SUSTAINABILITY AT WIDENER UNIVERSITY

2015-16 Annual Report

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SUSTAINABILITY AT WIDENER UNIVERSITY: AY 2015-2016 Annual Report

Letter from the Chief Sustainability Officer

Welcome to Widener’s inaugural annual sustainability report, for AY 2015-16. This report aims to foster awareness and inclusion about sustainability performance among university leaders and stakeholders, staff, faculty, administration, alumni and community members at Widener. Ultimately, the report is designed to serve our students because they expect no less than that their choice of institution of higher education advance sustainability for themselves and future generations.

Admittedly, the concept of “sustainability” is alternatively edifying and elliptical, technical and transformative, and fun if not at times frustrating. While it isn’t a shoe that fits every foot, sustainability provides a common language for shared responses and responsibilities for conserving resources, improving pedagogical and community outcomes, and saving money.

The proof is in the pudding: the recent Princeton Poll reveals that more than 60 percent of incoming freshmen consider an institution’s environmental stewardship as a basis for choosing which school to attend. Thus, more and more institutions of higher education across the board – community and junior colleges to colleges and universities, private to public, rural to metropolitan, liberal arts to professional, and small to immense and everything in-between – expressly aim to advance sustainability as a collateral if not core objective. Suffice to say that most of higher education here, there and everywhere at least considers the role that sustainability can play in sustaining desired institutional outcomes.

The breadth and depth of institutional commitment to sustainability, however, run the gamut. A few institutions champion schools of sustainability and/or centers of excellence that revolve around sustainability. Some have entrenched programs that consist of double-digit full-time employees keyed on implementing multifaceted sustainability strategic plans. At the other end of the spectrum are institutions still at the starting line and mulling whether and to what extent sustainability-advancing efforts make institutional sense, and just what to do about it. In the wide middle are institutions rich in ideas with sustainability deployed threadbare or thorough, with resources lagging behind or leading the way.

Advancing sustainability here or anywhere is no mean feat. The world is beset by environmental challenges. These include climate change, diminishing supplies of potable water and productive soils, air and water contamination, loss of biodiversity, deforestation, food scarcity, reliance on fossil fuels, and a disproportionate distribution of adverse environmental effects.

Population growth exacerbates these challenges. In the year 1000 BC, the world’s population stood at just one million. It didn’t cross 2 billion until about when Madame Curie, smitten with Pierre but smote by Radium, was awarded the Nobel Prize in Chemistry. By the time I was born, the planet housed about 3 billion people. It has since surpassed 7 billion, and could encroach 10 billion by the time my two teenagers and Widener’s current students may be grandparents themselves. The
ecological, ethical, and ethnographic challenges of an unsustainable world will be painful for future generations.

Environmental challenges press against the potential of Widener’s community partners, too. For instance, Chester, Pennsylvania has served as an epicenter of the ‘Environmental Justice’ movement for two decades. Wilmington, Delaware is at the confluence of three major rivers essential in our nation’s industrial history, and they have a legacy of pollution to show for it. Harrisburg – like many industrial urban centers on the East Coast – contains a surfeit of brownfields, beckoning development.

The question is what to do. Sustainability provides a framework for improving social, economic and environmental outcomes. It distills to the notion that humankind should be more intentional in how it consumes and converts the Earth’s limited resources. Governments, corporations, businesses, families, individuals and all of the planet’s inhabitants are each invested in a more sustainable future. Higher education’s 4,400 institutions and 20 million students play an essential role in advancing sustainability.

Widener’s eight schools, 6,200 students and 1,200 faculty and staff offer a unique blend of existing and potential environmental programming and projects so as to afford great potential to be a positive change agent in advancing sustainability in the classroom, on campus, and with the communities central to our civic engagement mission. And its new Sustainability Initiative aims to facilitate ways to save money, enhance educational outcomes, and collaborate more effectively with sustainability partners near and far.

A first step in deciding whether sustainability is worth the coin at Widener is developing institutional fluency, describing existing functions, and contemplating opportunities and challenges. As such, this report does four things. The first is to explain what sustainability means because it can mean many different things to many stakeholders. Second is to share the increasingly formidable role sustainability is playing in higher education. Third is to report on the variegated ways in which Widener advances sustainability. The report also has three appendices. Appendix A provides a bibliography. Appendices B and C share results of surveys of Widener students and leadership, respectively, about sustainability.

The report marks a beginning and not an end. While it is bound to have something for most readers, it is just as likely to leave some wanting more, or maybe less. As ever, thank you for your efforts to advance sustainability at Widener University. Please direct corrections, comments and questions to me at jrmay@widener.edu.

-- James R. May, Esq., Chief Sustainability Officer & Distinguished Professor of Law, Widener University
Acknowledgments

The report reflects many hands making for light work. Its structure is (very) loosely based on Moudrak and Clarke, Developing a First-Time Sustainability Report for a Higher Education Institution, in Sustainability Development at Universities: New Horizons, 506-527 (Filho, ed. 2012). The report is also informed by inputs and information gained at conferences, meetings, webinars and retreats organized by AASHE, PERC, NESCC, and Recyclemania, among others.

This report is informed by hundreds of interviews that I conducted with students, and representatives from leadership, colleges, departments, faculty, and staff. As for students, I presented to and met with the SGA, LLC, Student Honor’s Program, and various student sustainability-related societies (e.g., Student Sustainability Committee, Environmental Club, Biological Society). I also had conversations with scores of students about sustainability throughout campus. At certain events, I asked students to contribute testimonials about what sustainability means to them.

At the leadership level, I interviewed most members of the institutional senior leadership hierarchy at Widener to share ideas and information about the sustainability initiative, including the Board of Trustees; the President and her direct reports; the President’s Executive Team; the Provost and his direct reports; the Interim President and the Interim Provost; most office directors; and the Senior Leadership Team. At certain events, I asked for testimonials and suggestions about advancing sustainability at Widener.

At the college level, I interviewed the current deans of all schools except for the School of Business Administration (new), and several associate deans. I also met with the Faculty Chair, as well as chairs or heads of academic departments (e.g., Environmental Science, Chemistry, & Biology), and institutes (Business and Corporate Law, Health and Family Law and Policy, Global Environmental, Law and Sustainability, Law and Government).

As for faculty, I interviewed more than 50 individual members of faculty from each of Widener’s schools, upon request, and received numerous responses to an “Easy Sustainability Survey” circulated in the fall of 2015.

At the Administrative level, I interviewed leadership and staff personnel from Development, Human Relations, Public Relations, and Special Programs, the student honors program, and those directing special programs (civic engagement, global initiatives, study abroad, environmental coordination). As for facilities, I interviewed operations and facilities leadership and personnel for the Main and Delaware campuses, and ARAMARK representatives. I also met with the Manager of the Widener Pride Baseball Team to discuss a sustainability program in Chester.

Additionally, I met with dozens of community officials, and attended numerous public (and otherwise) meetings and gatherings. I met with various local, regional, national, and global stakeholders, including with the Pennsylvanian Resources Council, and the Mayors for the cities of Chester and Wilmington and their respective staffs about ways to advance sustainability in those communities.
To promote and inform the Sustainability Initiative, I delivered more than 30 presentations to leadership, departments, classes, and at professional conferences. These included to the Board of Trustees, the Senior Leadership Team, faculty meetings at both law schools, Arts & Sciences, Engineering, and the School of Business and Administration, more than a dozen classes in the College of Arts and Sciences, and the School of Business, and Law, and professional conferences in Delaware, Pennsylvania, Haiti & Norway.

I also interviewed dozens upon dozens of sustainability officers in higher education, and am especially grateful for input from Sarah Krakoff (University of Colorado); Fred Cheever and Chad King (University of Denver); Matt Lynch (University of Hawai‘i); Louis Kotze and Anel du Plessis (North West University, South Africa); Aurora Winslade (Swarthmore); Rob Fowler (University of South Australia); Catherine Iorns (University of Victoria-Wellington, New Zealand); and Karen Morris (Clean River, Inc.). Josh Hooper (Pennsylvania Environmental Resources Consortium) and Jay Vasell (Pennsylvania Resources Council) have also been terrifically patient guides as I ambled.

The report reflects inputs from far and wide and from an assortment of stakeholders, including newly-created sustainability-focused committees and associated membership, including the Student Sustainability Committee, Sustainability Showcase Advisory Group, Curriculum Sustainability Advisory Group, and the Sustainability Certificate Advisory Board; and dozens of interested students, staff and faculty who took the time to suffer my inquiries about advancing sustainability at Widener, especially Fred Akl, Joe Baker, Loyd Bastin, Christine Burrell, Lou Anne Bulik, Erin Daly, Julie Dietrich, Robert Dolbin, John Dernbach, Linda Durant, Iman Elkhashab, Shawn Fitzgerald, Denise Gifford, Bruce Grant, Rosemarie Greisman, George Hassel, Kathy Hornberger, Gil Landau, Ilene Lieberman, Steve Madigosky, Gretchen Mielke, Nadine McHenry, Jeannine McKnight, Sharon Meagher, Carl Pierce, Tori Remondelli, Michelle-Lyn Shelton, Rod Smolla, Paula Silver, Jayne Thompson, Steve Thorpe, Peter Ulich, Scott van Bramer, Steve Wilhite, and Julie Wollman, to name a few, but likely inadvertently missing more.

Last, I am grateful to Loyd Bastin, John Dernbach, Kathy Hornberger, Jeannine McKnight, Sharon Meagher, Carl Pierce, Scott van Bramer and Steve Wilhite for providing comments to drafts of this report, and to Janet Lindenmuth for extensive research on sustainability-related programs across the globe. Any misunderstandings, oversights, errors or omissions are mine. Please direct corrections, comments and questions to me at jrmay@widener.edu. Thank you for advancing sustainability at Widener.

-- -- James R. May, Esq., Chief Sustainability Officer & Distinguished Professor of Law, Widener University
Executive Summary

This annual report chronicles Widener University’s collective efforts to advance sustainable environmental, social and institutional practices on campus, in the classroom, and for communities central to its civic engagement mission, during the academic year ending June 30, 2016.

“Sustainable development,” or “sustainability,” is ‘development . . . that . . . meets the needs of the present without compromising the ability of future generations to meet their own needs.’ Sustainability promotes the notion that every human being is entitled to dignity and opportunity and has a concomitant duty to hold resources in trust for present and future generations. It also connotes that all should do their fair share to enhance well-being for humans and nature.

Sustainability consists of three pillars: Social, Economic, and Environmental. Social sustainability seeks to preserve nature and its reproductive capabilities, while advancing social justice and human dignity. Economic sustainability fosters continued competitiveness and strategic success, and promotes collaboration among and between departments and campuses. Environmental sustainability aims to avoid, minimize or mitigate overall adverse environmental impact. These three pillars of sustainability embody the notion of being more mindful about doing our fair share to advance well-being for the planet and present and future generations.

Widener University – with its 6,200 students and 1,200 faculty and staff – can serve as a metropolitan sustainability leader. It recently identified sustainability as a core institutional objective, launched a sustainability initiative, named a Chief Sustainability Officer, developed several sustainability-based programs, and joined national, regional and local sustainability-advancing organizations.

Cohorts within the Widener community have made sustainability a focus for decades in the classroom, on campus, and with the communities central to our civic engagement mission. Our eight schools offer five sustainability-promoting minors and majors, two sustainability-based institutes, more than a dozen sustainability-themed courses, and dozens of multi- and co-disciplinary and extra and co-curricular sustainability-advancing programs. Sustainability matters at Widener. The report concludes that Widener University – with its combination of forward-looking strategic plan ("Vision 2021"), Civic Engagement Mission, university-wide sustainability-advancing schools and programs, and blend of service-learning modalities with other high-impact practices – has the potential to become a leader in demonstrating and implementing good practices for advancing sustainability education in at least the metropolitan regions served by the university.
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“We do not inherit the Earth from our ancestors: we borrow it from our children.”

--Chief Seattle\(^1\)

“Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations.”

--Stockholm Declaration on the Human Environment\(^2\)

“Sustainability is arguably the great moral challenge of our time ...”

--Stephen Wilhite, Interim President, Widener University\(^3\)

“At Widener, we not only look for ways to improve our environmental friendliness, we implement them. As seen through various ecological improvements such as a reduction in water consumption, and new recycling initiatives, Widener is taking grand steps to become a sustainable university for the future.”

