

Proceedings Report



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From the
Sustainability Education Summit
September 20–21, 2010

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U.S. Department of Education
Office of the Under Secretary

U.S. Department of Education

Arne Duncan
Secretary of Education

Office of the Under Secretary

Martha Kanter
Under Secretary

September 2011

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Sustainability Education Summit: Citizenship and Pathways for a Green Economy Proceedings Report

"I want to reinforce to you how important it is for all of us in this room to show leadership and perseverance, to be among the people who are pioneers in this field. Right now, in the second decade of the 21st century, preparing our students to be good environmental citizens is some of the most important work that any of us can do. It's for our children, it's for our children's children, and it's for generations to come."

—Secretary Arne Duncan at the Sustainability Education Summit, Sept. 21, 2010

Introduction and Background

The first-ever U. S. Department of Education summit on sustainability, *Sustainability Education Summit: Citizenship and Pathways for a Green Economy*, was held on Sept. 20–21, 2010, in Washington, D.C.¹ The Sustainability Education Summit (the Summit) brought together leaders from higher education, business and industry, labor, government, and non-governmental organizations (NGOs) to build shared visions and strategies for education's role in developing a sustainable and green economy. The Summit was mandated by the 110th Congress in the *Higher Education Opportunity Act* (Public Law 110-315, enacted Aug. 14, 2008). The act required the Department of Education, in consultation with the administrator of the Environmental Protection Agency, by Sept. 30, 2010, to:

"... convene a summit of higher education experts working in the area of sustainable operations and programs, representatives from agencies of the Federal Government, and business and industry leaders to focus on efforts of national distinction that –

- (1) Encourage faculty, staff, and students at institutions of higher education to establish administrative and academic sustainability programs on campus;*
- (2) Enhance research by faculty and students at institutions of higher education in sustainability practices and innovations that assist and improve sustainability;*

(3) Encourage institutions of higher education to work with community partners from the business, government, and nonprofit sectors to design and implement sustainability programs for application in the community and workplace;

(4) Identify opportunities for partnerships involving institutions of higher education and the Federal Government to expand sustainable operations and academic programs focused on environmental and economic sustainability; and

(5) Charge the summit participants or steering committee to submit a set of recommendations for addressing sustainability through institutions of higher education.”

The overall goal of the Summit was to articulate a set of action steps for education, business and industry, government, and the environmental community to promote the transition to a sustainable, green economy. The dual themes of citizenship and pathways acknowledged that sustainability is valued in education both as a motivator for responsible behavior and as a factor in preparing tomorrow’s workforce to meet the economic imperatives for sustainable industries.

The intent of the Summit was to draw attention to the need for collaborative work among stakeholders, educators, business, and advocacy groups, and to provide an opportunity for these groups to discuss a path towards educating future leaders of a sustainable economy. For educators, this support from stakeholders would ensure that all graduates are eco-literate, defined as “the ability to understand the natural systems that make life possible,” and are ready as citizens to help face growing ecological challenges.² Furthermore, educators and stakeholders would establish effective career pathways, such that students are able to advance in careers at all levels, ready to meet the needs of business and society, and to participate in the emerging green economy. To that end, the Summit was organized around the following themes:

- Sustainable and green economic development
- Education solutions
- Building career pathways
- Leadership and the power of strategic partnerships

The two-day Summit consisted of plenary sessions with keynote speakers, panel discussions and smaller breakout group sessions. The plenary and keynote speakers were leaders representing a variety of sectors that are transforming education, the economy, and the environment, and offering some of the best approaches to achieving sustainability. The breakout group sessions charged Summit participants to: 1) advance the dialogue started in the plenary sessions; 2) develop thoughtful and challenging questions for speakers in the plenary

sessions; 3) learn from each other and understand the challenges of how to educate for a sustainable future; and 4) develop specific actionable recommendations to contribute to the national agenda to advance sustainability and sustainability education.

To capture the key points from thought leaders at the plenary and panel sessions and the actionable recommendations resulting from the breakout group sessions, the U.S. Department of Education commissioned this proceedings report. The information from this report was taken from notes, speeches, and transcripts of the plenary and panel sessions. The challenges and recommendations were taken from flipchart notes used in the breakout sessions. This report provides a brief synopsis of the Summit and is broken into three major sections, which include:

- 1) Brief descriptions of all Summit plenary and panel sessions, including highlights from key speakers;
- 2) Documentation of the challenges and barriers to advancing sustainability and sustainability education, as identified by groups in the breakout sessions; and
- 3) Specific actionable recommendations identified by the breakout groups.

Please note that this report provides a broad overview of the Summit and is not meant to capture every detail of it, nor are the recommendations meant to imply an endorsement from the U.S. Department of Education.

Description of Summit Activities

Sept. 20, 2010

U.S. Under Secretary of Education Martha Kanter

The Summit commenced with a welcome and introductions by U.S. Under Secretary of Education Martha Kanter. She provided a context for the Summit by first highlighting President Obama's address at the prior year's United Nations Summit on Climate Change, where he stated:

“Our generation’s response to this challenge [of climate change] will be judged by history, for if we fail to meet it boldly, swiftly, and together, we risk consigning future generations to an irreversible catastrophe.”

To date, Under Secretary Kanter noted, a variety of federal agencies have taken efforts to address this challenge and the cross-cutting nature of sustainability education. Specifically, Kanter recognized the U.S. departments of Agriculture, Energy, Health and Human Services, Interior, and Labor, and the Environmental Protection Agency, National Institute of Health, and National Science Foundation as having engaged in advancing or promoting sustainability. Many of those activities were funded through the *American Recovery and Reinvestment Act*.

Kanter stressed the importance of educating our way to a green economy, a better society, and a better environment by ensuring that higher education prepares the next generation of scientists, technicians, parents, entrepreneurs, and global humanitarians. She addressed the need for action and highlighted state and local examples across the country that are providing green, environmentally safe facilities and schools, and linked healthy environments to academic achievement. To reinforce these statements, she cited a U.S. Government Accountability Office report stating that 14 million students attend schools that are in need of extensive remediation or renovation and noted that student achievement is tied to environmentally safe facilities that have good indoor air quality, natural light, and other factors.³ Kanter also highlighted numerous schools and programs that are connecting sustainable facilities with curriculum and hands-on learning,⁴ and spoke of the importance of integrating sustainability education to ensure students are prepared for the 21st-century workforce.

Kanter spotlighted the American College and University Presidents' Climate Commitment (Presidents' Climate Commitment⁵) and applauded the bold leaders who signed the commitment and have transitioned to taking action. She also cautioned that although the President's Climate Commitment is a bold step forward, the majority of higher education institutions have yet to sign on. Kanter also emphasized the Department's work on articulating green pathways and programs of study and highlighted five states—Ohio, New Jersey, Oregon, Georgia, and Illinois—that are creating green pathways in specific career clusters.⁶ Throughout her comments about career pathways, Kanter emphasized the importance of science, technology, engineering, and math (STEM) education in preparing students with 21st-century skills.

