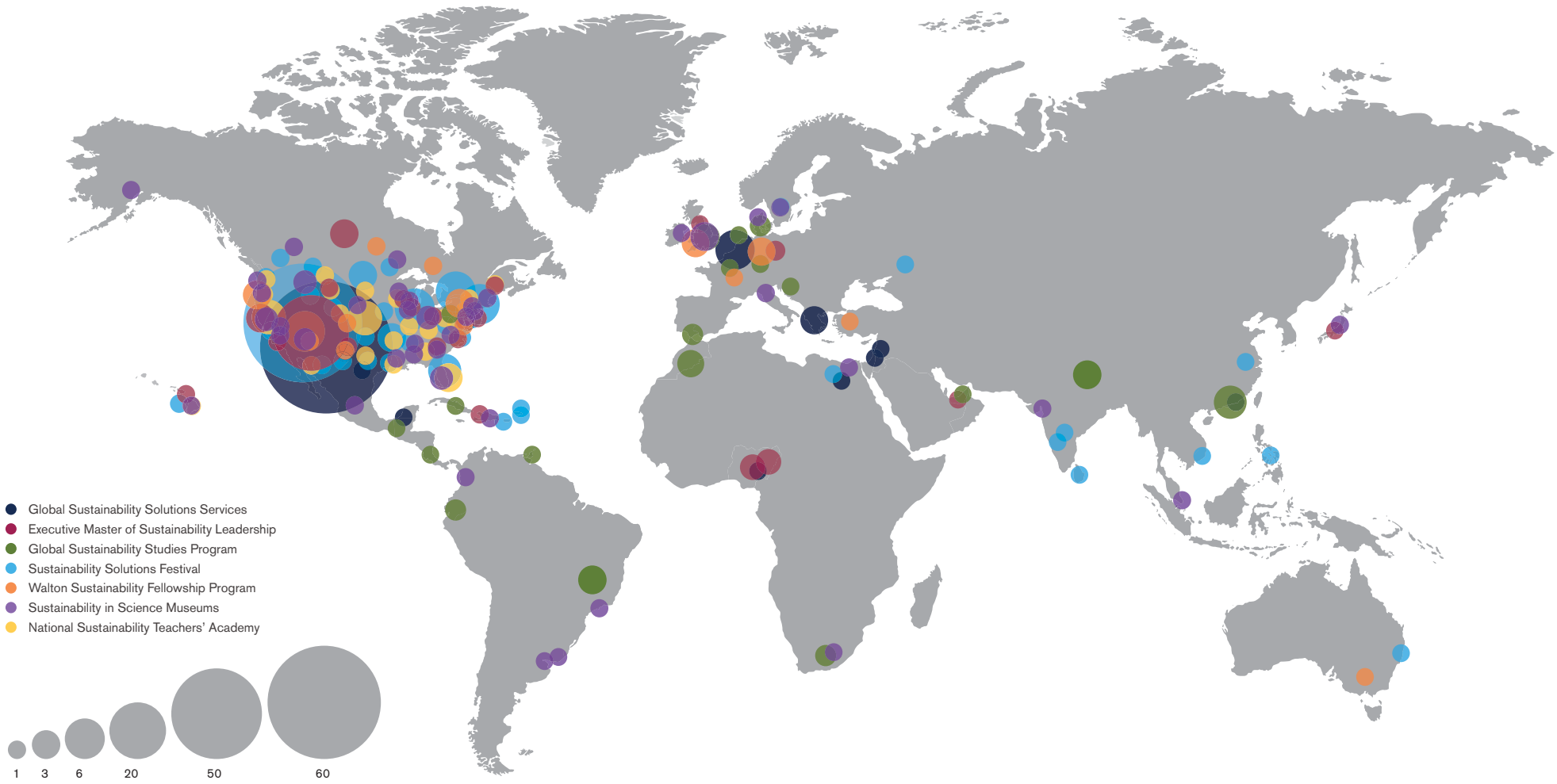
ASU Walton Sustainability Solutions Initiatives

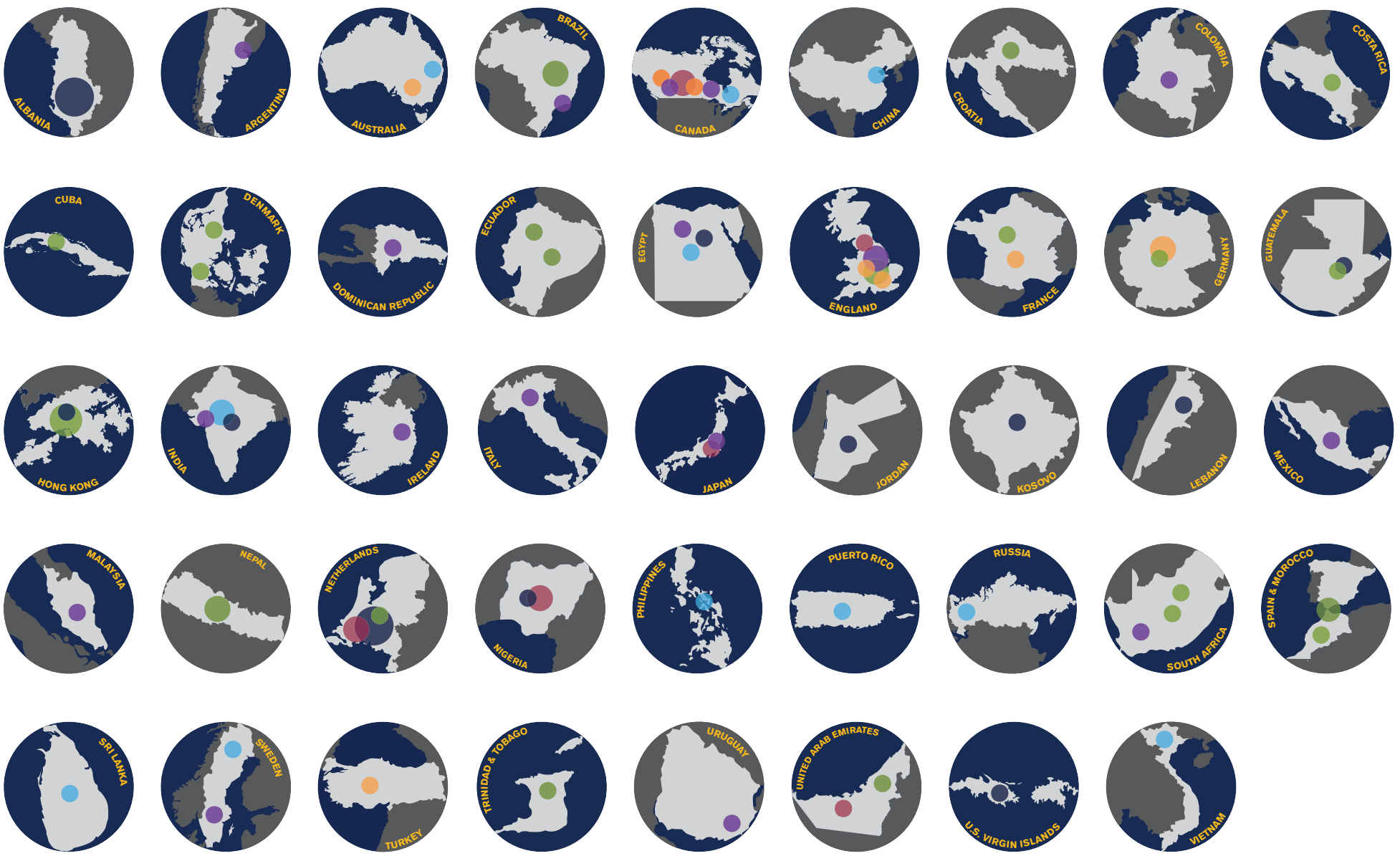
ARIZONA STATE UNIVERSITY

DRIVING IMPACT THROUGH COLLABORATION

sustainabilitysolutions.asu.edu

Global Impact





Dear Rob and Melani,

Since March of 2012, you have entrusted us to create an ambitious set of programs focused on creating, supporting and celebrating sustainability solutions. It is our privilege to report on the results of your investment. Your generous contribution – both financial and intellectual – has catapulted ASU to the global stage. When Melani suggested that we work with science museums, we had no way of knowing that within two years we could reach 49 institutions in 17 countries and 22 states. When we were in Bentonville at the Foundation offices and came up with the idea of reaching teachers in all 50 states, we didn't realize that there was such a demand and appreciation for sustainability in our schools that we would receive $500,000 from Wells Fargo to expand our reach.

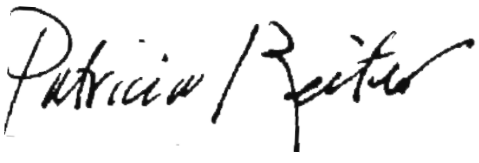
Likewise, the Global Sustainability Solutions Services was a pioneering effort to demonstrate how a university can create, validate and scale solutions for urgent yet complex problems. Since we began we have generated funded projects valued at $6.2 million and worked on 76 projects in nine countries with businesses, government agencies and NGO's. While this is important, your introductions to local purpose-driven organizations like Arizona Science Center, Liberty Wildlife and St. Vincent de Paul have been rewarding professionally for the Walton Initiatives and personally for our staff.

Throughout our efforts, the professionals at the Walton Family Foundation have guided us and been our sounding board. They hold us accountable and encourage us when we pivot to new opportunities to drive results.

This book is a reflection of your influence on the lives of many people – clients, partners, students of all ages and communities who are all working toward a more just, prosperous and resilient future for all.

Now more than ever businesses and universities must take the lead in the quest for solutions to “wicked” problems such as climate impacts, environmental resilience, water security and social justice. It is increasingly clear that governments alone cannot achieve the basic goals set forth in the Sustainable Development Goals. The seven Walton Initiatives are a powerful platform that engages stakeholders to link knowledge to action within the framework of the SDG’s to ensure that nine billion people can live well on the planet by 2050.

Your impact is broad and deep; we hope we can continue to build on this momentum.



Patricia Reiter
Executive Director,
Walton Sustainability
Solutions Initiatives

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SOLVE GLOBAL CHALLENGES







Every project of the Global Sustainability Solutions Services is about turning research into action to solve the pressing problems that face individuals, organizations, communities, nations and the world. Starting with local stakeholders, the Global Solutions team assesses the needs of people on the ground and creates scalable solutions that start locally but can grow globally. Our intention is to use our valuable assets as a university to collaborate with partners around the world and solve sustainability problems in the most practical and impactful way.

This year our Global Solutions team continued to work with established clients to address needs identified through earlier research. For example, our work with the city of Phoenix on its municipal greenhouse gas reporting demonstrated a 7.2% reduction in greenhouse gases citywide between 2008 and 2015 – exceeding the city's goal of a 5% reduction. Based on this success, five new initiatives are planned, which are projected to prevent 27 metric tons of greenhouse gases from entering the atmosphere – the equivalent of taking 5,281 vehicles off the road for a year or eliminating electricity use in 4,182 homes for a year.

Through a series of regional workshops sponsored by the RISN partnership with the city of Phoenix, Global Solutions discovered that green organics disposal was a common concern for many communities in the region. In 2015, we conducted a study

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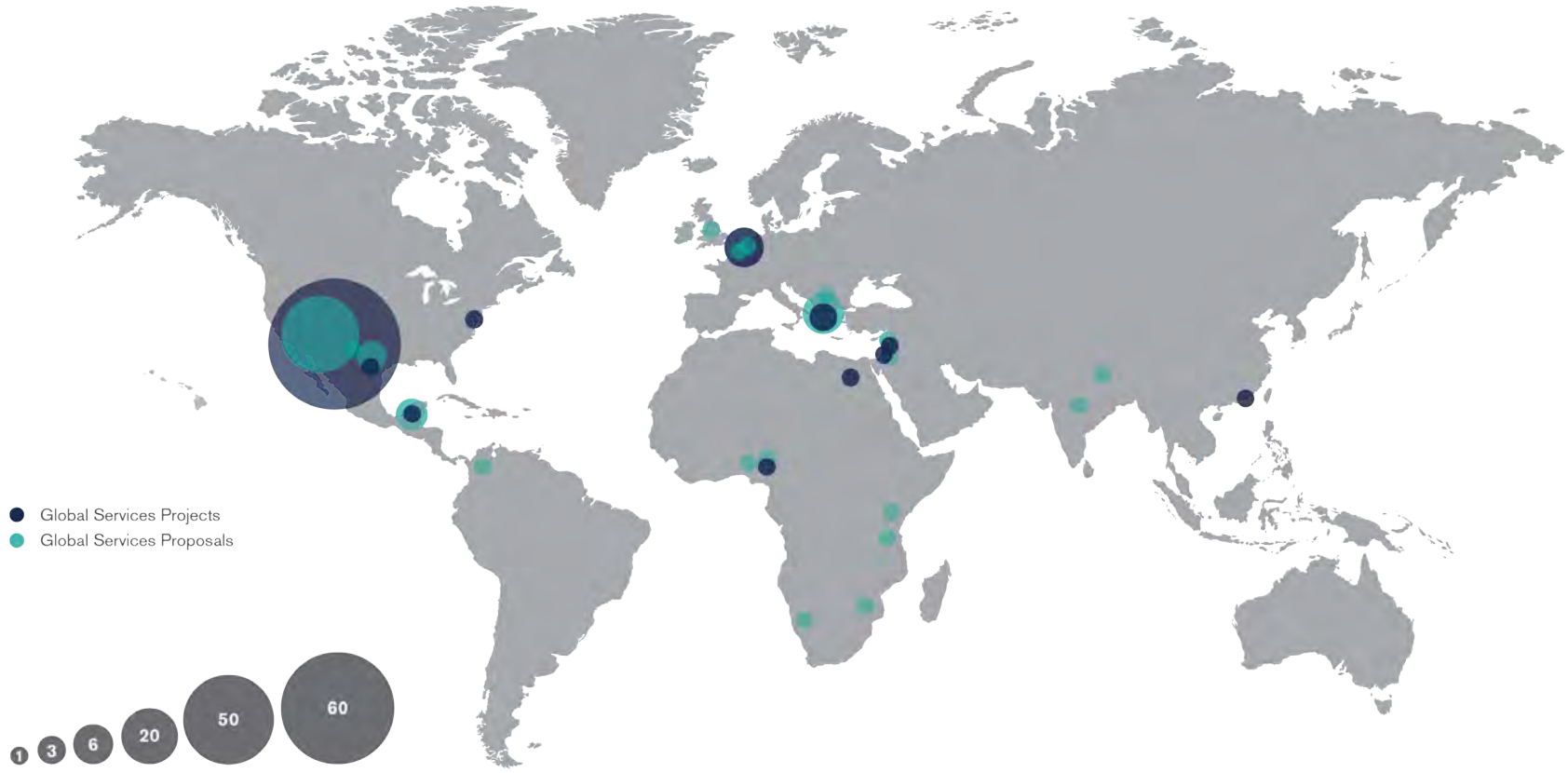

on the feasibility of a collaborative regional approach to the processing of green organics such as food scraps and landscape waste. This led to the development of a concept for a multi-site green organics processing system to divert organics from the landfill and create a regional circular economy across the metro Phoenix area. The most immediate impact of this study comes from our creation of the Regional Circular Organics System Design tool that will help municipalities assess the availability of waste feedstock and determine the financial viability of its processing.