--Tori Remondelli (Widener Engineering ’16)\(^4\)

**Introduction**

This report explains what sustainability is and the role it plays in higher education in general and at Widener in particular, and serves as a vehicle for sharing Widener’s sustainability successes and stories. It is also an invitation for readers to consider supplementary and complementary modalities for advancing Widener’s Sustainability Initiative. This inaugural report is for AY 2015-16.

“Sustainability” is a concept that promotes sensible social, economic and environmental stewardship. Higher education has played an important role in implementing sustainability across the globe. In turn, Widener University has a long if uncoordinated tradition of integrating sustainability principles on campus, in the classroom, and for the communities central to our civic engagement mission, culminating with the launching of a new “Sustainability Initiative” to help advance its sustainability prerogatives.

Sustainability is commonly thought to embed three pillars. “Social” sustainability seeks to preserve nature and its reproductive capabilities, while advancing social justice, human dignity, and individual and collective participation in the campus and civic engagement. “Economic” sustainability fosters financial health, advances continued competitiveness and strategic success, and promotes collaboration
among and between departments and campuses. “Environmental” sustainability aims to avoid, minimize or mitigate overall adverse environmental impacts.

Sustainability matters in higher education, business, and government. Approximately 550 four-year colleges and universities (recently including Widener) are members of the American Association of Sustainability in Higher Education. Nearly 50 four-year colleges and universities (again, recently including Widener) are members of the comparable Pennsylvania Environmental Resources Consortium.

Sustainability has been a component of Widener life for three decades. At Widener, sustainability ideals are used to improve operating efficiencies, enhance learning outcomes, and deploy service-learning strategies and other community-based high-impact practices. Many schools, departments and programs – including Widener’s Environmental Science, Environmental Studies, Chemistry, Biology, Environmental Education and Anthropology departments, and its School of Engineering and schools of law – have been advancing sustainability over decades.

Widener recently chose to embed sustainability as a core objective. We created a Sustainability Initiative, named a “Chief Sustainability Officer,” and launched sustainability-dedicated website to help to share our sustainability-related activities and accomplishments, http://www.widener.edu/campus_life/thinkgreen/default.aspx. Other recent sustainability-advancing efforts include creating a sustainability ‘hub’ in Costa Rica, acquisition of the Taylor Memorial Arboretum, re-committing to a university-wide recycling program, installing clean water bottle filling stations on three campuses, infusing sustainability in courses throughout the university’s eight colleges, offering a dozen new sustainability-themed courses, adopting minors in Sustainability Science and Sustainability Management, and establishing a new Environmental Law and Sustainability Law Center at the Commonwealth Law School and a new Global Environmental and Natural Resources Law Institute at the Delaware Law School.

This report is written so as to correspond with four goals that we set at the beginning of the initiative, as follows:

- **Goal 1: Connect and Converse.** Goal 1 was largely to listen and learn content and context regarding sustainability at Widener and beyond. Three aspects are involved. First was to interview sustainability leadership (including students) at University across systems, curriculum and support. Second was to survey what is happening elsewhere on the sustainability front in higher education. This includes studying what is happening elsewhere. Third was to increase visibility with local (e.g., Chester Environmental Partnership), regional (Pennsylvania Environmental Resources Council, otherwise known as “Pennsylvania Green Schools”), and national (American Association of Sustainability in Higher Education) associations.
• **Goal 2: Survey and Suggest.** Survey and Suggest Sustainability Efforts at Widener University in Three Areas: Campus, Classroom, and Community. At the campus level, this entailed working primarily with operations and maintenance at each campus to survey and suggest sustainability-enforcing actions. At the classroom level, this entailed surveying and suggesting activities from two directions: (1) Sustainability infusion, and (2) Sustainability programs (e.g., minors, majors, certificates, etc.). At the community level, this involved surveying and suggesting means to implement the sustainability initiative within the student, surrounding and global communities we serve.

• **Goal 3. Ascertain and Share Our Story:** Develop a narrative about Widener’s leadership role in sustainability in higher education. This entailed three primary activities as well. First was to develop a web presence about our sustainability initiative, perhaps in conjunction with or as an outgrowth of Green Pride. Second was to sponsor a university-dedicated "sustainability summit" or series of meetings to share ideas about sustainability programs, progress and potential. Third was to empanel an advisory group (or groups) to support the sustainability initiative across the three areas mentioned in Goal 1.

• **Goal 4: Recommend Next Steps.** Identify promising sustainability initiatives for achieving recognition in sustainability in higher education.

This report serves as a means for explaining sustainability and sharing Widener’s commitment to it, and has four parts, corresponding with these goals. Following an introduction, Part One provides an overview of sustainability as an internationally recognized good practice. Part Two then describes higher education’s growing role is advancing sustainability globally, nationally, and in Widener’s region. Part Three explains sustainability’s strategic role at Widener, including activities on campus, in the classroom, and with the communities central to our civic engagement mission. The report also includes appendices listing references and survey results.

The report concludes that Widener – with its combination of forward-looking strategic plan, Civic Engagement Mission, university-wide sustainability-advancing schools and programs, and blend of service-learning modalities with other high-impact practices – has the potential to become a leader in demonstrating and implementing good practices for advancing sustainability education in at least the metropolitan regions served by the university.

**Part I: Sustainability in General**

"[Sustainable development] meets the needs of the present without compromising the ability for future generations to meet their own needs."

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“[Corporate success means] fully integrating sustainability considerations into governance, performance, accountability, R&D and overall business strategy. Tracking results, analyzing data and implementing actions to increase efficiency and competitiveness are cornerstones for success.”

--CERES, The 21st Century Corporation: The CERES Roadmap for Sustainability

“[I]ntegrating sustainability is not just a good opportunity for business. It is essential for success in a world of constrained resources. Right now every business has a choice to make. We choose to move fast, using sustainability as a force for innovation. We choose to embrace transparency, collaboration and advocacy as tools to unlock opportunity and enable us to thrive in a clean and green economy.”

--Nike Corporation

'Sustainability' serves as a guiding framework for addressing the most pressing economic, social and environmental issues of our day, including climate change, poverty, equality and shale gas development. Sustainability has a bearing on many environmental matters, including water and air quality, species conservation, and national environmental policy, discussed below.

A. Sustainability and Policymaking

The principal strength – and some would say weakness – of ‘sustainability’ is its wide applicability. It can mean many different things in many different contexts. Sustainability principles are shape-shifters, adaptive to most environmental decision making, including water and air quality, species conservation, and national environmental policy in the U.S. and around the globe. But when used appropriately, sustainability can advance passing along an environment that is as suitable for existence as what was inherited; a promise to future generations of opportunity, wealth, satisfaction, or peace; optimal sustained yields of agriculture, animals or resources; continued employment or employability; or economic development.

Sustainability is a central feature in international and domestic relations. It has long served as a principal of international environmental law, including serving as an interpretive principle in international accords and with international tribunals resolving environmental disputes.

The concept of sustainability recently entered its fifth decade. In 1972, the Stockholm Declaration on the Human Environment was the first international instrument to recognize a principle of sustainability. Fifteen years later, the World Commission on Environment and Development released its pioneering study, *Our Common Future*, which defines ‘sustainable development’ as ‘development . . . that . . .’
. . meets the needs of the present without compromising the ability of future
generations to meet their own needs.”

In 1992, the Earth Summit’s Rio Declaration stated that sustainable development
must respect the interests of all and protect the integrity of the global
environmental and developmental system. The Rio Declaration’s blueprint
document, Agenda 21, provides that “integration of environment and development
concerns . . . will lead to the fulfilment of basic needs, improved living standards for
all, better protected and managed ecosystems and a safer, more prosperous
future.” Parties at the Earth Summit’s 20th anniversary in 2012 (Rio +20) released
a follow-up document, The Future We Want, which underscored the import of
sustainability to promote peace and prosperity, and alleviate poverty.

And then in September 2015 more than 190 nations of the U.N. General Assembly
issued the 2030 Agenda for Sustainable Development, which describes
sustainability’s role as one to “Promote peaceful and inclusive societies for
sustainable development, provide access to justice for all and build effective,
accountable and inclusive institutions at all levels.” Effective January 1, 2016, the
2030 Agenda incorporates the UN’s 17 Sustainable Development Goals (SDGs),
including reflecting human dignity, adapting to climate change, ensuring clean
water, air and soil, reducing poverty, and promoting gender equity, and respecting
sovereignty, among other ambitious objectives, by 2030.

B. Sustainability and the Law

Sustainability stands as a core principle of international environmental law,
reaching everything from biodiversity to climate change. It is a common feature of
domestic law across the globe. It has emerged as an influential framing construct of
local law, especially in land use and building codes.

The elasticity of the concept of sustainability can frustrate implementation and
enforcement as a legal construct. There is very little jurisprudence applying
constitutionally embedded provisions regarding sustainability and related
provisions. For example, more than four decades removed from Stockholm, the U.S.
Supreme Court—and no member of it—has yet to recognize or even acknowledge
the concept of sustainability. Since Stockholm, the U.S. Supreme Court has decided
more than 4,000 cases, including more than 300 involving environmental matters.
Yet the word “sustainability” appears not at all before the Court in any majority,
concurring or dissenting opinion. And while South Africa’s constitution embraced
sustainable development in 1996, the provision has had little practical effect.
Likewise, while Section 225 of the Brazilian constitution requires that governmental
policies promote ecologically sustainable development, apex courts there rarely
enforce this provision. On the other hand, sustainability has earned a foothold
with some international tribunals.

Outside of judicial sphere, however, sustainability serves as a remarkably influential
legal norm for laws, policies and practices. For example, sustainability is a common feature of national and subnational laws around the globe.\textsuperscript{31} To be sure, more than three-dozen countries have incorporated sustainability in their constitutions by advancing ‘sustainable development,’ ‘future generations,’ or some combination of these themes.\textsuperscript{32} These include Belgium (“pursue the objectives of sustainable development in its social, economic and environmental aspects”); Dominican Republic (“nonrenewable natural resources, can only be explored and exploited by individuals, under sustainable environmental criteria . . .” and provides for the protection of the environment “for the benefit of the present and future generations . . .”); France (“Care must be taken to safeguard the environment along with other fundamental interests of the Nation . . . In order to ensure sustainable development, choices designed to meet the needs of the present generation should not jeopardise the ability of future generations and other peoples to meet their own needs . . .”); Nepal (“provision shall be made for the protection of the forest, vegetation and biodiversity, its sustainable use and for equitable distribution of the benefit derived from it”); and, Uganda (“Parliament shall, by law, provide for measures intended—to manage the environment for sustainable development”). These constitutional provisions help bridge the gap left by international and domestic laws, even given the array of sustainability provisions already in existence.\textsuperscript{33} Even though the vast majority of these provisions do not create judicially enforceable rights, they nonetheless affirm national values of environmental sustainability to which courts, institutions of higher education, and others may advert.

While the U.S. lacks a national law expressly addressing sustainability, its retinue of federal conservation and pollution control laws arguably advance sustainability. For example, laws requiring environmental impact analyses (“EIA”) come closest to advancing sustainability as a legal prerogative. An EIA is the process whereby an agency evaluates the environmental impacts of a proposed action, determines which impacts are unavoidable, and then provides for planning to avoid, mitigate or compensate for them. In the United States, EIAs are required for certain types of federal and state actions. At the federal level, the National Environmental Policy Act\textsuperscript{34} is intended to “encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation.” NEPA has promoted sustainability in wide and vast if often overlooked ways. For example, a NEPA process preceded the construction, expansion, and maintenance of every federal highway in the country, including the Blue Route. The same can be said for many state roads for which federal funding is involved, as well as rail lines, many hiking paths, walkways, etc. Chances are that NEPA has played a part no matter how one has made their way to Widener. For these and thousands of other federal-related actions, NEPA has facilitated transparency, coordination and participation, and thusly, sustainability.

EIA is not solely a phenomenon at the federal level in the United States as embodied in NEPA. In fact, a half-dozen states – including New York and New Jersey – have
adopted what are known as “little NEPAs” to address state agency actions that may affect sustainability.

Moreover, federal and pollution control laws – such as the Clean Air Act, Clean Water Act, and Resource Conservation and Recovery Act – and their state analogues advance many sustainability goals.

