

Bucknell University

Bucknell Digital Commons

Faculty Contributions to Books

Faculty Scholarship

2023

The Pennsylvania Environmental Resource Consortium: A State-Wide Collaborative Network for Sustainable, Outreach, Education, and Action

Peter Buck

The Pennsylvania State University

Shaunna Barnhart

Bucknell University, sb060@bucknell.edu

Richard D. Bowden

Allegheny College

Ben Culbertson

Shippensburg University of Pennsylvania

Josh Hooper

Pennsylvania Environmental Resource Consortium

See next page for additional authors

Follow this and additional works at: https://digitalcommons.bucknell.edu/fac_books



Part of the [Environmental Studies Commons](#)

Recommended Citation

Buck, Peter; Barnhart, Shaunna; Bowden, Richard D.; Culbertson, Ben; Hooper, Josh; Mumper, Michael; Scicchitano, Dominic; Shultes, Ken; and Simpson, Tom, "The Pennsylvania Environmental Resource Consortium: A State-Wide Collaborative Network for Sustainable, Outreach, Education, and Action" (2023). *Faculty Contributions to Books*. 290.

https://digitalcommons.bucknell.edu/fac_books/290

This Contribution to Book is brought to you for free and open access by the Faculty Scholarship at Bucknell Digital Commons. It has been accepted for inclusion in Faculty Contributions to Books by an authorized administrator of Bucknell Digital Commons. For more information, please contact dcadmin@bucknell.edu.

Authors

Peter Buck, Shaunna Barnhart, Richard D. Bowden, Ben Culbertson, Josh Hooper, Michael Mumper, Dominic Scicchitano, Ken Shultes, and Tom Simpson

Query Details

[Back to Main Page](#)

1. Reference 'Buckland et al. (2018)' is cited in the text but not provided in the reference list. Please provide the respective reference in the list or delete this citation.

Ins

The Pennsylvania Environmental Resource Consortium: A State-Wide Collaborative Network for Sustainable Outreach, Education, and Action

[Peter Buck](#) 

Email : peterbuck@psu.edu

Peter Dawson Buck holds a Ph.D. in Educational Theory and Policy and degrees (M.A., B.A.) in music and creative writing. He manages [co-directs the Local Climate Action Program](#) and academic programming for Penn State's Sustainability Institute, integrating sustainability into academics, outreach, operations, and research, and collaborates on projects related to plastics, solar energy, and courses. He researches and supports local schooling for sustainability, democratic decision-making, and environmental justice. Peter has served on the [State College Area School District's Board of Directors](#), Ferguson Township Board of Supervisors, [and](#) serves on the PERC Executive Committee, [and has testified to Pennsylvania House Committees on climate mitigation and adaptation, the National Council on Science and the Environment Advisory Board for Drawdown, and the Board of the Penns Valley Conservation Association.](#)

Affiliationids : Aff1, Correspondingaffiliationid : Aff1

[Shaunna Barnhart](#)

Email : shaunna.barnhart@bucknell.edu

Shaunna Barnhart explores human–environment interactions with a focus on sustainability dilemmas, environmental governance, and perceptions of nature, particularly in regard to energy and waste. She is the director of the Place Studies Program, conducting teaching, research, and outreach related to sustainable communities, place meaning, and changing energy landscapes. She coordinates Bucknell's Coal Region Field Station. Barnhart researches farm-based biogas technology, household biogas technology in Nepal, forest conservation, participation in global carbon markets, environmental governance of changing energy behaviors, Nepalese forest conservation, use of processed sewage as a farmland fertilizer, hydraulic fracturing on college campuses, and student perceptions of nature.

Affiliationids : Aff2

[Richard D. Bowden](#)

Email : richard.bowden@allegheny.edu

Richard D. Bowden has a B.A. in Environmental Studies and Biology (Northland College), an MS in Aquatic Ecology (Michigan Technological University), and a Ph.D. in Forest Ecosystems (Yale University). He has worked on projects related to alternative energy, invasive plants, and forest ecology, conservation, and education. He has served on the PERC Executive committee since 2000, holding the positions of Chair or President for a decade. In his spare time, he enjoys cross-country skiing, biking, kayaking, hiking, swimming, and hunting.

Affiliationids : Aff3

[Ben Culbertson](#)

Email : brculb@ship.edu

Ben Culbertson has a MFA in ceramics (Alfred University), and teaches courses in ceramics, 3-D Digital Ceramics, Art Appreciation, Color and 2-D Design. He has been active in PERC as president, Secretary, Treasurer, Website Committee Chair, Co-Chair, Climate Committee, Member, Renewable Energy working group, Chair Campus Sustainability Champions, and Intern task force. Ben has been a potter for more than 40 years.

Affiliationids : Aff4

[Josh Hooper](#)

Josh Hooper has been the executive director of the Pennsylvania Environmental Resource Consortium since 2010. Previously he had a career in broadcasting, marketing and advertising, owning a boutique advertising agency and a production company. He's been in principal management positions with other communications companies, including Harrisburg's JPL. In 2017, Josh was certified as a fellow in the Climate Reality Leadership Corps and now speaks to community groups about Climate Change. Josh lives in Camp Hill, PA and has two sons, ages 24 and 27.

