various ways. Some courses discuss social, cultural, and historical contexts that shape how we think about environmental problems and solutions. Others have actual field studies, conducted both locally and globally. Others make extensive use of the landscape and infrastructure of the college to provide hands-on learning.

These courses and co-curricular initiatives help shape the future generations of leaders and decision makers who must deal with the full range of sustainability challenges, from global climate change to resource depletion and agricultural production. Furthermore, these learning opportunities can lead to changes in behaviors and attitudes of each individual which can have long-lasting impacts in many

areas including the environment and climate change. The long-term challenges to sustainable practices require deep, creative, and critical thinking across a range of disciplines, the kind of thinking that Wellesley is committed to teach as central to its mission as a liberal arts college. The goal of this plan is to make Wellesley community aware of the various learning opportunities and to tap into the existing physical and intellectual resources that will enable faculty to incorporate an academic consideration of sustainability into their research and teaching and to modify their research and teaching practices where possible to put less strain on resources (e.g., use less paper, consider remote meetings, and other interventions).

Main Issues/Primary Goals

- 1. Support sustainability across the curriculum
- 2. Increase hands-on learning and research opportunities in sustainability
- 3. Introduce incoming students to sustainability at Wellesley
- 4. Assess sustainability awareness among the entire Wellesley community

How We are Doing

For the purposes of this initiative, we are defining sustainability-related courses broadly, as those that focus on the relationship between humans and the environment, providing students with skills, knowledge, and experiences that will allow them to critically engage in and contribute to discussions regarding sustainability. Studying sustainability is not about advancing a particular worldview, but about providing students with the conceptual tools to consider how social and cultural context, economic and policy trade-offs, and scientific limitations and challenges and other approaches are relevant to studying sustainability.

By this definition, Wellesley College currently offers 20+ sustainability-related courses that are offered by 18 out of 52 departments, including courses in the humanities (philosophy, art), social sciences (politics, history), and the sciences (geosciences, biological sciences, chemistry). These courses take place on campus, in the Northeast, and more globally, such as at Lake Baikal in Russia, and in Belize. Currently, sustainability-focused majors and programs include Environmental Studies and the Sustainability Certificate Program run by Wellesley, Babson, and Olin. One goal of this section of the sustainability plan is to increase support for faculty interested in engaging in discussions of sustainability in their courses.

Another goal of this section of the sustainability plan is to support efforts to promote sustainability across the campus through student engagement. Much of this work occurs in conjunction with the Office of Sustainability, which oversees programs, such as Wells on Wheels, Sustainable Move-Out and Move-In Sale, the Bike Share Program, and Sustainable Office Certification and Sustainable Living Certification Programs, and recycling competitions. Wells on Wheels are water stations that connect directly to our own municipal water supply and serve to reduce the amount of bottled water purchased for events. Sustainable Move-Out and Move-In Sale allows students to drop off unwanted items, which are subsequently resold at the Sustainable Move-In rummage sale or given to charity. The Bike Share Program allows students to borrow bikes free of charge. The Sustainable Office

Certification and Sustainable Living Certification Programs offer offices and students, respectively, to be certified for complying with a list of sustainable standards in their offices or dorms. Most importantly, in the context of this sector, the Office of Sustainability provides many opportunities for students to engage in sustainability issues on campus. The office usually has 6-10 interns each year and works with 10-14 Eco-Reps (who live in the residence halls). These students play a crucial role in drawing attention to sustainability related issues on campus. In addition, the office works with the Advisory Committee on Environmental Sustainability on campus, oversees the Class of 1957 Green Fund (which funds community related sustainability initiatives), and helps implement the Green Revolving Fund (which funds infrastructure and energy efficiency improvements). Students have been important drivers for expanding Wellesley's engagement in sustainability. Many student projects, such as the use of low flow shower heads, composting and recycling styrofoam, have been implemented and continue to contribute to the sustainability of WC. In addition to undertaking research projects related to sustainability through coursework and independent studies, summer research programs with faculty, and college-sponsored internship programs, students have also engaged in sustainability through campus activism. Initiatives include a Sustainability Month Energy Competition, Recyclemania, Coal Action Week, and Earth Week. Fossil Free Wellesley led a divestment campaign in 2013-14, which raised awareness about climate change and investment policy across campus and led to substantive discussions with the Board of Trustees. Although the Board chose not to divest, it did commit to addressing climate change in other ways (Wellesley College, 2014). During the 2014-15 year, WEED led a campaign to prohibit the purchasing of bottled water for campus events using College Government funds. WEED has also held inter-dorm energy competitions. After the 2014-15 academic year, Slow Food will disband; however, new food and consumption focused groups are in the works.