C. Sustainability and Business

The business world has also long embraced sustainability as a good corporate practice, being adopted in corporate mission statements and guiding standard operating procedures in manufacturing, shipping, technology, and land development worldwide. For instance, Ceres -- a non-profit organization advocating for sustainability leadership that works to accelerate and expand the adoption of sustainable business practices and solutions to build a healthy global economy with a powerful network of investors, companies and public interest groups – has 1,100 corporate members worldwide.

Sustainability careers are a fast growing sector in employment. The vast majority of businesses have an executive position responsible for sustainability. To be sure, the majority of corporations – including many Fortune 500 companies – employ sustainability staff and make sustainability a core organizational objective. Many companies, including Wawa and DuPont, offer sustainability internships. A 2011 Widener survey revealed nearly 60 sustainability-related employment opportunities within a 50-mile radius of Philadelphia. Moreover, many federal, state and local governments make sustainability a primary policy tool, providing additional employment opportunities to practice sustainability.

Higher education has the opportunity and resources to embrace and operationalize sustainability principles, discussed in the next part of this report.

II. Sustainability in Higher Education

“[T]he introduction of sustainability approaches and the execution of sustainability-based projects is still a dynamic process so that it can be regarded as a growing trend. But sustainability in higher education needs at the same time to be perceived as work in progress.”

--Filho 2009, 317

“[T]he environmental sustainability of colleges and universities has become a major focus of higher education research and operations. Campus sustainability has been gaining traction as the prevailing trend in higher education. If it is to become more than a trend, however, colleges and universities need to successfully institutionalize their sustainability efforts.”
“Despite decades of attempt to embed sustainability within higher education, literature clearly suggests that highly regulated disciplines ... have been relatively slow to incorporate sustainability knowledge and skill areas.”

--Dresha and Hargroves

Institutions of higher learning have become major players in advancing sustainability goals. Higher education plays a key role in advancing sustainable practices. This academic year, about two-thirds of graduating high school students in the United States – 2.5 million young people – will enter college. The most recent Princeton Poll reveals that more than 60 percent of incoming freshmen consider an institution’s environmental stewardship as a basis for choosing which school to attend.

Just the United States alone claims about 4,400 colleges and universities and 20 million students. Higher education in the U.S. accounts for $300 billion in annual expenditures, that is, almost 3 percent of the entire U.S. GDP, and more than the GDP of about 170 countries worldwide. Institutions of higher learning also, of course, have a profound impact on the way that graduates live the rest of their lives, and whether and the extent to which sustainability is an enduring value.

As the bibliography at the conclusion of this report demonstrates, sustainability has had a profound impact on higher education. As one marker of this import, the sustainability literature in the context of higher education is deep and rich, including important works on higher education’s important role in advancing sustainability in general, on campus, by infusing it in the classroom, in associated communities, in student living and learning communities, in climate change context, in new settings, as a means for teaching sustainability literacy, as a means for integrating university missions, as a tool of social transformation, and, in legal education.

A. Sustainability Networks in Higher Education

Sustainability has become a driving force in higher education in the United States and in Pennsylvania. The Association for the Advancement of Sustainability in Higher Education (AASHE) is a non-profit 501(c)(3) membership organization that provides resources, education and support to higher education sustainability efforts for faculty, administrators, staff and students. AASHE defines sustainability in an inclusive way, encompassing human and ecological health, social justice, secure livelihoods, and a better world for all generations. AASHE has more than 900 members, including approximately 550 four-year colleges and universities. AASHE offers an assortment of programs, products and other sustainability-advancing offerings for higher education. AASHE’s Keystone event is an annual conference, which has recently drawn more than 2,000 participants.
Widener University joined AASHE in October 2015, and the Chief Sustainability Officer attended AASHE’s annual conference in Minneapolis in November, 2015.

AASHE allows members to participate in the Sustainability Tracking, Assessment & Rating System™ (STARS), which is a self-reporting framework for colleges and universities to measure their sustainability performance. More than 250 universities and colleges globally participate in the STARS program, including several in Widener University’s geographic area. Widener, however, is not yet among them.

The Pennsylvania Environmental Resources Consortium (PERC) promotes sustainability in higher education in Pennsylvania. It consists of more than 70 members, including about 40 “Pennsylvania Green Colleges.” Most area colleges with sustainability initiatives are members of PERC.

Widener joined PERC in November, 2015, and the Chief Sustainability Officer attended that annual meeting at Pennsylvania State University in November 2015. He also attended PERC’s “Inside Out” institutional sustainability training session (January 2016), and he is participating in various upcoming PERC-sponsored events.

The American College & University Presidents Climate Commitment (ACUPCC) is a voluntary program that aims to reduce higher education’s carbon footprint. Those institutions that join agree to collect and report carbon emissions, and to develop a climate action plan to reduce carbon output on an ongoing basis, and to carbon neutrality by 2030. As of this writing, 665 schools have signed the commitment, and 465 have submitted climate action plans. Actions at ACUPCC institutions have already reduced gross greenhouse gas emissions by 10.2 MtCo2e (metric tons of carbon dioxide). Several area institutions are signatories to the ACUPCC, including the University of Delaware, Delaware State University, Dickinson, Drexel, Temple, and Swarthmore.

Widener is not a signatory to the ACUPCC, and has not developed a climate action plan.

B. A Survey of Sustainability Programs in Higher Education

Sustainability is also one of the fastest growing and most durable aspects of curricular reform in higher education in the United States and across the globe. Some institutions have established schools of sustainability and/or cross-campus sustainability-advancing projects. As of this writing, nearly 250 universities around the globe offer sustainability-themed bachelor, master or doctoral programs, with several boasting multiple programs. Some have recently established non-academic programs, some which award certificates of completion. The vast majority of colleges and universities that have sustainability programs use the social/economic/environmental sustainability framework described above,
implemented through the three pillars of campus/classroom/community engagement.

1. **Schools of Sustainability.** Only a few universities have yet to establish dedicated schools of sustainability, or the like, although the number is growing. Established in 2006, Arizona State’s School of Sustainability serves as an early and leading example. As far as could be determined, Chatham stands as the sole university within Widener’s geographic reach with a “School of Sustainability,” with companion opportunities to earn bachelor, master, and interdisciplinary and joint degrees in sustainability.

2. **Projects and Initiatives.** Dozens if not hundreds of universities in the United States and elsewhere have established sustainability projects and initiatives, many of which are detailed in chapters in many of the books listed in the Appendix. A few leading examples include the pioneering Ponderosa and Piedmont Projects at Northern Arizona University (1996) and Emory (2001), respectively. Other universities have established similar projects, including Central College’s “Piedmont Project” in Iowa.

3. **Bachelor’s.** Nearly 100 universities from around the globe offer sustainability-themed bachelor degrees. Of the nearly 80 universities in the United States to do so, those nearest to Widener include Albright, Chatham, Drexel, Dickinson, Messiah and Pennsylvania State. These join at least 15 more from around the globe, including those in Australia (e.g., Adelaide, Bond, and Murdoch universities), Germany (Oldenburg University), United Kingdom (e.g., Manchester, St. Andrews and Surrey universities), and Switzerland (e.g., Gland).

4. **Master’s.** Masters degrees are the most common variety of degree-bearing sustainability programs. More than 160 universities allow students to earn a masters degree in fields like Sustainability Science, Sustainable Development, and Sustainable Agriculture. Programs within Widener’s relative geographic reach include those at Chatham, Dusquesne, Pennsylvania State, Philadelphia, Villanova and Wilson.

5. **Doctorate’s.** At least 28 universities offer a sustainability-themed doctorate degree, including the universities of Arizona State, Carnegie-Mellon, Dublin, Oxford and West Virginia. Programs nearest to Widener include those at Carnegie-Mellon and the University of Pittsburgh.

6. **Certificates.** More universities are beginning to offer certificates in sustainability, including Temple and West Chester. Non-academic programs offering certificates in sustainability are also trending upward, including new programs at the University of Denver, and the University of Vermont. A proposal to establish a new non-academic certificate in sustainability is currently under consideration at Widener University.
7. **Legal Education.** Law Schools have been at the vanguard of infusing environmental sustainability into higher education. Environmental law and sustainability is an entrenched component of legal education in the vast majority of U.S. law schools. According to the Directory of Environmental Law Education Opportunities at American Law Schools, approximately 125 out of the nation’s 200 law schools have sustainability-reinforcing environmental programs in some way shape or form.

*Masters.* Twelve law schools – including American University, University of Denver, George Washington University, University of Miami, Tulane University, University of Utah and six more – offer a Masters in Environmental Law (LL.M.).

*Joint degrees.* Boston University, University of Colorado, Duke University, University of Hawaii, University of Illinois, University of Maryland, University of Michigan, University of Minnesota, University of Oklahoma, University of Oregon, Syracuse University and Yale are among 24 law schools that offer joint degrees in environmental law and other subjects.

*Certificates.* Certificates in Environmental Law are offered at 50 law schools, including Arizona, University of California-Berkeley, Widener University-Commonwealth, Widener University-Delaware, Florida, Kansas, Pace, Pittsburgh and Tulsa.

*Centers/Institutes.* Lewis & Clark, New York University, Pennsylvania University and University of San Diego are among 25 law schools with centers or institutes in environmental law.

*Clinics.* Legal education’s investment in environmental sustainability is perhaps most evident in considering clinical offerings. Environmental law clinics have had a singularly transformative impact in using the resources of higher education to advance sustainability and social justice. For instance, Widener University-Delaware’s Environmental and Natural Resources Law Clinic – the 4th oldest environmental law clinic in the world – has provided nearly 1,000,000 hours of free legal services to promote environmental sustainability since 1989. Environmental clinical programs are now in place at an additional five-dozen law schools, including Rutgers, Oregon and Pace. Six more schools – including Golden Gate and Stanford – offer environmental justice clinics, advancing social sustainability for disadvantaged communities.

*Scholarship.* Legal academies also provide robust outlets for sustainability-related scholarship. Forty-five law schools have environmental-themed law reviews or law journals, including the Sustainable Development Law and
Policy Journal at American University. Four more law schools sponsor environmental law moot court and negotiation competitions. Most every law school in the country has hosted an environmental-themed symposium, including Widener University-Commonwealth (e.g., sustainability and shale gas), and Widener University-Delaware (global environmental constitutionalism, environmental citizen suits), which hosted one of the world’s first legal academic conferences on sustainable development law, in 1997. Sustainability scholarship in turn influences sustainability teaching principles in legal and higher education.

Despite all of these efforts, there is margin for legal education to advance sustainability more effectively: “While law schools have begun to address sustainable development, they have not done so in any organized or systematic way ... law schools need to play a leading role in the national and global effort to achieve sustainability.”

C. A Survey of Sustainability at Area Colleges and Universities

A brief survey of the area shows the extent to which sustainability principles are influencing higher education at universities and colleges within Widener’s geographic reach. This local survey underscores how, by and large, area colleges and universities frame ‘sustainability’ as tripartite (social, economic and environmental) and tri-pillared (campus, classroom and community).

1. The University of Delaware has made sustainability a core education mission. UD engages the campus community, the state, the nation and the world concerning issues of sustainability. UD roots sustainability as a core principle through research, action and engagement. UD offers multifaceted programs in environmental sciences and studies. It conducts leading-edge research and scholarship on solar technology, fuel cells, sustainable landfills, offshore wind power and many other fields. Its campus in lower Delaware is carbon-free, powered by offshore wind energy. UD offers sustainability-related coursework in engineering, history, geography, wildlife ecology, marine studies and many other areas, providing a high-quality learning environment in undergraduate, graduate and professional programs. UD is a member of AASHE and APUCC.

2. Delaware State University launched the “Go Green” initiative in 2009 and established a 15-member green task force that is composed of members from the University’s Board of Trustees, executive administrative leadership, faculty, Student Government Association and others. The task force focuses on implementing a climate action plan. DSU is a member of the APUCC.

3. Drexel integrates sustainability throughout the campus and curriculum, and has an active sustainability council. The Sustainability Council offers ongoing programs throughout the year to the entire Drexel community as a
way to promote sustainable practices on campus, at home, and in the community. Drexel is a member of AASHE, APUCC and PERC.

4. **Loyola University Maryland** is making strides to integrate sustainability throughout campus, classroom and community initiatives, headed by a “Sustainability Team.” Loyola offers a minor in environmental sustainability, and several sustainability-advancing courses and programs. Loyola University Maryland is a member of AASHE and APUCC.

5. **Neumann University** maintains intermittent sustainability initiatives, including recycling and some curriculum integration, headed by a “Care of Creation Advisory Committee.”