Internationally, Global Solutions made major strides in proactively creating partnerships with international funding organizations such as USAID as well as partners on the ground. We are now working to deploy revolutionary solutions to water shortages in the Middle East that respect local laws and customs while developing new businesses. Similarly, we are working with agencies, local governments and businesses to collaborate on a plan for the growing of green economies in the Balkans, a region of great political, environmental and cultural significance.

In every case, our focus was on the business case for developing ethical and impactful sustainability solutions. Not only are we addressing important human needs, but we are ensuring that our solutions make sound financial sense and are replicable and responsible for our clients, our partners, ourselves and our planet.

SOLVE GLOBAL CHALLENGES

Green Organics Collaborative and Regional Assessment Tool

Narrative

A future vision... looking back from the year 2050 through the eyes of a Public Works professional

It's 2050 – the year I've been focused on for the past 40 years. I never dreamed that I'd spend the last four decades in the field of Public Works, but now that I've reached retirement age I can look back on my career with a great deal of pride. It's gone fast – but now that I have a chance to sit back and reflect, I can't believe how much has been accomplished. And I can't believe how exciting, frustrating, challenging and life-changing it has been.

When I started my career in 2010, the field of Public Works was about standard municipal services: infrastructure management, emergency response, parks and grounds, water and sewer, waste management…and we had just started learning more about sustainability principles with some of the more visionary leaders and stakeholders around the Valley.

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Sure, we were doing recycling, but we didn't really get on the sustainability train until regional leaders realized that there was a lot of value – for the people in our communities, for the cities' prosperity and for the welfare of the planet – in what we called, at the time, waste. The new rallying cry was "Let's turn trash into resources" through a new economic model termed "The Circular Economy," where waste is re-purposed into useful products. I have to admit that as a young person involved in Public Works, that was an inspiring and invigorating concept.

What if we could collaborate with the other cities in our region to divert waste from the landfill and turn it into useful products? What if through our work, we could make life better for our communities five, ten, 20 and even 40 years into the future? In 2010, I was newly married with our first baby on the way when this all began, so suddenly thinking about the future took on much greater importance.

The rise of Reimagine Phoenix and RISN

In 2013, the city of Phoenix, led by its mayor Greg Stanton, created the Reimagine Phoenix Initiative, with the goal of a 40% waste diversion rate for Phoenix by 2020 – a really ambitious bar to me at the time. Then Phoenix took a step further into the future when it partnered with Arizona State University to establish the Resource Innovation and Solutions Network, or RISN.

RISN was a huge idea – a global knowledge network for the circular economy, with hubs across the nation and around the world, starting here in Phoenix. Ground Zero for RISN was a 100-acre campus to the southwest of downtown Phoenix where businesses could try out new ideas, researchers could brainstorm new technologies

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and manufacturers could use the waste from our citizens' recycling bins, garbage cans and dumpsters – from construction debris to food waste and organic matter – to create useful materials.

Seriously? Was this even possible?

The global concept was fascinating but mind-boggling, and my job was to pull back a bit and focus on my city, my region and the diversion and re-purposing of green organics specifically. Even looking at the issues through this local lens, it was a complex process, involving government, private industry, corporations, NGOs and, most importantly, the public. How could we possibly gain cooperation and collaboration across boundaries within a county that included giant cities, smaller towns, tribal and agricultural lands? And if we could bring everyone together, how could we make it work financially to create public and private value?

Pioneering collaborations – 2016 to 2030

Along with other leaders and managers from around the Valley, I was invited to attend a series of Regional Collaborative meetings, beginning in 2014, at which communities, counties and tribes in the Phoenix Metropolitan Area could share their successes and challenges in waste diversion and particularly in green organics processing. RISN facilitated the meetings and subsequent discussions.

At these meetings, RISN reported on the progress of other green organics initiatives, like the Turf Composting Study funded by the city of Phoenix in 2016. Over a five-year time span, the study proved the efficiency and success of diverting green waste from residential and commercial garbage and converting it into compost at a public facility owned by the city. The compost, when spread on the turf at public parks and other municipal grounds, created a more resilient green carpet of grass that was enjoyed by my family and thousands of others for activities from picnicking to playing Frisbee with the dog.

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The city's use of its own compost initiated a broader local compost market.

As a Public Works professional, I deemed this experiment a success because the sale of the compost to third parties created a new revenue stream for Phoenix. The resulting reduction in water usage was a boon to the environment in our water-starved region, and it saved Phoenix money as well.

This was one of the most exciting yet challenging times in my career. Ultimately, through rounds and rounds of negotiations, we accomplished collaboration among several cities on capital investment, shared hauling operations and shared facilities.

In the period from 2016 to 2030, five facilities in the cities of Phoenix, Scottsdale, Tempe and the Mesa/Gilbert/Chandler and Apache Junction/Queen Creek areas came online and grew to capacity. Phoenix achieved and then exceeded its 40% diversion goal by 2020. Shared value agreements were created that have grown into successful long-term relationships between municipalities in the region. We diverted 234,000 tons of organic waste annually, reduced carbon emissions, created a regional Regional Circular Organic Resource System that was the first of its kind in the world and took the first steps toward a healthier, more beautiful and more prosperous region.

I'm incredibly proud of that.

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Growth and change – 2031 to 2040

By the time 2031 rolled around, my oldest daughter was in college and my two sons were in high school. All three of them were more sophisticated about technology, communication and the science of sustainability than I was – they grew up with it. One night at the dinner table, my younger son just shook his head when I said that public transportation used to run on fossil fuel and that we had just introduced curbside organics bins back in 2015.

That conversation reminded me of another great advance that came through the Regional Circular Organic Resource System. During the 2020s, skyrocketing gasoline prices further justified the use of compressed natural gas, or CNG, for public transportation and in subsequent years CNG became a standard fuel for all types of vehicles, public and private. This boded well for our regional green organics facilities, because one of the by-products of anaerobic digestion of green organics is CNG. Through this period of growth, the price of oil and other commodities continued to increase in volatility and price, and because of the forward-thinking programs begun back in 2016, we were ready – and our municipalities would profit. Air quality around the region improved as fossil fuel consumption decreased.

This was a fulfilling time for me. As my children grew, so did the regional network of green organics practitioners and facilities. Two more facilities – a Phoenix/Glendale/Peoria collaboration and a new facility in Mesa – came online and grew to capacity as the diversion rate around the entire region continued to increase. The addition of more public - private partnerships allowed for the private operation of some facilities, while others remained public and most had already achieved financial success.

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The number of participating cities grew, as the general knowledge of and interest in sustainability initiatives on the part of the public continued to grow. Through teacher education and public school curricula on sustainability, the post-20s generation considered good sustainability practices to be a given. By the time that cynical 15-year-old at my dinner table went out into the world, the Earth's population would be nine billion and counting, so taking care of the planet was something he and his friends took very seriously.

From the time we started the green organics project in 2015 through the year 2040, over 323,000 tons of organic waste were diverted annually and carbon emissions were further reduced, helping the whole region meet its carbon reduction goals. That meant a lot for my children's future, and it sure meant a lot to me.

A sustainable future

The last years that I worked in green organics, from 2040 to today, were gratifying because the success of our department and city was clear and I could start sharing best practices and knowledge with municipalities outside the region. The Phoenix Metropolitan Area has been considered for years to be a leader in sustainability, and our pioneering Regional Circular Organic Resource System really solidified that reputation.

Some of the innovators who have come through the Resource Innovation Campus in Phoenix for almost 30 years jump-started new technologies in re-purposing green waste materials from palm fronds into animal feed and their techniques have been replicated around the country and the world. The platform for bringing additional waste streams online – from fats, oils and grease to animal manure – were created, adding to the efficacy and profitability of the entire system.

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Since 2040, four more facilities came online in nine more cities – Glendale/Peoria, Surprise/Buckeye/Peoria, Avondale/Buckeye/Goodyear and Chandler/Maricopa. Over my 40-year career we grew diversion to 386,000 tons of organic waste annually. New jobs were created and new businesses moved into the area through our partnerships on the Phoenix Resource Innovation Campus and at the new processing facilities around the Valley. We saved money for our communities and our residents by reducing operating costs through public-private partnerships and regional collaborations. We reduced greenhouse gas emissions in the Phoenix Metropolitan Area that helped to mitigate climate change and clean up the air. We reduced the number of trucks traveling to landfills, and those trucks produced lower emissions because they were now powered by by-products of our organics processing facilities instead of those fossil fuels we used to depend on.

And most importantly, we introduced a true closed loop circular economy to the region. The 400,000 tons of compost produced at our facilities now helps to grow food across

our urban landscape – safe food that is free of the effects of synthetic fertilizers – and that food is then consumed and its scraps are processed at our organics facilities to create more compost and fuels. That means less waste in the landfill, cleaner air, greener grass at the parks, safer food, recycling of important soil nutrients and a more prosperous region.

I entered into my career because I wanted to make life better for the people who lived in the communities I served. I never dreamed that an idea incubated in the Valley of the Sun would have such an enormous impact on the future of those people, their communities and the world.

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CHALLENGES

Green Organics Collaborative and Regional Assessment Tool

Executive Summary

Organic waste represents thirty to sixty percent of the residential waste stream in the Phoenix Metropolitan Area (PMA). In many communities, the majority of this material ends up in the landfill where organics represent both an opportunity cost as a potential market revenue to the municipalities, and as a major contributor to landfill-generated methane emissions.

Nationally, a variety of technologies including anaerobic digestion, composting and gasification have been used to convert the organic feedstock into a valued product and/or to extract energy. While these technologies have shown promise, they still face challenges to becoming economically and environmentally sound. In addition, the economic and political environment in the State of Arizona has made it challenging for municipalities to introduce new waste diversion initiatives. However, municipal leaders understand that in addition to the rising long-term economic costs of landfilling organics, environmental and social costs are also on the rise. Under this changing cost structure, the discussion is shifting from “if” it is viable to invest in an organics diversion initiatives to “when and how” it will become viable.

In June 2015, a project collaboratively funded by six municipalities, two counties and a Native American tribe, was initiated to assess the feasibility of a regional approach to building an organics management system. The purpose of this study is to identify plausible pathways to achieving an envisioned 2050 scenario of a regional, multi-site green organics processing system that diverts green organics in the Phoenix Metropolitan Area from landfills.

In this study, the Resource Innovation and Solutions Network (RISN), a unit within the Walton Sustainability Solutions Initiatives (WSSI) and the Decision Theater Network (DTN), both Arizona State University (ASU) research departments, developed the Regional Circular Organic Resource System Design Model (RCORS) to simulate and visualize this complex problem. The model provides the functionality to analyze viable collections alternatives and the financial requirements for the organics processing technology that could support cost-effective collections for the municipalities and financial viability for the facility.

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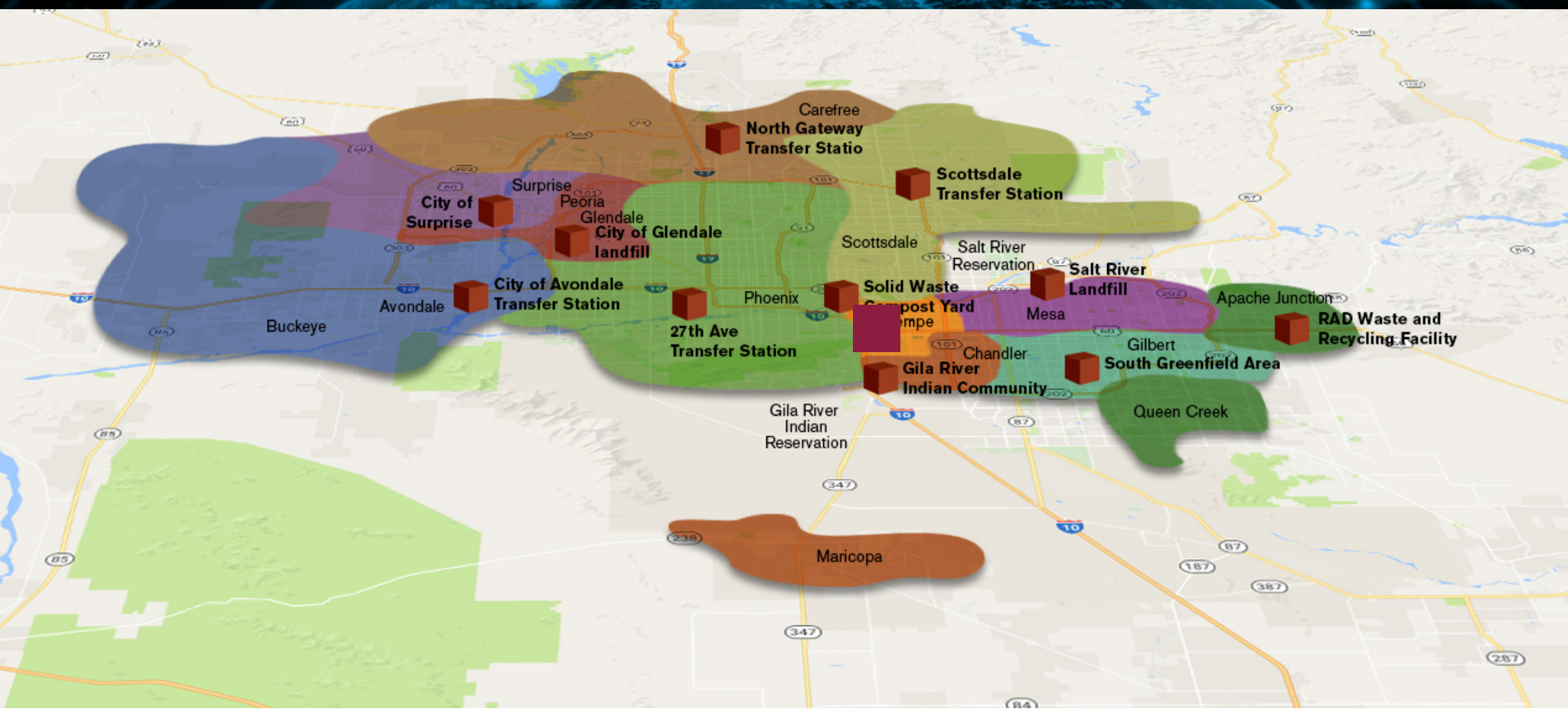

This report presents a scenario that is one of many possible pathways to a PMA-wide organics management system. In the three-phase scenario presented in the comprehensive report, 11 organic waste processing facility sites could be implemented by 2050 with a total annual organic diversion across the three phases of 400,000 tons resulting in the diversion of 56% of green organics for the participating municipalities. Eight of the sites in this scenario are municipality-owned, two are tribal-owned and one facility is privately owned.