There are also new campus programs that have emerged in recent years. One of the most exciting is the Center for Work and Service's Alternative Break Program, which sends small groups of students to sites around the country to participate in a week-long service project during the College's winter or spring breaks. Some of the service trips have a focus on sustainability. During the 2013-2014 academic year, a spring break trip went to Everglades and Biscayne National Parks to focus on environmental pollution and protection. During the 2014-2015 academic year, one group went to Lake Mead, Nevada to learn about water conservation and environmental stewardship, and another group with a focus on food justice went to Baltimore, Maryland to work with an urban farming organization.

These activities are communicated in many ways to the campus community. There is a centralized sustainability website that outlines the College's sustainability initiatives and provides information on past and present projects to improve sustainability at Wellesley (Office of Sustainability, Wellesley College, 2015). The Friends of the Wellesley College Botanic Gardens has a bi-annual newsletter with articles written by students, faculty, staff, and alumnae (Friends of the Wellesley College Botanic Gardens, 2015). There is the Wellesley Center for the Environment Newsletter (Wellesley Center for the Environment, 2015) that is sent on a weekly basis to interested students and community members. This newsletter promotes upcoming campus events, jobs, and internships that relate to the environment and sustainability. However, the College currently lacks any regular communications regarding sustainability activities on campus that is sent to the entire Wellesley College community with a broader array of content.

Finally, the Class of 1957 has established the Class of 1957 fund for initiatives that enhance sustainability at the College. The goal is to provide funding for projects that increase awareness of sustainability across the campus, reduce environmental impacts of the College and promote sustainable practices on campus. This fund has provided funding for multiple projects, including a Book Arts Program that focused on responsible use of paper on campus and providing water bottles during orientation to reduce the use of bottled water. This funding is available for some of the activities proposed in this plan.

In summary, there are many curricular and co-curricular activities at Wellesley that incorporate sustainability. However, there is a lack of communication and campus-wide awareness about these learning opportunities. Thus, a key goal of this section is to provide support to faculty interested in engaging sustainability in the curriculum and to expand awareness of sustainability-related initiatives across the campus.

Recommended Strategies

Phase 1 = Within 2 years of plan being adopted

Phase 2 = Within 5 years of plan being adopted

Phase 3 = Within 10 years of plan being adopted

*PLTC = Pforzheimer Learning and Teaching Center

**SUST = Sustainability Committee

***LTS = Library and Technology Services

1. Provide support for faculty in integrating sustainability across the curriculum

Issue	Strategy	Responsible Party	Status	Phase
AC1.1	Continued support for existing sustainability-related courses and research	Academic Departments, Provost's Office	In Progress	1

Many courses, programs, and departments engage sustainability. The only program focused on sustainability, however, is the Three College Sustainability Certificate Program, which is supported jointly by Babson, Olin, and Wellesley. Due to lack of resources, the future of this program is in jeopardy; its continuation requires ongoing support from Wellesley.