[Michael Mumper](#)

Email : mumper@lvc.edu

Michael Mumper (he, him) has a BS in Environmental Resource Management (The Pennsylvania State University). He has worked for most of his career as a facilities management consultant, primarily working with institutions of higher education to develop energy savings strategies which have resulted in reduced Scope 1 and Scope 2 emissions. He has been the Director of Facilities Management at Lebanon Valley College since 2019, and serves on the executive board of the Central PA Association of Energy Engineers and the PERC Executive Committee.

Affiliationids : Aff6

[Dominic Scicchitano](#)

Dominic Scicchitano was a PERC program coordinator, and was an Environmental Law Institute research associate from 2019 to 2021. He was involved in projects connected to indoor projects and green buildings, wetlands, and oceans, and managed ELI's People Places Planet Podcast. He conducted research on microplastic pollution, organized focus groups to help incorporate nature play elements into plans for a new public park, and served on the Executive Board for the Middle Susquehanna Riverkeeper Association. He majored in Environmental Studies and Spanish, with a minor in Latin American Studies (Bucknell University, BA).

Affiliationids : Aff7

[Ken Shultes](#)

Email : shultes@dickinson.edu

Ken Shultes has held leadership positions at Dickinson College for almost 30 years. Sustainability has always been a prime focus and absolute passion, and specifically reducing carbon emissions and connecting operations initiatives to the curriculum and the overall student experience. Ken oversees the college's organic farm and was instrumental in attaining LEED certification for seven projects at Dickinson, including six Gold and one Platinum. Ken has led the college's march towards carbon neutrality and achieving carbon neutrality in 2020, with offsets.

Affiliationids : Aff8

[Tom Simpson](#)

Email : thomas.simpson@fandm.edu

Tom Simpson (B.S., Horticulture; M.Ed., Biology; M.Ed., School Counseling) has served as Sustainability Coordinator at Franklin & Marshall College since 2008. Previously, he taught science and math in middle and high schools. At F&M he deals with solid waste, transportation, employee gardens, and more. Tom grew up in Lancaster, PA but lived in Italy for 23 years. Tom has served as PERC president-elect, president and immediate past president. Tom's activities include travel, gardening, running, and bicycling. Tom is married with two adult children. As an afternoon job, he coaches high school cross country and track.

Affiliationids : Aff9

[Aff1](#) Pennsylvania State University, Sustainability Institute, State College, PA, 16802, USA

[Aff2](#) Center for Sustainability and the Environment, Bucknell University, Lewisburg, PA, 17837, USA

[Aff3](#) Department of Environmental Science and Sustainability, Allegheny College, Meadville, PA, 16335, USA

[Aff4](#) Shippensburg University, Shippensburg, PA, 17257, USA

[Aff5](#) Mechanicsburg, PA, 17055, USA

[Aff6](#) Lebanon Valley College, Annville, PA, 17003, USA

[Aff7](#) Pennsylvania State University, State College, PA, 16802, USA

[Aff8](#) Dickinson College, Sustainability and Facilities Planning, Carlisle, PA, 17013, USA

[Aff9](#) Franklin and Marshall College, Lancaster, PA, 17603, USA

Abstract

The abstract is published online only. If you did not include a short abstract for the online version when you submitted the manuscript, the first paragraph or the first 10 lines of the chapter will be displayed here. If possible, please provide us with an informative abstract.

This paper explores the organizational theory, programs, and concomitant challenges faced by a state-level higher education consortium for sustainability in the United States, the Pennsylvania Environmental Resource Consortium (PERC). We provide insights for other institutions of higher education that may want to form consortia or consider changes to existing consortia. PERC members collaborate to advance sustainability on member campuses, in local communities, and across the Commonwealth. PERC envisions thriving, just communities on a healthy planet, and seeks to inspire higher education communities throughout the Commonwealth to lead transformational sustainability efforts through example, expertise, and collaboration. This chapter provides a brief theoretical background in PERC as a collaborative. It shares history and context for PERC's mission and activities as well as an overview of its programs. It includes reflections on challenges to collaboration

and coordination, including from COVID-19, changing digital technology, disparities among PERC institutions, accelerating sustainability challenges in the Anthropocene, anti-intellectualism and hyperpartisanship in the Commonwealth and the United States, and PERC's own staffing, volunteerism, participation, and funding challenges. The chapter closes by revisiting the organization's 2021–2025 Strategic Plan as an invitation to consider how cooperation, coordination, and collaboration among higher education institutions can positively impact sustainability across sectors.