Collaborative agreements among the municipalities in the PMA provide an opportunity to increase efficiency, reduce transportation costs and achieve economies-of-scale on a regional basis. The RCORS model provides the functionality to help the municipalities evaluate the requirements for the siting of a financially viable organics processing facility and to explore opportunities for municipalities to collaborate in providing feedstock for a facility.

There are some external trends that are key to the success of an organics recovery program. The price and risk volatility of the commodity produced by the processing facility (compost, electricity or fuel) are driven by the market and can affect financial performance. As a result of this volatility, the private sector is currently averse to investing in recycling or recovery businesses.

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Several key conclusions can be reached from this study. The first and most important finding is that the regional approach is viable and that collaborations can result in processing facilities that are financially more resilient. A related finding is that collaborations will be based on location-specific requirements. Finally, the public sector has a longer view of capital investment and resource stewardship and is more likely to implement such an organics recovery programs.

This report and the collaborative effort behind this research and development would not be possible without the guidance of staff from the municipalities and organizations:

City of Mesa
City of Peoria
City of Phoenix
City of Scottsdale
City of Tempe
Maricopa County Air Quality Department
Pinal County
Salt River Pima Landfill
Town of Gilbert
Town of Queen Creek

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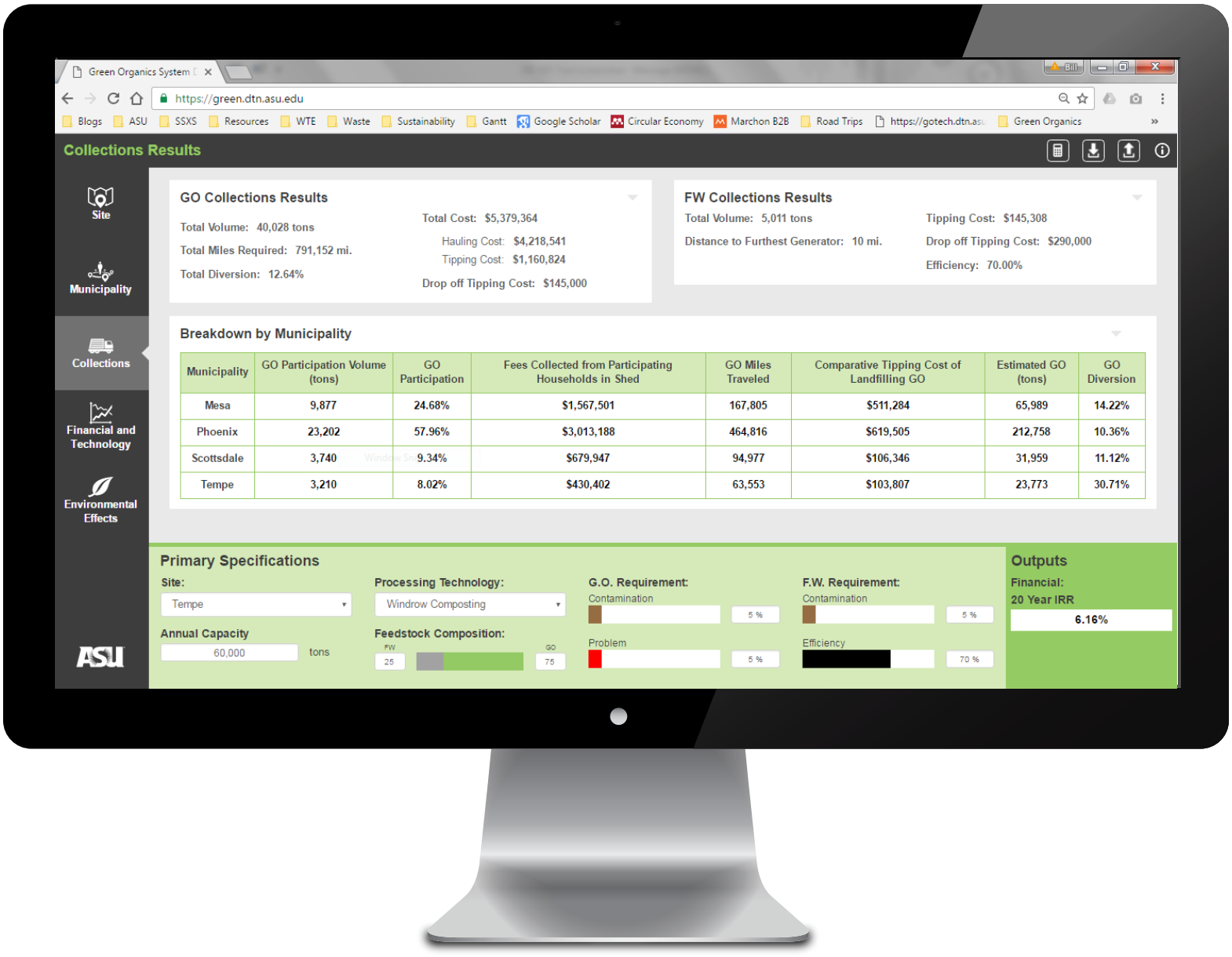

Green Organics Collaborative and Regional Assessment Tool

Dashboard

In collaboration with ASU Decision Theater, the Regional Circular Organic Resource System Design Model (RCORS) was developed to support a regional approach to providing feedstock to an organics processing facility. The tool uses census tracts to identify the potential collection shed that is required to provide the required green organic feedstock, then allows the user to select specific municipalities to participate in providing feedstock. Financial viability of the facility is calculated with a 20-year Internal Rate of Return using estimates of feedstock from selected municipalities, based on proximity, facility costs and market prices for the produced outputs.

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A Holistic Water Solution for Underserved and Refugee Host Communities in Lebanon and Jordan

Arizona State University and an international consortium of co-creators will lead a two-year, nearly $2 million USAID project to bring clean drinking water systems to the Middle East. Holistic Water Solutions will bring certified potable water to residents and refugees in areas of greatest need within Lebanon and Jordan.

Holistic Water Solutions integrates cutting-edge technology, sustainable business models, entrepreneurial training for women and extensive community engagement. Among its key objectives is to assess how reliably this system meets long-term water security needs within the complex socio-economic conditions of the Middle East. This project was developed directly with USAID's Middle East Water Security Initiative, under USAID's new co-creation procurement process.

Potable water sources will be developed by tapping nontraditional water resources through two cutting-edge methods:

1. Treatment of groundwater through reverse osmosis to eliminate salts and contaminants, to provide water at the community level
2. Conversion of atmospheric water vapor, to provide water at the household level

Combining these two water sources with an affordable and portable water storage solution and a reliable power source will increase the availability of potable water by 20 percent in 18 communities, nine in each country.

ASU Team

- Richard Rushforth
- Rhett Larson
- Nathan Johnson
- Ashley St. Thomas

Project Consortium

- Zero Mass Water
- GreenCo Water
- H_20 For Humanity
- René Moawad Foundation
- Mercy Corps

USAID
FROM THE AMERICAN PEOPLE

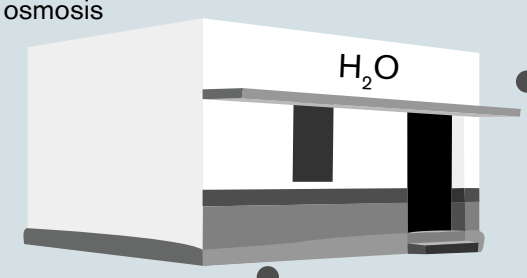
ASU Arizona State University

Our holistic water solution generates clean water for:

drinking | cooking | washing | bathing

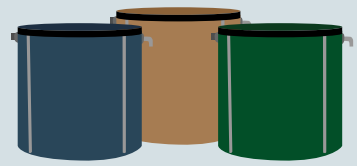
Community Kiosk

Technology that desalinates "brackish" groundwater and purifies it using reverse osmosis



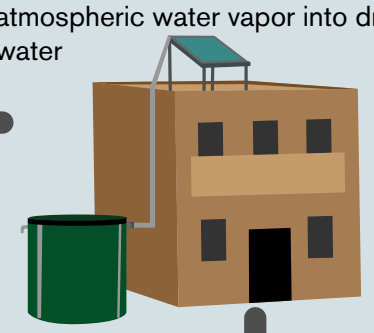
Portable Storage Tank

Ultra-light DIY tank that stores up to 1,000 liters of water



Household Water Source

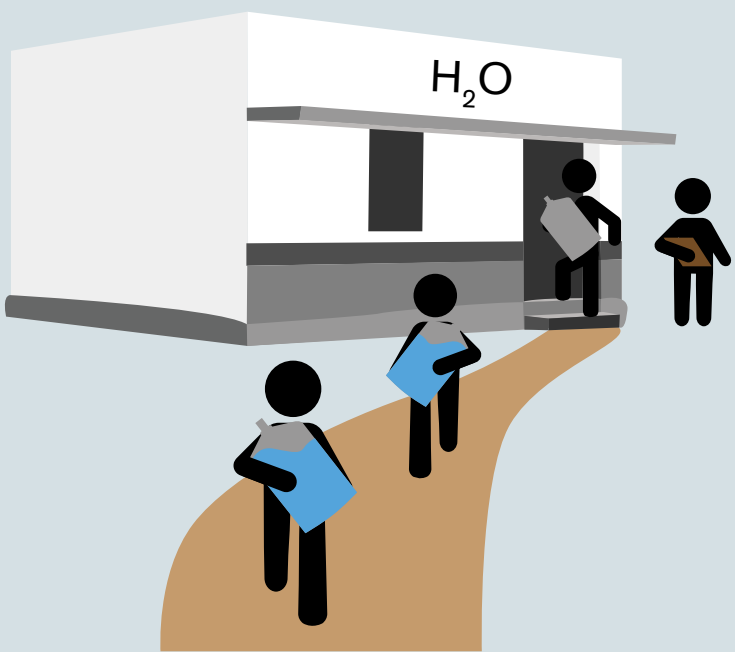
Household-level technology that turns atmospheric water vapor into drinking water



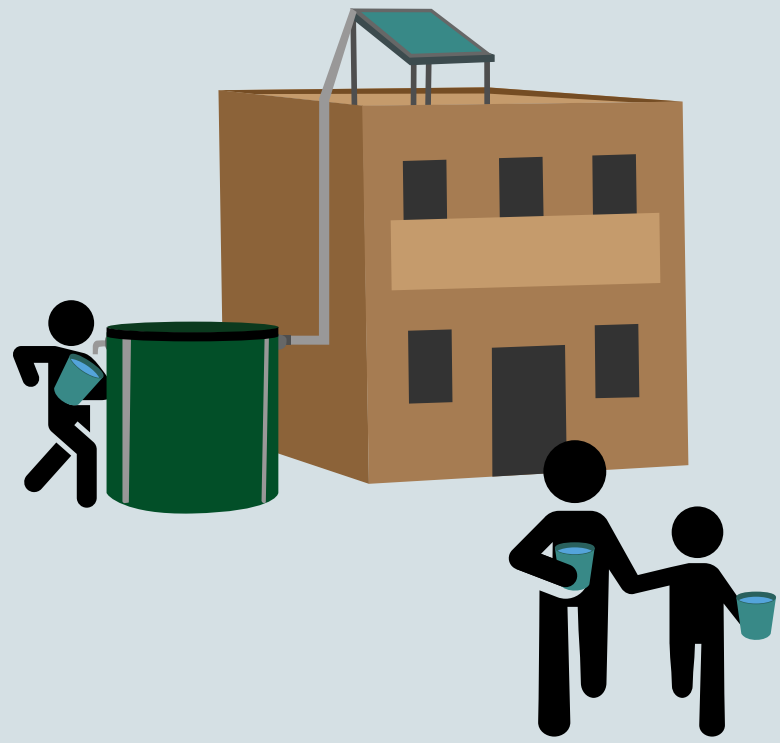
Business Model

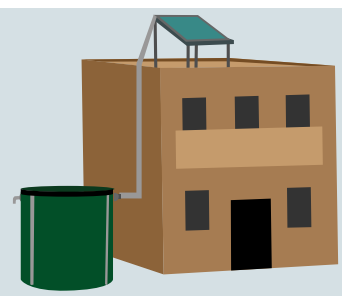
Women entrepreneurs will manage the kiosks, generating an income by selling water to community members.

With kiosks in 18 communities, 36,000 people can access affordable clean water.



With water sources at 125 households, 500 people or more can produce their own clean water.





The mobile household water source is suitable for permanent residences as well as refugee communities.

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VIDEO: A Holistic Water Solution for Underserved and Refugee Host Communities in Lebanon and Jordan

Click the image to link out to video

JOSHUA FINE
René Moawad Foundation

SOLVE GLOBAL CHALLENGES

VIDEO: Kosovo Energy and Green Economy Projects

Click the image to link out to video

GARY DIRKS
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Walton Sustainability
Solutions Initiatives

SYNERGY –
SOLVE + EDUCATE

Ethical Circular Economy Certificate and Training Program

A recent study by McKinsey estimates that shifting to a circular economy could add $1 trillion to the global economy by 2025 and create 100,000 new jobs within the next five years. In spite of this potential, there is little training available for those interested in advancing the concept. Recognizing the need for training of young professionals around circular economy principles, the Walton Initiatives received funding from the Ray C. Anderson Foundation to create an online Ethical Circular Economy Certificate course for use by businesses, non-profits and educational institutions around the world.