To read a transcript of Under Secretary Kanter's opening remarks visit:

<http://www.ed.gov/news/speeches/citizenship-and-pathways-green-economy-remarks-under-secretary-martha-kanter-sustainab>

Opening Keynote Addresses

After Under Secretary Kanter's welcoming speech, leaders representing the government, business, and education communities provided opening remarks, as described below.

- ***U.S. Deputy Secretary of Housing and Urban Development (HUD) Ron Sims***
- Mr. Sims highlighted the importance of teamwork among the private and public sectors, and the philanthropic and faith-based communities. He also pointed out the critical role that higher education institutions must play in developing the green economy, and the importance of universities' role in creating green economic growth. Sims also underscored that ensuring sustainability and improving education systems are everybody's responsibility in order to ensure the United States will continue to be competitive in the 21st century.

- ***Bank of America Chairman Chad Holliday***
- Mr. Holliday highlighted effective change management practices within the private sector that could be applied to sustainability efforts. Holliday spoke about his work with the United Nations Global Compact, studying global companies that had implemented sustainability practices to find the common elements to their success. He stated that these elements were that change was embedded at every level of the operation of the organization; every individual within the company was invested in finding ways to advance sustainability; and there was a long-term commitment by the company. Holliday showed an example of a problem for which a solution had not yet been created. In this instance, a company's bold, public commitment to finding a solution changed the culture inside of the company and brought the best minds to the table.

- ***Arizona State University President Michael Crow***
- President Crow spoke about the challenge of teaching, designing, and learning the concept of sustainability, as it is taught in schools as peripheral knowledge rather than as a core value and function. Crow, as the leader of a premiere public research university committed to building a sustainable environment and economy for Arizona, suggested that radical reforms are needed and that implementation of these reforms was difficult from both monetary and emotional perspectives. Crow spoke about teaching, learning, and discovering sustainability as a mission of the institution and a purpose for its existence. Examples included introducing sustainability concepts to all students; creating a school of sustainability; committing the university to carbon neutrality by 2020; and integrating sustainability as a thread in all curricular areas of the institution.

Panel 1: What Is Needed for Higher Education to Lead Society on a Socially, Economically, and Environmentally Sustainable Path

The first panel of the Summit held a dialogue on (1) higher education's leadership role in creating a healthy, just, and sustainable society; (2) the importance of sustainability and how to ensure it is the core part of the institution's framework and goals; (3) the operation of an economy that is based on a low carbon production system; and (4) challenges faced by the higher education community in advancing sustainability. Panelists were:

- Anthony Cortese, president, Second Nature (facilitator);
- Beverley Tatum, president, Spelman College;
- Girard Weber, president, College of Lake County; and
- Michael Crow, president, Arizona State University.

Anthony Cortese, facilitator of the panel, talked about the Presidents' Climate Commitment, which has 674 signatories from institutions representing 35 percent of all students in higher education. He emphasized that many more schools that have not yet signed the Presidents' Commitment are taking action to address climate change and sustainability education.

Beverley Tatum highlighted that Spelman College is considered a leader in environmental responsibility among Historically Black Colleges and Universities (HBCUs) and recently signed on to the Presidents' Climate Commitment. Spelman is just one of a handful of HBCUs to do so, and Tatum described how sustainability aligns with her college's mission. She spoke of the importance of being a leader in the education of women of African descent, and the global impact of our environmental choices. Tatum emphasized the need to model environmentally sound choices for students and gave several examples of her college's commitment. These include an environmental science and environmental studies program with rapid enrollment, a LEED-certified residence hall, paperless business processes, and a green cleaning program.

Jerry Weber, president of College of Lake County, spoke about sustainability efforts at the college, including starting a group called Community Partners for Sustainability and signing on to the Presidents' Climate Commitment. Weber talked about the college's membership in a larger initiative, the Illinois Green Economy Network, which has 48 Illinois community colleges working together to achieve sustainability. Weber also spoke about leading the American Association of Community Colleges Initiative, the Sustainable Education in Economic Development (SEED) Center, which is a new website that brings together green curricula and other resources from colleges across the country.

Michael Crow of Arizona State University offered five ways to facilitate sustainability in institutions: 1) setting the intellectual design aspirations for individual institutions, 2) defining a purpose for the institution that is greater than itself, 3) driving change at every level, 4) change in processes, and 5) bringing faculty and staff together that are committed to transformation.

All panelists answered a series of questions, primarily focused on two themes: 1) framing sustainability education within the overall educational process for greater impact and innovation; and 2) the types of strategic partnerships with business, government, NGOs, and education that are necessary to advance sustainability education.

Under Secretary of Energy Kristina Johnson

Under Secretary Johnson started her keynote with an emphasis on the importance of educating and preparing young people for the clean energy economy and the energy side of sustainability education. She stated, “It’s so critical that we educate the next generation to grow up as concerned about the environment as many of us were 40 years ago ... on the first Earth Day.”

Johnson also stated that President Obama and U.S. Department of Energy Secretary Steven Chu believe that the country that leads the clean energy economy will lead the world because clean energy is the industrial revolution of our time. To that end, the under secretary described the leadership of the Obama administration in setting goals to reduce greenhouse gas emissions by 42 percent by 2030, and by 83 percent by 2050, in reducing dependence on imported oil, and in growing jobs in the clean energy economy, thereby renewing the economy to create 21st-century jobs.

To effectively address energy issues, Johnson suggested the need to utilize the three c’s: communicate, connect, and commit. She emphasized the importance of *communicating* the need and reasons behind the Obama administration’s greenhouse gas emission goals and how to achieve these goals. To reach these goals, Johnson suggested, the U.S. must reduce its energy consumption by 31 percent with increased efficiency, increase usage of renewable and nuclear energy, and obtain commercially deployable carbon capture and storage by 2020. While she thought this is possible, she also underlined the need for innovation and for students who are prepared to think about energy from scientific, social, behavioral, and economic perspectives. Johnson also emphasized the importance of “*connecting* the dots” of federal agencies and highlighted the work with the departments of Commerce, Education, and Labor and the Regional Innovation Clusters, which brought together seven different agencies with a common goal of an educated workforce. Johnson emphasized the importance of everyone *committing* to meet the needs of a clean energy economy, both individually and collectively.

While she highlighted numerous opportunities to save energy, one suggestion was the use of “smart meter” controls for home energy use, which have proven to reduce energy use by 20 percent. Johnson emphasized that individual action has been strengthened through projects like the Smart Grid Investments funded by the *American Recovery and Reinvestment Act*, which allowed 10 million “smart meters” to be deployed and supported the development of information to communicate the value of the Smart Grid program.

Johnson concluded her remarks by highlighting some of the Department of Energy’s education efforts to encourage students to take an interest in energy issues, noting the biennial Solar Decathlon and sponsorship of numerous college science bowls. Johnson suggested there should be competitions in greening schools, opportunities to engage kids early on with science fairs, funding opportunities for programs in higher education focused on energy literacy, and an education campaign around energy issues.