Keywords

Institutional collaboration
College-community collaboration
Sustainability networking
Sustainable campus operations

1. Introduction: Theoretical and Practical Basis for Higher Education Collaborations for Sustainability

Higher education organizations have long sought to address society's major issues. Addressing these issues has been focused through individual programs at colleges and universities, in the missions of the full institution itself, or through consortia. cursory consideration of programs in social justice, human rights, or sustainability will bring to mind courses of study in many institutions around the world. Land grant universities in the United States were charged with helping to develop technologies, especially in natural resources, that would benefit society at large (Fitzgerald et al. 2012). Notably, the role of these institutions has evolved over time, moving from an academy that serves as sources of information, to now operating in more expansive and diverse roles, including innovation, revitalization, development, scientific advising/communicating, facilitating (Trencher et al. 2013), and entrepreneurial activities (Audretsch 2014). Certainly, this engagement has extended to the sphere of environmental sustainability, with academic institutions engaging in inward-looking as well as outward-looking initiatives (Lozano et al. 2015). These outward-looking initiatives take different forms. Importantly, this outward focus has warranted the creation of coordinating, collaborating, and cooperating institutions.

Organizations can work together to achieve objectives beyond the scale of their own immediate sphere of authority or influence. Keast et al. (2007) describe this continuum as moving from cooperation to coordination to collaboration. This continuum represents a sliding intensity of transaction costs and formality to achieve shared goals. Cooperating is low intensity and requires limited connections. Coordination requires sharing tasks but maintains organizational autonomy. Collaboration blurs organizational or institutional boundaries, creating a unified and unitary identity, merger of resources, and consolidation of tasks.

An example of a national-level collaborative organization is the Association for the Advancement of Sustainability in Higher Education (AASHE; <https://www.aashe.org>). It exists independently of any individual higher education institution but serves the higher educational sector's sustainability preferences. AASHE staff, programs, and funding do not reside within any 2- or 4-year college or university, it has its own identity, and its tasks are distinct from its member institutions. Its board is comprised of staff and faculty from North American higher education post-secondary schools but its full-time staff are employed by AASHE. Historically, PERC's structure resembles a state-level organization like AASHE, made up of a Board from Pennsylvania college and universities, and staff employed by PERC itself. Since COVID-19, staffing has presented a minor challenge and members of the Board have had to do more administrative work than in previous years. However, the organization's mission has continued to remain largely independent of any single member school's preferences.

PERC is an organization of colleges and universities in Pennsylvania that enables collaboration for sustainability and encourages sustainability on member campuses, in local communities, and across the Commonwealth, differentiating it from larger national organizations, such as AASHE, the Global Council for Science and the Environment (<https://www.gcseglobal.org/>), or the Association for Environmental Studies and Sciences (<https://aessonline.org/>), which have national or global outreach. PERC is more akin to the New Jersey Higher Education Partnership for Sustainability (<https://www.ramapo.edu/njheps/>), whose members are New Jersey institutions that promote sustainability in operations and administration, outreach, student life, curriculum, and research. Like these organizations, PERC members share their success stories through conferences, workshops, webinars, web learning cohorts, and regularly emailed communications to help institutions learn from one another.

The purpose of this paper is to describe PERC's history, goals, and operations, and to evaluate challenges and lessons learned so that other organizations that seek partnerships among higher education institutions can profit from our viewpoints.

2. Methods: Positionality, PERC's History, Programming, Foci, and Challenges

To provide even tentative recommendations for future collaborative work for sustainability in higher education, we examine PERC's history, its current programming, topical foci, and multiple challenges. A review has been conducted by examining web-based documents, reviews of current and prior Strategic Plans, meeting notes and minutes, discussion and communication among PERC's leadership, and an examination of the last decade's programming.

The authors' account for their positionality, the positions they have "chosen to adopt within a given research study" (Savin-Baden and Major 2013). These positions influence how the research has been conducted, what its outcomes could be, and the recommendations that flow from the study (Rowe 2014). The authors' positions influence the subject, who participates, and the context for viewpoints. In this study, the authors all serve on PERC's Executive Committee and have done so for between three and more than ten years. Six of the authors are full-time employees of Pennsylvania institutions of higher education. Their positions range across those institution's organizational structure, including facilities management, inter-organizational and cross-functional centers or institutes that bridge curricular, co-curricular, or research functions with facilities or administration, as well as faculty in ceramics, educational policy, environmental science, and geography. The remaining two authors have served in administrative and director positions within PERC. All of the authors are seen as cis-gendered white people, eight male and one female.

The history of PERC can be instructive to learn of the challenges in forming, and even more so, maintaining a largely volunteer organization. PERC was formed by Donald Brown, a former employee of the Pennsylvania Department of Environmental Protection (DEP). Working in various environmental policy areas, Brown observed that there were many creative, valuable, and world-class environmental initiatives, teaching, and research efforts being conducted at Pennsylvania's colleges and universities. However, despite many policy efforts at the state level that would profit from research input and collaboration, there were very few connections between academia and state natural resource or environmental agencies.