6. **Pennsylvania State University** offers what may be the area’s most sophisticated sustainability program. PSU has embraced sustainability as a foundational principle, and offers sustainability programming and projects throughout its curricular and community outreach offerings, on 21 campuses. PSU created a well-staffed and supported Sustainability Institute to integrate and implement the University’s sustainability mission from top to bottom, including throughout the University’s research, teaching, outreach, and operations, and to help prepare students, faculty, and staff to be sustainability leaders in their professional, personal, and civic lives. PSU is a member of AASHE, APUCC and PERC.

7. **The University of Scranton** has an active sustainability task force, and has worked to infuse sustainability measures on campus, in the classroom, and in the neighboring community. It has worked to infuse sustainability into the curriculum, and hosted a related ‘sustainability summit.’ It is a member of AASHE and PERC.

8. **Swarthmore College** has recently redoubled its efforts to promote sustainability. In June 2015, it established an Office of Sustainability and a Sustainability Committee, and launched an Environmental Sustainability Framework for capital projects and facilities. It promotes active learning in sustainability, with an arboretum and greenhouse, among a multitude of other activities, and offers an interdisciplinary minor in sustainability. Swarthmore is a member of ACUPCC and has a climate action plan that aims to trim carbon output by 50 percent by 2015, and become carbon neutral by 2035. It is also a member of AASHE and PERC.

9. **Temple University** has a growing sustainability program, with an Office of Sustainability, nearly 100 sustainability-advancing courses, a myriad of sustainability-advancing bachelor and master degrees, and a minor and a certificate in sustainability. Temple is a member of AASHE and APUCC.
10. Villanova’s approach to sustainability emphasizes social justice and community service. It offers a minor in sustainability studies, a bachelor’s in sustainability engineering, and various other sustainability-advancing degrees. Villanova is a member of AASHE and APUCC.

11. West Chester University established an Office of Sustainability in 2011. In October 2015, its President announced a commitment to carbon neutrality and sustainability with new programs and resources devoted to reducing resource consumption, increasing curricular offerings, and improving community awareness. WCU is a member of AASHE, APUCC and PERC.

III. Sustainability at Widener University

“Widener’s sustainability initiative embeds the values of environmental stewardship into the curricula and daily life. The university has more than 1,200 faculty and staff and an annual enrollment of more than 6,000 students who are civically engaged leaders with a global reach. Widener’s large sphere of influence enables it to make a real impact in shaping and preserving our future.”

--Jeannine McKnight, Widener MA ‘17

"Sustainability is important because it centers on protecting the environment and our health without compromising our way of life. At Widener, I have seen many examples of the commitment to sustainability, some being the many recycling bins around campus and refillable water fountain stations."

--Gabriela Faux, Widener Ch. Engr. ‘17

“At Widener Law, we have a very visible recycling system, which demonstrates commitment to sustainable practices like reusing our materials. Also, in a more practical sense, our environmental law clinic and course offerings shows the importance of education about our environment and sustainability and prepares law students to take those lessons and apply them throughout the rest of their career.”

--Sarah Slinger, Widener L’16

“What better way to advance our Civic Engagement mission than through an all-out effort to make sustainability a curricular, co-curricular, and administrative priority on all of the university’s campuses?”

--Stephen Wilhite, Interim President, Widener University

As mentioned, Widener’s three campuses, eight schools, 6,200 students and more than 1,200 faculty and staff offer a unique blend of existing and potential environmental programming and projects so as to afford great potential to be a positive change agent in advancing sustainability in the classroom, on campus, and
with the communities central to our civic engagement mission. Widener has made sustainability a focus for decades and its new Sustainability Initiative aims to facilitate ways to save money, enhance educational outcomes, and collaborate more effectively with sustainability partners near and far.

As detailed below, Widener advances sustainability from university through unit levels. Our efforts begin with helping to create a more sustainable campus environment. We heat and cool seven buildings geothermally, making us (as far as we know), the only area university to do so. Our recently constructed buildings are LEED-certified as energy efficient. Since September 2015, we have installed more than 60 new multi-use recycling bins, 10 pure water bottle filling stations, and dozens of LED lights and motion sensors throughout our campuses. We serve only cage-free eggs and chicken, locally grown produce, and sustainable, organic coffee grown at our own sustainability hub in Costa Rica. We have switched to more environmentally friendly cleaning practices. All of our napkins, and much of the paper and cardstock we use university-wide are made from recycled or post-consumer paper. And we continue to work on ways to reduce paper, water and energy consumption, minimize office and food waste production, and advance sustainability while saving resources.

Moreover, sustainability is deeply ingrained in the DNA of our academic programs and civic missions. We offer five sustainability-promoting minors and majors, two sustainability-based institutes, more than a dozen sustainability-themed courses, and dozens of multi- and co-disciplinary and extra and co-curricular sustainability-advancing programs. And each of our eight schools advance sustainability, including in the ways detailed below. In short, sustainability matters at Widener.

While there is more to do and to understand, what is clear is that Widener has the potential to be a leader in advancing sustainability in our metropolitan region. This part of the report details existing and ongoing steps at Widener toward sustainability on campus, in the classroom, and in the communities central to our civic engagement mission. To this end, this report separates sustainability into seven domains: Curriculum; Research; Operations; Outreach and Service; Student Life; Institutional Mission, Policy, and Planning; and External Stakeholders.

A. Curriculum

We advance sustainability in the curriculum through sustainability-advancing programs, courses, and infusion.

1. Programs.

   We offer a growing list of academic programs related to sustainability and environmental conservation, including:
   a. Environmental Science Major and Minor—The environmental science
major and the minor address the growing need in our society for persons possessing both a broad scientific background and an understanding of environmental relationships.

b. Sustainability Science Minor—This minor is open to students in all majors and prepares students to address some of our most pressing local, regional, and global sustainability issues.

c. Sustainability Management Minor—This minor is offered in two formats, one for business majors and one for non-business majors. The minor enables students to manage the dependent, complex relationships between the environment, economy, and culture.

d. Environmental Studies Minor—This minor provides arts and sciences students with an understanding of complex environmental issues and the social, political, and cultural contexts that affect human interaction with the environment. Students will combine knowledge from the scientific disciplines with principles of social science to help solve environmental problems.

e. Environmental Engineering Minor—This minor prepares engineering students to protect and restore the quality of our air, water, and land resources, and to address the environmental issues and problems that are vitally important to the sustainability of our society’s infrastructure.

f. Certificate in Sustainability—This would be a non-academic program run in conjunction with the Oskin Leadership Institute, currently under consideration.

2. Courses.

Each of our eight schools – the College of Arts & Sciences, the School of Business Administration, the School of Education, Hospitality, and Continuing Studies, the School of Engineering, the School of Human Service Professions, the School of Nursing, and the Commonwealth Law School in Harrisburg and the Delaware Law School in Wilmington – advance sustainability in the classroom in myriad ways, including sustainability-advancing courses and projects for various colleges and departments, detailed below.

**College of Arts and Sciences**

1. **Chemistry.** The Widener science faculty includes some of the leading teachers and researchers in the fields of sustainability and green chemistry. Many of the chemistry department’s labs feature green experiments, and students, as future scientists, are encouraged to consider how they will meet society’s current needs without compromising future generations. In 2014, led by Dr. Loyd Bastin, Widener became the first Pennsylvania institution to sign the Green Chemistry Commitment. Sustainability-advancing courses include:
• CHEM-100 (Introduction, non-majors, focusing on 12 principles of green chemistry)
• CHEM 145A – General Chemistry I (group activities based on sustainability examples to reinforce content into coherent activities)
• CHEM 120 (for non-science majors)
• CHEM 145 (Gen Chem)
• CHEM 147 (General Chemistry I lab for science and engineering students)
• CHEM 255/257 (Organic Chemistry I lecture/lab for science and chemical engineering students)
• CHEM 256/258 (Organic Chemistry II lecture/lab for science and chemical engineering students); CHEM 461/463 (Advanced Synthesis and Spectroscopy – this is our capstone chemistry course)
• Greener Synthesis of Pharmaceuticals (13 Widener undergraduates in a project to design an environmentally sustainable synthesis for class of pharmaceuticals)

2. English and Creative Writing: One way this department advances sustainability is through the “Promoting Literacy in the Chester Writers House,” which is a service-learning course held at Open Mike’s Internet Café in Chester and open to community members. The course considers ways in which environmental and food justice issues impact literacy. This course also organized the Day and Night of Sustainable Thinking, discussed elsewhere herein.

3. Environmental Science & Environmental Studies: Widener’s Environmental Studies and Environmental Sciences departments have a long list of sustainability-advancing programs, including ‘Cultivation-to-Cup,’ a multidisciplinary offering that produces organically grown coffee named WU Brew, now available in Widener’s bookstore, P.O.D. markets, and online. Together with the Las Lajas farm in Costa Rica, Dr. Stephen Madigosky and his Widener students have been able to cultivate and produce a sustainable product. Sustainability-advancing courses include:

• ENVR 172 Principles of Sustainability Science
• ENVR 180 Sustainable Development: Service Learning in Tropical America
• ENV 180 (Sustainability in Practice)
• ASC 400 Values Seminar: The Just City (interdisciplinary capstone courses for A&S and Engineering students to address aspects of the sustainability of cities, with particular focus on issues of rights and safety, in Chester)
4. **Languages:** SPANISH 302 incorporates issues of environmental and social sustainability in Spain and Latin America into course readings and writing assignments. (Linked with Environmental Science course on Latin American Biodiversity for Spring 2016)

5. **Women’s Studies:** Women and Development in Latin America (GWS/ANTH/SOC 239) is a travel/experiential learning/service learning course addressing all 3 dimensions of sustainability, including visits to eco-tourism sites developed and owned by indigenous women’s cooperatives.

### School of Business Administration

The School of Business Administration (SBA) offers several required and elective courses that contain significant content on sustainability and corporate social responsibility. At the undergraduate level, Understanding and Working in Organizations (MGT 100) and Leadership in Business (MGT 310), which are required for all business majors, have theoretical and practical coverage of these topics. Sustainability, Innovation, and Entrepreneurship (MGT 335) is a very popular elective. Senior Project (MGT 451), which is required of all management, economics, international business, and business informatics, has many real-life projects dealing with sustainability and environmental awareness. Some of the recent student-led projects included business plans for start-up environmentally friendly landscaping companies, a marketing plan for a family-owned organic shade-grown coffee plantation in Costa Rica, a feasibility study for a campus-wide recycling project, and replacing sanitary paper products on campus with more environmentally friendly products.

In cooperation with the Science Division, the SBA created two undergraduate minors: Minor in Sustainability Management (for environmental science majors) and Sustainability Management Minor (for SBA majors). These majors started accepting students in the fall 2014 semester. As a result of a major re-design of the MBA program, three of the required courses have substantial coverage in sustainability and corporate social responsibility. These courses are Leading Organizations and People (BUS 605), Managerial Economics and Innovative Environment (BUS 625), and Managing for Results (BUS 675). Additional sustainability-advancing courses include BUS 351 and BUS 371, both of which incorporate “Triple bottom line” investing and corporate governance.