The Walton Global Sustainability Solutions Services are now recognized as a global circular economy expert thanks to this course and presentations at conferences like GreenBiz, Sustainable Brands, AASHE and Dell World and by the Ellen MacArthur Foundation, which named ASU as a Pioneer University and a member of the CE100. The Walton Initiatives are uniquely qualified to provide this service because of the synergy between the subject matter experts on the Global Solutions team and the education and curriculum writing experts for our Higher Education programs.

The world's first Ethical Circular Economy workshop was held, in partnership with Sustainability School Lagos, in Lagos, Nigeria in April 2016 with 35 attendees. In October, Phoenix area business and municipal leaders completed the certification, and the course is scheduled to become an online offering for ASU students in Spring 2017. The team also hosted 20 business leaders for a Circular Economy Tour led by the US. Chamber of Commerce Foundation.

SYNERGY –
SOLVE + EDUCATE

VIDEO: Ethical Circular Economy Certificate and Training in Lagos

Click the image to link out to video

OLUFEMI OLAREWAJU

Director,
Sustainability School Lagos
Lagos, Nigeria

EDUCATE FUTURE LEADERS

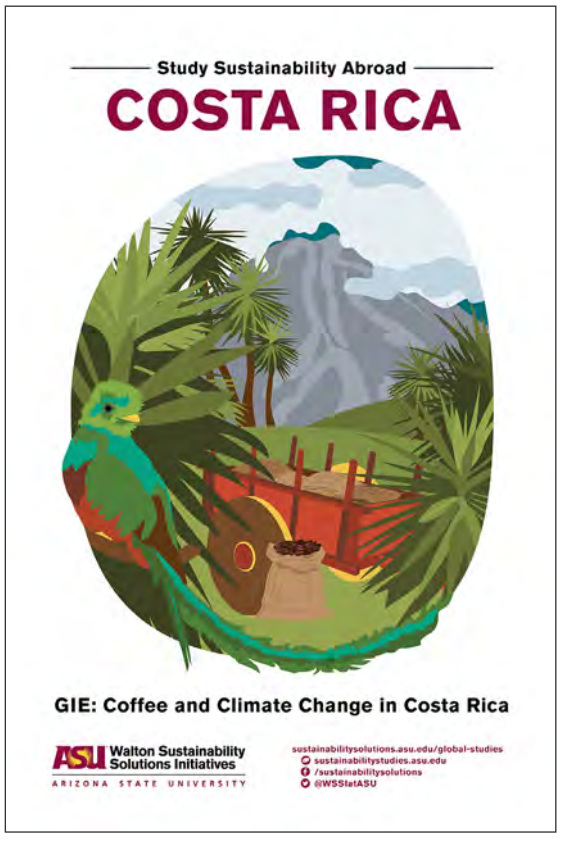
Global Sustainability Studies Program

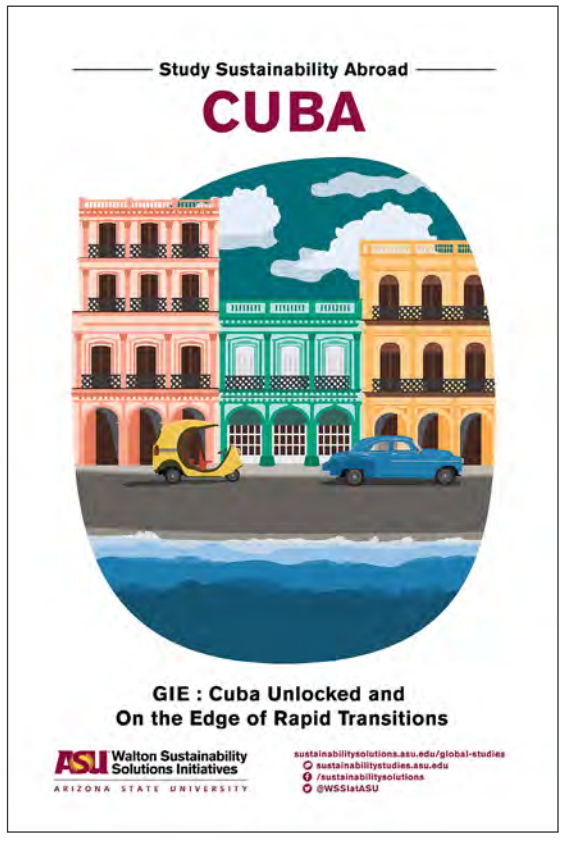
Context is everything, as the saying goes, and the truth of this statement is played out again and again by ASU students when they travel, learn and collaborate in our Walton Global Sustainability Studies Program courses. Even the most brilliant student can have her assumptions turned upside down when she works on a project to monetize sustainable farming in a country where there is little or no infrastructure or conducts sustainability reporting that might be a somewhat routine task in the U.S. but becomes an almost insurmountable challenge in a country with a dysfunctional government.

Walton Global Studies students learn another important lesson as well – that they don't have all the answers. For example, in many of the Global Studies classes, students travel deep into the mountains and jungles to learn firsthand about permaculture, conservation and bio-diversity from local elders and leaders who practice established techniques. This cultural immersion provides new insights into climate change and other contemporary challenges.

By meeting and working with practitioners, faculty and students from other countries and cultures, our Walton Scholars run head on into the reality of our global world – and it's a transformative experience, full of epiphanies and deep, lasting inter-cultural bonding. Our students gain an appreciation for the beauty of our planet and its people through studying and collaborating abroad, an appreciation that often leads to adjustments in their majors and career aspirations.

EDUCATE FUTURE LEADERS





In 2017 we will showcase two new global immersive experiences in the spring, one in Cuba and one in Costa Rica. These courses are shorter in duration and necessarily even more intense than the traditional two to three week courses. Cuba: Unlocked and On the Edge of Rapid Transitions will help students to understand the complex interactions between environmental, economic and socio-political outcomes of the burst of tourism which is affecting Cuba since their borders were opened to the U.S. Through on-site collaboration with Cuban citizens, the students will help to develop strategies for a circular economy for sustainable tourism. Costa Rica: Coffee and Climate Change will use the global coffee commodity chain as a lens through which students can view and assess the sustainability of market-based social change initiatives. The course will also address the impacts of climate change that have added to the complexity of conservation and coffee growing efforts across Costa Rica.

In addition, this summer our Walton Global Scholars will study Human Development, Diversity and Sustainability in Ecuador; Sustainability Challenges of the Wildlife Economy in South Africa; Sustainable Food Systems, Community Development and Happiness in Denmark; and Urban Sustainability in Hong Kong, Taiwan and Mainland China. Two Nepal programs, called Re-Imagining Environmental Sustainability in Urban and Rural Nepal and Global Resolve: Grassroots Innovation for Sustainable Development, are also offered in the summer session.

SOLVE | EDUCATE | ENGAGE

EDUCATE FUTURE LEADERS

VIDEO: Risk and Resiliency in Earthquake Affected Urban and Rural Nepal

Click the image to link out to video

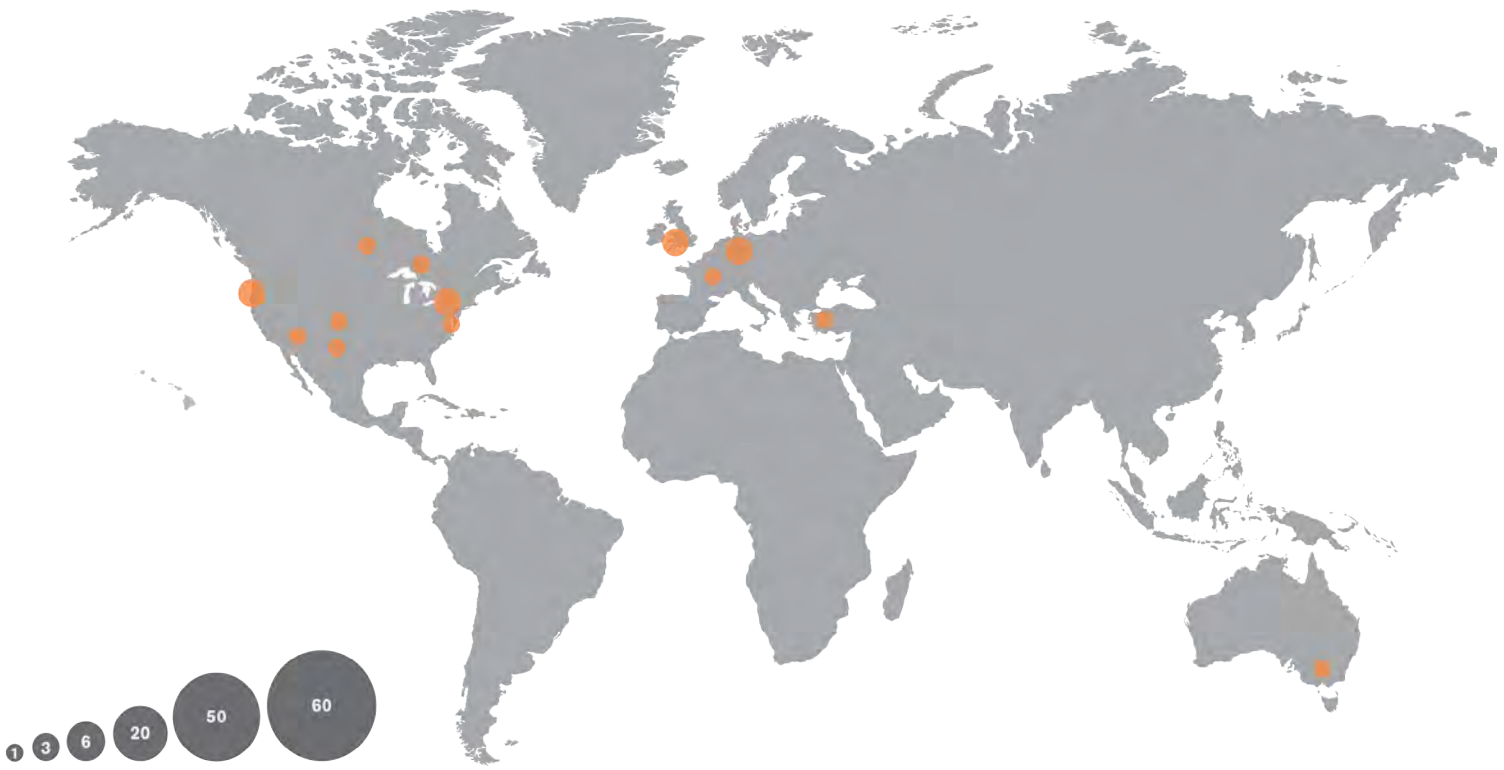
CAPSTONE PRESENTATION

Because change agents need communication skills, Nepal Global Studies students were asked to choose one image of Nepal and write something about it to inspire action. This resulted in the entries included here.

EDUCATE FUTURE LEADERS

Walton Sustainability Fellowship Program

As noted in the Annual Report, the work of our Walton Postdoctoral Fellows has proved to be the highlight of our Sustainability Fellowship Program. We have expanded our institutional networks as our Postdocs have received tenure-track positions at prestigious universities across the globe while we continue to engage them through ongoing classes, projects and new proposals. All of our Post-Doc Fellows have provided contributions that demonstrate impact reaching from the COP21 sessions in Paris to livestock and land use survey-ing in Africa.



And we are excited to welcome our final Postdoc, Dr. Andrew Bernier, a sustainability education and communications expert who you will learn more about in the following pages. Andrew is fulfilling the vision of a high-level scholar collaborating across a variety of the Walton programs with specific input and participation in the Teachers' Academies, Science Museums and Festival programs.

The Imagination and Climate Futures Initiative, co-created by Walton Postdoc Fellow emeritus Manjana Milkoreit, welcomed another esteemed writer to campus: Pulitzer Prize winning author Elizabeth Kolbert. Ms. Kolbert delivered an engaging lecture around ideas from her book The Sixth Extinction. With an audience of over 400, Kolbert discussed the concept of the Earth's sixth potential life cataclysm, likely to be the first to be caused by humans.