Panel 2: Building Career Pathways for Sustainability Education

The second panel consisted of leaders in secondary and postsecondary education and focused on how to prepare students for jobs in the green and clean energy economy. The panel discussed (1) preparing students for postsecondary education and careers while in 12th grade, (2) teacher preparation and teaching of sustainability education, (3) mechanisms for funding sustainability education, (4) scaling sustainability education, and (5) the integral role leadership plays in changing the learning environment.

The panelists were:

- Mary Spilde, president, Lane Community College (facilitator);
- Gary Heath, former superintendent of schools, state of Maryland;
- Kirk Bergstrom, president, Worldlink; and
- Bryan Albrecht, president, Gateway Technical College.

Panelist and facilitator Mary Spilde emphasized the importance of embedding sustainability education so that it becomes “the way of the workplace,” not an add-on project or a fad. She cautioned that sustainability is very complex and needs a systemic approach, which can seem overwhelming in terms of figuring out the first steps. Spilde spoke about developing a framework that allows educational institutions to move forward with educating and training students in the emerging green economy and with offering credentials, certificates, and degrees. One such framework is the career pathways model, which Spilde introduced with the following explanation:

“... each step on the career pathway is designed to prepare students for the next level of education or the next level of employment. Career pathways are not separate programs, but a framework for weaving together high school education, adult education, college and university education. It’s about earning credentials and careers, not about a program.”

Spilde also talked about educating for green jobs. Initially, she explained, there was great confusion about the definition of a green job, which made it difficult for community colleges to respond to industry’s needs. But now it is clear that green jobs span many sectors and that many of the jobs in the labor market will be middle skilled jobs, requiring some amount of postsecondary education. She commented that Lane Community College developed a brief framework to understand the kinds of green jobs available in the region, focusing on nascent jobs with new technologies, jobs with emerging technologies such as wind and solar, energy efficiency and management, and the greening of existing jobs.

Gary Heath, representing the state of Maryland, reported on the need to start sustainability education in elementary schools and emphasized that fundamental policy initiatives are necessary to make sustainability an integrative theme for the whole school. At the time of the Summit, Heath acknowledged that the Maryland legislature was debating and voting on legislation that would set an environmental literacy graduation requirement. He said initiatives such as the *No Child Left Inside Act (NCLI)*, which would incentivize states to create plans that ensure every student graduates environmentally literate, should be the fundamental first step in addressing sustainability education. Heath discussed the core competencies of the proposed graduation requirement, which include the requirement that students have the attitudes and experiences necessary to be able to generate solutions to environmental challenges.

Kirk Bergstrom, president of Worldlink, emphasized the need for the sustainability education movement to be a central theme in schools, not a fringe movement, informing facility design, curriculum, and teacher professional development. He also stated that the principles of sustainability education require systems and design thinking, problem solving, innovation, and geospatial literacy, all of which can be integrated across disciplines. Bergstrom strongly suggested that the term “green careers” be used instead of “green jobs,” as it will cultivate comprehensive thinkers and systemic problem solvers to enter those careers.

Bryan Albrecht of Gateway Technical College spoke about how the college has been strategic in addressing its sustainability vision and education by looking internally first and listening to students and faculty about their ideas, passions, and interests. Albrecht also described the

implementation of a “green scholar” program, which allows students to get involved in college sustainability activities, earn points, and graduate as green scholars who will be recognized at graduation with a pin, certificate, and prize. Albrecht also emphasized the importance of engaging the community to reconsider 12th grade as a transition year and not as an end point, with programmatic transitions and credit transfers into postsecondary education. Albrecht spoke of several different models at his college focused on transitions, including career academies and an early college initiative. Finally, Albrecht addressed how Gateway prepares students for careers by teaching the necessary green skills and competencies for jobs that exist in the economy today.

Summit participants also shared ideas about collaborative learning as one of the core pedagogical approaches to sustainability. Ideas generated by the group included making a business case or a clear and concise economic argument for sustainability education, developing reward systems and incentives for faculty, and moving beyond cognitive intelligence to behavioral, social and emotional intelligence.

Panel 3: Regional Economic Clusters and the Power of Partnerships

The panel discussed the role institutions of higher education play in regional economic development and the promotion of sustainability. The panelists represented colleges and universities that have driven economic activity in their regions by providing a skilled workforce, attracting targeted businesses, and developing key economic sectors in the emerging green economy.

Panelists were:

- John Fernandez, assistant secretary at the U.S. Department of Commerce (facilitator);
- Eduardo Padron, president, Miami Dade College;
- James Buizer, Arizona State University;
- Geoffrey Chase, San Diego State University; and
- David Orr, Oberlin College.

Assistant Secretary Fernandez facilitated the discussion and began by describing how the Department of Commerce is driving the notion of regional innovation systems and clusters to create ecosystems where the private sector can flourish and create jobs. Fernandez emphasized that regional economic development involves three major components: talent pool, innovation infrastructure, and a broad system of support networks. He emphasized the Summit is about strengthening the talent pool and finding systems and partnerships among all

aspects of higher education, the business community, and various intermediaries to advance sustainability.

Padron spoke about education as the most important industry in the 21st-century knowledge economy, where two-thirds of all new jobs being created in this country today require postsecondary education. He highlighted examples of Miami Dade College's efforts to build bridges between education and economic development to support the community. Padron described the college's work with the Beacon Council, the economic development arm of the county in Miami, and its commitment to provide customized curriculum and training to new or existing businesses in the region. For example, he described the partnership with the college and Florida Power and Light, an energy company, to provide a specialized curriculum for nuclear power specialists in a short period of time. He also emphasized that the college has been successful because it values collaboration and partnership with local economic development organizations and because of its emphasis on the integration of sustainability into all disciplines.

Buizer began the discussion emphasizing that a university's function has typically been to educate students and create knowledge through research but not to implement sustainability solutions or be part of economic development efforts in the community. Buizer highlighted the value and necessity of partnerships to create viable sustainability solutions, particularly with businesses, government agencies, and the K–12 school system. He described the challenges of these partnerships, recognizing the differences in mission, culture, motivators, and reward structure of these entities. Overcoming these barriers requires investment, incentives, time to build mutual trust and respect, and frameworks for opportunities to collaborate in order for partners to co-produce and advance effective sustainability solutions.

Chase described San Diego State University as “we are not *in* the community, we are *of* the community,” an important perspective when preparing students for the future and building partnerships. He discussed creating partnerships across departments within the institution to build trust among faculty members. These partnerships have allowed faculty to connect around the topic of sustainability and effectively integrate it into their work. Chase talked about engagement strategies and incentives for faculty, including small monetary awards to take advantage of professional development opportunities about sustainability. He also highlighted and stressed the importance of partnerships across education institutions, including community colleges, school districts, and public-private partnerships.