### School of Education, Hospitality, and Continuing Studies

**Sustainability-advancing courses include HM 207, in which students are assigned to seek initiatives to make the lab portion of the class more sustainable: i.e. recycling, food wastes and costs. Students identify a sustainability goal or issue, research it, and conduct a training program.**
School of Engineering. The School of Engineering regularly encourages students to shape their senior project to advance sustainability, and integrate sustainability throughout the curriculum. Sustainability-advancing courses include:

- Solid Waste
- Land Use Planning
- Pollution Control
- Environmental Law for Engineers
- ASC 400 Values Seminar: The Just City (interdisciplinary capstone courses for A&S and Engineering students to address aspects of the sustainability of cities, with particular focus on issues of rights and safety, in Chester)
- Widener Recycling Plan
- Determination of Factors Influencing Waste Composition at Institutions of Higher Education
- Adsorptive separation of CO2 and hydrocarbons
- Vertical Axis Wind Turbine Solar Panel Tracking System
- Green Buildings
- Hydroelectric Turbine
- Solar/ Electric Hybrid Vehicle
- Green Roof

School of Nursing. Infusing Sustainability in a Doctor of Nursing Practice (DNP) Curriculum. The purpose of this project is to infuse sustainability in an innovative Doctor of Nursing Practice curriculum through complexity, ethics, health policy, and DNP practice improvement courses, and in DNP project design, implementation, and evaluation. Additional sustainability-advancing coursework include:

- NURS 887 (online sustainability module in NURS 887 Doctor of Nursing Practice II in WEBSTUDY)
- NURS 101 (Freshman Seminar) (week of content on Sustainability; visit to the “New American Garden” exhibit at the New Building Museum and also have a tour with the focus of sustainability)

Commonwealth Law School. The Commonwealth Law School advances sustainability in a variety of ways, including recently establishing an Environmental and Sustainability Law Center led by Distinguished Professor John Dernbach, a scholar whose record of publication and influence rank him as a national leader in his field. Sustainability-advancing courses include:

- Sustainability Law and Practice
- Sustainability Seminar (in conjunction with community partners on
developing sustainable land use ordinances, including Pennsylvania State Association of Township Supervisors)

**Delaware Law School.** Delaware Law School has one of the deepest and longest-standing environmental law programs in the world. It was one of the first schools in the nation to offer Environmental Law regularly, beginning in 1981, and heralds the world's 4th longest-standing clinical program, which began in 1989. It recently launched a Global Environmental and Natural Resources Law Institute, chaired by Distinguished Professor James R. May.

The Institute's faculty has long been leaders in sustainability. Sustainability-advancing coursework begins with the Environmental and Natural Resources Law Clinic, which since 1989 has helped individuals and organizations pursue hundreds of citizen suit claims, securing important victories requiring protection of more than 6,500 overly-polluted waters and forcing changes at facilities large and small to reduce or eliminate pollution of air, water, and land. In its more than quarter-century of operation, the Clinic has secured more than $20 million dollars in facility upgrades, environmental expenditures, and supplemental environmental projects that help advance sustainability by reducing environmental degradation. Additional sustainability-advancing courses include:

- Environmental Law
- Natural Resources Law
- International Environmental Law
- Global Environmental Constitutionalism

### 3. Infusion

In August 2015, Widener offered its first *Infusing Sustainability into the Curriculum* faculty workshop. The workshop was organized and facilitated by Drs. Loyd Bastin (Chemistry), Paul Goldberg (Spanish), and Stephen Madigosky (Environmental Science). The workshop was open to all full-time faculty interested in exploring the infusion of sustainability into an existing course or in developing a new course around sustainability issues. The faculty received a $1,000 honorarium for participation in the workshop ($500 after completion of the workshop and $500 after presenting at the subsequent workshop). Faculty were required to: (1) read 8 readings of about 15 minutes over the two weeks preceding the workshop; (2) participate in the 2-day workshop; (3) prepare a syllabus and give a 10-minute presentation at a follow-up meeting; and (4) report (1 page written and 10 minute oral) back to the group during the subsequent workshop. Nine faculty from across the university participated in the workshop: Normajean Colby (Nursing), Shirley Drayton-Brooks (Nursing), Adrienne Hall (Hospitality Management), Kit Healy (Psychology), Louise Liable-Sands (Chemistry), Andi Martin (Chemistry), Jim Porter (Business), Jayne Thompson (English), and Janine Utell (English).
A variety of speakers from Widener and Chester introduced sustainability and led discussions on a variety of sustainability issues and provided examples of how these issues could be infused into courses. The topics and speakers were: (1) overview of Sustainability (Steve Madigosky); (2) Importance of Sustainability in the Curriculum (Loyd Bastin); (3) Sustainability and Policy (John Dernbach); (4) Connecting Chester to the “Circuits Trails”, A Regional Wide Initiative (Lizzie Hessek, PA Environmental Council); (5) Sustainability Issues Motivate Student Learning in Science: Case Studies for Majors & Non-Majors (Bruce Grant); (6) Cross-disciplinary sustainability projects across the curriculum (Steve Madigosky); (7) Components of a graduate course on sustainability (Loyd Bastin); (8) Sustainability and Law (John Dernbach); (9) Integrating Ecology, Technology and Indigenous Culture in a Spanish Conversation and Composition Course (Paul Goldberg); (10) Social Sustainability (Sharon Meagher); and (11) Environmental Justice Tour of Chester with Rev. Horace Strand. Professor James May also participated in the workshop as a discussion facilitator.

The work of some of the participants is ongoing but several of them have shared their infusion examples on and off-campus. Dr. Andrea Martin developed several class exercises that infuse recycling, mineral usage/mining for cell phone components, the UN climate summit in 2015, and student presentations on sustainability. Dr. Louise Liable-Sands integrated sustainability into a chemistry course for non-science majors by implementing weekly writing assignments and a research paper on sustainability issues. Dr. Normajean Colby integrated sustainable issues into a freshman seminar course. She has the class calculate their carbon footprint and explore the environmental impact of household products prior to the start of the semester. She then led discussions about sustainability and how it relates to health and nursing. As a result of her participation in the workshop, Jayne Thompson organized two events in the city of Chester: A day and night of sustainable thinking. The day of sustainable thinking event featured family-friendly activities designed to spark an interest in sustainability among young participants. The night of sustainable thinking event featured 10 presenters from the Chester community and Widener (students and faculty). The speakers discussed a variety of sustainability issues ranging from chemical pollution to climate change to environmental justice to organic farming.

B. Research.

Widener boasts some of the world’s most influential scholars on the subject of sustainability. Widener scholars have published the following sustainability-related books, chapters and articles during 2015-16:

1. Books

constitutionalism in advancing sustainability. Available at: http://www.e-elgar.com/shop/environmental-constitutionalism

- JOHN C. DERNBACH & JAMES R. MAY, SHALE GAS AND THE FUTURE OF ENERGY: LAW AND POLICY FOR SUSTAINABILITY (Edward Elgar Pub. 2016). This is the first book to systematically explore the relationship between shale gas and sustainable development. With the help of 14 contributing authors, the book ventures answers to the question of whether, or under what circumstances, shale gas can help accelerate the transition to sustainability. For information about the book, click here. To download the introduction and chapter 1, click here and here.


2. Chapters

- Erin Daly & James R. May, Constitutional Environmental Rights, in ENCYCLOPEDIA OF PUBLIC ADMINISTRATION AND PUBLIC POLICY (DOMONIC BEARFIELD & MELVIN DUBNICK ED., 2015)


- John C. Dernbach, Creating Legal Pathways to a Zero-Carbon Future (2016) (from Contemporary Issues in Climate Change Law and Policy: Essays Inspired by the IPCC (Robin Kundis Craig & Stephen R. Miller eds., Environmental Law Institute, 2016). This paper provides an overview of the challenge of achieving a zero carbon future, reviews major reports by the Deep Decarbonization Pathways Project and the World Bank, and finally, using the U.S. as an example, describes ways to identify and create legal pathways to that objective, building on the insights of these two reports. To download a copy, click here.


3. Articles

• John C. Dernbach and James R. May, *Can Shale Gas Help Accelerate the Transition to Sustainability?* (2015). Analyzing a broad range of issues, this article asks, and suggests answers to, the question of whether, or how, shale gas production can help accelerate the transition to sustainability. This article summarizes a range of issues that are captured in more detail in our book. To download a copy, click [here](#).


• John C. Dernbach, *Facing Down the So-Called Agenda 21 'Conspiracy:' Lessons for Planners* (2015). In the last several years, proposed land use decisions in the United States frequently have been subject to claims that they were influenced in undesirable ways by Agenda 21, the international strategy for sustainable development adopted at the U.N. Conference on Environment and Development in 1992. Using a land use controversy in Mt. Gretna, Pennsylvania as a case study, this article explains how local planners and officials can address these claims when they are made. To download a copy, click [here](#).

• John C. Dernbach & Federico Cheever, *Sustainable Development and Its Discontents* (2015). This article provides a functional and historical analysis of the meaning of sustainable development. It then analyzes and responds to criticisms that the term is “too boring” to command public attention, “too vague” to provide guidance, and “too late” to address the world’s problems. To download a prepublication copy, click [here](#).


C. Operations

We have taken various measures to reduce energy consumption university-wide, including installing more efficient lights inside and out, motion sensors in classrooms and common areas that turn off lights when the area is not occupied, upgrading HVAC systems, installing insulation and more energy-efficient windows, and maintaining interior building temperatures of 55F and 80F during winter and summer breaks, respectively, detailed below.

1. Energy Savings on Heating and Cooling. Specific measures to advance energy savings include:

- **Three LEED-Designated Buildings.** Our three newest buildings are “LEED” certified by the U.S. Green Building Council, including Harris Hall (founded 2015), Freedom Hall (2014) and Founders Hall (2013). LEED certification equates to sustainable materials and construction, and energy and waste efficiency.

- **Seven Geothermally-Heated and Cooled Buildings.** Seven buildings at Widener are heated and cooled with geothermal exchange technology (“geoexchange”), including Kirkbride, Metropolitan, Grasselli, Sharples, and Thayer Halls, which reduces energy consumption (and associated carbon emissions). Widener is the only area university (at least as far as can be determined) that deploys geothermal energy.

- **Installed 32 High Efficiency Boilers.** On the Main Campus, we have recently installed 32 high-efficiency (At least 97 percent efficient) low-NOx (emissions of nitrogen oxides) boilers, including in Old Main (6), Hanna, Grasselli and Thayer Halls (5), 1238 Potter St. (2), Manor House (2), 1300 Potter St. (2), Schwartz pool heater (3), CAN (1), KLC (2), Cann (2), Turrell and Howell (3), Founders Hall (2), and Freedom Hall (2).

- **Installed Programmable Thermostats.** We have installed programmable thermostats with setback temperatures for unoccupied/night use throughout the university.

2. Energy Savings on Lighting. We have recently replaced or retrofitted hundreds of lighting fixtures around campus to reduce energy use, as follows:

- Schwartz Center Gym and Field House: Replaced 64 400-watt HID fixtures with 192-watt T8 fluorescent fixtures, reducing energy use by about 47% (2008).

- Pool: Replaced 25 400-watt HID fixtures with 100-watt LED fixtures, reducing energy use by about 70% (2015).

- Wellness Center: Replaced 14 168-watt fluorescent fixtures with 40-watt LED fixtures reducing energy use by about 76% (2014).
• Sharpless, Moll and Kapelski Halls: Replaced 193 26-watt fluorescent fixtures with 15-watt fluorescent fixtures reducing energy use by about 42% (2012).

• Boettner and New Hall: Replaced 88 26-watt fluorescent fixtures with 8-watt LED fixtures reducing energy use by about 75% (2013).

• Old Main:
  o First floor hallway: Replaced 16 50-watt lamps with 7-watt LED lamps, reducing energy use by about 85%; Replaced 5 75-watt par lamps with 15-watt compact fluorescent lamps, reducing energy use by about 80% (2015).
  o Exterior: Replaced 3 100-watt HID exterior fixtures with 18-watt LED fixtures, reducing energy use by about 88% (2015).
  o Second and Third Floors: Replaced 40 26-watt fluorescent fixtures with 32-watt fixtures, reducing energy use by about 30% (halls) and 60% (offices) (2010).

• University Center, Cafeteria: Replaced 100-watt lamps in hanging fixtures and table lamps with 15-watt compact fluorescent lamps, reducing energy use by about 85% (2013).

• KLC Learning Center, Boiler room: Replaced 40-watt fluorescent fixtures with 32-watt fixtures, reducing energy use by about 60% (2015).

• Kirkbride, Forum: Replaced 25 160-watt fixtures with 132-watt fluorescent fixtures with dimming controls, reducing energy use by about 23% (2010).

• Sun Hill Properties: Replaced front outdoor fixtures with LED fixtures, reducing energy use by about 80% (2014).

• Founders, Freedom and Harris Halls: All have been fitted with a combination of LED and energy efficient fluorescent fixtures.

• Campus-wide: Replaced most lighting fixtures on campus that were designed for standard incandescent lamps with efficient compact fluorescent lamps or LED lamps, reducing energy use by about 50% or more.

3. Additional Energy Savings at Commonwealth Law School. In addition to university-wide programs, the CLS is implementing various efforts to conserve energy, including:

• Solar Energy Assessment. Recently issued a request for no-cost bids to advance the installation of low to no-carbon renewable energy systems.

• Energy Audit. Arranged for PPL to conduct an energy audit/evaluation under Act 129, which resulted in efficiency upgrades and a rebate of approximately $34,000.00 and annual savings of about $3,000.00 to $4,000.00.