EDUCATE FUTURE LEADERS

VIDEO: Update from Postdoctoral Fellow Emeritus

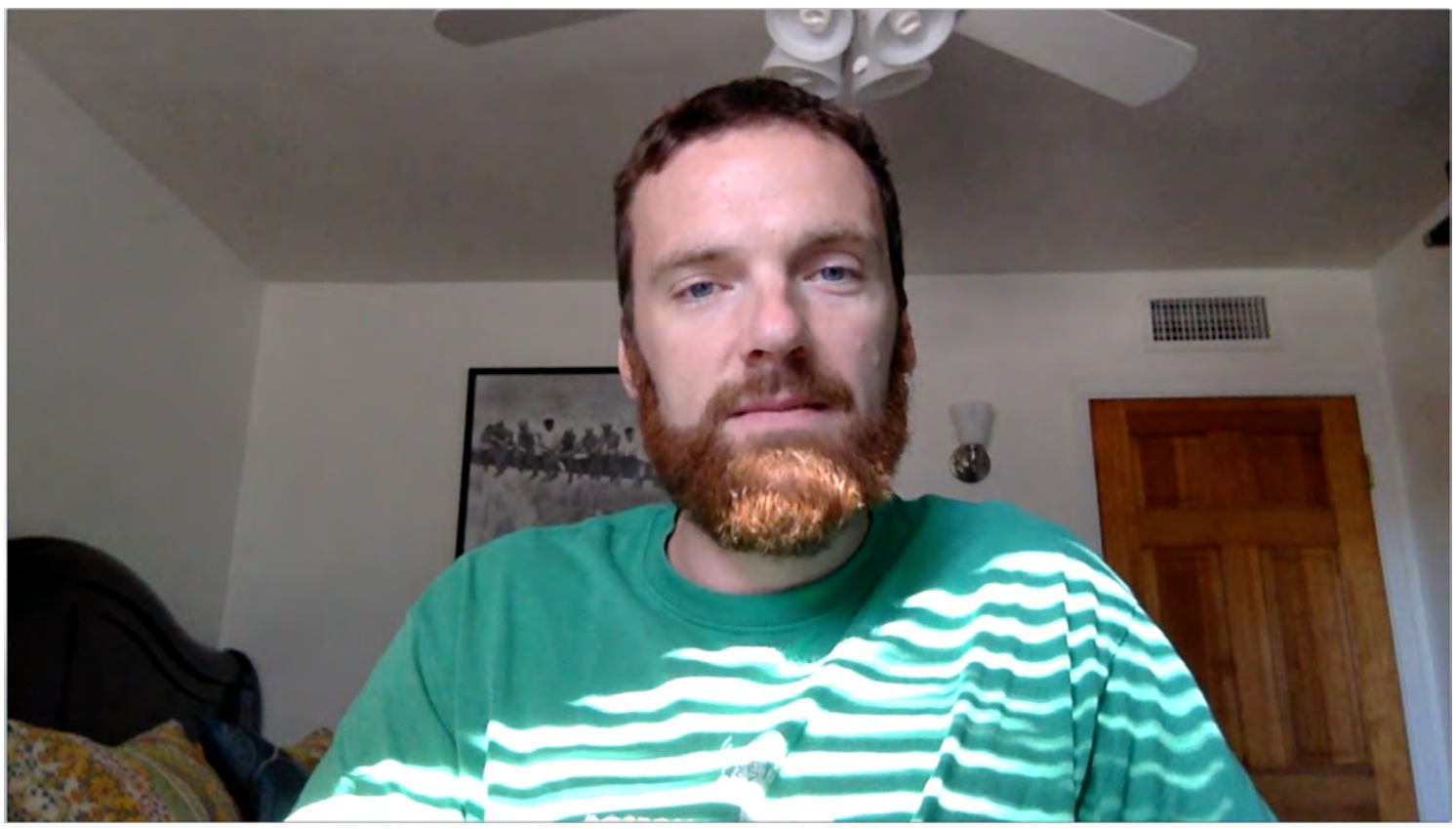
Click the image to link out to video

DR. JENNIFER HODBOD
Assistant Professor,
Michigan State University

EDUCATE FUTURE LEADERS

VIDEO: Update from Postdoctoral Fellow Emeritus

Click the image to link out to video



DR. SCOTT CLOUTIER

Assistant Professor,

ASU School of Sustainability

EDUCATE FUTURE LEADERS

Dear Rob and Melani,

I am grateful for the opportunity you provided for me as a Postdoctoral Fellow as well as your generous support for the Walton Sustainablility Solutions Initiative. The Walton Initiatives is, I think, a unique and wonderful organization devoted to solving sustainability issues around the world. The Walton Sustainability Fellowship Program made an astonishing contribution to my career development and prepared me to be an independent mature researcher.
I am currently working as an Assistant Professor at the Department of Industrial Engineering at Istanbul Sehir University (aka The City University of Istanbul) in Turkey. Thanks to the transferrable skills I acquired at ASU, my colleague and I initiated the Sustainable Systems and Solutions Lab (S3-Lab - please see at http://s3-lab.sehir.edu.tr), which is an inter-disciplinary research and practice lab dedicated to develop system-based sustainability solutions for socio-economic and environmental issues by bridging academia and industry. My unique experience at Walton was a true inspiration and contributed greatly the development of S3-Lab's vision and mission, and S3-Lab and the Walton Initiatives have initiated a research and educational partnership. Furthermore, I still teach an online course for Systems Thinking at the ASU School of Sustainability, and I am Walton Emeritus Fellow and a Senior Sustainability Fellow at the ASU Global Institute of Sustainability. I, as an Emeritus Walton Fellow, will be a lifetime partner for this great team and a Walton Initiatives Ambassador here in Istanbul, Turkey.

Dr. Nuri Onat
Assistant Professor,
Istanbul Sehir University
(The City University of Istanbul)

EDUCATE FUTURE LEADERS

In August 2016 I left Arizona State University to start a new position as Assistant Professor of Public Policy at Purdue University – a major research university and member of the "Big 10." This professorship is primarily a research position, but also contains significant teaching obligations. Among the guest speakers I have invited to my class to introduce students to various career paths in sustainability and environmental politics is my former ASU colleague Bruno Sarda, whom I worked with to co-teach Global Context, one of the four course streams of the Executive Master of Sustainability Leadership program while I was at ASU.

One of my main achievements as a Walton Postdoctoral Fellow at ASU was the creation of the Imagination and Climate Futures Initiative. Since 2014, I coordinated two major public lectures and campus visits by internationally renowned fiction writers, Margaret Atwood and Paolo Bacigalupi, panel events and workshops on the Tempe campus and an international climate fiction short story contest. These ICF activities continue while the initiative transitions to a new leadership structure. The ICF annual lecturer for 2017 is already lined up: science fiction legend Kim Stanley Robinson. I plan to be back at ASU for Robinson's campus visit and public lecture next year, which will be an opportunity to renew and deepen collaborations with ASU colleagues.

Over the last three years I initiated an innovative research program on the role of future thinking/imagination in climate change politics. At Purdue University I continue to pursue this work and have submitted a number of collaborative grant proposals for this research program over the last two months, for example, a proposal for developing a science-policy engagement process with international climate change negotiators (total funding pursued = $300,000). The success of these applications would facilitate a number of collaborative activities with colleagues at ASU such as a workshop at Purdue University in the Fall of 2017 and empirical research on changes in climate-related beliefs among residents of Phoenix.

Dr. Manjana Milkoriet
Assistant Professor,
Purdue University

EDUCATE FUTURE LEADERS

Welcome Dr. Andrew Bernier, Postdoctoral Research Fellow

This year, the Walton Initiatives welcomed Dr. Andrew Bernier as our newest Walton Sustainability Solutions Initiatives Postdoctoral Research Fellow. Guided by a decade of experience as a high school science and sustainability teacher, adjunct faculty and science correspondent for public radio, his questions about sustainability focus on how well people design, operate and communicate knowledge systems for sustainability solutions.

Andrew's research centers on how structures, models and mechanisms can be intentionally designed to make sustainability more accessible to more people and how they can be engaged throughout the process. His dissertation focused on the writing, design and implementation of a four-year high school honors sustainability STEM curriculum based on systems dynamics at Paradise Valley High School. His research found students taught through systems design were better apt to understand, perform and enjoy core sustainability competencies. A number of those students have gone on to pursue sustainability degrees at ASU and remain in touch with Andrew to this day.

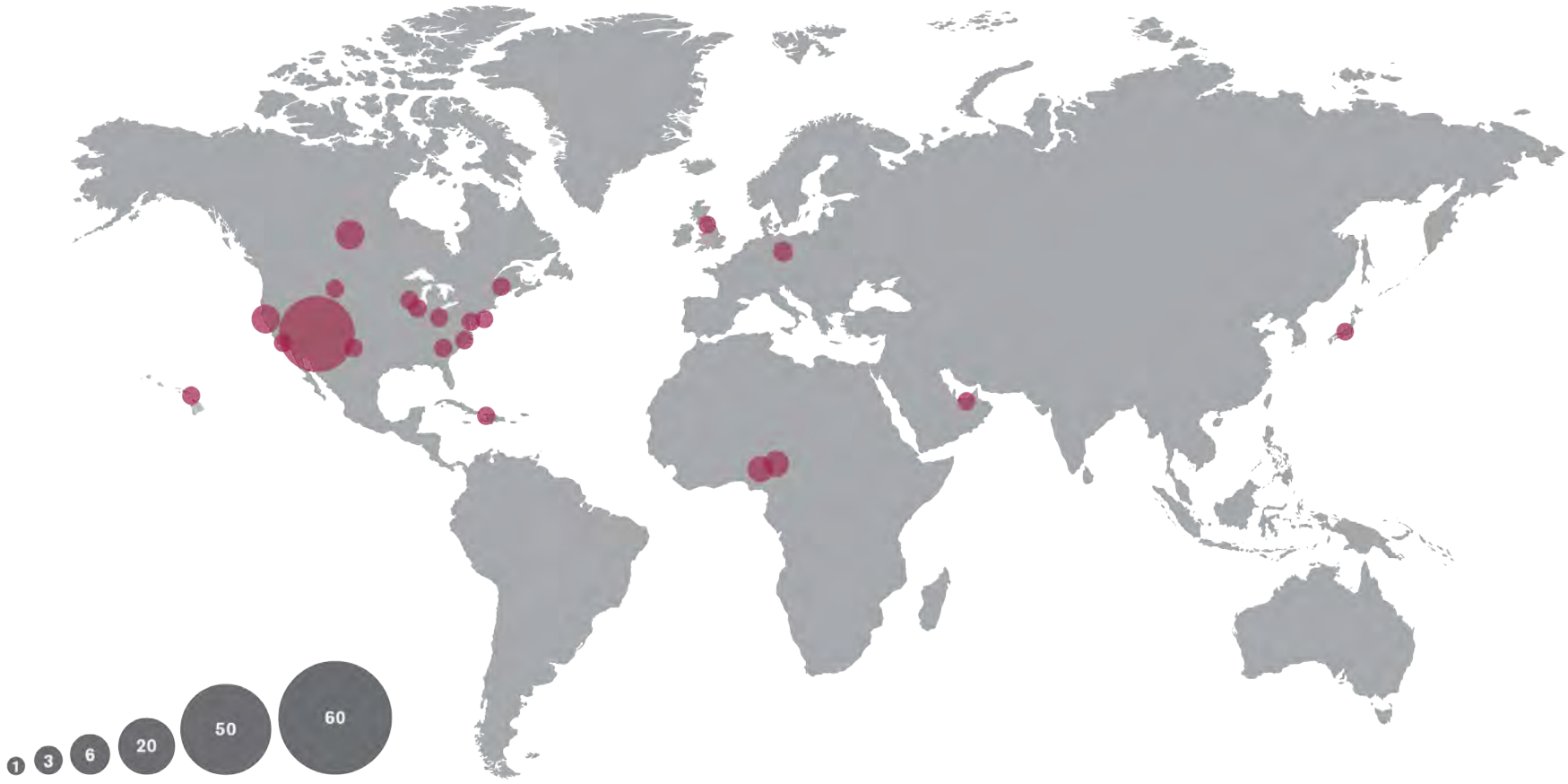
The communication of sustainability has always been paramount to Andrew's work, from his self-designed undergraduate focus of communication of sustainable development, to becoming the "sustainability guy" while hosting and directing a sustainability news-magazine show on Ithaca College radio, to serving as a staff editor and social media manager for the Journal of Sustainability Education.

Prior to joining ASU, Andrew served as the first Science and Innovation Correspondent at KJZZ, the National Public Radio affiliate in Phoenix. While there he helped establish the Arizona Science Desk to share and distribute science content both locally and nationally.

In addition to teaching at ASU's School of Sustainability and contributing to Walton Initiatives projects, Andrew aims to develop curricular models that help students and educators map and display a student's systems thinking, understand how sustainable urban design can help improve the public's knowledge capacity and develop methods of communication and storytelling to enhance sustainability messaging.

EDUCATE FUTURE LEADERS

Executive Education + Training



In 2012, we engaged GreenBiz to conduct a survey to help us identify a gap and need for new graduate education platforms and programs aimed specifically at mid-career professionals. That survey validated our instincts and our research that people with five-plus years of experience in and around sustainability roles within their organization were encountering barriers to furthering their sustainability programs and they were looking for advanced skills and training through an accelerated graduate degree program. That was how the Executive Master of Sustainability Leadership was born.

Since the program launched with its first cohort in January 2014, it has graduated 36 empowered sustainability leaders with another 17 ready to join these alumni in January. Twenty-one of the 53 students who have enrolled in the program have experienced some form of demonstrative career advancement since starting the course – a 40% career advancement rate in almost three years!

EDUCATE FUTURE LEADERS

But perhaps an even stronger legacy of the EMSL program is the foundation and infrastructure it established to create additional education and training programs that bring sustainability and leadership skills to a much broader audience. The online portion of EMSL was used as a foundation to establish the School of Sustainability's Master of Sustainability Leadership degree, delivered through ASU Online. In fact, five EMSL graduates are now instructors for the MSL program. To date, MSL has had 54 enrollments.

The instructional design expertise of the EMSL team combined with the sustainability content expertise at ASU has enabled the Walton Initiatives to become an ideal partner to develop and deliver sustainability training and certification for partners around the world. The EMSL team worked with Starbucks to create their pioneering Greener Apron sustainability certificate program and has provided certification to 246 Starbucks employees. The team has also created workshops for the World Bank, The Sustainability Consortium, the Walton Teachers' Academy and the first ever Ethical Circular Economy workshop in conjunction with Sustainability School Lagos.