Orr offered the audience several observations about the challenges faced by the sustainability movement. First, he explained, sustainability has been organized in silos instead of into an integrated package. Second, the sustainability movement branded itself as an environmental movement and this messaging has created multiple challenges. Orr proposed that sustainability should be considered a national security issue, and challenged Summit participants to think in those terms. Third, he described the Oberlin Project, which aims to integrate sustainability into the college and city, as an example of higher education's role in green regional economic development. The project is integrating sustainability by 1) rebuilding downtown Oberlin into a LEED-Platinum-certified neighborhood under the U.S. Green Buildings Council Neighborhood Development Rating System, 2) becoming carbon neutral, 3) establishing a 20,000 acre "green belt" around the city, and 4) changing the educational enterprise by developing an educational consortium that can support teams working across various components of the project.

Panelists then answered a series of questions about: engaging faculty in sustainability efforts; developing pre-service trainings for teachers; utilizing the procurement process to motivate the private sector to engage in sustainable practices; and providing strategies to educate American students to understand the global perspective of energy.

Sept. 21, 2010

The second day of the Summit began with Glenn Cummings, now former deputy assistant secretary at the Office of Vocational and Adult Education at the U.S. Department of Education. Cummings provided leadership for planning the Summit, reviewing the first day of the Summit and setting the context and charge for the second day.

Panel 4: A Systems View—Institutions, Relationships, Leadership, and Intermediaries

The last panel of the Summit was composed of a diverse group of leaders with domain-spanning perspectives. They spoke about proposals to move the education system toward sustainability. The panel discussed the drivers for change, identified conditions necessary for change, and spoke about how collaborative approaches could create demand for jobs and sustainability education while moving toward a green economy.

Panelists for the session were:

- James Elder, director, Campaign for Environmental Literacy (facilitator);
- Tom Kelly, University of New Hampshire;

- Leith Sharpe, University of Illinois;
- Debra Rowe, Oakland Community College; and
- Anthony Cortese, president, Second Nature

James Elder facilitated the discussion and noted the high level of representation of government, higher education, and business communities discussing sustainability education at the Summit, something unimaginable only three or four years ago. He also stated that the one thing missing from the discussion was the issue of scaling sustainability education programs. Although there are some tremendous programs available in both the K through 12 and higher education sectors, Elder suggested that having greater influence and impact would require scaling these programs to reach many more schools, higher education institutions, and students, something that has never been tried before. He also talked about the challenges of understanding and educating people about the real costs of all of our actions, including the cost of the goods and services we purchase to the environment, people's health, including workers', and communities.

The panel began by reflecting on the previous day and asking the audience general questions. Tom Kelly noted that much of the discussion on the first day focused on technical competencies that could be solved by science and technology. Missing from the dialogue were issues on ethical reasoning and values. Kelly also stated that there was no mention of the history of sustainability, which grew out of the sustainable development movement in the post-World War II era. He emphasized that understanding the history of sustainability will ensure that values and ethics lie at the center and are an explicit part of the sustainability conversation. Further, he suggested that sustainability is a global issue and that cultivating respect and a sense of connection across diverse peoples will be critical to accomplishing the collective goal of creating a sustainable world.

Leith Sharpe asked participants to consider new ways of delivering education that identifies processes, relationships, and systems that could open doors to many new conversations, experiments, and adventures. Sharpe also talked about the existing marketplace offering a huge variety of innovations, technologies, services, and products but suggested there was a slow integration rate currently. She stated the slow rate was due to the capacity gap between what the market can offer and what organizations and businesses are capable and confident of embracing and adopting within their organization.

Debra Rowe discussed two key points necessary to create a sustainable future: (1) change in our habits and practices, and (2) change in policies and regulations—that is, a shift in culture

and a shift in policy. Rowe also addressed the issue of training for green jobs that do not exist in today's economy, offering suggestions such as helping employers expand their businesses and improve profits by adopting models that work for energy efficiency and renewable energies, and changing policies to allow the green economy to realize its full potential.

Cortese stated that conversations at the Summit centered on the concept of sustainability and considered the economic, social, and environmental aspects we need to attend to in order to create a better world now and in the future. Cortese emphasized that sustainability could be a new framework for education. He reflected on conversations he heard at the Summit about teaching interdisciplinary systemic perspectives addressing them at the local and regional levels. He also stressed that teaching sustainability does not put more of a burden on teachers, but instead gives them a different perspective. So far, evidence has shown that it can stimulate teacher and student creativity and make teaching more exciting and interesting for all.

Panelists also discussed how to reduce barriers, provide incentives at the systems and institutional levels, influence the funding of education systems, and increase the number of teachers and administrators that take action in advancing sustainability efforts. Suggestions included: (1) creating a green ribbon school program; (2) repurposing or directing funds for environmental physical plant improvements or sustainability education; (3) changing federal, state, and local policies; (4) building an alliance of major employers committed to sustainability; (5) filling education capacity gaps; (6) building in faculty incentives to reform teaching; and (7) demonstrating to teachers that by meeting the core competencies they are educating for a sustainable future.

Keynote Address:

▪ ***U.S. Secretary of Education Arne Duncan***

Secretary Duncan addressed the Summit in a keynote address and began by describing the U.S. Department of Education's efforts to save teachers' jobs, create and fund programs such as Race to the Top and the Promise Neighborhoods Initiative, and support education reform at the district, state, and neighborhood levels. The secretary specifically stated that the Summit marks a new milestone for the Department of Education and acknowledged that it was just beginning this critically important work. Duncan spoke of witnessing the impact of climate change firsthand and how education must be part of the solution. He stated,

“This ... Sustainability Summit represents the first time the Department (of Education) has taken a leadership role in the work of educating the next generation of green citizens, and preparing them to contribute to the workforce through green jobs ... I

promise you that we will be a committed partner in the national effort to build a more environmentally literate and responsible society. “

Secretary Duncan went on to highlight many of the sustainability education efforts of other agencies, including the National Science Foundation, U.S. Environmental Protection Agency, National Oceanic and Atmospheric Administration and the Department of Labor.⁷ He also talked about some of the Department’s work, including that of the National Clearinghouse on School Facilities, Departmental green team, and National Research Center for Career and Technical Education, whose project with five states to design programs of study will lead to success in green industries and career pathways. Duncan stated,

“These career pathways will define the academic knowledge and the vocational skills that students will need to prepare themselves for green jobs in architecture, agriculture, energy, transportation, and waste management.”

The secretary also spoke of the Obama administration’s commitment to promote a well-rounded curriculum for children, including, for the first time, the proposal that environmental education be included. Duncan discussed the administration’s *Blueprint for Reform*—its proposal to reauthorize and fix the *No Child Left Behind Act*—, departmental efforts to support locally developed models that teach environmental science, creation of a competitive grants program, and significant investments in science, technology, engineering, and mathematics (STEM). Duncan, in closing, spoke of the Department’s commitment to sustainability as an investment in the country’s economic future.