• Negotiated Efficiency Savings. Based on efficiency upgrades, negotiated energy supply contract of .0746 per KWH for 2 years, saving thousands
annually

- Replaced T-12’s with T-8’s. Replaced existing T-12 fluorescent fixtures with more efficient (and luminescent) T-8 electronic ballast systems which allow for low, medium or high luminescence settings, depending on classroom needs
- Replaced incandescent lights with LEDs
- Replaced 90% of existing HVAC units with more energy efficient systems.
- Installed programmable thermostats on all units
- Installed energy-efficient roofs on the student organizations and administration buildings
- Installed photocells or timers on all outdoor lighting systems
- Considering other efficiency-improving measures, including replacing parking lot and external building lights with L.E.D. fixtures, and replacing the roof at the library building to improve the R-value on insulation

4. Additional Energy Savings at Delaware Law. DLS has decreased energy consumption with:

- LED lighting. We installed low-emission lights throughout parking lots and exterior buildings, and in the Vale auditorium and other various areas within university buildings.
- Light Sensors. We installed sensor lighting switches within classrooms and offices throughout campus
- HVAC Upgrades. We have upgraded older, less efficient HVAC units with high efficiency units
- VFDs. We installed VFD’s (Variable Frequency Drives) on several HVAC units. VFD units can operate at 100% capacity on extremely hot and/or cold days, and 50% capacity on average days, for example, thus reducing energy costs and consumption while reducing wear and tear on mechanical parts
- Automated HVAC Control. In conjunction with the Registrar’s office, we have systematized energy outputs by installing “Metasys” controls that enable us to manipulate room temperature and lighting controls from a centralized location. That means that we aren’t heating and lighting rooms that aren’t in use.
- Energy Efficient Windows. Throughout campus, the university has replaced inefficient (low “R-value”) single-pane windows with more efficient fixtures.

5. Paper Savings.
Widener continues to curtail paper consumption throughout the university,
including by:

- **Paper-free.** In the last year, we have digitized payroll, accounting and timekeeping for Widener’s 1,200 employees, enrollment for 6,000 students, and teaching materials for countless classes. We have also converted to direct deposit for expense reimbursement.

- **Purchasing.** We now purchase all hand towels and paper products from 100 percent post-consumer waste recycled paper.

- **Hand dryers.** We have installed hand dryers in restrooms throughout campus.

6. **Additional Paper Savings at Delaware Law.** The DLS has reduced paper use by, among other things:

   - Digitizing many of its courses and course materials, rendering them “paper-free”
   - Having the copy center print all materials double-sided unless requested otherwise
   - Producing event material “in-house” only as needed
   - Ordering all materials electronically either via email or websites
   - Using a wiki to communicate information that needs to be shared to save paper and make it easily available to all
   - Encouraging students and faculty to send print jobs to the Xerox machines and use the duplex function

7. **Waste Savings.** As a highly visible symbol of Widener’s commitment to sustainability, the University recently launched a comprehensive recycling program on all campuses, with the tag line of “Green Pride.” Distinctive recycling receptacles are now in place in outdoor spaces and in common spaces in University Center, academic buildings, the Fitness Center, and the Board Room. The recycling system already in place in residence halls will continue and will ultimately be complemented by the addition of recycling containers in every university office, including all faculty offices. These efforts will be cohered with what have been previously disconnected recycling efforts on the Main Campus, and at the Commonwealth and Delaware Law Schools.

8. **Additional Waste Savings at Commonwealth Law.** CLS has taken the following measures in addition to what is mentioned above:

   - Instituted a single-stream recycling program
   - Recycling all used computers, monitors, fluorescent tubes, and ballasts through a private vendor
   - During summer and winter breaks, curtailing dumpster pick ups to save funds and resources
9. Additional Waste Savings at Delaware Law. The law library removes book covers prior to discarding to facilitate recycling. All waste generated within academic and administrative buildings is commingled, except for that produced by residents and dining centers, which is still source separated. Hazardous waste is stored and removed by licensed 3rd parties.

10. Hazardous Waste Reduction: The chemistry department developed its first comprehensive chemical hygiene plan in 2006, wherein the department revised its procedures to ensure that waste was properly disposed of in a timely fashion. It also instituted protocols to reduce hazardous waste generated by teaching and research, including extensive inventory reduction and improving storage facilities.

11. Water Savings. The majority of restrooms at the University (including most in Delaware and Harrisburg) have been retrofitted with 1.6 gallon pressure tank toilets, and with auto-flushers for urinals. Specific water-saving measures recently conducted on the Main Campus include:

- Water-saving toilets. Installed low-flow (1.6 gpf v. 3.5 gpf) toilets throughout campus. Installed 24 new pressure assist toilets in Dixon Apartments, saving about 90,000 gpy of water and sewage.
- Water-saving urinals. Installed low-flow (1.0 gpf v. 1.6 gpf) urinals throughout campus.
- Water-saving showerheads. Installed low-flow (1.5 gpm) showerheads throughout campus, saving on water, gas and sewage. For example, just changing showerheads in the quads saves 100,000 gpy alone.
- Water saving faucets. Installed low-flow (0.5 gpm v. 1.5-2.0 gpm) faucets throughout campus.
- Efficient Water Heater. In Old Main, installed efficient water heater (200k BTU to 50k BTU), cutting gas use by 75 percent.
- Water saving flow hoses. Installed low-flow rinse hoses in University Center Kitchen, reducing water use by about 30-40 percent.

12. Plastic Water Bottle Savings. Water bottle filling stations help keep disposable plastic bottles out of the waste stream, and provide fresh, clean and cool water for our students and staff on demand. Filling stations also save money, curtailing the need for 5-gallon water machines located throughout the university.

During AY 2015-16, we installed 8 new water bottle filling stations, including at the Wellness Center (2), University Center, Harris Hall (4) and Delaware Law School (1). As of July 11, 2016, these stations have thus far removed approximately 100,000 disposable water bottles from the waste stream.
13. Food

- **Waste Savings.** We strive to incorporate sustainable practices into our food services on all campuses. We converted to “tray-less” in 2013 to reduce food waste and water use. Moreover, we recycle 100% of our fryer oil, reduce food waste during preparation, and display the nutritional content of portions served. In the future, ARAMARK plans to:
  
  o Introduce a reusable to-go container program
  o Introduce zero waste catering options (catering where all waste is biodegradable or recyclable)
  o Conduct employee sustainability training
  o Provide sustainable food options for Oxfam’s annual Hunger Banquet

- **Sustainable Food Practices.** Among other things, we serve:
  
  o Only cage-free eggs
  o Cage-free pork (as of 2017)
  o Organically-certified WU Brew brand coffee, harvested from a Widener-affiliated farm that practices sustainable development in Costa Rica
  o Only fish certified by the sustainability-advancing “Monterey” program
  o Organic, vegetarian options daily
  o Organic milk, and soy and almond beverages
  o Locally-grown “farm-to-table” produce with the goal of increasing offerings by 5% a year.


Our housekeeping staff is taking various steps to incorporate sustainable practices on the Main Campus, including:

- Implementing our new university-wide recycling program
- Installing three “Blue Cleaning” systems (called the “OS-3 On Site Generator,” housed in University Center, and Schwartz and Kirkbride Halls). The OS-3 cuts water use by 50%, uses only a single, biodegradable cleaning chemical instead of three harsher chemicals used by the system it replaced, and provides for safer, hypoallergenic cleaning supply fluid
- Purchasing higher-efficiency automatic floor cleaning systems (called the “T-3”) for several of our buildings on the main campus


We also
installed six tree and shrub-landscaped-islands totaling approximately 1,200 square feet to parking lot in 2015.

D. Outreach and Service

We have advanced sustainability through outreach and service in innumerable ways, including:

1. Acquisition of Taylor Arboretum at Widener University.
Widener University has acquired the Taylor Memorial Arboretum, a 30-acre reserve of plantings and natural lands located about a mile north of the university in Nether Providence Township. The arboretum will remain free and open to the public while providing the university with greatly expanded opportunities for research and hands-on learning in the environmental and biological sciences and science education. The arboretum will be renamed the Taylor Arboretum at Widener University.

2. Acquisition of CARES21 Property in Costa Rica.
Widener University has purchased a five-acre property in Costa Rica named CARES21 (short for Consortium of Agro-ecological Research and Education for Sustainability for the 21st Century). CARES21 will provide a base for existing projects and to develop new research in one of the world’s most biodiverse countries. The University’s efforts in Costa Rica have led to the creation of WU Brew, Widener’s own brand of environmentally friendly coffee.

3. Food Day Sponsor.
Widener is an active partner in Food Day (Oct. 24), which aims to improve food outcomes in nearby communities with demonstrations and events around campus designed to support sustainable, Fair Trade, and organic farms, reduce hunger and improve food access, and reform factory farms to protect the environment and farm animals. Widener also provides healthy snacks as part of the “Soccer for Success” program.

We work with various organizations to advance food security and sustainability, including the Stetzer Elementary School to utilize their homegrown sweet potatoes for nutritional meals to local students and family members, and at the Ruth Bennett Farms in Chester to promote organic, sustainable foods.

By way of example, Dr. Kathy Hornberger, Associate Professor of Science and Director of Environmental Community Outreach, serves as the botanical advisor to the Shade Tree Commission and has instructed the planting of more than 300 trees in the City of Chester over the last 9 years by students from the University and local residents. In this capacity, she served as the
university contact for the University Green grant received from the Pennsylvania Horticultural Society/US Forest Service to establish Widener University as an anchor institution for community greening efforts between itself and the Chester community, in which students from both Widener and Chester High School planted trees on the latter’s campus.

Her work with the Chester Environmental Partnership resulted in the first conference on environmental justice ever held in Chester on Widener’s main campus, where she spoke about trees and urban health. Among her work as a Penn State Extension Master Gardener for Delaware County, she co-chairs the Pollinator Garden at Smedley Park and has given many talks to garden groups and other organizations about gardening for pollinators, the importance of trees, and invasive plants and their eradication. She has helped start gardening initiatives in Chester at Stetser Elementary School and downtown in the business district. As a member of the Board of Directors for the J. Lewis Crozer Public Library at 7th & Engle Streets, she developed plans for revitalizing a garden space and read “The Lorax” to a pre-K group of children on Earth Day.

Dr. Hornberger also serves as the Head Curator & Curator of Botany, and has been a frequent speaker, at the Delaware County Institute of Science in Media. She curates a herbarium collection of 5700 mostly 19th century dried plants. Her archival work into former members with botanical interests has revealed past ties with historical figures who explored the Western Territories in the 1860s—70s. She has led current efforts to upgrade the educational signage and collections’ presentations of the museum artifacts. In addition, she is also helping to promote women’s contributions to the sciences by researching former DCIS women members and affiliates.

5. Participation at Sustainability-Advancing Conferences.
We have attended various sustainability-themed conferences and meetings, including those sponsored by the American Association of Sustainability in Higher Education, the Pennsylvania Environmental Research Consortium, the Philadelphia Resources Council, and the Chester Environmental Partnership. We have also been invited to deliver papers at leading sustainability-themed conferences, including annual conferences of the World Conference on Sustainability in Higher Education, and AASHE.

E. Student Life.

1. Sustainability Showcase. On March 14-15, 2016, Widener University hosted a “sustainability showcase,” designed to highlight programs and student and faculty projects and research involving sustainability. The showcase offered a hybrid of programs, posters, activities and give-aways, all surrounding what Widener is doing to advance sustainability.
2. **Student Sustainability Week.** In conjunction with Widener’s Office of Civic Engagement, Widener students coordinated a “Sustainability Week” for April 18-22, 2016. The week focused on how Widener students are helping to advance sustainability in Chester and other communities central to our civic engagement mission.

3. **Student Sustainability Committee.** The OCE and CSO helped student leaders assemble the University’s first Student Sustainability Committee. Among other things, the committee helped with coordinating the University’s participation in Recyclemania 2016, and Sustainability Week.

4. **Student Groups.** We held meetings with and presentations to an assortment of student groups throughout the AY, including SGA, Honors, LLC, Panhellenic, and others.

