

Written Testimony of  
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before  
Pennsylvania House of Representatives  
Majority Policy Study Committee  
July 20, 2021

The following written summary of the testimony of Louis G. Leonard, JD, Dean of the Falk School of Sustainability & Environment, is respectfully submitted in advance of the hearing by the Majority Policy Study Committee of the Pennsylvania House of Representatives which will be held at Chatham University's Eden Hall Campus on Wednesday July 28, 2021:

**Training Pennsylvania's workforce to effectively steward the Commonwealth's natural resources and deploy modern, best practices around food, water and energy are key pillars of a prosperous Pennsylvania economy.**

Sometimes we can take the work of natural systems for granted. But looking closer, these systems provide valuable services to people and communities in Pennsylvania and beyond. A recent study by Penn State University, found that "statewide demand for all types of forest-water protection programs was estimated to be over \$3.8 billion per year."<sup>i</sup> In other words, people actually see the value of protecting natural systems like forests and freshwater.

Agriculture, energy and water are foundations of Pennsylvania's economy and its future jobs. These industries are changing rapidly – with a significant shift toward sustainable practices. From 2017-2019, for example, jobs in clean energy fields in Pennsylvania grew over four times faster than jobs in the economy overall.<sup>ii</sup> This shift requires innovating around new approaches and supporting a workforce that can adapt to these changes and learn new skills.

Chatham University's Eden Hall Campus is a laboratory for innovative sustainable technologies like a wastewater facility that treats used water on-site without harmful chemicals, a set of advanced Platinum LEED-certified classroom and dormitory buildings served by one of the largest university geothermal heating and cooling systems east of the Mississippi, and an aquaculture and aquaponics system that breeds fish to help restock local waterways while exploring ways to use the waste from fish cultivation to grow food. At Eden Hall, these sustainable systems are used as a training ground for students to learn modern practices and enter the workforce with skills that are in demand.

**Sustainability goals and targets – increasingly embraced by the private sector – already are beginning to shape the future of the global, national, state and local economies.**

Over the past decade, a big shift has occurred in the role that companies play in driving a more sustainable future. Globally, thousands of companies have set targets to reduce pollution, increase the use of clean energy or otherwise limit their environmental impact. Often these companies then require that their entire supply chain of business partners meet similar goals. The ripple effect of these corporate sustainability targets is beginning to impact nearly every sector of the global and national economy.

A 2018 assessment of corporate commitments to reduce climate pollution found that 2,175 companies from across the world have made at least one commitment with the Carbon Disclosure Project. These companies represent \$21 trillion in revenue (roughly equivalent to the entire U.S. gross domestic product).<sup>iii</sup> A separate 2021 analysis found that 60% of Fortune 500 companies have at least one climate or renewable energy target.<sup>iv</sup>

More than 1600 companies have set sustainability targets that include goals for their supply chain partners.<sup>v</sup> Doing so creates pressure on those supplier companies, who may not have set targets of their own, to nonetheless transform their businesses towards more sustainable practices. At Chatham University, our faculty and students have worked with companies like Marburger Farm Dairy in Evans City to improve their sustainability practices to meet the demands of companies like Walmart, which have set ambitious carbon reduction targets.

Sustainability goals are not only being adopted by individual companies, but also by regional economic actors. In 2019, the Allegheny Conference identified alignment with the Paris Climate Change Agreement and the UN Sustainable Development Goals as one of three key pillars for its 10-year development blueprint for the 10-county region.<sup>vi</sup>

**The COVID pandemic reminded us that supply chains are vulnerable and a more local approach to many areas, including food, will make our communities both more resilient and more sustainable.**

Across the globe and in Pennsylvania, the COVID pandemic disrupted supply chains of all kinds. In Pennsylvania, disruptions in food supply chains presented particularly difficult problems from farms to consumers, from rural to urban areas of the Commonwealth. For example, many farmers could not get their product to market before it spoiled. Elsewhere, expanded ‘food deserts’ in cities like Pittsburgh left many families without enough food to eat.

At Chatham University, our Center for Regional Agriculture & Food Transformation (CRAFT) created an online “Pennsylvania Farm Product Directory” which helped connect 45 farms from 13 counties in Western and Central Pennsylvania to new customers. The directory helped consumers understand where and when they could buy the farmer’s products, the precautions the farmers were taking to keep the food supply safe, and delivery options.<sup>vii</sup>

This kind of connection of local food supplies to local consumers, in Pennsylvania and elsewhere, is a key component of a more secure, resilient and sustainable food system.

**For our local economy to keep up with these trends, Pennsylvania needs a workforce that is trained for the future. Preparing workers to be ready for this future requires innovative education models.**

Educating a Pennsylvania workforce prepared for this changing marketplace requires shifting not only to new technologies, but new techniques for instruction and learning. A common challenge for traditional educational institutions is that our modern economy is driven by complex, overlapping systems that represent intersections among physical and social sciences like hydrology and chemistry, economics, engineering, business administration and public policy, and sociology and humanities. Typical education institutions are organized in silos that make it hard for students to easily extend learning across these disciplines.