To read a transcript of Secretary Duncan’s address, visit:

<http://www.ed.gov/news/speeches/greening-department-education-secretary-duncans-remarks-sustainability-summit>

▪ **Rep. John Sarbanes**

Rep. John Sarbanes began his speech by emphasizing the importance of the Sustainability Education Summit and its noble goal. The congressman urged the audience to leave the Summit with steps for moving forward in terms of promoting sustainability and environmental awareness in the earliest stages of educational development for the next generation. These efforts, Sarbanes emphasized, would complement, enhance, and strengthen sustainability initiatives in higher education.

Sarbanes also provided background information regarding the *NCLI* bill, first introduced in 2007. He spoke of efforts by Congress and the Department of Education to promote environmental education through this bill. The congressman spoke about the effect that technology is having on children today, who spend on average four to five hours a day plugged into technology, while spending only four minutes a day on outdoor, unstructured recreation and play. Sarbanes described the *NCLI* goals of changing that imbalance, encouraging young people to go outdoors and teaching them the benefits of that activity. For educators, he suggested that it is important to recognize the relationship between time spent outdoors and student achievement. He noted the *NCLI Act* would provide grants, training, and curriculum development for outdoor education opportunities to schools and teachers. The congressman said that he hoped that *NCLI* would be incorporated into the reauthorization of the *Elementary and Secondary Education Act*.

Sarbanes mentioned numerous federal agencies that have made commitments to environmental education over the years. He noted that the Department of Education has not been one of them, but said that he hoped that the *NCLI Act* would change that. He also stated he was pleased that the Obama administration has focused new attention on environmental education through the blueprint and other activities. Sarbanes talked about the Maryland Board of Education's efforts to consider environmental literacy as a graduation requirement (it passed as of this report). He talked about his experiences working with students and explaining the three pillars of environmental education: appreciation and respect for the outdoors and its beauty; an understanding of the ecology and the interaction of people with it; and the utility and value of the natural resources around us. Sarbanes excitedly explained that the *NCLI* was just an arm of an advocacy movement that has grown into a sizeable coalition across the country. If a robust environmental education component were implemented in our education system across the country, there would be a coalition of grassroots partners ready to embrace it. "Then we could say back to Mother Nature: 'Here is an army, let's go build the future,'" said Sarbanes.

Breakout Group Sessions

The overall goal of the Summit was to yield specific actionable recommendations, contributing to a national agenda that advances sustainability and sustainability education. Attendees participated in breakout groups for two days working to build those recommendations. The plenary sessions and panel discussions provided attendees with the shared language, knowledge, and understanding of sustainability education that served as the foundation for the smaller breakout groups. Those groups discussed challenges and dilemmas on the pathway to a sustainable economy supported by education. Some of the challenges that were identified are:

- ❖ *No common definition and no core competencies of sustainability and sustainability education;*
- ❖ *No consistent messaging of sustainability to the public, limiting its impact and broad appeal for action;*
- ❖ *Challenge of making sustainability an integrative theme for an entire school, college or university, for the curriculum;*
- ❖ *Lack of clarity and coordination of federal, state, and local policies and funding streams, and contradictory performance measures;*
- ❖ *Patchwork of local and regional initiatives that are not organized into a coherent strategy for national transformation;*
- ❖ *Lack of information on skills and competencies needed by employers to embed sustainability into programs and degrees;*
- ❖ *Lack of metrics for measuring students' sustainability competencies;*
- ❖ *Disconnection between availability of green jobs in the labor market and training at community colleges for green jobs;*
- ❖ *Deficiency in understanding and strategy for creating demand for green jobs and thus sustainability education;*
- ❖ *Difficulty leveraging federal funding streams;*
- ❖ *No national consensus-based process to define what sustainability means for U.S. education policy;*
- ❖ *Lack of clearinghouse for resources and tools to implement sustainability education;*
- ❖ *Inability to plan curriculum in an emerging green economy;*
- ❖ *Reward structure in higher education tenure and promotion supports research but not teaching; and*
- ❖ *Lack of resources, incentives, capacity, and models to develop career pathways for sustainability and green careers.*

Recommendations From Sustainability Education Summit

After identifying the challenges in advancing sustainability education, the breakout groups brainstormed recommendations for an action agenda. The following are the major recommendations that came out of the Summit, organized around four major themes: Mobilize, Coordinate, and Convene Local and Regional Stakeholders; Federal Planning, Coordination, and Communication; Federal Legislation and Policy; and Federal Discretionary and Formula-Funded Investment Strategies.

Please note that the list of recommendations below is not meant to be exhaustive or to imply an endorsement from the U.S. Department of Education. The recommendations were compiled, categorized, and written to capture the largest number of recommendations possible from the Summit.

Mobilize, Coordinate, and Convene Local and Regional Stakeholders

Although many of the recommendations require federal action and/or legislation, some can begin to be implemented locally and/or regionally in communities across the country to advance sustainability education.

1. Convene and engage in regional and local conversations with mayors and other local elected officials, the K–12 education system, local school boards, higher education, business, nonprofits, and faith-based organizations, on possible partnerships and collaboration, assessment of gaps and mapping of resources, and identification of best practices in the community.
2. Mobilize and create an alliance of large and small employers and associations, such as chambers of commerce, that are committed to sustainability and working with and influencing the higher education community to change standards and produce sustainability literate graduates.
3. Gather examples across the country of practices of excellence from local chambers of commerce and other employer associations involved in sustainability education for dissemination and replication.
4. Organize at the state, regional, and local levels to identify promising practices and conduct asset mapping with key stakeholders, including students in the community, to understand the resources and tools (and gaps) available to scale up and advance sustainability education practices, policies, and programs.

Federal Planning, Coordination, and Communication

The following recommendations require federal leadership and action to plan, coordinate, and communicate the integration of sustainability education across federal agencies with the engagement of key stakeholders from all sectors. However, these actions may require legislative, executive order, and/or regulatory action.

5. Establish a federal interagency task force on sustainability education through a presidential executive order or by other mechanisms, led by the U.S. Department of Education.

6. Create a national action plan for federal agency coordination of sustainability education practices, policies, and regulations within 120 days of the executive order.
7. Convene a summit of all federal agencies to identify evidence-based practices, standards, core competencies, and replicable practices in sustainability education.
8. Create a dedicated environmental or sustainability education office at the U.S. Department of Education.
9. Develop and implement a national campaign on education for sustainability that provides a simplified and powerful message and an all-inclusive definition that builds awareness and sparks action.
10. Create an external advisory council on education for sustainability composed of unions, NGOs, researchers, employers, parents, K–12 teachers and school leaders, and higher education faculty and administrators to organize a set of actionable items, including best practices, legislative recommendations, and statutory requirements.

Federal Legislation and Policy

The following recommendations mainly refer to incorporating sustainability education into specific pieces of legislation that may require action from Congress or general policy changes.

11. Ensure that the reauthorization of the *Elementary and Secondary Education Act (ESEA)* incorporates sustainability education to strengthen STEM (science, technology, engineering, and math) programs, build teachers' knowledge and skills, and prepare students to be college and career ready.
12. Ensure policies of the *No Child Left Inside Act* are incorporated into the reauthorization of *ESEA*, including requiring state environmental literacy plans and annual funding for sustainability education.
13. Promote and advocate for inclusion of sustainability education into common core standards and ensure that sustainability education is part of the reauthorization of the *No Child Left Behind Act*.
14. Fully fund the University Sustainability Program, as authorized by the *Higher Education Opportunity Act of 2008*.
15. Work with the nationally recognized accreditation agencies for postsecondary institutions and programs for the inclusion of sustainability education standards.

