sustainability@asu

ASU JULIE ANN WRIGLEY
GLOBAL INSTITUTE *of* SUSTAINABILITY
ARIZONA STATE UNIVERSITY

the genesis of sustainability @ asu

ASU Charter

ASU is a comprehensive public research university, measured not by whom it excludes, but by whom it includes and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves.

Michael M. Crow
President, Arizona State University

Julie Ann Wrigley
President and CEO,
Wrigley Investments, LLC

S. Robson Walton
Chairman of the Board, Walmart

More than a decade ago, in 2004, Arizona State University President Michael M. Crow convened a meeting in Temozón, Mexico, that mobilized a small but distinguished group of intellectual leaders who were exploring a new idea – sustainability science.

These scientists and practitioners gathered to consider how a large, public research university could best commit itself to sustainability as a core value in its teaching, research and outreach activities. That discourse has guided the course of sustainability at ASU to this day, and includes these goals:

- *Teach students the ideas and tools they will need to solve sustainability problems.*
- *Identify and connect ASU faculty and staff concerned with sustainability as an academic field and a value.*
- *Brand ASU as a university that is committed to sharing ideas that will help solve sustainability challenges on local and global levels.*

Today, the Julie Ann Wrigley Global Institute of Sustainability is the hub for ASU's efforts in sustainability education, innovation and operations. We are shaping the field and transforming the world. Please join us.

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ARIZONA STATE UNIVERSITY

Biodesign Institute

W. P. Carey School of Business

Herberger Institute for Design and the Arts

Mary Lou Fulton Teachers College

Ira A. Fulton Schools of Engineering

Thunderbird School of Global Management

Graduate College

College of Health Solutions

Barrett, the Honors College

Walter Cronkite School of Journalism and Mass Communication

Sandra Day O'Connor College of Law

College of Letters and Sciences

College of Liberal Arts and Sciences

New College of Interdisciplinary Arts and Sciences

College of Nursing and Health Innovation

College of Public Service and Community Solutions

School of Sustainability

University College

sustainability@asu

ASU's sustainability commitment reaches across all colleges and institutes

creating a sustainable future

Universities have always played a special role in finding answers to critical issues, but to solve highly complex, global-scale sustainability challenges, universities must fundamentally change. At Arizona State University, we are committed to this goal.

We restructured our academic organization and established the Julie Ann Wrigley Global Institute of Sustainability. As part of the institute, we established the first-ever School of Sustainability in the United States. We believe that: sustainability should transcend all academic disciplines, the pace of discovery has to accelerate, and our institutions must educate leaders capable of solving sustainability problems across the world.

Gary Dirks
Director, ASU Wrigley Institute

Rob Melnick
Executive Director and COO, ASU Wrigley Institute and School of Sustainability

Christopher Boone
Dean, School of Sustainability

As we focus our efforts on sustainability education, outreach, research, solutions and operations, we know that:

- *Innovative thinking requires **transdisciplinarity** – a structure outside the normal rule – giving equal value to natural, built and social systems, along with human ideals.*
- *Collaboration and successful partnerships need structure, engagement and **a central place to convene**.*
- *Research must be **solution-focused and participatory**, involving stakeholders in the co-production of knowledge and embracing system innovation rather than optimization.*
- *To **build human capacity**, the next generation of scholars and practitioners must receive training and professional development, from K-12 through executive leadership and beyond.*

Sustainability at ASU spans every discipline, every department and every campus. Sustainability is a core value of the university.