AC1.2	Provide resources for faculty across	PLTC, Sustainability	Planned	2
	the college who wish to incorporate	Office, faculty with		
	sustainability into courses.	experience in incorporating		

The College will develop resources for faculty and host lectures on effectively incorporating sustainability into their teaching. During the sustainability-themed year (see below, section AC1.3), the PLTC will host lectures by faculty at Wellesley and other institutions who have successfully incorporated sustainability into their teaching. The college has many faculty who already have incorporated sustainability in their courses, and their experiences and strategies should be shared amongst the community. This will aid other Wellesley faculty who wish to incorporate sustainability into their courses.

AC1.3	Organization of a sustainability-themed year	SUST, Knapp Social Sciences Center, PLTC &	Planned for	3
	sustamusme, themse year	Departments, Sustainability Office	2017-2018	

As part of the discussions with the Provost's office and the Dean's office, it has been proposed that a sustainability themed year should be organized to increase awareness of sustainability among the Wellesley community. During this year, the Wellesley community will be encouraged to incorporate sustainability in the classroom, co-curricular events, and campus life. Courses with sustainability-themes should be highlighted in the sustainability website (see AC1.4). The Sustainability Committee will meet with departments during the year prior to the event to encourage participation by as many members of the college community as possible. Ruhlman and Tanner conferences could have sustainability themed sessions.

In addition, the Knapp Social Sciences Center and PLTC, partnering with other programs across disciplines, will host a number of lectures and events surrounding sustainability to encourage thought-provoking discussions on sustainability. Lectures will provide balanced views on sustainability so that the Wellesley community can engage in thoughtful discussions and formulate their own informed opinions about sustainability.

AC1.4	Increase awareness of current courses, research opportunities and internships related to sustainability through the enhancement of sustainability website.	Sustainability Office, SUST	In Progress	1	
-------	--	--------------------------------	-------------	---	--

Currently, a web page with a list of sustainability-related courses exists, but it has not been updated for several years. The site should be updated and include courses from across the college. The website should also link out to lists of faculty conducting sustainability-related research and sustainability

internships. Creating this website will succeed if faculty volunteer information about classes and research projects that have sustainability-related content.

AC1.5	Promote the use of the campus as a laboratory for sustainability-related	Sustainability Office, Facilities, SUST	Planned	2
	issues.			

The Wellesley campus provides numerous opportunities for incorporating sustainability into courses. From waste management to energy use, as well as buildings and the fauna and flora on campus, the Wellesley campus provides ample opportunities for students to engage in creative projects related to sustainability. The Office of Sustainability and Facilities Department can assist interested faculty by providing ideas for using the campus as a laboratory in two ways: 1). A list of potential sustainability related projects on campus that might be of interest to courses and helpful to facilities staff should be created; 2) A webpage with datasets regarding campus operations (energy, water, waste, purchasing, food and dining, etc.) would greatly facilitate faculty in disciplines such as computer science, environmental studies, and economics, among others, to integrate campus sustainability issues into the curriculum.

AC1.6	Explore the establishment of the Center for the Environment.	ES, Departments, Provost's Office, Sustainability Office, SUST	Planned	3
		Office, SUST		

A draft plan for the Center for the Environment was developed in 2013. According to this plan, the Center would serve to integrate sustainability-related fields at the college (1). The Center would promote collaborative research and teaching across Wellesley as well as Babson and Olin College. In addition, the Center would promote alumni involvement and outreach to increase student engagement in sustainability. The transdisciplinary center would be housed within the Science Center, in part to further the integration of the sciences with the rest of the liberal arts. The specific goals for the Center included (Wellesley Center for the Environment Working Group, 2013):

- Bringing in environmental practitioners from around the world who can contribute to the curriculum. The Center would also connect with local environmental practitioners who can engage students in real-world issues, comment on student work, and host student internships.
- Providing consistent programming to enhance student leadership and communication skills.
 Programs and events might involve invited speakers as well as workshops and student-led symposia
- Involving the alumni through Project Handprint
- Hosting weekly informal seminars and research updates
- Housing student-led sustainability projects and events
- Serving as a hub for sustainability-related data and information for the campus community

The College should continue to explore the possibility of establishing this Center.