Federal Discretionary and Formula-Funded Investment Strategies

The following recommendations call for strong federal investments in sustainability education, some through innovative new programs and initiatives, incentivizing and funding systemic change or replication of existing successful practices, or infusing sustainability into existing education programs. Please note that some of these recommendations may require legislative action to fund the activities while others may be implemented by existing and anticipated program appropriations.

16. Consider implementing a prestigious green schools award program focused on a broad range of activities within schools and that improves indoor environmental quality, reduces exposure to toxic substances, encourages energy efficiency and use of renewable energy technologies, engages students on environmental issues, and produces environmentally literate graduates.
17. Develop and fund a national clearinghouse on sustainability education through a Web portal that provides free and accessible tools and resources on such topics as curriculum, best practices, funding opportunities, labor market information, opportunities for transformative experiences, service learning, and project-based learning to build the capacity of the education community.
18. Provide significant investments by federal agencies, both formula and discretionary, as well as leverage private-sector, local, regional, and state resources to support replication and scaling of existing innovations, research, and systematic change, including interdisciplinary approaches to sustainability education and career pathways.
19. Develop and hold a student sustainability education summit and create a new student competition on sustainability to support student engagement and increase learning outcomes.
20. Encourage, incentivize, and fund the implementation of professional development, coaching, curriculum, and leadership development focused on sustainability education for teachers, guidance counselors, school leaders, and college faculty and administration.
21. Engage and incentivize schools of education, pre-service schools and certification systems across the country to embed sustainability as a foundation of learning to support and strengthen teacher and leader preparation from early childhood through postsecondary education.

22. Infuse sustainability concepts into existing federal education grant programs related to STEM, oceans, climate, and the environment to foster broad-based infusion of sustainability concepts across the board.

Sustainability Education Summit Roster

Organization	First Name	Last Name
Academy for Educational Development	Beverly	Brooks
Academy for Educational Development	Mindy	Feldbaum
Alliance to Save Energy	Merrilee	Harrigan
American Architectural Foundation	Ronald	Bogle
American Association of Community Colleges	Laurie	Quarles
American Association of Community Colleges	Todd	Cohen
American Association of Community Colleges	Matthew	Dembicki
American Association of Community Colleges	Ellen	Hause
American Association of Community Colleges	Carolyn	Teich
American Association of School Administrators	MaryAnn	Jobe
American Association of State Colleges and Universities	John	Hammang
American Chemical Society	Mary	Kirchhoff
American Federation of Teachers	Darryl	Alexander
American Federation of Teachers	Dawn	Krusemark
American Forest Foundation	Melissa	Harden
American Indian Higher Education Consortium	Al	Kuslikis
American Indian Higher Education Consortium	Carrie	Billy
American Institute of Architects	Pamela	Loeffelman
American Meteorological Society	Kira	Nugnes
American National Standards Institute	Vijay	Krishna
American National Standards Institute	Roy	Swift
American Society of Landscape Architects	Kevin	O'Hara
American University	Chris	O'Brien
AngloAmerican PLC	Peter	Woicke
Antioch University New England	Helen Courtney	White
Applied Research Center	Yvonne Yen	Liu
ARAMARK	Kathleen	Cacciola
Arizona State University	James	Buizer

Artesia, Bloomfield, and Carmentia (ABC) Unified School District, American Federation of Teachers	Frances	Delaney-Barron
Association for the Advancement of Sustainability in Higher Education	Paul	Rowland
Association for Career and Technical Education	Jan	Bray
Association of Collegiate Schools of Architecture	Michael	Monti
Association of Physical Plant Administrators of Universities and Colleges (APPA)	Steve	Glazner
Austin Community College District	Kirk	White
Bard Center for Environmental Policy	Eban	Goodstein
Bellevue College	Julie	Griffin
BioScience Collaborative	Joanne	Gere
BlueGreen Alliance	Yvette	Pena Lopes
Bosha Design and Communications	Barbara	Bosha
Building Futures	Andrew	Cortes
California Student Sustainability Coalition	Michael	Cox
Campaign for Environmental Literacy	James	Elder
Cannon Design	Lynne	Deninger
Center for a Livable World	Brian	Murphy
Central Piedmont Community College	Michael	Horn
Central Virginia Community College	Charles	Carter
Chesapeake Bay Foundation	Sarah	Bodor
Clean Air-Cool Planet	Jennifer	Andrews
Climate Counts	Mark	Harrison
Collaborative for High Performance Schools (CHPS)	William	Orr
College of Lake County	Allan	Levandowski
College of Lake County	Girard	Weber
Columbia Gorge Community College	Mimi	Maduro
Columbia Gorge Community College	Daniel	Spatz
Columbia Gorge Community College	Frank	Toda
Columbia University Office of Government and Community Affairs	Lauren	Feighan
Committee on Architecture for Education/American Institute of Architects	John	Weekes

Community College National Center for Community Engagement	Lyvier	Conss
Connecticut Community College System	Gail	Coppage
Corporate Environmental Health & Safety Management Roundtable	Thomas	Davis
Corporation for a Skilled Workforce and the Trans-Atlantic Training Alliance	Keith	Bird
Council on Environmental Quality, Executive Office of the President	Nikki	Buffa
Council on Environmental Quality, Executive Office of the President	Christopher	Currens
Council on Environmental Quality, Executive Office of the President	Tara	Radosevich
Council on Environmental Quality, Executive Office of the President	Aisha	Saad
Crop Science Society of America	Maria	Gallo
Delta College	Jean	Goodnow
Earth Day Network	Sean	Miller
East Valley Institute of Technology	Sally	Downey
ecoAmerica	Claire	Carlin
ecoAmerica	Amy	Golden
ecoAmerica	Robert	Perkowitz
Ecological Society of America	Teresa	Mourad
Education Development Center, Inc	Ilene	Kantrov
Emory University	Peter	Roberts
Energy Action Coalition	Anjali	Helferty
Energy Action Coalition	Courtney	Hight
Environmental Protection Agency	Peter	Grevatt
Environmental Protection Agency	Ruth	McCully
Florida A&M University	Richard	Gragg
Florida International University	Tara	Jafarmadar
Florida International University	Hector	Mujica
Ford Motor Company Fund and Community Services	Cheryl	Carrier
FrancisEmma, Inc.	Sr. Maureen T.	Carroll, SBS
Gateway Technical College	Bryan	Albrecht