After visiting many of the academic institutions across the state, Brown initiated formation in 2000 of the precursor to PERC, known initially as the PA Consortium for Interdisciplinary Environmental Policy (PCIEP). It became a coordinating association of PA higher education institutions, with a set of by-laws, a governing committee, and institutional representatives, receiving administrative support from DEP. This initial formation as a DEP-supported initiative, was advantageous in directly linking the organization with the state agencies responsible for various elements of environmental policy. As Brown's responsibilities at DEP transitioned into retirement, the organization changed its name to PERC. Following strategic planning in 2010, PERC became a dues- and sponsorship-based consortium with a paid executive director, a committee structure formed under organizational by-laws, and formed as a 501(c)3 non-profit organization in the United States. Since early 2021, there has been a paid associate director, a president and president's council, secretary, treasurer, an executive committee, and institutional representatives. Organizational initiatives are organized primarily through the executive committee, a structure and membership with its advantages and disadvantages later.

In 2019, PERC fully engaged the United Nations' Sustainable Development Goals (SDGs) at its annual conference. The opening speaker, Caroline Fox, from the US Sustainable Development Solutions Network (SDSN) housed at Columbia University's Earth Institute, stressed the importance of state-level action on the SDGs. That conference led to PERC's first explicit commitment to SDG #4: Quality Education's target 4.7 and 4.b that focus on education for sustainable development and commitments to higher education's potential. Other speakers and presentations covered health and well-being (SDG #3) and its connection to other goals, climate action and strong institutions (SDG's #13 and #16), solar energy and marginalized people (SDG's #7 and #10), as well as environmental justice issues related to food security, energy production and distribution, transportation and community planning, and governance (SDG's #2, 7, 10, 11, and 16). Overall, this effort was beneficial in providing a framework for organizational initiatives, as well as providing a common framework for PERC to partner with others also addressing the SDGs, making PERC an embodiment of SDG #17: Partnership for the Goals. The SDG framework continues to inform PERC's programming and our 2021–2025 Strategic Plan.

PERC acknowledges that institutions of higher education are also members of the community in which they are located. Programming encourages engagement and collaboration with local communities that are mutualistic and reciprocal. Programs for member institutions provide training, skills, and resources so that boundaries between the community and academy are blurred, and relationships can be strengthened. PERC actively seeks the guidance and expertise of community partners, and works actively with partners to advance sustainability in communities (SDG #11). When applicable, PERC provides information to the media on important issues pertinent to higher education, sustainability and/or topics of relevance. Additionally, PERC has worked to unite higher education institutions from across the Commonwealth of Pennsylvania to provide policy-relevant research to state government. These include the 2016 Power Dialog (Buckland et al. 2018), meetings with state representatives regarding net zero climate change commitments, and programs created in cooperation with DEP's Energy Office and Office of Environmental Justice. Efforts have sought to enhance the technical and interdisciplinary expertise of government decision-makers through cooperation with academic institutions, emphasizing the interdisciplinary perspective of environmental issues. [AQ1](#)

3. Results

Major Efforts

In its more than 20 years of operation, PERC has spearheaded a number of major initiatives that have impacted sustainable campus operations, state and local level policy, community initiatives, and education. Such initiatives include food recovery, climate efforts, environmental justice, public environmental health, and campus sustainability champions. Through these initiatives, PERC member institutions can deepen their on campus, community, and state-level impacts and networks, demonstrating that a collaborative networking consortium can have a greater impact on education, operations, and outreach in

sustainability and environment arenas than individuals or institutions acting alone.

Food Recovery

According to *Drawdown* (<https://drawdown.org/>) if food waste were its own nation, it would be the third largest emitter of greenhouse gases in the world after China and the United States. It is estimated that about a third of all food produced globally is wasted each year (FAO [2011](#)). This is in addition to other environmental impacts from the agricultural sector (Bennetzen et al. [2016](#), Smith et al. [2014](#); Clark and Tilman [2017](#)). In 2013, with the support of the United States Environmental Protection Agency (EPA) and Sodexo, PERC created the Pennsylvania Higher Education Food Recovery Challenge (PHE-FRC), the first statewide project of its kind in the country. PERC was honored by the EPA as Endorser of the Year in 2015 for the creative structuring of this initiative. Since then, several member institutions along with Sodexo have also received EPA "Waste Wise" honors as a result of participation in the Pennsylvania Higher Education Food Recovery Challenge.

Through the program, institutions have been encouraged and educated to utilize techniques to reduce food waste. These positively effect changes on SDG #12.3, to "halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses compost any remaining unused, spoiled, or expired food; and donate unused food to food banks and shelters" by 2030 (UNESD [2015](#)). The benefits to PERC member institutions and beyond include carbon footprint reduction, student engagement, sustainability awareness, community engagement, and cost savings. Institutions file a report each year detailing progress in reducing the amount of food sent to landfills or incinerators. As an example, prior to the pandemic Franklin & Marshall College was sending more than 100 tons of food waste per year to be composted. Some of that food returned to campus for use on college grounds and gardens. By 2017, over 1100 tons of food were diverted from landfill, with a resultant 926 MTCO₂E of carbon reduction.