Testimonials – Executive Master of Sustainability Leadership

"EMSL has heightened the intensity of what I do for sustainability from my personal actions, including interactions with my kids, through every business consideration. It is quite remarkable—the value of this program goes way beyond what I had thought it would be. It is extraordinary."
John Martinson, China Mist Tea Company

"Just a few short months after joining the program, I have been able to apply knowledge gained to map my organization's priority goals with sustainability principles to identify strategies that create resource efficiency and improve customer service."
Anthony Chavez, Social Security Administration

"Made my pitch today to the executive team... Purchasing exec said 'We got this printer issue to the tune of $100k a year - can you help us solve that?' College VP said 'Can you come present at our staff meeting?' CEO says 'Why don't you make this part of your master's capstone and role this into our strategic planning process?' I said 'Sounds like a great idea!' Looks like I have some legs on this thing now... whew!"
Joe Fullerton, San Mateo County Community College District

"Chris has brought the knowledge he has taken from the EMSL program and implemented it in his everyday duties. In addition, he has taken full responsibility in leading our newly revamped sustainability program successfully. The skills and leadership Chris has obtained from EMSL are proving very valuable to GlobalTranz and everyone in our extended community."
Robert J. Farrell, CEO, GlobalTranz Enterprises Inc.
regarding Chris Kryiakopoulos

EDUCATE FUTURE LEADERS

Alumni – Executive Master of Sustainability Leadership

Adeyemi Adewole
Mike Amico
Hideaki Azuma
Dena Baldwin
Jamie Bohan
Tara Briscoe
Evelyn Brumfield
Antonia Castro Graham
Karen Cecil
Jamie Cook
Debra Emmanuelle
Lisa Estrada
Warren Gorowitz
Michael Herod
Denise Kronsteiner
Sarah Lyon
Colleen Mahoney
Denise Maldonado Avitia
John Martinson
Deborah Mayfield
Bryan McLaren
Femi Olarewaju, PhD
Dawn Olsen
Pratik Patel
Deven Patten
Rosalynn Peschl (Dodd)
Jeremiah Powless
Bonnie Richardson
Jennifer Roberts Johnson
Jennifer Ruggiero
Kristopher Spector
Anamica Srinivasaragavan
Alexandra Stinchfield
Tyler Sytsma
Timothy Trefzer
Thomas Williams

EDUCATE FUTURE LEADERS

Employers of Executive Master graduates

accenture

American Red Cross

ARIZONA HUMANE SOCIETY

Banner Health

BAYER

Cummins

EWING

GEORGIA WORLD CONGRESS CENTER

CITY OF HUNTINGTON BEACH ORANGE COUNTY CALIFORNIA

LOCKHEED MARTIN

MARICOPA COMMUNITY COLLEGES

MICROCHIP

SKF Delivering more than power.™

REPUBLIC SERVICES

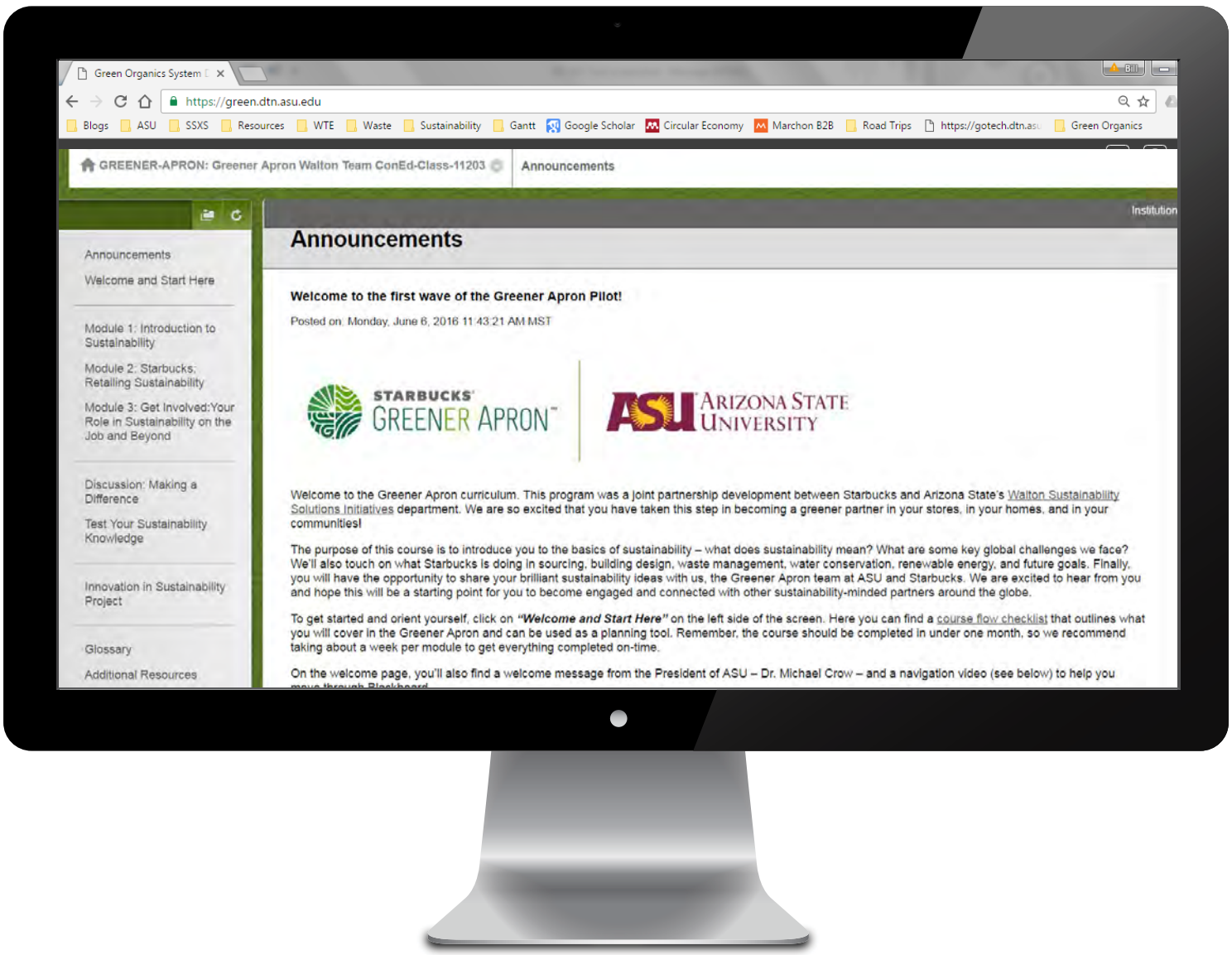
UNCCHARLOTTE

USAID FROM THE AMERICAN PEOPLE

WHOLE FOODS MARKET

SOLVE | EDUCATE | ENGAGE

EDUCATE FUTURE LEADERS



Certificate – Starbucks Greener Apron

The Starbucks Greener Apron program was designed for Starbucks' employees and created by the Walton Sustainability Solutions Initiatives Higher Education team. The goal of this online self-paced curriculum is to increase knowledge and awareness of sustainability both globally and within the Starbucks culture, and motivate its participants to engage in sustainability practices. The program comprises three modules: introduction to sustainability, overview of sustainability within Starbucks, and a call to action to advocate for sustainability practices at work and at home. Upon completion of the program, participants are encouraged to implement a sustainability project and share it with their cohort and other Starbucks partners. To date, the Greener Apron program has reached nearly 1,500 participants with plans to roll out a global launch over the next several years.

EDUCATE FUTURE LEADERS

VIDEO: Starbucks Greener Apron

Click the image to link out to video

STACY STRICKLAND
Program Manager,
Starbucks

Participant,
Greener Apron Program

SYNERGY –
EDUCATE + ENGAGE

EMSL Workshops at GreenBiz Forum

Founded by business journalism pioneer Joel Makower, GreenBiz is recognized as a leading news outlet and conference organizer for sustainability business and innovation trends. The Sustainability Solutions Festival recognized GreenBiz as an ideal partner for convening sustainability business leaders from across the globe.

Over the course of our relationship with GreenBiz, we have worked with them to identify and provide leading edge experts for their annual business trends conference, held in Phoenix each year since 2014. In our conversations with GreenBiz organizers prior to this year's conference, we recognized an opportunity to provide an interactive workshop where attendees would learn strategy and communications skills from our Executive Master of Sustainability Leadership faculty.

The Transformative Organizational Success through Leadership session identified that many sustainability programs struggle because they are developed or integrated in ways that miss important organizational dimensions. The four-hour workshop provided insights on how to create and identify sustainability strategies that promote broad organizational success, apply global sustainability principles to specific organizational context, employ leadership competencies and behaviors that are critical to transformational change and communicate effectively about sustainability with key stakeholders and audiences.

The workshop had 57 participants in its first year and was rated so highly that GreenBiz took the unorthodox step of inviting it back for a second year in a row this February at GreenBiz 17.

SYNERGY –
EDUCATE + ENGAGE

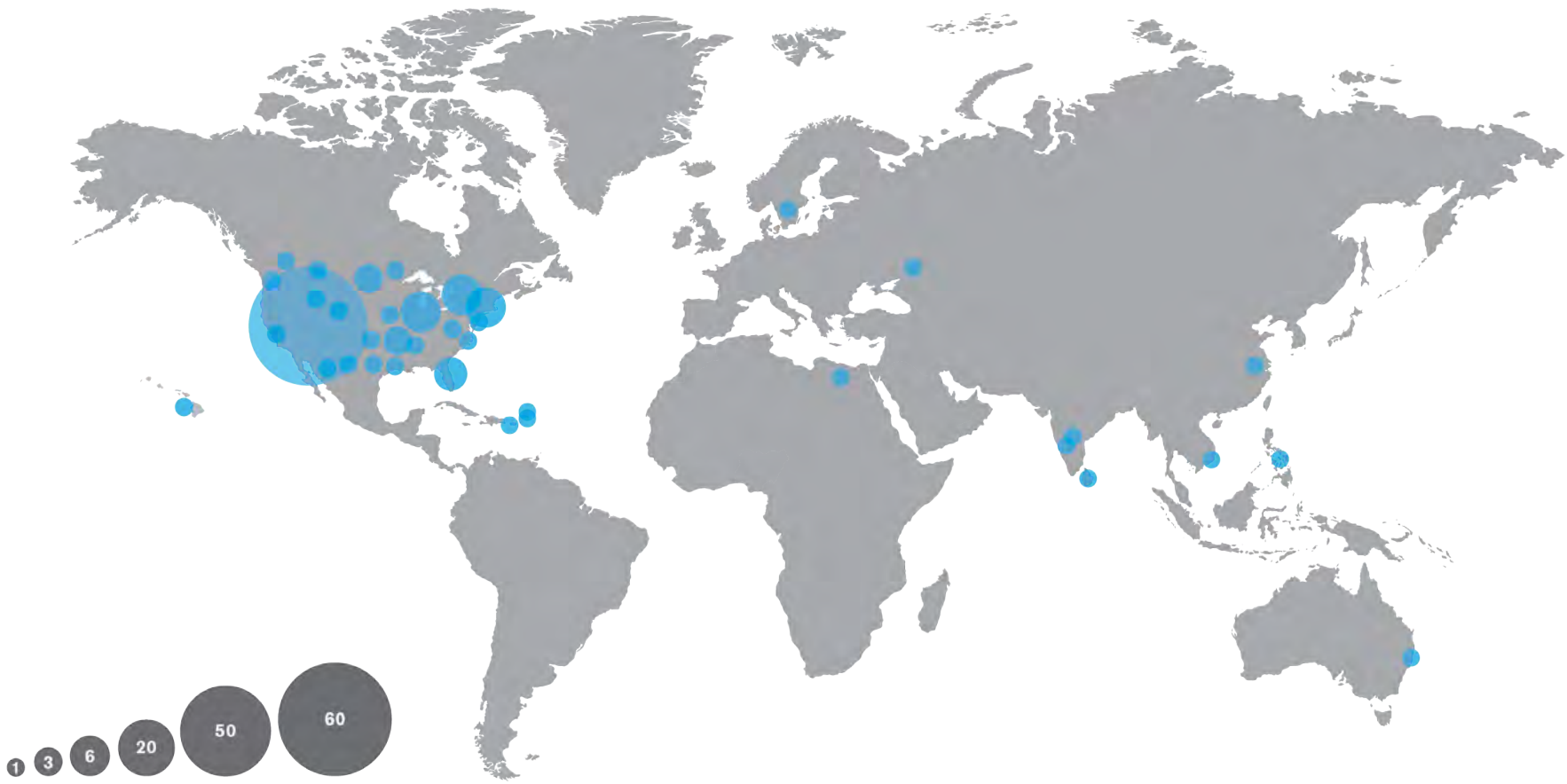
VIDEO: GreenBiz

Click the image to link out to video

JOEL MAKOWER
Chairman and
Executive Editor,
GreenBiz Group, Inc.

ELLIE BUECHNER
Conference Director,
GreenBiz Group, Inc.

ENGAGE AND INFORM THE PUBLIC



Sustainability Solutions Festival

Let's (re)imagine our home

For the 2017 Sustainability Solutions Festival, we will call on participants and partners to ***(re)imagine our home*** using examples of sustainability solutions in our individual dwellings, our community and the entire planet Earth as the place we "hang our hat." The 2017 Festival is proud to once again showcase a diverse group of partners and organizations that seek to engage audiences and inspire a more sustainable future where people live, learn, work and play.

ENGAGE AND INFORM THE PUBLIC

2017 Events

Night of the Open Door at the ASU Downtown campus
Friday, February 3, ASU's Downtown Phoenix Campus

Meet Me Downtown Sustainability Walk
Monday, February 5, Downtown Phoenix

Sustainability Short Films
Friday, February 10, Valley Youth Theatre and Phoenix's Pop-Up Park

City Lights Movie Night
Friday, February 10, CityScape Phoenix

Clark Park Farmers' Market
Saturday, February 11, Clark Park Tempe, AZ

World Business Council for Sustainable Development Member Conference
Monday, February 13, JW Marriott Desert Ridge

Global Reporting Initiative North American User Conference
Monday, February 13, ASU Skysong

2017 Second Nature Climate Leadership Summit
Monday-Wednesday, February 13-15, Tempe Mission Palms

Sustainability Solutions Showcase
Monday, February 13, Desert Botanical Garden

GreenBiz University
Tuesday, Feb 14, Memorial Union on the ASU Tempe Campus
8:00-9:00 a.m. Sustainability Tour and Continental Breakfast
9:00 a.m. - Noon Presentations

GreenBiz 17
Tuesday-Thursday, February 14- 16, JW Marriott Desert Ridge

Sustainability Solutions Celebration
Wednesday, February 15, El Chorro

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Arizona Forward Luncheon
Thursday, February 16, 2017, Downtown Phoenix

Night of the Open Door at the ASU Polytechnic campus
Friday, February 17, ASU's Polytechnic Campus

Sustainability Family Day at Arizona Science Center
Monday, February 20, Arizona Science Center

Night of the Open Door at the ASU Tempe campus
Saturday, February 25, ASU's Tempe Campus

Meet Sammy

This year's mascot "Sammy" is a youthful, imaginative astronaut. In partnership with Bear Essentials News for Kids, Sammy will engage our K-6 audience on how to live sustainably as he explores what we need to create a healthy future for all during a voyage to a space station in orbit around Earth.

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Partners – Sustainability Solutions Festival

The 2016 Sustainability Solutions Festival enthusiastically welcomes back our presenting sponsors:

SRP Delivering more than power.™

City of Phoenix

WALTON FAMILY FOUNDATION

We look forward to working with our many premier partners over the course of our now month-long Festival:

GreenBiz group

THE SUSTAINABILITY CONSORTIUM

DTPHX Downtown Phoenix Inc. DTPHX.ORG

ARIZONA SCIENCE CENTER Never stop wondering.