Georgia Institute of Technology	George	Ewing
Georgia Institute of Technology	Molly	McLaughlin
Grantmakers for Education	John	Branam
Greenfox Schools	Kristen	von Hoffmann
gye nyame inc.	Gregory	McCray
Haywood Community College	Rose	Harrell Johnson
Healthcare Career Advancement Program	Laura	Chenven
Healthy Schools Campaign	Alexandra	Schaible
Healthy Schools Network	Claire	Barnett
Height Analytics	Jarrel	Price
HVAC Excellence	John	Diem
HVAC Excellence	Jerry	Weiss
IIT Environmental Management & Sustainability	Margaret	Mattson
Illinois Community College Sustainability Network	Robert	Hilgenbrink
Illinois Green Economy Network	Leith	Sharp
Indiana University - Purdue University Indianapolis	Patricia	Fox
Interaction Associates	Ashley	Welch
International Masonry Institute	Steve	Martini
International Masonry Institute	Maria	Viteri
Interstate Renewable Energy Council	Jane	Pulaski
Jobs for the Future	Gloria	Mwase
Johnson & Johnson	Ann	Lee-Jeffs
Johnson Conrols	James	Simpson
KB Science, LLC/Van Scoyoc Associates	Kristin	Bennett
Kendeda Fund	Diane	Ives
Kennebec Valley Community College	Bert	Corrigan
Kennebec Valley Community College	Bruce	Davis
Laborer's International Union of North America (LIUNA) Training and Education Fund	Gary	Gustafson
Laborer's International Union of North America (LIUNA) Training and Education Fund	Cindy	Herleikson
Lane Community College	Roger	Ebbage
Lane Community College	Mary	Spilde
Laney College	Peter	Crabtree
Longwood University	Kelly	Martin

Los Angeles Trade-Tech College	Leticia	Barajas
Los Angeles Trade-Tech College	Marcy	Drummond
Macomb Community College	Bill	Stark
Massachusetts Institute of Technology	Amanda	Graham
Mesalands Community College	Phillip	Barry
MFI Connect	Alex	Simon
Miami Dade College	Eduardo	Padron
Michigan State University	Kathy	Lindahl
Michigan State University	David	Skole
Michigan State University	Laurie	Thorpe
National Academy of Sciences	Jay	Labov
National Association for Campus Activities	Krista	Harrell-Blair
National Association for the Education of Young Children	Alison	Pepper
National Association of College and University Business Officers	Michele	Madia
National Association of Independent Colleges and Universities	Robert Bo	Newsome
National Association of State Directors of Career Technical Education	Nancy	Conneely
National Clearinghouse for Educational Facilities at the National Institute of Building Sciences	Judy	Marks
National Coalition of Certification Centers	Roger	Tadajewski
National Council for Science and the Environment	David	Blockstein
National Council for Science and the Environment	Shelley	Kossak
National Council of Teachers of Mathematics	Kichoon	Yang
National Education Association	Carolyn	Breedlove
National Environmental Education Foundation	Deborah	Sliter
National Environmental Education Foundation	Diane	Wood
National Institute of Building Sciences	Ryan	Colker
National Institute of Building Sciences	Henry	Green
National League of Cities	Audrey	Hutchinson
National Oceanic and Atmospheric Administration	Marlene	Kaplan

National Oceanic and Atmospheric Administration	Louisa	Koch
National Oceanic and Atmospheric Administration	Lindsay	Knippenberg
National Oceanic and Atmospheric Administration	Ella	Lichtenberg
National Oceanic and Atmospheric Administration, Climate Program Office	Frank	Niepold
National Parent - Teacher Association	Chuck	Saylors
National Partnership for Environmental Technology Education	Kirk	Laflin
National Research Council	Martin	Storksdieck
National Research Council/ National Academies	Marina	Moses
National Science Foundation	Tim	Spuck
National Science Foundation	David	Campbell
National Science Foundation	Celeste	Carter
National Science Foundation	Jill	Karsten
National Science Foundation	Carolyn	Wilson
National Science Foundation Regional Center For Renewable Energy	Kathleen	Alfano
National Science Foundation, Directorate of Geosciences	John	Moore
National Science Foundation, Division of Research on Learning in Formal and Informal Settings	Nancy	Spillane
National Science Foundation, Division of Research on Learning in Formal and Informal Settings	Mike	Town
National Science Teachers Association	Francis	Eberle
National Spiritual Assembly of the Baha'is of the U.S.	Peter	Adriance
National Wildlife Federation	Danielle	Moodie-Mills
National Wildlife Federation	Kevin	Coyle
National Wildlife Federation	Patrick	Fitzgerald
National Wildlife Federation	Julian	Keniry
National Women's Studies Association	Patti	Provance Binder
NatureBridge	Richard	Innes

NatureBridge	Jason	Morris
NatureBridge	Susan	Smartt
New Jersey Department of Labor and Workforce Development	Matthew	Alcalde
No Child Left Inside Coalition	Don	Baugh
No Child Left Inside Coalition	Monica	Healy
No Child Left Inside Coalition	Gary	Heath
No Child Left Inside Coalition	Charles A.	Stek
No Child Left Inside Coalition	Jeri	Thomson
No Child Left Inside Coalition (NCLI)	Kevin	Sullivan
North American Association for Environmental Education	Brian	Day
North Carolina Community College System	Matthew	Meyer
North Carolina Museum of Natural Sciences	Meg	Lowman
Northern Virginia Community College	William	Gary
Northern Virginia Community College	Robert	Henderson
Office of Congressman Earl Blumenauer	Tyler	Frisbee
Office of the Secretary of Education	Nick	Kislinger
Office of the Secretary of Education	Bonnie	Reiss
OM	Jim	Clemmens
Penn State Public Broadcasting	Lindsey	Faussette
Pennsylvania State University	Nancy	Franklin
Pew Center on Global Climate Change	Janet	Peace
Phi Delta Kappa International	Bill	Bushaw
Portland Community College Sylvania Campus	Linda	Gerber
Portland State University	Jennifer	Allen
Portland State University	Mary	Moller
Portland State University	Wim	Wiewel
Potomac Jobs Corps Center	Jeffrey	Barton
Princeton University	Mark	Burstein
Rakoff Associates LLC	Stuart	Rakoff
Red Rocks Community College	Joan W	Smith
Regional Adult Education Program of Lee, Scott, Wise and Norton Public Schools	Rebecca	Scott
Regional Technology Strategies, Inc.	Stuart	Rosenfeld