Universities alone, however, cannot create a sustainable future. Sustainability will require the efforts of individuals and leaders at every level of society, from government and business to philanthropy and science. Together, we can change the world's trajectory, creating pathways to a better, more sustainable future.

history of sustainability @ asu

2002

Michael M. Crow becomes 16th president of Arizona State University

2004

Global sustainability leaders convene in Temozón, Mexico, to design ASU's sustainability initiatives

Global Institute of Sustainability established with $15 million gift from Julie Ann Wrigley

2006

School of Sustainability awarded charter by Arizona Board of Regents

2007

First semester begins for School of Sustainability

2008

College of Nursing building rededicated as headquarters for Global Institute of Sustainability

School of Sustainability awards nation's first master's degree in sustainability

2009

School of Sustainability honors its first class of 13 graduates

Four new professorships established with $10 million investment from Julie Ann Wrigley

2010

Undergraduate minor in sustainability launched

2011

Global Institute of Sustainability headquarters renamed Wrigley Hall

ASU formalizes community of Sustainability Scientists and Scholars

2012

Rob and Melani Walton Sustainability Solutions Initiatives launched with $27.5 million investment

2013

First cohort begins Master's in Sustainable Solutions program

Executive Master's for Sustainability Leadership launched

2014

ASU renames Institute to Julie Ann Wrigley Global Institute of Sustainability in honor of founding benefactor

As the hub of ASU's sustainability initiatives, the Julie Ann Wrigley Global Institute of Sustainability advances research, education and business practices.

education

Arizona State University's School of Sustainability is the **first of its kind** in the U.S.: a comprehensive degree-granting program with a transdisciplinary focus on finding real-world solutions to social, economic and environmental challenges.

outreach

Sustainability partnerships and innovative outreach events connect the university with **diverse communities locally, nationally and globally** to engage individuals and communities in projects and dialogues to address sustainability challenges.

research

Arizona State University conducts **use-inspired research,** developing practical solutions to some of the most pressing social, economic and environmental challenges of sustainability, especially as they relate to urban areas.

solutions

The institute connects researchers with each other and with practitioners from business, industry, municipalities and government to **collaborate on solutions for sustainability challenges** of urban growth, environmental protection, resource management and social and economic development.

operations

Guided by four overarching sustainability goals – climate neutrality, zero solid and water waste, active engagement and principled practice – Arizona State University is **a model for sustainability operations and practices** around the country.

education

School of Sustainability

ASU's School of Sustainability is the first of its kind in the U.S.: a comprehensive degree-granting program with a transdisciplinary focus on finding real-world solutions to social, economic and environmental challenges.

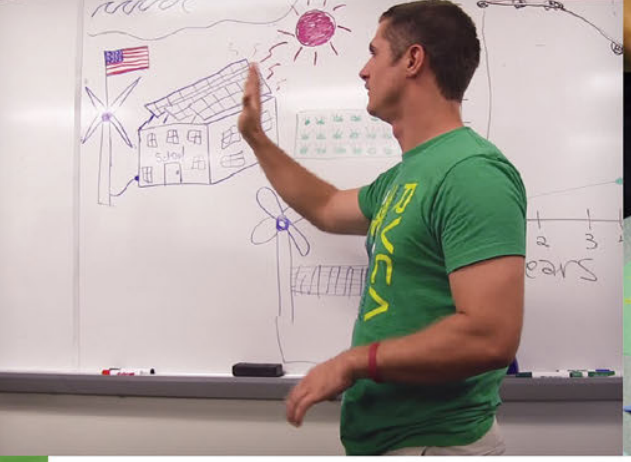
Its mission is to bring together multiple disciplines and leaders to create and share knowledge, train a new generation of scholars and practitioners and develop practical solutions to some of the most pressing challenges of sustainability.

Study in the School of Sustainability emphasizes experiential learning, research with faculty, corporate and K-12 work, community service and leadership development. With graduate and undergraduate offerings online and in person, the school offers bachelor's, master's and doctoral degrees in sustainability.

The School of Sustainability is a unit of the Julie Ann Wrigley Global Institute of Sustainability.
schoolofsustainability.asu.edu

Areas of Study

- Business practices and economics
- Climate change and adaptation
- Ecosystem alteration and biodiversity
- Energy, materials and technology
- Food systems
- Future scenarios and systems thinking
- International development
- Policy and governance
- Social and behavioral change, ethics
- Urbanization
- Water quality, use and supply



Sustainability Science Education for Teachers

This course was founded on the idea that attaining a sustainable future can be achieved one classroom at a time by informed and dedicated teachers.