Climate Efforts

The human causes and impacts of climate change are well documented, with widespread consequences to natural and human systems (IPCC [2021](#)). To effect change on SDG #13: Climate Action, PERC has supported action across all scales of operations, governance, and sectors. PERC has attempted to position members in its network to leverage energy, knowledge and experience within Pennsylvania's higher education institutions to address climate change challenges and solutions. Additionally, PERC can provide the networking platform needed to make connections between higher education, local and state government, and industry. Three stand out regarding energy development, statewide and nationally coordinated climate change education, and engaged scholarship.

In the late 2000's, PERC worked with staff and graduate students at St. Francis University to provide consortium availability that allowed campuses to purchase wind power. This came at a time when renewable power purchases were in their infancy in Pennsylvania. St. Francis's Masters of Business Administration program and geographic proximity to the Allegheny Front of the Appalachian Mountains made this coordination possible. PERC provided access to knowledge experts at the annual meetings.

PERC has also supported coordinated climate change education inside and outside of the classroom. In 2015, PERC hosted a daylong symposium on climate change education at Susquehanna University. In 2016, PERC participated in and coordinate the Power Dialog in Pennsylvania. The Power Dialog, nationally organized by Eban Goodstein at Bard College, used the input process of the Obama administration's Clean Power Plan (CPP) to create an opportunity for students to offer policy approaches to state-level greenhouse gas mitigation. Through PERC's collaborative, Pennsylvania faculty afforded students the possibility to become climate policy entrepreneurs effecting change in state government. The Power Dialog created in-class "interdisciplinary learning possibilities in architecture, demography, ecology, economics, electrical and mechanical engineering, ethical theories and practical ethics, law, physics, policy theory, political science, public health, rhetoric, and visual art...[and] systems thinking that is so often emphasized in sustainability education was the only feasible approach to this Power Dialog (Buckland et al. 2018). PERC has gone on to support other statewide climate teach-ins, including the 2020 and 2021 "Solve Climate by 2030" events in coordination with Bard and others.

PERC has also sought to find ways to appropriately apply student learning in and for communities. Representatives on the Executive Committee have argued for the advancement of municipal, city, or county greenhouse gas inventories and climate action plans. For several years, PERC convened ad hoc and special committees, focus groups, and programming that provided important networking opportunities to discuss inventory tools and methodology. Following these discussions, the PA DEP developed the Local Climate Action Plan (LCAP) program (DEP [2021](#)) that partners local governments with faculty and students in Pennsylvania college and universities to create local and intergovernmental greenhouse gas (GHG) emissions inventories and climate action and adaptation plans (CAAPs). For the last three years, training has been delivered to faculty, students, and staff by ICLEI: Local Governments for Sustainability to 40 municipal and college teams. The cohorts learn about the global carbon budget, regional carbon intensity, the structure and timelines for CAAPs, how to use ICLEI ClearPath software, data gathering, trouble shooting for data and governmental navigation, and CAAP drafting. Currently, the LCAP is undergoing administrative approval for management through PERC member, Penn State University.

Environmental Justice

During the early days of US environmental legislation, passage of critical laws (e.g. National Environmental Policy Act, Clean Air Act, Clean Water Act), focused on environmental protection though pollution reduction, ostensibly to protect human health. However, the disparities of pollution impacts and a lack of protection for minority communities were not recognized. It was not

until the 1980s that the first studies identifying environmental justice were published (Holifield et al. [2018](#)).

Environmental Justice has come to occupy more of PERC's attention in recent years. It has provided inspiration to effect changes for SDGs #3: Good Health and Well-being, #9: Reduced Inequalities, #11: Sustainable Cities and Communities, and #16: Peace, Justice, and Strong Institutions. The empowerment of Black, Indigenous, people of color, (BIPOC) and other marginalized populations has inspired our current members on their own campuses and in our work at PERC. Like many environmental organizations, our membership has been overwhelmingly white and predominantly male. While historically explainable, PERC is taking concerted actions to diversify its programming and our membership and include BIPOC into all aspects of the organization. In 2020–2021, this took the form of supporting the Commonwealth's first annual summit on environmental justice in Pennsylvania, EJ in PA. The event, held virtually on a Harrisburg University platform on April 6, 2021, was done in cooperation with community, governmental, non-profit, and business leaders for environmental justice across the Commonwealth. The virtual one-day event brought together community members to build common language, to understand issues, to learn from national leader Mustafa Santiago Ali, and activated local Environmental Justice hubs around Pennsylvania. Going forward, PERC has committed to supporting EJ activities in higher education and in communities. This will manifest in membership, participation, financial investment, as well as integrating EJ into existing programming like the annual conference and regular webinars, as well as special programming focused exclusively on EJ.