**F. Institutional Mission, Policy and Planning**

The Initiative implements the University’s Civic Engagement Mission under its strategic plan, Vision 2021. In addition to advancing the University’s Civic Engagement strategic goal, the Initiative also advances the strategic goals of Institutional Agility, High-Impact Educational Practices, Dynamic Campus Environment, and Leadership. The Initiative promotes social, institutional and environmental sustainability in the classroom, on its campuses, and with the communities Widener serves to advance educational, workplace, and fiscal objectives. Thus, Widener has committed to “make sustainability a prominent component of the university's civic engagement programming” as a Unit Objective for the Operations Department, Student Affairs and University Relations. Moreover, all academic units “will develop programming that promotes sustainability in the university’s operations and in its co-curricular, extracurricular, and curricular offerings,” as incorporated by reference into Vision 2021.

The University established and appointed a new “Chief Sustainability Officer” to build capacity and facilitate advancement of sustainability priorities. The CSO currently reports to the University Provost, and is charged with working with the Operations Department, with the Office of Student Affairs staff, and with the deans on all three campuses to help build capacity and facilitate all of the university’s sustainability efforts, from operations to curricular, co-curricular, and extra-curricular programming.

We have assembled four new sustainability action groups to help to advance sustainability across the university, including those devoted to campus, curriculum and community activities, and another that is student-driven.

**G. External Stakeholders**

With civic engagement and leadership at the heart of the university's mission,
Widener is uniquely positioned to make a difference in the communities we serve—locally, nationally, and globally.

1. Local

   a. Chester Environmental Partnership. Widener is an active member of the Chester Environmental Partnership, a 20-year old non-profit that aims to promote environmental sustainability and social justice in Chester, Pennsylvania.

   b. PUSH. Widener is a member of Presidents United to Solve Hunger (PUSH), a consortium of colleges and universities worldwide that are committed to addressing world hunger and sustainability through collective action and sharing best practices in teaching, research, outreach, and student engagement. In 2015, Widener's PUSH students volunteered at the Ruth L. Bennett Farm in Chester, Pa., helping to harvest 2,500 pounds of food for the local community.

   c. Stormwater Management. Environmental Science Professor Jamie Anderson works with the Pennsylvania Resources Council to educate Delaware County residents on the importance and benefits of managing stormwater. Professor Anderson offers community workshops on how to install rain barrels and to protect the environment and save money; a free food-grade barrel and installation kit are provided to participants.

   d. Shade Trees. Dr. Chad Freed and his environmental science students developed a model for the design, construction, and maintenance of a shade-tree inventory for the city of Chester. They are working with Chester’s Shade Tree Commission to study the city’s trees and recommend new plantings. They are mapping their suggested plan using a geographic information system (GIS).

   e. Corporate Social Responsibility. In 2010, the School of Business Administration held its first highly acclaimed “Sustainability and Corporate Social Responsibility” workshop for local high school students, which involved learning about best practices and creating an environmentally friendly aluminum plant in Indonesia.

   f. Centers and Institutes. In 2015, Widener's Delaware Law School established the Global Environment and Natural Resources Law Institute in Wilmington, Delaware, and the Commonwealth Law School established a Sustainability Law Center in Harrisburg, Pennsylvania. Law Professor John C. Dernbach and several students from his “Sustainability Law and Practice” class successfully pitched sustainability ordinances for recycling, composting, stormwater management, permeable paving, and sustainable building materials to Harrisburg City Council.
g. Project Restore. This project works toward creating a more sustainable community with a focus on creating more opportunities for people with criminal records, people in prison, and people reentering our community.

h. Youth Court in Delaware. This project supports the first “youth court” program in Wilmington, at Bayard Middle School.

2. Global

Through the university’s civic and global engagement initiatives, the university is exploring additional ways to have the Initiative serve programs in the cities of Chester, Harrisburg and Wilmington, and global initiatives in Costa Rica, Haiti, Honduras, and Trinidad. Highlights follow.

a. Costa Rica: multi-disciplinary experiential learning curriculum that involves students making connections between the global and the local, and understanding how environmental, social, and economic sustainability are interconnected by focusing on the Costa Rican coffee industry. Dr. Stephen Madigosky, chair of the environmental science department, and Drs. Chad Freed, associate professor of environmental science, and Itzick Vatnick, professor of biology, spent several winter breaks in Costa Rica with students enrolled in ENVR 180, Sustainable Development: Service Learning in Tropical America. Dr. Madigosky and his students later teamed up with local farmers in Las Lajas, Costa Rica, to grow sustainable, organic coffee, and ultimately, WU Brew.

b. Honduras. In spring 2015, Dr. Patricia Dyer, director of study abroad, took her Languages and Cultures students to Tegucigalpa, Honduras, where they worked with Zamorano University students to build a sustainable mini-farm at an orphanage. Widener students later raised funds to pay for a pump that will run the irrigation system for the farm.

c. China: Green Chemistry and Engineering at Qinghai University and Chongqing Technology and Business University in China: teaching and research collaborations with science and engineering faculty at both institutions revolve around green chemistry and environmental toxicology.

d. Mexico: Service-learning project involves installing a new sustainability technology in the community (e.g., wood-saving stoves, natural sewage systems using native plants, rainwater-saving systems), in conjunction with Women and Development in Latin America (GWS/ANTH/SOC 239), discussed above.

e. Haiti: Widener University has two projects that involve Arts & Sciences, Engineering and Law. The first is in cooperation with the Université de la Fondation Aristide (UNIFA), a new Haitian university with a strong social justice mission to empower Haitian youth and strengthen local society by providing academic and professional training in law, engineering, medicine, and nursing.
Its very mission thus seeks to advance social sustainability despite the challenges that confront Haitian society. Although environmental consciousness is still marginal, UNIFA is examining the roles that law and medicine can play in advancing environmental awareness and is developing the campus as a site for the exchange of political and civic ideas on environmental issues, while it demonstrates responsible environmental stewardship through thoughtful and creative land use – all of which are virtually unique in Haitian society. UNIFA is advancing these goals through partnerships within Haitian civil society and with universities in the United States, including Widener’s Sustainability Initiative. Widener co-sponsored UNIFA’s first “Environmental Week” in the Spring of 2016. Professor Erin Daly (Vice-President for Institutional Development at UNIFA) has served as local liaison for this work.

Second, “ENGine,” was founded and is run by a Widener student (Tori Remondelli, ’16) to promote clean water and sustainable agriculture at a project in and around Cap-Haitian. This includes designing a seed storage facility with supporting steel beams and columns to withstand the large loads associated with hurricanes and earthquakes that plague this region of the Caribbean. Due to the limited availability of materials in Haiti, the design utilized a handful of smaller steel members while exceeding the design requirements, to ensure the structure will serve the needs of the community for years to come.

Conclusion

Sustainability encompasses the domains of ecology, economics, politics, law, and culture in relation to human sustainability on planet Earth. The university’s sustainability efforts require collaboration across academic and administrative units, and that collaboration has already begun to emerge, and by manifold additional activities on campus, in the classroom and with the communities we serve.

In the fall of 2015 Widener committed to make sustainability a priority exponent of its Civic Engagement Mission. Based on core strength in civic and global engagement, strong schools, personalized programs, service learning, and high impact practices, Widener University has the potential to become a sustainability leader in higher education in the region and beyond.

[End]
Appendix A: Bibliography

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Appendix B: Results of Student Sustainability Survey

Question posed and collected at various meetings, 2015-16: “Widener should or should not advance sustainability because . . .” (Names and/or organizations listed, if any.)

- Widener should be more sustainable because we are directly in Chester and they need our support. - Toni Stradford
- Widener should be more sustainable because it would make it a better and more enjoyable place.
- It helps people who need it most. – SGA
- Widener should be more sustainable because it will help lower tuition, which will make higher education much more accessible. - Nick
- Widener should be more sustainable because . . . the students are the future and the sooner we get involved the sooner a solution can be found. – Emily
- Widener should be more sustainable because we need to create a better future for the campus as well as the Chester community. – Doug
- Widener should be more sustainable because the environment that children, students, and families are living in is unhealthy and Widener can help make a difference in the communities health by becoming more sustainable. – Samantha R.
- Widener should be more sustainable because it’s our civic duty as members of both the local and global community, and as an institution of higher education. – Nicolette
- A better environment would promote a healthier population. – Matthew Stellfox
- Widener should be more sustainable because once it’s gone it’s gone forever. – Nick
- Widener should be more sustainable because we can encourage others to follow in our footsteps. – Isabel
- Widener should be more sustainable because it’s cool to “go green”, and doing so will better the quality of life for students and others alike. – Andrew Compton
- Widener should be sustainable because we only have so much of resources and when we deplete them . . . their gone. We need to work NOW to save what we still have.
- Widener should be more sustainable because we are an influence and symbol for the greater Chester area and for the future . . . – Andrew Fischer
• Widener should be sustainable because one’s action can affect the others. For example, if we using too much electricity or water, someone outside our community will not have access to it.

• Widener should be more sustainable because it will benefit not only Widener, but the Chester community and beyond.

• Widener should be more sustainable, because I see empirical evidence of real and unethical events enacted by people that just like to use jargon words.

• Widener should be more sustainable because we should hold ourselves accountable for the ecological troubles/success of the future.

• Because our future should be preserved for generations to come.

• Widener should be more sustainable in order to claim responsibility for our impact on the environment.

• Widener should be more sustainable because this is our future.

• Widener should be more sustainable because it sets a good example for other colleges and it can lead to a better, larger movement.

• Widener should be more sustainable because we are the first generation to see and feel the effect of climate change and the last generation to be able to do something about it. – Kevin Lindsay

• Widener should be more sustainable because everyone with the ability to make a change to help the environment is obligated to help. – (cannot read signature)

• Widener needs to be more sustainable because the world is slowly dying and we must stop the world from dying so that the future does not die.

• Widener should be more sustainable, because Widener is ahead of the curve. – Joe Noon

• Widener should be more sustainable because it will create a healthier environment and establish a sense of pride in our community.

• Widener should be more sustainable because as it stands humans are destroying this planet as well as ourselves. – Joshua Schneider

• Widener should be more sustainable because it would provide the students with a safer and healthier living environment. – Ryan Boran

• Widener should be more sustainable, our civilization is approaching a point of no return, and if every single person and institution does not help change the current status quo, our only home (earth) could be tarnished. – John Gormley

• Widener should be more sustainable because it can make a difference in creating a brighter future for our children. – Leo
• Widener should be more sustainable because we can set an example for others.
• Widener needs to be more sustainable because it will help out the Chester community. It will get more people involved. – Kristina
• Widener should be more sustainable because the future of Widener depends on it. – Lavanya
• Widener should be more sustainable because it helps the Chester community and the future outlook for the rest of the world. – Megan
• Widener should be more sustainable because it will get people involved benefit Chester, be an example for other schools – Morgan Davis – Miranda Burke
• Widener should be more sustainable because we care about our community. – Aly
• Widener should be more sustainable because it will also promote environmental literacy. People will live healthier and happier. – Rohan
• Widener should be more sustainable because we are using resources that the next generation of students will need. – Khalil Williams ‘16
• Widener should be more sustainable because influence the Chester community & other schools to do the same. – Kaitlyn Kahuiia
• Widener should be more sustainable because it’s our duty to better the community around us. – Maria
• Widener should be more sustainable, because it’s better for the students/faculty and environment. And also for the residents of Chester, PA. sustainability benefits everyone. - Meghan
• Widener should be more sustainable because our environment matters as a community we can have a large impact. Also, it is a great way to start good habits early. – Nicole Stark
• As a university, we should be leaders in improving the society we live in. We have a responsibility to educate the next generation of leaders and if they are educated in an environment that encourages sustainable efforts, they will be more likely to continue those behaviors and teach others.
• Because it’s good for Widener University & Chester community – Othneil Degalison
• Widener should be more sustainable because it would inspire the student body, campus faculty, and administration to build/develop a culture that supports efforts to be more sustainable as a campus & community. – Michael Dixon ‘17
• Widener should be more sustainable because located in their mission statement states the desire to give back to the community – Shakirah A.
• Widener should be more sustainable to lead the community in better practices, creating a healthier environment for all. – Sarah Cox

• Widener should be more sustainable because we need to be more changing level, which starts with our campus. – Chelsie

• Widener should have more sustainability to improve environment set examples for other schools – Lindsay

• Because all of our ecosystems are being destroyed and even Widener can make an impact. – Eddie Seyfried

• Widener should be more sustainable because they have the funds to do so – Jessica Easton

• Widener should be more sustainable because we're all Widener and what we do personal effect the Chester community for now and years to come. We are the future and we can make a difference. – Natalaya Hines

• Widener should be more sustainable because we have minimal resources and need to branch out to find other ways. – Bali

• Widener should be more sustainable because we need to do a better job practicing what we preach in regards to environmental sustainability initiatives. – Doug Fisher

• Because it’s good see lowering tuition

• Widener should be more sustainable because we waste so much money, and creating land fill, we should get solar panels.