The mission of the course is to empower K-8 teachers with an understanding of how science, technology, design and effective governance can create a sustainable society, and provide them with the ability to translate these concepts to their classrooms

Part of producing globally minded and knowledgeable citizens, teachers share a responsibility in addressing sustainability topics with the next generation of scientists, politicians, inventors, citizens and leaders – those who will be faced with solving sustainability challenges as these problems become increasingly complex and urgent. This course equips teachers to educate future generations to understand the challenges that they face and the potential solutions within their grasp.

The Sustainability Science Education Project is a partnership of the Mary Lou Fulton Teachers College, the Biodesign Institute and the School of Sustainability.
sse.asu.edu

"Our mission in creating this course was to create something that would engage the teachers-in-training deeply enough that they would want to teach this when they go out in the field. We need somehow, in the course of a semester to not only get them engaged and interested, but also to see the relevance of sustainability for their own classroom."

—Lee Hartwell*, Virginia G. Piper Chair in Personalized Medicine, Center for Sustainable Health*

Executive Master's for Sustainability Leadership

The Executive Master's for Sustainability Leadership is a unique curriculum designed to teach organizational leadership skills through the lens of sustainability. It provides mid-career professionals and executives with practical, actionable tools to embed sustainability in their organizations.

The 13-month program combines in-person and virtual learning experiences that focus on strategy, leadership, global context and communication skills. The program's curriculum was created in partnership with academic and industry leaders, including ASU's W. P. Carey School of Business, home to one of the nation's top-ranked executive MBA programs.

The Executive Master's was launched in 2013 through a webinar viewed by over 500 mid-career professionals and executives. Students from across the U.S. and around the world have enrolled to learn to embed sustainability in their organizations. The program engages its students with an elite network of peers and mentors – like-minded professionals with diverse backgrounds who will network with and support the students beyond graduation to become agents for long-term change and create positive outcomes around the world.

The Rob and Melani Walton Sustainability Solutions Initiatives are made possible by a generous investment by the Rob and Melani Walton Fund of the Walton Family Foundation.

leadersinsustainability.asu.edu
sustainabilitysolutions.asu.edu

Sustainability Storytelling

A film documentary course co-listed in the School of Sustainability and the Walter Cronkite School of Journalism and Mass Communication is taught by Peter Byck, director of the critically acclaimed documentary, “Carbon Nation.” ***cronkite.asu.edu***

Community Solutions

The College of Public Service and Community Solutions offers a Creative City Certificate focusing on cultural innovation, placemaking and social and economic entrepreneurship. The college also offers a master’s degree in sustainable tourism. ***publicservice.asu.edu***

Environmental Design

Herberger Institute offers a doctoral program in design, environment and the arts that addresses sustainable design challenges and interdisciplinary research. The institute also offers a master of science in the built environment degree with a concentration in energy performance and climate-responsive architecture. ***herbergerinstitute.asu.edu***