Public and Environmental Health

Historically, human health was considered to include those issues related to human morbidity and mortality (illnesses, diseases) and community-related public health issues (e.g. cholera). This has expanded to include environmental health deterioration due to pollution or improper disposal of waste that impacts both human and non-human health. Linkages between environmental health and human health have become much more explicit and well documented, with concerted efforts to explore synergies that promote human and environmental health (WHO [2022](#)). Public environmental health came to occupy prominence in PERC's programming following the 2019 annual conference focused on the SDGs. The Director of the Pennsylvania Office of Rural Health documented overlaps between the social determinants of health and their connections to multiple SDGs, prompting PERC to agree that these connections warranted their own line of programming. This led to a working group that partnered PERC with Penn State's Sustainability Institute, the Pennsylvania Department of Health's Cancer Division, and Villanova College of Nursing faculty. This programming has featured experts on climate change and populations of concern, climate change and hazard response, housing and environmental justice, agricultural communities and mental health, and unconventional shale gas drilling's relationship to individual and community health. It continues with an educational cohort of 18 people from healthcare institutions, government, and universities who meet monthly to discuss issues of environmental health in spring 2022.

Campus Sustainability Champions

PERC initiated the Campus Sustainability Champions program to recognize students, faculty, administrators, and staff, as well as student and non-student organizations of Pennsylvania colleges and universities who have made meaningful contributions toward environmental sustainability on their campus, in their community, or in society at large. Student contributions have included a wide variety of efforts, including food rescue, campus gardens, recycling, bike-share programs, wind and solar initiatives, promoting carbon neutrality, and environmental education. Faculty are recognized for teaching, research, or campus or community-based environmental initiatives, including serving as campus sustainability coordinators, solar energy projects, sustainable foods, environmental dance marathons, campus tree planning, and modeling sustainable living practices. Awardees typically show leadership and measurable accomplishments, and are well respected on their campuses for their efforts. Since the initial program in 2013, 112 students and 57 non-students have been recognized. Six campus organizations were awarded, four of which were student groups. Nominees are presented by the PERC campus representatives to the PERC Executive Committee, which reviews the nominations and approves selections. Awardees are invited to attend the annual conference to serve on a panel to discuss their efforts.

The program has highlighted significant, novel, or high profile accomplishments and serves to help member schools promote environmental activities on their campuses, and to publicize more widely the wide array of environmental initiatives being conducted on college and university campuses. Many schools advertise the award on their campuses or in media within their community. Awardees names and lists of accomplishments are posted on the PERC website, thus publicizing some of the wide variety of efforts occurring in Pennsylvania colleges and universities.

4. Discussion

PERC confronts the same issues affecting higher education while more acutely facing issues related to sustainability. These include financial, operational, staffing, and educational challenges overlaid and exacerbated by COVID-19. Because PERC seeks to effect positive change in higher education, we face the vicissitudes of our organizations. Tied to sustainability, we have additional burdens of cost and complexity associated with wicked and super-wicked problems (Lazarus [2009](#)). These issues are occurring in a socio-politically contentious field of play where highly technical information collides with widely divergent and deeply held beliefs and values. This socio-political conflict is hyperpartisan in the United States, as shown clearly by the January 6 Insurrection and the cleavages in United States society that preceded and followed it. Of course, PERC's part-time Associate Director, Presidents Council, Executive Committee, and other participants face challenges to their time and ability to fundraise and develop high-value programming.

COVID-19 has highlighted structural difficulties and inequities that were present in the system before 2020. According to Wiley University Services ([2021](#)), US universities face declining enrollment, financial difficulties, a shrinking pool of U.S. high school graduates, reduced state funding, decreasing rankings among institutions globally, and lower international student enrollment. An *Inside Higher Ed* and Hanover Research survey found that COVID-19 exacerbated funding insecurity and that the majority of the university administrators they surveyed were concerned with impacts on enrollment (88%), faculty and staff employment (81%), and declines in other forms of revenue. PERC member schools face these issues, though not equally. Those schools in the Pennsylvania State System of Higher Education (PASSHE) face a number of them more acutely as two sets of three schools in western and northeastern Pennsylvania are being merged and consolidated for the reasons discussed above (Owens and Rude [2021](#)). As a dues-paid member organization, these challenges threaten our operations.

PERC seeks to effect positive changes for sustainability through higher education. Our membership is made up of a diverse group of colleges and universities of different scales and types. Our members range in size from liberal arts colleges with one campus like Dickinson, Haverford, Lebanon Valley College, and Swarthmore that serve between 1,600 and 2,500 students to Penn State University that serves about 100,000 students through online programs as well as on 24 campuses, two urban centers, and county-located extension offices.

No matter our participants' campus size, seeking to influence faculty, staff, students, and communities in academics and curricula, administration, operations, outreach, research, and student life presents logistical and cultural challenges. For example, PERC seeks to bring any faculty member in any discipline to approach sustainability and sustainability issues. These issues include, but are not limited to: climate change education, environmental in/justice, governmental and private climate action and adaptation planning, precautionary environmental actions or regulations, public health as it relates to the built environment, energy production, food production and security, industrial siting, and transportation. With the levels of specialization present across our universities—whether Research I or II, liberal arts, or community colleges with technical foci—a single issue like “methane’s role on a changing planet” can potentially bring faculty from chemistry, geology, geography, history, material science, meteorology, philosophy, photography, policy, and/or statistics together. Organizing and facilitating those interdisciplinary and transdisciplinary conversations creates epistemological challenges. When we add another dimension such as community-engaged scholarship or coordinated living labs with campus facilities, we invite additional logistical and linguistic challenges. Our municipalities or counties and their governments or community groups as well as our university buildings, grounds, food service, or energy services speak different languages and work on different calendars than the academic year.