A 2020 US National Academies of Sciences and Engineering report found that significant changes are needed in the way students learn to prepare a workforce for the age of sustainability.<sup>viii</sup> The report recommended key educational innovations, including:

- creating educational programs that cut across disciplines to allow students to understand the intersecting systems that drive our economy and sustainability challenges;
- deeply incorporating experience-based learning or on-the-job training to build real-world experience by connecting students with business, governments or others to solve real problems;
- recognizing the connections between social and environmental problems to ensure that underrepresented communities, both urban and rural, are not left behind.

The Allegheny Conference also has reviewed workforce development needs for the region and come to some similar conclusions. It found that jobs of the future in western Pennsylvania will be ‘hybrid jobs’ that blend diverse skill sets into a single role, especially “emerging, cross-cutting skills”.<sup>ix</sup> And of course these educational options must be flexible and affordable for workers of various backgrounds and financial means.

At the Falk School, we have been experimenting with these kinds of educational innovations for nearly a decade:

- We offer strongly inter-disciplinary undergraduate and graduate degrees in sustainability, food, environmental science and natural resources. We have designed dual degree programs that combine a traditional Master of Business Administration with degrees in either sustainability or food studies – in some cases students receive both degrees in only two years.

- We use the living laboratories of Eden Hall to provide experience-based learning opportunities that get students out of the classroom and into the often-complex reality of sustainability problem solving.
- We partner with business and communities to tackle real world problems in ways that give students valuable training opportunities, including through CRAFT's Food Innovation Lab which helps small business owners in the food sector stand up new business, test products and design marketing strategies.

**To scale up innovative training and education models, educators need to work together with each other, with businesses and with communities to create a network that makes sustainability training accessible, affordable and fit for purpose.**

In its 2016 report *Inflection Point*, the Allegheny Conference found a number of gaps in the workforce of the future for the region.<sup>x</sup> Despite many successful programs, the region lacks a coordinated effort to advance career pathways for a sustainable future. The report called for “closer industry and educator connections” to address an “information gap about emerging high-demand jobs and skills [that] exists between employers and training providers.”

As importantly, building toward this future economy must be done in a way that supports communities that traditionally have been left behind. Minority communities are currently underrepresented in environmental business, governance and non-profit careers. Lower income communities in both rural and urban parts of our region do not adequately benefit from careers in these areas.

At Chatham we are experimenting with new partnerships to bridge these gaps. Our Baker Training Program is a partnership with a community workforce organization – Community Kitchen Pittsburgh – and local employers to train both traditional students and members of the workforce in skills that can bring more local Pennsylvania grain into the marketplace. We see the importance, from a hybrid skills training and affordability perspective, of creating partnerships with community colleges, the traditional engine of workforce development, and other community training institutions. We currently are exploring new opportunities for pathways from 2-year community colleges to Chatham's undergraduate and graduate programs in sustainability fields, building on similar programs we have in nursing and marketing. Making it easy for students to move – affordably and at their own pace – along a career development journey is crucial for the flexibility and skills training necessary for the workforce of the future.

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<sup>i</sup> Public Demand for Forest Conservation and Water Protection in PA, PennState Extension (Jan 22, 2021), <https://extension.psu.edu/public-demand-for-forest-conservation-and-water-protection-in-pa>

<sup>ii</sup> 2020 Pennsylvania Clean Energy Employment Report, [bw] RESEARCH PARTNERSHIP, [https://www.dep.pa.gov/Business/Energy/OfficeofPollutionPrevention/EnergyEfficiency Environment and EconomicsInitiative/Pages/Workforce-Development.aspx](https://www.dep.pa.gov/Business/Energy/OfficeofPollutionPrevention/EnergyEfficiency%20Environment%20and%20EconomicsInitiative/Pages/Workforce-Development.aspx).

<sup>iii</sup> ANGEL HSU ET AL., DATA DRIVEN YALE ET AL., GLOBAL CLIMATE ACTION FROM CITIES, REGIONS, AND BUSINESSES (2018).

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- <sup>iv</sup> WORLD WILDLIFE FUND ET AL., POWER FORWARD 4.0, at 2 (2021), <https://www.worldwildlife.org/publications/power-forward-4-0-a-progress-report-of-the-fortune-500-s-transition-to-a-net-zero-economy>
- <sup>v</sup> Science Based Targets Initiative, [www.sciencebasedtargets.org](http://www.sciencebasedtargets.org) (data retrieved on July 9, 2021).
- <sup>vi</sup> Next is Now: A 10-Year Vision of Vitality for the Pittsburgh Region (2019), <https://pittsburghregion.org>.
- <sup>vii</sup> Pennsylvania Farm Product Director, Center for Regional Agriculture & Food Transformation (CRAFT), Chatham University, <https://www.craft.chatham.edu/pa-farm-product-directory>.
- <sup>viii</sup> Strengthening Sustainability Programs and Curricula at the Undergraduate and Graduate Levels, National Academy of Sciences & Engineering (2020), <https://www.nap.edu/catalog/25821/strengthening-sustainability-programs-and-curricula-at-the-undergraduate-and-graduate-levels>
- <sup>ix</sup> Inflection Point, Allegheny Conference (2016), <https://www.alleghenyconference.org/beyondinflectionpoint/>
- <sup>x</sup> Inflection Point (2016).