Responsible Endowments Coalition	Dan	Apfel
San Diego State University	Geoffrey	Chase
Santa Fe Community College	Randy	Grissom
Sebesta Blomberg & Associates	Joel	Stout
Second Nature	Anthony	Cortese
Second Nature	Georges	Dyer
Second Nature	Michelle	Dyer
Second Nature	Toni	Nelson
Sierra Club	Jacqueline	Ostfeld
SkillsNET	Michael	Brown
Society for College & University Planners	Thomas C	Longin
Society for College and University Planning	Jolene	Knapp
Society for College and University Planning	Terry	Calhoun
Society for Organizational Learning	Peter	Senge
Sodexo	Rachel	Sylvan
Sodexo	Arlin	Wasserman
Sodexo USA	Robert	Morasco
Solar College Initiative	Cheri	Faso Olf
Southeastern Green Network Inc.	Cynthia	Hayes
Southern Maine Community College	John	Brautigam
Southwestern Illinois College	Mark	Eichenlaub
Southwestern Illinois College	Brad	Sparks
Spelman College	Art	Frazier
Spelman College	Beverly	Tatum
Student Conservation Association	Leah	Allen
Sustainable Endowments Institute, a special project of Rockefeller Philanthropy Advisors	Mark	Orlowski
The Catholic University of America	Soolyeon	Cho
The Catholic University of America	George Bradley	Guy
The Center for Green Schools at the U.S. Green Building Council	Rachel	Gutter
The Cloud Institute for Sustainability Education	Jaimie	Cloud
The George Washington University	Ellen	Scully-Russ
The George Washington University	Cynthia	Way
The Kresge Foundation	Julian	Haynes

The Kresge Foundation	Caroline	Smith
The Lawrenceville School	Samuel	Kosoff
The National Research Council	Jean	Moon
The Sheinkopf Group	Blanche	Sheinkopf
Theodolite Human Capital, LLC	Randi	Schoenfelder
Triangle Coalition	Kathryn	Culbertson
U. S. Department of Education	Sharon Lee	Miller
U.S. Department of Education	Frank	Chong
U.S. Department of Education	Emma	Eckerstrom
U.S. Department of Education	Brian	Fu
U.S. Department of Education	Anya	Gibson
U.S. Department of Education	Peirce	Hammond
U.S. Department of Education	Katherine	Tobin
U.S. Department of Education	Gregory	Henschel
U.S. Department of Education	Grace	Solares
U.S. Department of Education, Office of Safe and Drug-Free Schools	Sharon	Burton
U.S. Department of Education, Office of Vocational and Adult Education	Tarik	Barrett
U.S. Department of Education, Office of Vocational and Adult Education	Brenda	Dann-Messier
U.S. Department of Education, Office of Vocational and Adult Education	Leigh	Jenkins
U.S. Department of Education, Office of Vocational and Adult Education	Dale	King
U.S. Department of Education, Office of Vocational and Adult Education	Margaret	Romer
U.S. Department of Energy	Benjamin	Goldstein
U.S. Department of Energy	Kristina	Ronneberg
U.S. Department of Energy	Ben	Steinberg
U.S. Department of Energy	Matthew	Inman
U.S. Department of Energy	Michelle	Fox
U.S. Department of Energy	Adrain	Walls
U.S. Department of Labor	Jonathan	Njus
U.S. Department of Labor	Amy	Young

U.S. Department of State	Richard	Rosenman
U.S. Environmental Protection Agency	Ed	Fallon
U.S. Environmental Protection Agency	Alan	Hecht
U.S. Green Building Council	Kristin	Simmons
U.S. Green Building Council	Jaime	Van Mourik
U.S. Partnership Education for Sustainability	Doug	Cohen
U.S. Partnership for Education for Sustainable Development	Debra	Rowe
U.S. Partnership for Education for Sustainable Development	Dianne	Dillon-Ridgley
United Association of Plumbers, Pipefitters and HVAC Technicians	Chris	Haslinger
United Federation of Teacher Green Schools Committee	Coquille	Houshour
Unity College	Mitchell	Thomashow
University of Maryland	Renee	Ater
University of Maryland	Ruth	Lozner
University of Maryland	Scott	Lupin
University of Maryland, Office of Sustainability	Mark	Stewart
University of Michigan	Jonathan	Bulkley
University of Montana	James	Burchfield
University of South Florida	Karla	Davis-Salazar
University of South Florida	Christian	Wells
University of Virginia	Vivian	Thomson
University of Wisconsin-Madison	Catherine	Middlecamp
V. Kann-Rasmussen	Astrid	Kann-Rasmussen
Virginia Community College	Trenton	Hightower
Virginia Department of Education	Randall	Stamper
Wake Forest University	Dedee	DeLongpre Johnston
Walmart Foundation	Michelle	Gilliard
West Virginia Council for Community and Technical College Education	Sid	Valentine
West Virginia Council for Community and Technical College Education	James	Skidmore
West Virginia Department of Education	Gene	Coulson

West Virginia University at Parkersburg	Gary	Thompson
Wisconsin Technical College System	Sandra	Schmit
Woodland Job Corps Center	Modesto	Gloria
Woodstock Job Corps Center	Tanisha	Nixon
Worcetser Polytechnic Institute	Karen	Kashmanian Oates
WorldLink	Kirk	Bergstrom
YouthBuild Providence	Anthony	Hubbard
YouthBuild Providence	Robert	Nyahkoon
	Volker	Rein

Endnotes

¹ General information about the Summit can be found on the Department of Education’s website at <http://www.ed.gov/blog/2010/09/citizenship-and-pathways-for-a-green-economy/>

² “Eco-literacy” was first defined in the 1990s by David Orr in “Ecological Literacy: Education and the Transition to a Postmodern World.”
http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_ERICExtSearch_SearchValue_0=ED377036&_ERICExtSearch_SearchType_0=no&accno=ED377036

³ Both Secretary Duncan and Under Secretary Kanter acknowledged the quality of school facilities in the United States and cited a GAO report and the National Clearinghouse for Educational Facilities. For more information visit:

- U.S. General Accountability Office. (June 1996). *School Facilities: America’s Schools Report Differing Conditions*, available at <http://www.gao.gov/archive/1996/he96103.pdf>, Page 5.
- National Clearinghouse for Educational Facilities available at <http://www.edfacilities.org/>.

⁴ Some of the schools and programs highlighted by Under Secretary Kanter include:

- Greenschools, available at <http://www.projectgreenschools.org/>
- Green Charter Schools Network, available at <http://www.greencharterschools.org/>.

⁵ For more information about the American College and University Presidents’ Climate Commitment visit: <http://www.presidentsclimatecommitment.org/>.

⁶ For more information about the Green Programs of Study visit:

- National Research Center for Career and Technical Education. *National CTE Technical Assistance Academy – Green Programs of Study*, available at <http://136.165.122.102/mambo/content/view/58/>.

⁷ Secretary Duncan highlighted numerous sustainability education programs in other agencies. For example, these included:

- U.S. Environmental Protection Agency (EPA) has awarded environmental education grants through its Office of Environmental Education (OEE) since 1992 to support projects that “enhance the public’s awareness, knowledge, and skills to help people make informed decisions that affect environmental quality.” (Available at <http://www.epa.gov/enviroed/grants.html>.)

-
- In 2005, the National Oceanic and Atmospheric Administration started awarding Environmental Literacy Grants. (<http://www.oesd.noaa.gov/elg/index.html>.)
 - The Department of Labor awarded \$490 million in grant funds for green jobs training through *America's Recovery and Reinvestment Act*.
 - In the fall of 2010, the National Science Foundation awarded 15 grants as part of the Climate Change Education Partnership (CCEP) program. (http://www.nsf.gov/news/news_summ.jsp?cntn_id=117685)



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