SustainabilityConnect

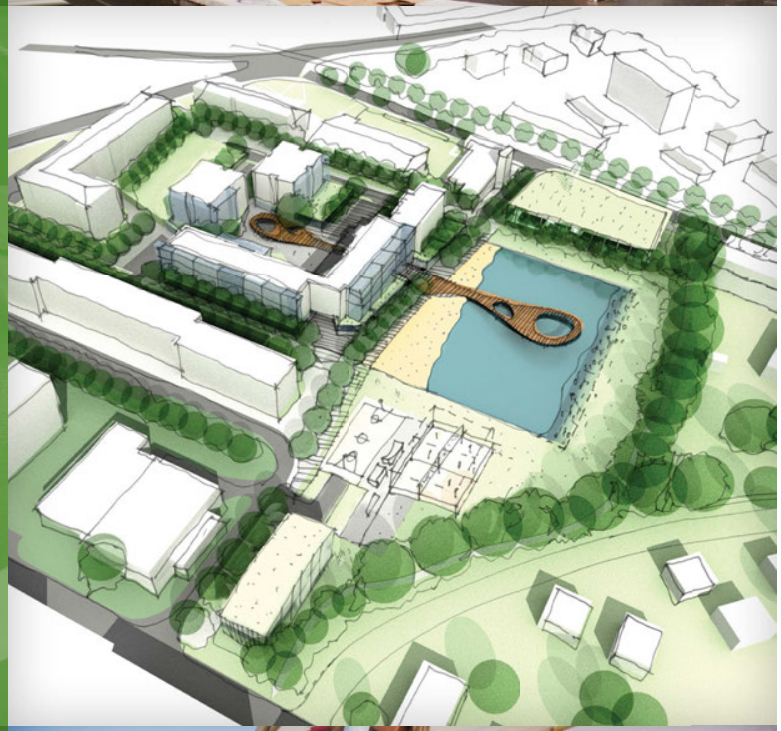
The SustainabilityConnect website brings together individuals from Arizona State University with professionals in the community to work collaboratively on sustainability issues, while providing students with internships and applied projects. ***sustainabilityconnect.asu.edu***

Study Abroad

The ASU Study Abroad Office administers programs in over 55 countries, totaling more than 250 different programs. Students have studied sustainability in Australia, Brazil, Chile, China, Ecuador, England, France, Germany, Guatemala, Italy, Morocco, New Zealand, Spain, Switzerland, the United Arab Emirates and more. ***studyabroad.asu.edu***

Professional and Custom Education

The School of Sustainability offers custom education and training programs to help companies, governments and non-governmental organizations achieve their sustainability goals. Custom programs can be administered to small or large groups, online or through face-to-face instruction. ***sos.asu.edu/sustainabilityskills***



Global Collaboration

Launched in 2012, an ASU partnership with Leuphana University in Germany allows students to collaborate across oceans. The model has evolved to focus on collaboration for sustainability education and research outcomes and expanded to encompass other university affiliations. ***sos.asu.edu/global-collaboration***

USAID Research and Innovation Fellowships

In partnership with the U.S. Agency for International Development Global Development Lab, ASU offers top graduate students the opportunity to work in developing countries on solutions to development challenges. ***usaidrifellowships.asu.edu***

Sustainable Engineering

The Ira A. Fulton Schools of Engineering offer programs and courses ranging from management of environmental resources, to biomedical engineering, to humanitarian engineering, to energy and materials science, to construction engineering and management. ***engineering.asu.edu***

Business Sustainability

Students in the W. P. Carey School of Business can learn about sustainability as it applies to supply chain management, resource economics, entrepreneurship and more. The school also offers an undergraduate concentration in sustainability. ***wpcarey.asu.edu***

Interdisciplinary Arts and Sciences

The School of Mathematical and Natural Sciences offers a degree in life sciences with a concentration in environmental science; the degree is available to students at the West campus and through ASU Colleges in Lake Havasu City. ***newcollege.asu.edu***

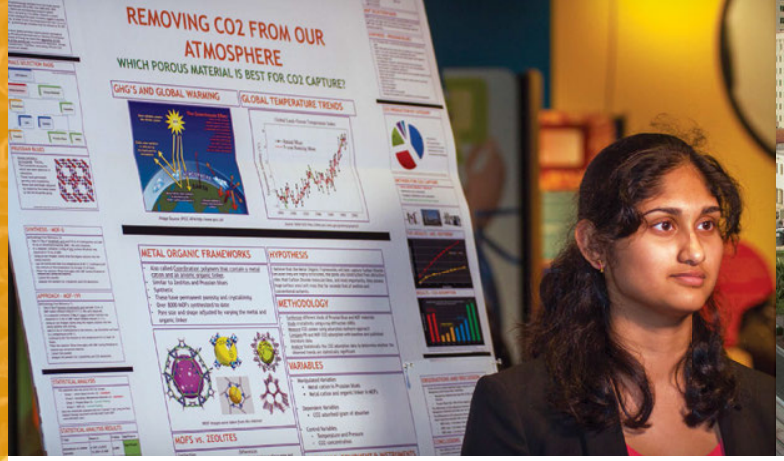
Geographical Sciences and Urban Planning