2. Increase hands-on learning and research opportunities in sustainability

Issue	Strategy	Responsible Party	Status	Phase
AC2.1	Continue to support sustainability-focused summer research projects led by faculty and students.	Provost's Office, Sustainability Office	Planned	1

Many faculty use Wellesley's existing resources, such as the botanical gardens and Lake Waban, to run sustainability-related projects. These projects should continue to be supported by the summer research program.

AC2.2	Encourage sustainable classroom	Sustainability Office,	Planned	1
	practices.	LTS		

As mentioned in the Purchasing section [see section 7], the college spends \$50,000 annually on purchasing paper. As an attempt to save costs and to be more sustainable, faculty should consider going paperless in their courses. In addition, some classes in the arts and the sciences use toxic chemicals, which are harmful to both the environment and the body. Efforts should be made to find alternatives for these materials. Faculty should consider sustainability when their comments are solicited for classroom and lab renovations (the new studio arts building will offer many good examples of such initiatives taken by faculty).

The LTS and sustainability office websites also should host a site with resources to aid the incorporation of sustainability in their teaching. In addition, small problem-solving sessions or online forums should be offered for interested faculty to discuss strategies for effectively incorporating sustainable practices in the classroom while also improving pedagogy. For example, how should faculty get students to learn effectively without having to print out volumes of text? How might new electronic devices be incorporated into the classroom that minimize paper while enhancing student learning? The Sustainability Office and SUST should provide resources to ensure that interested faculty are provided with adequate tools to work with.

AC2.3	Encourage sustainable lab practices.	Sustainability Office	Planned	1
	This may include equipment sharing and swaps, educating research faculty about energy efficient appliances.			

Per square foot, research labs, teaching labs, and some studio arts spaces are often much more energy intensive to run than classrooms. Thus, sustainable practices in such areas can contribute

substantially to reductions in energy use. Sustainable practices in labs and studio arts spaces should be supported. These include:

- use of environmentally friendly solvents and cleaning reagents
- swapping unwanted equipment and supplies
- purchasing energy efficient equipment
- turning off equipment and lights when not in use
- closing fume hoods when not in use
- regular defrosting of -20C freezers

The Office of Sustainability will work with relevant departments and buildings to develop a webpage to assist faculty in sustainable lab and studio practices.

AC2.4	Initiate a Green lab certificate program	Sustainability Office	In Progress	2	
-------	--	-----------------------	-------------	---	--

In consultation with representatives of the Sustainability Office, interested faculty members will obtain a list of recommendations to improve sustainability in their research labs. A Green lab certificate will be given to labs that act on the recommendations. Examples of recommendations might include improving recycling procedures, defrosting freezers and turning equipment off at night. These recommendations will not take substantial amount of time to implement but will bring significant energy and waste reduction. Such green lab certification has been implemented at many major universities, such as Harvard University (Harvard University Sustainability, 2015), University of Washington (University of Washington Sustainability, 2015) and Cornell University (Cornell Sustainable Campus, n.d.).

AC2.5	Integration of the Global Flora Project into courses and summer research.	Departments, Botanic Gardens,	Planned	2
	into courses and summer research.	Sustainability		
		Office, SUST		

As part of Wellesley Renewal project, the permanent collections greenhouses are proposed for major renovation (French, Jones, Summa, & Mathes, 2014). Goals of the Global Flora project include net-zero water and energy building to meet aspects of the Living Building Challenge. Once completed, the renovated greenhouses will provide students and faculty with opportunities to study the building from multiple disciplines, including architecture, engineering, chemistry, physics and biology. In addition, the indoor landscape will be closely monitored using sensors that can detect abiotic factors, such as soil moisture, temperature, humidity and light. These metrics will provide ample opportunities for class research projects. In the long run, these studies will allow for the development and further understanding of indoor ecosystems and ecosystem services which in turn will provide opportunities for interdisciplinary teaching and research.