Second Nature

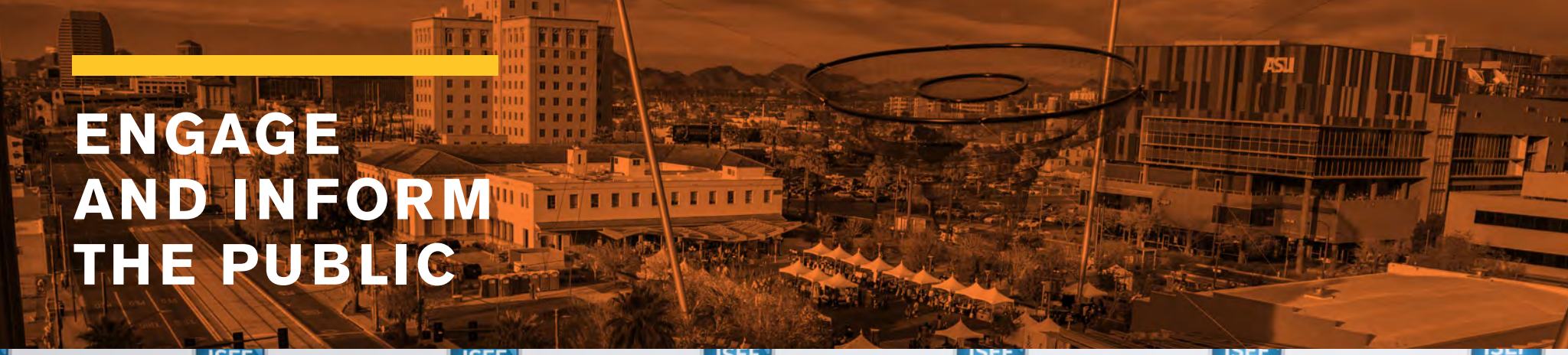
wbcsd

GRI Empowering Sustainable Decisions

NIGHT OF THE OPEN DOOR AT ARIZONA STATE UNIVERSITY

ARIZONA FORWARD

SOLVE | EDUCATE | ENGAGE



ENGAGE AND INFORM THE PUBLIC

2016 Intel ISEF Walton Award Winners

This past spring, we were honored to once again recognize the research and innovation of some of the world's top high school students. The Intel International Science and Engineering Fair returned to Phoenix and we presented Walton Sustainability Solutions Awards to four projects including a team from Puerto Rico and our first ISEF winner from here in Arizona.

Our tracking of project titles at ISEF continues to show strong growth of sustainability-oriented research and work through the 2016 fair. The terms "sustainable" (50 projects) and "emission" (48 projects) had the strongest growth over the last year, and our total tally of sustainability keywords for 2016 was 149 projects, a 13% increase over 2015 and a 52% increase since we began tracking key terms in 2013.

We also received 184 entries from regional ISEF-affiliated fairs around the world. This year's regional winner comes from New York and we are excited to introduce her and our other honorees to you at the Sustainability Solutions Showcase in February. Here are brief abstracts on their work to tide you over until then.

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Hannah Herbst, Boca Raton, FL

Bringing Electricity Access to Countries through Ocean Energy: BEACON-Combating Energy Poverty through the Development of a Novel Ocean Energy Probe

Hannah's desire with this project was to create a low-cost source of energy for people in the developing world to charge personal electronic devices. She was able to develop a prototype using 90% recycled materials at a cost of $12/unit.

Shantanu Jakhete, Stuart, FL

Novel Mosquito Control: A Chemical-Free, Low-Cost Approach for Aedes aegypti Reduction via Specific Range Frequency Sweep

In order to combat diseases, such as zika, malaria and dengue, Shantanu developed a mosquito control device that uses sound wave technology to terminate sexually-active males in the mosquito population. This device emulates the sound of a female mosquito attracting the males to the high-voltage mesh. Shantanu also investigated any adverse effects that the sound might have on the local ecology and found the device to be safe without the use of harmful chemicals.

McKenna Loop, Chandler, AZ

The Effect of the Extraction Method on the Amount of Crude Algal Lipids Recovered for Economically Feasible Biofuel Production

In a quest to solve the world's energy crisis utilizing algae biofuels, McKenna began researching her solutions at ASU's Polytechnic Campus. A known challenge is the efficiency of the extraction of lipids from the algae that results in a much higher cost than fossil fuels. Using a method that capitalizes on a natural symbiotic relationship with a fungus, McKenna discovered a method that reduced the cost of algae biofuels by 74.1%.

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Dariannette Valentin and Osvaldo Pagan, Aguanda, Puerto Rico

The Future of Energy: Spidronized Solar Cells

Dariannette and Osvaldo's project explored the challenge of maximizing the efficiency of solar panels. Using a mathematical model, they looked at the efficacy of solar cells. By creating a simulation of a 12-hour day, Dariannette and Osvaldo discovered that using Spidronized Solar Cells or the "Spidron Nest" solar cell will produce 7.3kWh compared to the 5.6kWh of energy produced by a conventional cell.

2016 Intel ISEF Regionally Affiliated Award Winner

Nishita Sinha, Chatham, NY

Experimental Studies in Developing Safe Sanitation Solutions

Nishita's project focused on finding solutions for the environmental and perpetual social problems that impoverished communities without access to proper sanitation face. Her solution is a waterless toilet that uses locally available materials to break down human waste anaerobically into a safe form of fertilizer.

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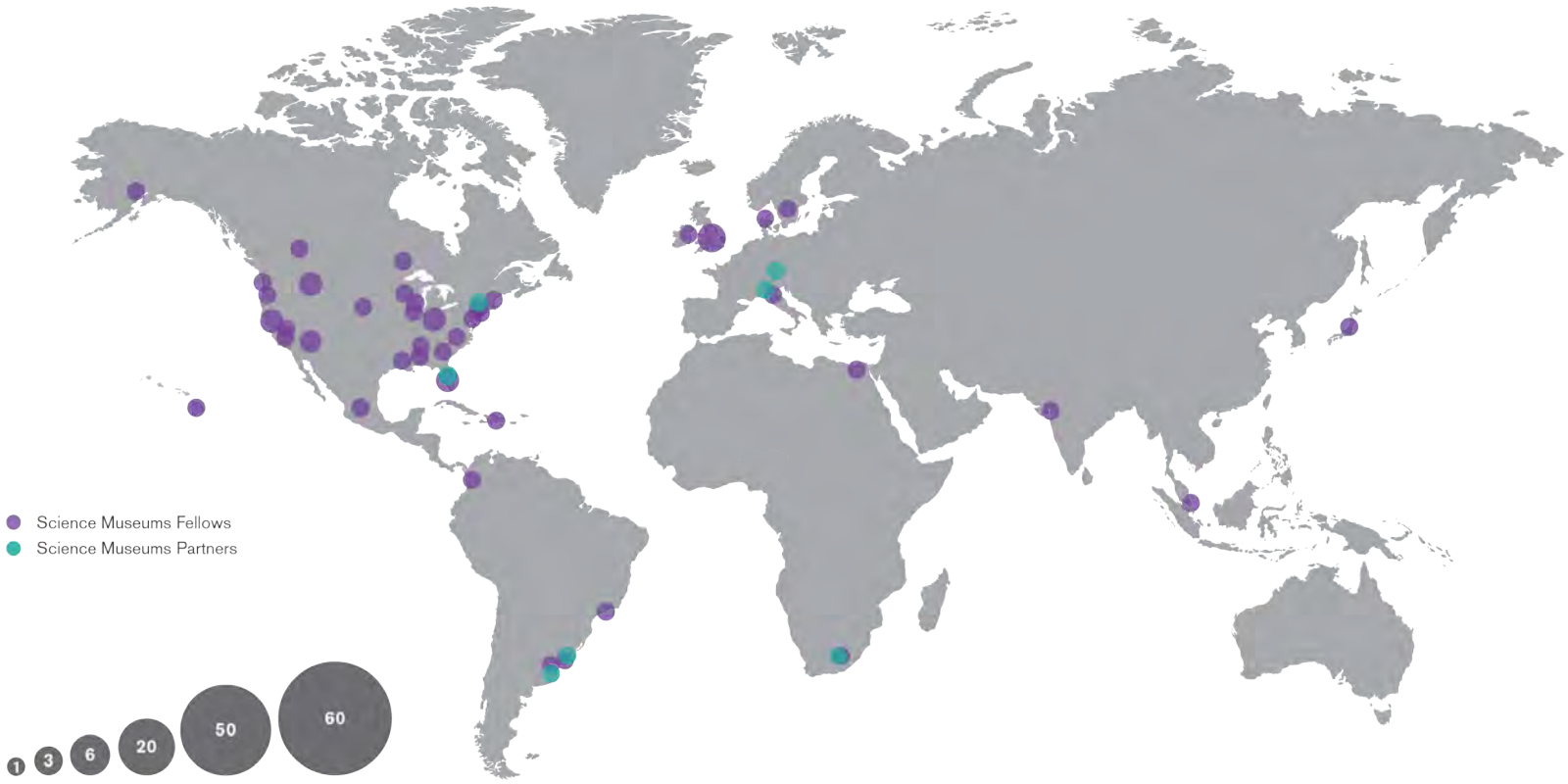
Sustainability in Science Museums



Perhaps our most aggressively scaling global program to date has been the Sustainability in Science Museums program. Conceived as education training, and content development and support for science centers and museums, the demand for this content and expertise from the informal education sector was unexpected and continues to be immensely rewarding.

Thanks to our collaborations with our pilot institutions – Arizona Science Center and California Academy of Sciences – we were able to rapidly design applicable and desired content and programming that immediately enticed an enthusiastic cohort of museum professionals, from educators to executives, last February. Our hope that these Fellows would lay the foundation for a powerful network of public engagement experts has exceeded our expectations.

Our inaugural cohort of 25 Fellows who came to ASU last February has translated to invitations to present or participate at seven top-flight conferences in locations ranging from Montreal to Argentina, Italy and most recently South Africa. The program's sustainABLE© Activity Kits have been distributed to the Fellows' institutions, showcased at these conferences and adapted into region-specific activities far and wide.

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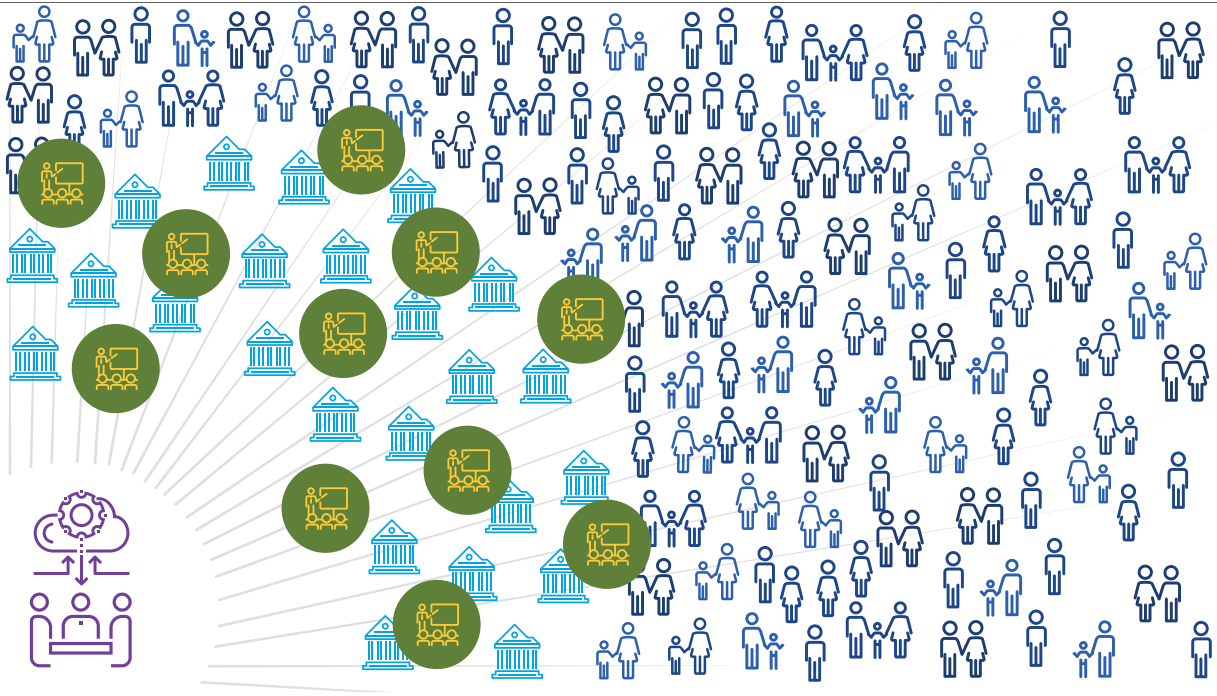
The scaling of impact made by this program has proved to be dynamic. When we invite a select group of enthusiastic professionals to travel to ASU, they take their learning and their materials back to their museums and centers to share with colleagues and engage their guests. According to the Association of Science and Technology Centers, these trusted public institutions invite 95 million guests through their doors annually. Our participation at these conferences, made possible through our relationships with our Fellows, enables sustainability science and ideas to better reach those 95 million people.



Additionally, as part of their commitment as a Fellow, these professionals and their institutions commit to implementing programs at their locations. Some examples of current projects in development include: internal staff sustainability training and professional development at LA Natural History Museum; an adult night entitled “Reimaging our City for the Future” at the Terry Lee Wells Nevada Discovery Museum; a museum/school partnership to plant a garden in South Africa; family workshops that teach about the three pillars using the FutureBuilder kit activity in Tokyo, Japan; a teacher workshop for 75 elementary teachers on sustainability, food waste and water usage to take place this summer in Dublin, Ireland.

ENGAGE AND INFORM THE PUBLIC

VIDEO: Sustainability in Science Museums Fellowship

Click the image to link out to video

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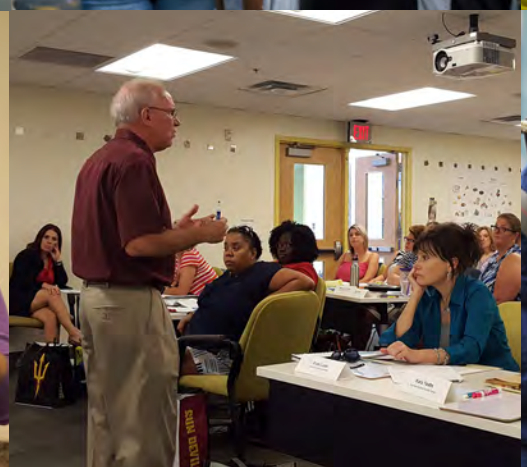

Sustainability Teachers' Academy

When the National Sustainability Teachers' Academy was established in 2014, the aim was to equip K-12 teachers in all 50 states with the knowledge, skills and tools to become agents of change. The underlying strategy of the Academy was for teams of two complementary teachers to come to the workshop and learn how to teach sustainability, then return to their school districts to create sustainability projects and curriculum and train other teachers in their districts to do the same.