The School of Geographical Sciences and Urban Planning offers sustainability-related degrees, including bachelor's and master's degrees in urban and environmental planning, a master's in geography and doctoral degrees in urban planning and geography. ***geoplan.asu.edu***

Applied Biological Sciences

The College of Letters and Sciences offers undergraduate and graduate degrees in applied biological sciences, with areas of focus including applied ecology and sustainable horticulture. ***cls.asu.edu***

outreach



Sustainability Solutions Festival

The Sustainability Solutions Festival convenes the planet's top sustainability events and organizations for one week every year to discover and explore how we can individually and collectively reimagine our lives and our planet.

During the festival, Arizona becomes the epicenter of the sustainability universe as business leaders, students, families and creative thinkers gather to celebrate and honor solutions to the world's toughest issues. The festival includes conferences that convene leaders in sustainability theory and practice, community gatherings for all ages at locations around Phoenix and Tempe, and a variety of related events.

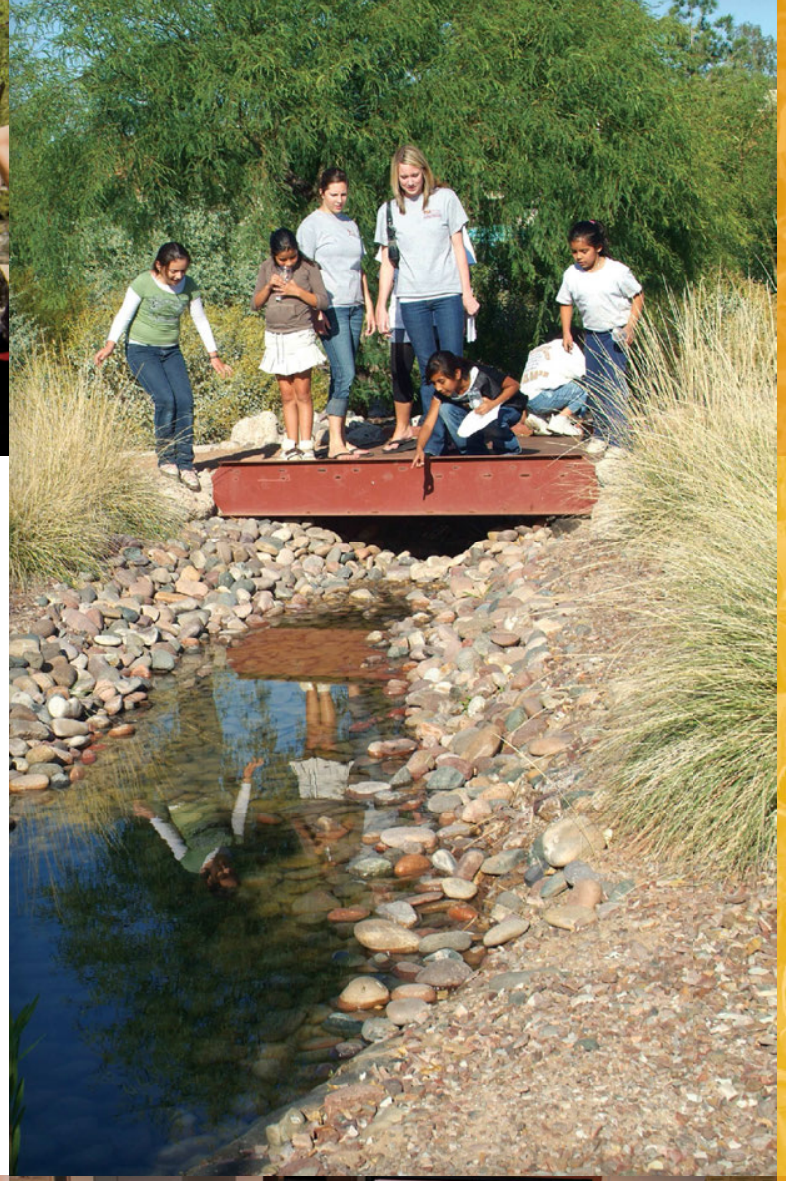
The week-long event has an annual goal to engage 10,000 people of all ages and backgrounds. The festival also participates in competitions and events throughout the year, partnering with programs and organizations that support and honor students, creative thinkers, researchers and entrepreneurs locally, nationally and internationally.