AC2.6	Expand the use of Edible Ecosystem	Departments,	Planned	2
	Teaching Garden to additional courses.	Botanic Gardens		

The Edible Ecosystem Teaching Garden is a garden that mimics natural, biologically diverse ecosystems while providing products humans can use/consume (Wellesley College Botanic Gardens, n.d.). It is designed to be a self-sustaining community of plants that remains healthy with minimal human maintenance. The establishment of the Edible Ecosystem Teaching Garden is currently in progress but as it grows and becomes established, it should be a valuable resource for teaching in a variety of courses.

AC2.7	Ensure that Wellesley students continue	Sustainability Office	In Progress	1
	to have opportunities to farm.			

Currently, Wellesley students have access to a plot of land on North 40 where they can grow their own plants and produce. The College should continue to allow the students to continue growing their own plants and produce on North 40. If the Town of Wellesley decides to use that portion of land for other purposes, the College should find an alternative plot of land.

AC2.8	Circulate regular sustainability bulletins	Sustainability Office	In Progress	1
	and advertise sustainability-related			
	events on campus.			

The bulletin will highlight sustainability-related issues and opportunities on campus as well as provide lists of internships. In addition, sustainability-related events with a focus on sustainability need to be better advertised. These may include events such as talks given by artists who focus on engaging with environmental issues or talks by economists and biologists. The bulletin should be a resource that the campus community can consult to learn about all the sustainability-related events happening on campus.

3. Expose incoming students to Sustainability at Wellesley

New Student Orientation is an ideal time to teach incoming students about sustainable practices on campus and Wellesley's commitment to sustainability. Impressing upon them the importance of sustainability can have long lasting impacts throughout the four years at the college. The following are concrete actions to be implemented by the Sustainability Office and the First-year orientation team:

Issue	Strategy	Responsible Party	Status	Phas
				e

AC3.1	Train student leaders about sustainability so they can educate first-years about sustainability on campus	First-year orientation team, Sustainability Office	Complete/In Progress	1
-------	---	--	-------------------------	---

Student leaders collaborate with the first-year orientation team and the sustainability office to develop strategies to increase sustainability awareness among the incoming students. The student leaders will then educate the first-years about the importance of sustainability:

- Incoming students will be provided with tips on how to be sustainable. For example, an APT can teach students how the use of tablets can significantly reduce the amount of paper used in courses.
- Student orientation coordinators will organize sustainability-related events and model sustainable behaviors

AC3.2	In the "What to bring" section of the welcome package, a section on sustainable items will be included (e.g. LED bulbs, hand towels etc)	First-year Orientation Team, Sustainability Office	Planned	1
AC3.3	Include a section on Wellesley's efforts on sustainability to the parents' guide.	First-year Orientation Team, Sustainability Office	Planned	1
AC3.4	Implementation of sustainability themed pre-orientation trips	First-year Orientation Team, Sustainability Office	Planned	2

Although Wellesley does not currently run first-year pre-orientation trips, such a program has been discussed preliminarily. If this were to move forward, sustainability themed experiences, such as sustainable farming, should be incorporated as one of the trip options.

4. Assess sustainability awareness among the Wellesley community

Issue	Strategy	Responsible Party	Status	Phase
AC4.1	Work with OIR to survey sustainability awareness for incoming students and graduating seniors.	Office of Institutional Research, Planning and Assessment, Sustainability Office	Planned	1

In conjunction with the Office of Institutional assessment, the sustainability office will develop questions for incoming students and graduating seniors to track how their knowledge and awareness on sustainability changes over their college years. This will also allow the College to assess whether the proposed goals stated in this plan are being met.