On the previously named issue—“methane’s role on a changing planet”—PERC would hope to assist or spur its member schools to connect with others. For example, to bring together faculty and students with physical plant operators to reduce fugitive methane emissions, photography faculty and students documenting shale gas development impacts in Pennsylvania with local museums, libraries, or community groups to create conversation, municipal sewer or transit authority staff to share with faculty and students about technologies that reduce methane emissions. As noted earlier, we can have students present to state government officials on methane’s climate forcing potential and mitigation strategies that could be realized under the former Clean Power Plan or Governor Wolf’s Executive Order 2019–01 or effect change through local climate action and adaptation plans. These examples highlight the epistemological and institutional challenges PERC faces in order to support coordination, cooperation, and collaboration for sustainability.

Sustainability issues are inherently political. In the United States, some of them—the climate crisis and environmental justice chief among them—are now part of the hyperpartisan culture wars. Pennsylvania author Seamus McGraw has written on shale gas drilling, climate change, and guns and gun-related identity in the United States. He frequently observed in the early- and mid-2010s that if he knew where a person stood on abortion that he could guess with over 90% accuracy where people stood on unconventional gas drilling and the human role in forcing climate change (McGraw [2015](#)). While more citizens in the United States are becoming alarmed by and less doubtful about or dismissive of climate change since 2017 (Leiserowitz et al. [2022](#)), the United States had easily the largest ideological divide between its right and left wings regarding climate action in a survey of ten developed nations (PEW [2021](#)).

PERC is also coordinating with other organizations around the Commonwealth to support environmental justice programming. PERC takes it as a fact that minoritized communities in the United States, particularly Black, Indigenous, and other people of color (BIPOC) as well as religious, gender, and sexual-identity-related people have been deliberately disenfranchised and harmed by deliberate and legal means. Where environmental factors such as housing and transit planning, waste and industrial facility siting, governance, health access, and legacy pollution issues are concerned, PERC seeks to provide cooperative advocacy platforms,

and create educational programs and opportunities to redress wrongs. Because the United States has such an entrenched history of enslavement and a legacy of legalized and enforced racist policy as well as a culture rooted in and surrounding that racist policy, PERC is engaged in the personal, organizational, and highly political (but not party partisan) fields of race in America. This last challenge raises issues for our membership, our members, and the actions we take. It also presents our own leaders with the difficult task of confronting structurally-created distrust in their personal and professional lives and the moral challenges this creates.

From mid-2020 through February 2022, PERC has been run by a volunteer Executive Committee, Presidents Council, and part-time Associate Director. To accomplish our role for sustainability in Pennsylvania, we must put in many hours. Our membership has been stable for the last few years, but we must continue to innovate our programming and prove our value in outcomes and outputs to existing and potential member schools. Fundraising through meetings with sponsors or other means offers both opportunities and challenges. Like many volunteer organizations, this requires commitment. With the exception of our Associate Director, we are all full-time faculty and staff from universities. We are also people who serve in local or regional government or on other community boards. Though in different stages of life, we are all people with families and friends living through extraordinarily challenging times and world events.

Despite sharing our successes and baring our weaknesses, we also recognize and acknowledge the limits and constraints from an in-depth analysis of a single organization. PERC's structure and activities are driven by its location in the eastern United States, a diversity of institutional members with different goals and operational systems, and the values of its founders, leaders, and members. Political climates and the diversity and operations of academic institutions in other geographical locations worldwide will mean that PERC cannot be replicated intact into other locales; organizational structures and activities will undoubtedly vary. Nonetheless, we believe that our experiences provide useful insights for other organizations with similar missions.

5. Conclusion

PERC will continue to pursue its Mission and Vision as a collaborative organization of higher education institutions that:

- Supports integration of sustainability principles in campus operations and provide platforms,
- Disseminates best practices in sustainability teaching, research, outreach, student life, and operations, and
- Enables networking among higher education, community organizations, government, and other stakeholders across the commonwealth dedicated to working towards a thriving future.

We will continue to provide value to our member institutions and sponsors, connect institutions with one another and with their communities and the Commonwealth on sustainability best practices, motivate and activate Pennsylvania higher education communities to take action and make transformational changes, and integrate justice into all of our functions, including leadership, administration, initiatives, cooperative agreements, and sponsorship, and advocate for justice through our work.

Author Credits. All authors contributed equally to this manuscript. P. Buck served as the overall editor.