The Rob and Melani Walton Sustainability Solutions Initiatives are made possible by a generous investment by the Rob and Melani Walton Fund of the Walton Family Foundation.

sustainabilityfestival.asu.edu
sustainabilitysolutions.asu.edu

GreenBiz Forum

A regular partner and signature event of the Sustainability Solutions Festival, GreenBiz Forum brings together vast networks, insights and domain expertise for several days of impactful stage presentations, workshops and networking opportunities. The brightest thinkers and most influential leaders in business and sustainability provide an unparalleled in-depth look at the key challenges and opportunities facing sustainable business today.



Ecology Explorers

Ecology Explorers gives Phoenix area K-12 teachers and students opportunities to learn through real scientific research. More than 75 schools throughout the Phoenix metropolitan area participate in the program.

Participating students learn to study local ecology like a professional scientist. Teachers can take advantage of workshops, lesson plans and other resources developed by the program to tie in with required science education standards. ASU undergraduate students also participate in the program by sharing Ecology Explorers lessons and activities, both in classrooms and through afterschool programs, especially in underserved communities.

In their backyards and schoolyards, students collect scientific data that contributes to ASU research on the Phoenix ecosystem. The combined findings from participating research sites show patterns in nature that exist across the Phoenix metropolitan area.

ecologyexplorers.asu.edu

Sustainable Cities Network

ASU's Sustainable Cities Network works to advance and implement sustainability as a core value throughout city planning, development, policy and operations.

The network brings together Arizona cities, towns, tribal communities and county governments to share best practices in sustainability, provide training and information, and bridge ASU's research with front-line sustainability challenges facing cities to explore and implement solutions.

The Sustainable Cities Network helps cities to leverage information and connections and empowers them to accelerate change.

The Sustainable Cities Network is a unit of the Julie Ann Wrigley Global Institute of Sustainability.
sustainablecities.asu.edu

"With help from the network, City of Mesa has been able to make educated decisions on current energy efficiency projects and move forward on a $1 million streetlight retrofit program."