AC4.2	Develop a survey for alumni	Office of Institutional	Planned	2
	involvement in sustainability.	Research, Planning and		
		Assessment, Resources,		
		Sustainability Office		

With the assistance of the Center for Work and Services, we will gather information on:

- alums who have gone on to pursue sustainability-related careers
- alums who have gone on to graduate programs in sustainability-related fields
- how their study at Wellesley has changed their lifestyle and interactions with their community

Such information will provide us with a sense of how Wellesley has engaged them in sustainability related issues throughout their time at Wellesley. In addition, such information will allow us to connect current students with alums who have gone on to pursue sustainability related fields.

AC4.3	Assess the Sustainability Office.	Sustainability Committee	Planned	1	
-------	-----------------------------------	--------------------------	---------	---	--

An external review of the Sustainability Office is needed to assess how the Sustainability Office is staffed and organized relative to the college's commitment to addressing sustainability in all institutional decisions.

Financial Implications

Promoting awareness of sustainability amongst the community can lead to behavioral changes that will ultimately lead to reduced use of resources from water to paper and energy. While the financial impacts are difficult to estimate, such behavioral changes can reduce the college's overall energy use and waste generation [[see Sections 6 and 7]]. In addition, promoting green labs will lead to cost savings from reduction in energy use in the laboratories. Some of the initiatives listed here, such as enhancing student research and developing sustainability-related courses, will require funds. In order to secure funding, the College should explore funding opportunities from foundations. Sustainability is currently a high priority among many institutions and organizations. The intersection of sustainability and education should be of interest to foundations. The Class of 1957 funds should also be utilized to support some of the activities proposed in this plan. In addition, funds from CLCE should be sought for the Sustainability year.

Climate Implications

Education is arguably one of the most effective ways of promoting changes at the individual, societal and political levels. Educating the current generation of students about sustainability will make the appropriate inroads into environmental stewardship. As educators of the next generation of leaders, the College has the responsibility to ensure that students graduate with accurate knowledge and critical thinking skills to tackle issues related to climate change.

In the short-term, implementing these goals will lead to a general reduction in use of resources from water to paper and energy. Furthermore, improving sustainability in research labs can have significant reduction to the College's overall energy use and waste generation. Overall, these efforts will contribute to the overall reduction in carbon emissions and reduce the College's impact on the environment

Potential Student Involvement

- Student leadership on sustainability as Eco-reps, APTs, RAs and FYMs.
- Sustainable farming on campus
- Student research in sustainability-related fields
- Internships in the Office of Sustainability

Sources

Cornell Sustainable Campus. (n.d.). Green Your Lab. Retrieved from http://www.sustainablecampus.cornell.edu/initiatives/green-your-lab

French, R., Jones, K., Summa, C., & Mathes, V. (2014). The Global Flora Collection of the Margaret C. Ferguson Greenhouses. Retrieved from https://sites.google.com/a/wellesley.edu/global-flora/

Friends of the Wellesley College Botanic Gardens. (2015). Newsletter. Retrieved from http://www.wellesley.edu/wcbg/resources/newsletter/node/27057

Harvard University Sustainability. (2015). Green Labs. Retrieved from http://green.harvard.edu/programs/green-labs

Office of Sustainability, Wellesley College. (2015). Sustainability. Retrieved from http://www.wellesley.edu/sustainability

University of Washington Sustainability. (2015). Green Laboratory Program. Retrieved from http://green.uw.edu/green-laboratory

Wellesley Center for the Environment. (2015). Wellesley Center for the Environment Newsletter Archives. Retrieved from

https://drive.google.com/a/wellesley.edu/folderview?id=0BzqP82l8FumGb1dWcXIteGVvSEU

Wellesley Center for the Environment Working Group. (2013). Draft Case Statement.

Wellesley College. (2014, March 7). Divestment. Retrieved from

http://www.wellesley.edu/about/president/mytake/divestment/node/42604

Wellesley College Botanic Gardens. (n.d.). Edible Ecosystem Teaching Garden. Retrieved from http://www.wellesley.edu/wcbg/our gardens/edible ecosystem teaching garden/node/30407