• Widener should be more sustainable because it will give our university a better reputation.

• Widener should be more sustainable because it is good for the environment.

• Because it beneficial and would be more environmental friendly. It will make Chester better and more appealing.

• Widener should be more sustainable because it helps the environment and we can make a difference in Chester.

• Widener should be more sustainable because it helps the environment!

• Widener should be more sustainable because we are all together on this planet and it is our responsibility to keep it alive for future generations.

• Widener should be more sustainable because . . . we can cut costs on major expenditure & be advocates for global change. – Christin Manilal

• Widener should be more sustainable because . . . it will help the Chester community even more than we already do. – Breanna

• Widener should be more sustainable because it can educate people on how to achieve a better social impact through their lifetime. – Megan Lewis
• Widener should be more sustainable because the future of our planet depends on young minds that are enriched at Widener University – Gabriela Mongelos

• Widener should become more sustainable because ignoring the issue doesn’t make the problem go away. Sustaining our climate and community is important not only for my generation but future ones. Eventually resources will run out, and then what would we do? This is an issue that needs to be dealt with now before it’s too late. This is why Widener needs to be sustainable. – Elizabeth Cohen

• Widener should be more sustainable because Widener needs to live up to its promise of producing better citizens and better students. An increase in sustainability relating to our lifestyles and our educations will achieve that. – Gabrielle Gehron

• Widener should be more sustainable because they have the resources and funding to support programs in sustainability. – Sean

• Widener should be more sustainable because we can leave a huge environmental footprint in the world we live in if we all work together – Carley

• Widener should be more sustainable because global warming is on the rise and using public transit and cars can help increase global warming. – Christin Jobs

• Widener should be more sustainable because we live in an environment that already very polluted & so urbanized that if we contribute to the pollution, we will only make it worse.

• Widener should be more sustainable because . . . we are growing and we will have a bigger impact as the years go on. - Emily W.

• Widener should be more sustainable because our generation is responsible for what is happening, which will affect our children if it isn’t fixed soon. – Krista

• Widener should be more sustainable because any sort of good impact to the world, no matter how small, is still important and necessary. – Maddy

• If each university did their part the earth will be more environmentally friendly.

Suggestions that students have made to advance sustainability at Widener:
• Compost, spread awareness, solar panels, conserve electricity, don’t waste light, commuter carpooling, scheduled transit, don’t support polluting, biodegradable bags/or paper bags, recycling deposit, recycle cans not trash cans.

• Making all of the lights in the residence halls automatic. We waste so much energy year round since they stay on in the hallways and common areas.
• Having the energy-efficient toilets in all of campus buildings
• Making everything digital
• Hydahon stahun in all campus buildings
• Educate the community about sustainability
• Relate the trash burning factory
• Establish community campus garden, to get community involved
• Bring more supermarkets around so it’s no longer a food desert.
• In classroom = use campus cruiser more rather then printing things. Use computers more.
• On campus = use solar panels or LED, wind power – do something for earth day.
• Community = community gardens team up with Swarthmore environment club. – Andrew Compton (ajcompton)
• Expand technology use; more library hours; b. Encourage paper-free classes; online textbooks, submit assignments online. Teachers post PWP’s so students don’t need to print them. c. Expand community recycling program; off-campus students, community in general; d. Money from recycled cans; e. Competitions – between Resident Halls – most lbs. recycled, least lbs. trash; Solar panels: top of Kirkbride – produce electricity, save $; Community Gardens at Widener – fresh food goes to students (very excited for this one)
• Using the environmental club (or Anderson) rain garden on campus in front of Kirkbride
• Help build vegetable gardens on campus or in Chester
• Trying to petition to government to stop trash refiners and steam factories
• Green sources of energy - Solar panels – Windmills (mini) turbines
• More trees (more funding) on campus partners: Businesses and corporations Widener partners will (have it as tax write off)
• Farm in Chester Widener should expand
• Stop selling water in plastic bottles transition away from it
• Fuel efficient shuttles/campus cars. - Jessica Easton (jreaston@mail.widener.edu); Eddie Seyfried (edseyfried@mail.widener.edu)
• Solar panels
• Digitalize all work
• Help Chester schools digitalize/become energy efficient
• Solar and wind energy
• Partner with local government as well as local business and larger business to become energy efficient.
• Eat ice cream made by solar panels
• More recycling
• Plant trees
• Involve community in fixing environment.
• Put a container next to trash/recycling bins to collect water bottle caps.
• Temperature control? (Low. Avg. Temp)
• Add “green Pride” to dorm rooms (contest for who can recycle most)
• Stop maintenance from combining recycle & trash into one big bag.
• Compost – use it to fertilize all the flower beds on campus. Jasmere Scleicher (jaschleicher@mail.widener.edu); Ashley Rundell (aerundell@mail.widener.edu); Nicole Stark (nestark@mail.widener.edu); Sarah Cox (sdcox@mail.widener.edu)
Appendix C: Sustainability Ideas Advanced by Senior Leadership Team, Widener University, 2015-16

1. Ways to Advance Sustainability
   a. Administrative sustainability audit
   b. Expansion of existing community outreach programs and education.

2. Additional resources partners and stakeholders
   a. Partner with corporate partners to utilize their knowledge and resources.
   b. Partner with existing community organizations/initiatives.
   c. Promote sustainability initiatives to extend groups for possible funding/support.
      1) Community gardens and nutrition programs
      2) Research community issues for sustainable solutions – engineering school – rehab
      3) Summer research projects
      4) Deferred maintenance – communicate sustainability
      5) Compost from cafeteria
   d. Partners & Stakeholders
      1) Energy Companies
      2) Cars
   e. Sustainable health – here and abroad
   f. Social Media
   g. Engage students
   h. Make it part of our culture, an “in your face” approach
   i. LEED
   j. Staff recycling
   k. ITA water bottles for students
   l. More efficient paperless processes
   m. File management efficiency
   n. Brand Widener sustainability (like Wild spaces)
   o. Student contests showcasing sustainability initiatives (i.e. water bottle filler fundraisers)

3. Combine civic engagement and sustainability
   a. Investigate conservation & alternative energy
      1) Courses
      2) Major/Minor
      3) Clinical work
b. Research – Seminars – Costa Rica, China & Peru – Wu Brew
   1) Community – Environmental Resources
   2) Artist Comm

c. Gov’t points on sustainability
   1) Scaling up coffee consortium
   2) Foundation, Grant opportunities
   3) Cooperate with local environmental partners

d. Health – nursing/laws/human serving

e. What is core of sustainability if we narrow focus?

f. Environment as core

g. Student & employee training

h. Think about how our programming enhances/damages community around us.

i. Capstone programs geared towards sustainability

j. Need resources, Bike racks – promote bike to work or class campaign
Endnotes

1. This proverb, along with some close variants, is attributed to several sources, including Chief Seattle, Antoine de St. Exupery, Jane Goodall, Ralph Waldo Emerson and David Bower, among others. See Giga Quotes. Earth. http://www.giga-usa.com/quotes/topics/earth_t001.htm.


9. Ibid.

10. As is practice in higher education, this report treats ‘sustainability’ and ‘sustainable development’ as synonyms.


19. Ibid at para. 8.


29. E.g., Associação Nacional do Transporte de Cargas e Logística v. Governador do Estado de São Paulo, S.T.F., ADPF 234 MC/DF, DJe 06.02.12 (Rel. Min. Marco Aurélio) (Braz.) (case brought by asbestos transporters against a state law on constitutional grounds).


31. See May and Daly, GLOBAL ENVIRONMENTAL CONSTITUTIONALISM (Cambridge, 2015), Appendix E and associated text.


34. 42 U.S.C. § 4321 et seq., (“NEPA”).


37. Memo, Greenberg et al., Sustainability Management Committee, to Faculty Council Executive Committee, Widener University, at 5 (February 27, 2015) (“Over 85% of the businesses surveyed now have an executive position responsible for sustainability.”


39. Ibid.

40. Ibid.

41. See e.g., www.jobsinsustainability.com (last visited Oct. 10, 2016).

42. Dresha and Hargroves, Fostering Rapid Transitions to Education for Sustainable Development through a Whole-System Approach to Curriculum and Organizational Change, in SUSTAINABLE DEVELOPMENT AT UNIVERSITIES: NEW HORIZONS 29 (Filho, ed. 2011).


44. Johnsen, Torjesen, and Ennals (2015); Davim (2015); Barlett and Chase (2013); Martin and Samels (2012); Jones, Selby and Sterling (2010), Filho (2009); Litten and Terkla (2007); Filho and Salomone (2006); M’Gonigle and Starke (2006); Corcoran, Blaze, and Wals (2004).


52. Filho, Brandli, Kuznet and Finisterra do Paco (2014).
56. Pennsylvania Environmental Resources Consortium, available at:
58. Pennsylvania Environmental Resources Consortium, available at:
60. (Filho 2011).
62. Falk School of Sustainability, http://falk.chatham.edu
63. Peggy Barlett and Geoffrey Chase detail the curriculum-reforming advents of the
64. See http://departments.centraledu/globalsustain/prairie-project/ (last visited July 10, 2016).
65. Janet Lindenmuth (Widener Legal Information Center) compiled the list of bachelor-
bearing programs in sustainability for this report. For the complete list, please see:
https://docs.google.com/spreadsheets/d/1tjlerIq8dAYNfRnVQ7a-S1WarEkgwzOuxAwQHkRJm8I/edit?usp=sharing (list subject to periodic updates; last updated Dec. 27, 2015).
66. Janet Lindenmuth (Widener Legal Information Center) compiled the list of master-
bearing programs in sustainability for this report. For the complete list, please see:
https://docs.google.com/spreadsheets/d/1Z2W34uAwvsseGGv4DZ7HDtPjmUWg2xiYrCWf9vLxpyvc/edit?usp=sharing (list subject to periodic updates; last updated Dec. 27, 2015).
67. Janet Lindenmuth (Widener Legal Information Center) compiled the list of doctoral
programs in sustainability for this report. For the complete list, please see:
https://docs.google.com/spreadsheets/d/1qD92vk7LKkGyd1Empalnkdrh45fG6rb_HL2fcP9RsDo/edit?usp=sharing (list subject to periodic updates; last updated Dec. 27, 2015).
70. See http://universitycollege.du.edu/epm/degree/certificate/energy-and-sustainability-online/degreeid/363?gclid=Cj0KEjw5le8BRRCj9fhllr_bH24cBEiQAkDQcUZT8cJPMqBw7LASSaHDe75abWGRxJcGoLnvz1Z8kgaAp8S8P8HAQ (last visited July 2, 2016).

71. See https://learn.uvm.edu/program/professional-certificate-in-campus-sustainability-leadership/72. DIRECTORY OF ENVIRONMENTAL LAW EDUCATION OPPORTUNITIES AT AMERICAN LAW SCHOOLS (Randy S. Abate, Carolina Academic Press 2008)


74. This list is meant to convey breadth and depth, from deep to relatively shallow. It is not meant to chronicle programs at the dozens of area colleges and universities with sustainability programs.


78. http://www.loyola.edu/department/sustainability/about/whatis (last checked Nov. 12, 2016).


86. See, e.g., Wynn Calder & Julian Dautremont-Smith, Higher Education: Emerging Laboratories for Inventing a Sustainable Future, in Agenda for a Sustainable America, at 93 (John C. Dernbach ed. 2009).

87. For purposes of this report, “sustainability advancing courses and projects” are those that integrate principles of sustainability in some way, and not necessarily solely courses with the word “sustainability” or the like in the title. For an example of a program that uses a similar scope, see http://sustainability.temple.edu/academics-and-research/courses. Such courses fall within the ambit of “sustainability coursework” with the AASHE.

88. For example, Professor John C. Dernbach has written four books on sustainability, including The Future of Energy: Sustainability and Shale Gas (with James R. May); Acting as if Tomorrow Matters: Accelerating the Transition to Sustainability (2012); Agenda for a
Sustainable America (2009); and, Stumbling Toward Sustainability (2002).