References

Audretsch DB (2014) From the entrepreneurial university to the university for the entrepreneurial society. *J Technol Transf* 39:313–321. <https://doi.org/10.1007/s10961-012-9288-1>

Bennetzen EH, Smith P, Porter JR (2016) Agricultural production and greenhouse gas emissions from world regions—the major trends over 40 years. *Glob Environ Change* 37:43–55. <https://doi.org/10.1016/j.gloenvcha.2015.12.004>

Clark M, Tilman D (2017) Comparative analysis of environmental impacts of agricultural production systems, agricultural input efficiency, and food choice. *Environ Res Lett* 12:064016

Department of Environmental Protection (2021) Local climate action program. <https://www.dep.pa.gov/Citizens/climate/Pages/Local-Climate-Action.aspx>. Accessed 14 Feb 2022

Fitzgerald HEK, Bruns ST, Sonka AF, Swanson L (2012) The centrality of engagement in higher education. *J Higher Ed Outreach Engage* 16:7–27

Food and Agriculture Organization of the United Nations (FAO) (2011) Global food losses and food waste—extent, causes and prevention

Holifield R, Chakraborty J, Walker G (2018) Introduction: the worlds of environmental justice. In: Holifield R, Chakraborty J, Walker G (eds) *The Routledge handbook of environmental justice*. Routledge 711 Third Avenue, New York, NY, pp 1–11

Inside Higher Ed and Hanover Research (2020) Responding to the Covid-19 crisis: a survey of college and university presidents. https://universityservices.wiley.com/wp-content/uploads/2020/04/Wiley_IHE_COVID-19_SurveyofPresidents_20200327.pdf. Accessed 16 Feb 2022

IPCC (2021) Summary for policymakers. In: Climate change 2021: the physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte V, Zhai P, Pirani A, Connors SL, Péan C, Berger S, Caud N, Chen Y, Goldfarb L, Gomis Ml, Huang M, Leitzell K, Lonnoy E, Matthews JBR, Maycock TK, Waterfield T, Yelekçi O, Yu R, Zhou B (eds)]. In Press

Keast R, Brown K, Mandell M (2007) Getting the right mix: unpacking integration meanings and strategies. *Int Public Manag J* 10 (1):9–33. <https://doi.org/10.1080/10967490601185716>

Lazarus R (2009) Super wicked problems and climate change: restraining the present to liberate the future. *Cornell Law Rev* 94:1153–1234. <https://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1152&context=facpub>. Accessed 14 Feb 2022

Leiserowitz A, Maibach E, Rosenthal S, Kotcher J, Neyens L, Marlon J, Carman J, Lacroix K, Goldberg M (2022) Global warming's six Americas, September 2021. Yale University and George Mason University. New Haven, CT: Yale Program on Climate Change Communication

Lozano R, Ceulemans K, Alonso-Almeida M, Huisingh D, Lozano FJ, Waas T, Lambrechts W, Lukman R, Hugé J (2015) A review of commitment and implementation of sustainable development in higher education: results from a worldwide survey. *J Cleaner Prod* 108:1–18. <https://doi.org/10.1016/j.jclepro.2014.09.048>

McGraw S (2015) *Betting the farm on a drought*. University of Texas Press, Austin

Owens D, Rude L (2021) PASSHE unanimously votes for consolidation of 6 Pa. institutions. ABC News 27. <https://www.abc27.com/news/this-week-in-pennsylvania/pennsylvania-politics/passhe-unanimously-votes-for-integration-of-6-pa-institutions/>. Accessed 14 Feb 2022

Pew Research Center (2021) In response to climate change, citizens in advanced economies are willing to alter how they live and work

Rowe WE (2014) Positionality. In: Coghlan D, Brydon-Miller M (eds) *The Sage encyclopedia of action research*. Sage

Savin-Baden M, Major CH (2013) *Qualitative research: the essential guide to theory and practice*. Routledge

Smith P, Bustamante M, Ahammad H, Clark H, Dong H, Elsiddig EA, Haberl H, Harper R, House J, Jafari M, Masera O, Mbow C, Ravindranath NH, Rice CW, Robledo Abad C, Romanovskaya A, Sperling F, Tubiello F (2014) Agriculture, forestry and other land use (AFOLU). In: Climate change 2014: mitigation of climate change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer O, Pichs-Madruga R, Sokona Y, Farahani E, Kadner S, Seyboth K, Adler A, Baum I, Brunner S, Eickemeier P, Kriemann B, Savolainen J, Schlömer S, von Stechow C, Zwickel T, Minx JC (eds)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA

Trencher GP, Yarime M, Kharrazi A (2013) Co-creating sustainability: cross-sector university collaborations for driving sustainable urban transformations. *J Cleaner Prod* 50:40–55. <https://doi.org/10.1016/j.jclepro.2012.11.047>

United Nations Department of Economic and Social Affairs (2015) Sustainable development goal 12: responsible production and consumption: targets and indicators. <https://sdgs.un.org/goals/goal12>. Accessed 15 Feb 2022

Wiley University Service (2021) Top challenges facing U.S. higher education. <https://universityservices.wiley.com/top-higher-education-challenges/>. Accessed 14 Feb 2022

World Health Organization (WHO) (2022) Compendium of WHO and other UN guidance on health and environment. https://www.who.int/health-topics/environmental-health#tab=tab_1. Accessed 31 Jan 2022