Our first National Workshop was held in June 2015 in Tempe, Arizona with 29 teachers in attendance. Since then, we have held five National Sustainability Teachers' Academy workshops and trained 157 enthusiastic teachers, who in turn have shared their information with other teachers who have then taught sustainability principles to thousands of students around the country. Two sessions are scheduled for Summer 2017 along with a new recurring webinar to keep teachers engaged beyond the workshop.

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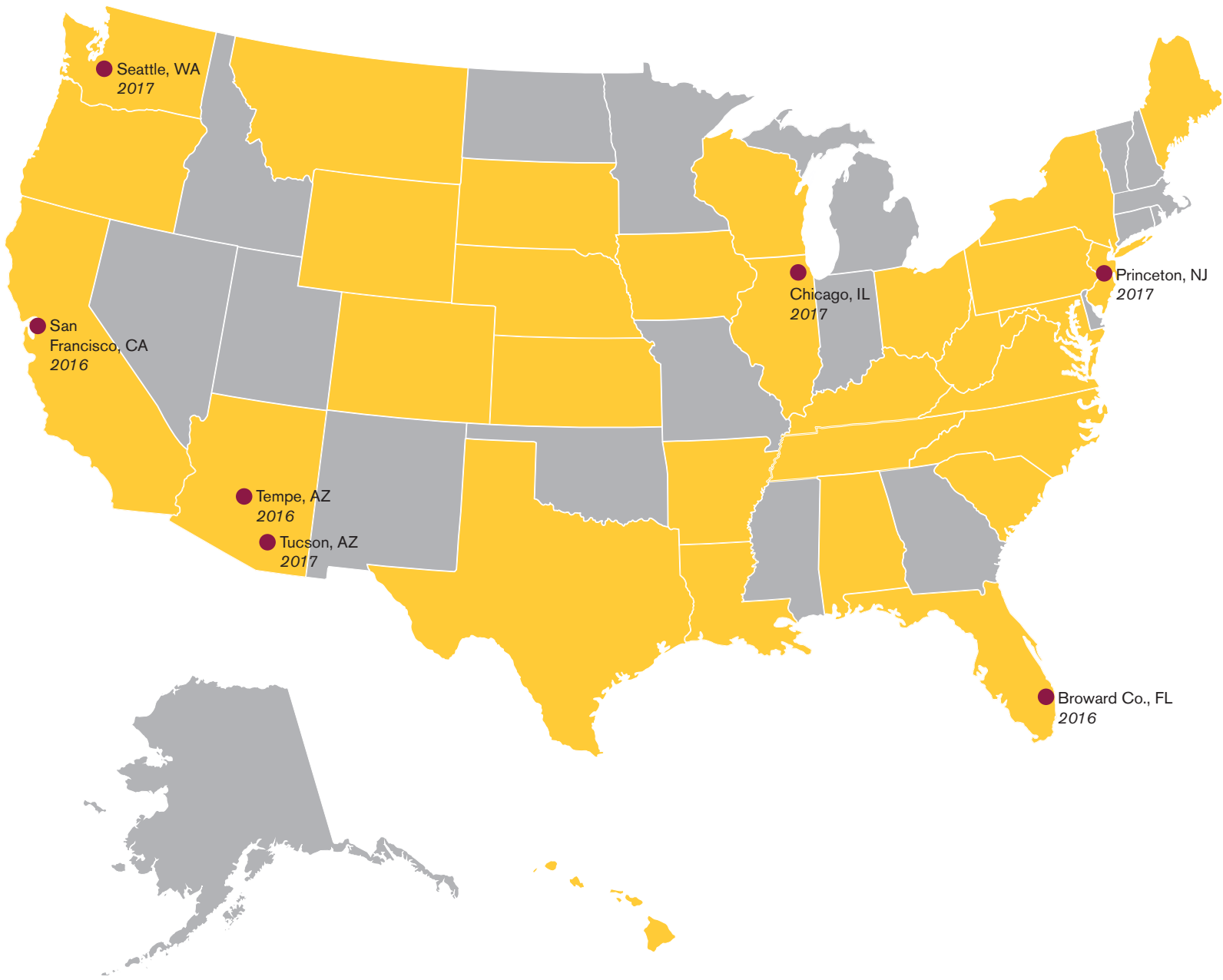
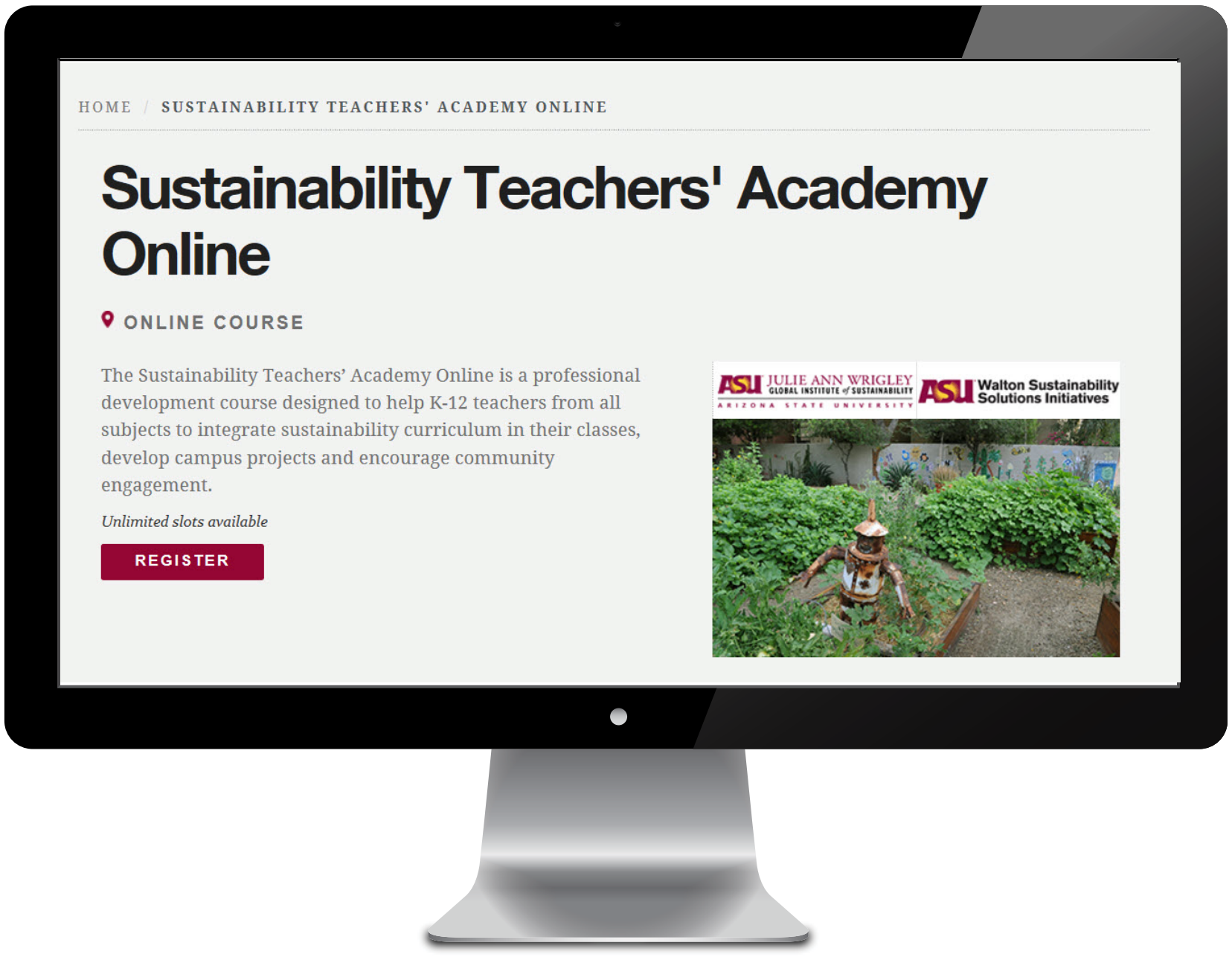


The Teachers' Academy concept – and the interest in teaching sustainability in our schools – caught the imagination of executives at Wells Fargo, who committed $500,000 to create Regional Teachers' Academies. The abbreviated, regionally-based two-day workshops helped to expand our reach and increase our impact. Since 2015, three Regional Workshops have been held all over the country, from Florida to California. 97 teachers have participated in these Regional Workshops thus far.

Upcoming Regional Teachers' Academies will be held this December in Princeton, NJ and next spring in Chicago, Seattle and Tucson.



Online Teachers' Academy

Dashboard

Our team is excited to expand our outreach to educators across the nation with the creation of an interactive and engaging Online Sustainability Teachers' Academy, which will debut this month – November 2016. The Online Academy will make the curriculum much more accessible to teachers without the investment of time and money involved in travel to an in-person workshop. With the addition of this online program, our reach is potentially limitless; now we have the capability to transform educators into sustainability change agents around the world.

ENGAGE AND INFORM THE PUBLIC

VIDEO: Teachers' Academy implemented project

Click the image to link out to video

ELAINE FIORI
Florida teacher and participant,
2015 National Sustainability Teachers' Academy

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Impact through Social Media

Social media has been a core to our communications and engagement efforts since 2013. Our channels on Twitter, Facebook, Linkedin, Pinterest and now Instagram allow us to directly share sustainability solutions and promote our events with diverse audiences. Here are a few of our top posts from this past year:

Facebook

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Impact through Social Media

Twitter

Tweet activity

Walton Initiatives @WSSIatASU
.**@IshaCogborn** from **@WasteManagement** talks rules of recycling to keep stream clean, reduce processing costs **#sustyftw**
pic.twitter.com/0ioE7yFQrn

Promote your Tweet
Your Tweet has 34 total engagements so far.
Get more engagements on this Tweet!

Promote your Tweet

Impressions	2,837
Total engagements	34
Media engagements	9
Likes	8
Detail expands	7
Profile clicks	6
Retweets	3
Hashtag clicks	1

ENGAGE AND INFORM THE PUBLIC

Impact through Social Media

In 2016, we added **Instagram** to our stable of social media channels, using it to specifically promote the Sustainability Solutions Festival. Because of Instagram's visual orientation, the Walton Marketing and Communications team has used Instagram as the platform to create highly engaging images, memes, videos and animations that can also be shared across Facebook and Twitter.

TIMELINE

2012

May
Walton Initiatives launch

September
Walton Initiatives website live

November
Solutions Services signs first contract

December
Solutions Services at GoGreen Phoenix

2013

January
First Future Cities Competition awards

Climate Center presents to World Bank

Global Launch in Netherlands

April
First Project - Hong Kong Global Center

Sustainability Solutions Showcase honors and awards ASU entrepreneurs

May
First Global Studies students travel

First Intel ISEF Sustainability Awards

June
RISN Plenary Presentation at Sustainable Brands Conference

Festival honors innovators at Intel ISEF

May
RISN develops recycling education program with Mayo Clinic and Paradise Valley Unified School District

Post-doctoral Research Fellow Jennifer Hodbod conducts agricultural research in Ethiopia

Second group of Global Studies students travel

April
Economic Viability of Restorative Thinning report for The Nature Conservancy released

Global Sustainability Solutions Services' SRP Waste Assessment project wins ASU President's Award

Festival honors innovators at AZ Science and Engineering Fair

March
Global Solutions team launches regional sustainability development plan in Netherlands

February
First Sustainability Solutions Festival with GreenBiz and Arizona Science Center

RISN launches

2014

January
First cohort of EMSL students commences

Winners of Creative Non-Fiction Awards announced

December
City of Phoenix Greenhouse Gas Emissions report released, showing 7.2% reduction

September
First SEED Spot entrepreneur awards

August
EMSL launched

NextGen Scholars and practitioners workshop

July
Announcement of Science Museums and Teachers' Academy programs

August
Global Services team leads Living Building Challenge design class for Liberty Wildlife

November
Albanian green schools project launched to retrofit the nation's schools and develop a sustainable economy

RISN Nigeria launches

Walton Senior Fellow Margaret Atwood speaks for Imagination & Climate Futures Initiative

2015

January
First Cohort of EMSL students graduates

ASU and Walton Initiatives host Future City of Arizona Competition

February
Second Sustainability Solutions Festival

April
Kelly Saunders and Sustainability Solutions Festival win ASU OKED Community Engagement Award

May
ASU becomes an Ellen MacArthur Foundation Pioneer University

Third group of Global Studies students travel

May
Fourth group of Global Studies students travel

April
First Ethical Circular Economy Certification workshop in Nigeria

Sustainability Teachers' Academy wins ASU OKED Community Engagement Award

February
Festival extends to two weeks and engages more than **39,000** people

ASU joins CE100 partnership with Ellen MacArthur Foundation

First Sustainability in Science Museums Fellowship

January
ASU hosts Wells Fargo Regional Teachers' Academy

Second Cohort of EMSL students graduates

2016

December
Post-doctoral research fellow Manjana Milkoreit conducts climate change workshops at COP21 in Paris

October
First Sustainability in Science Museums Fellowship announced at ASTC

September
New York Times bestselling author Paolo Bacigalupi speaks for Imagination & Climate Futures initiative

June
Hosted World Wide View on Climate and Energy

First National Teachers' Academy Workshop

June
Starbucks Greener Apron certificate pilot program launched with **1,500** participants

Sustainability in Science Museums leads panel at Ecsite in Austria

July
First sustainABLE© kits introduced to museums worldwide

Sustainability in Science Museums presents at ICOM in Italy

August
Sustainability in Science Museums conducts workshop at Natural History Museum of Los Angeles County

September
Unveiling of Green Organics Regional Systems Design

Consortium led by ASU awarded $2 million for USAID Holistic Water Solutions in Lebanon & Jordan project

Sustainability in Science Museums conducts workshops in museums in Uruguay and Argentina

October
Pulitzer Prize-winning author and journalist Elizabeth Kolbert speaks at Imagination & Climate Futures Initiative

November
Online Teachers' Academy launches

Sustainability in Science Museums leads workshops in Durban, South Africa museum

- Overall Walton Initiatives
- Global Sustainability Solutions Services
- Executive Master of Sustainability Leadership
- Global Sustainability Studies Program
- Sustainability Solutions Festival
- Walton Sustainability Fellowship Program
- Sustainability in Science Museums
- National Sustainability Teachers' Academy

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