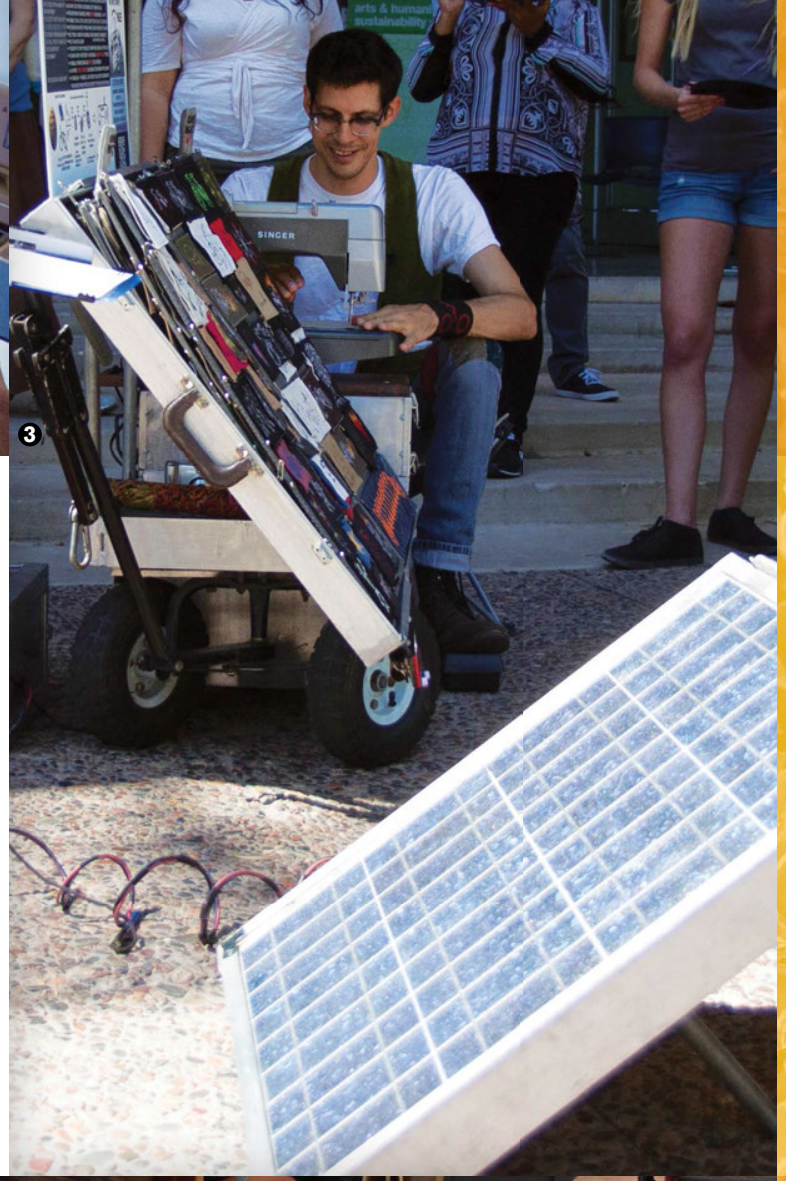
***—Scott Bouchie**, City of Mesa Deputy Director*

Low Impact Development Toolbox

As part of SCN community discussions on green infrastructure, the cities of Mesa and Glendale have collaborated to develop a Low Impact Development Toolbox, which they call LID Tools.

LID Tools include new and innovative practices to reduce the detrimental impact of an urban development pattern on stormwater quality and quantity, while converting stormwater to a resource that supports the creation of a high-quality, sustainable built environment.

Mesa and Glendale partner with the Sustainable Cities Network on outreach and education related to their work, in an effort to standardize LID practices throughout the region.



Arts & Humanities in Sustainability

Through a partnership between the ASU Wrigley Institute, the Institute for Humanities Research, ASU Art Museum and Herberger Institute for Design and the Arts, this series examines sustainability concepts through a diverse range of ideas, emotions, actions and contexts.

Río Canción ❶ featured artwork created by Honduran youth at a workshop on cyanotype – a method of photography that uses sunlight and natural materials.

In a clean-energy event called ***Sustainability Stories with the Solar Sewing Rover*** ❷ ❸, visual artist Paul Nosa created one-of-a-kind patches depicting audience suggestions using his solar-powered portable sewing machine.

A sustainable wood art exhibition, ***Prototypical*** ❹ ❺ featured prototypes by ASU students that melded art with functional design using a biodegradable, adhesive-free composite medium.

Wrigley Lecture Series

Funded through the generous support of Julie Ann Wrigley, the Wrigley Lecture Series brings internationally known thinkers and problem-solvers to ASU to engage directly with students and the larger sustainability community.

Sustainability Series

Sustainability Series speakers discuss a range of environmental, social and economic topics at these events, sponsored or co-sponsored by the ASU Wrigley Institute.

Case Critical

Experts engage in solution-based discussions focusing on the environmental, social and economic implications of high-stakes threats and breaking-news issues.

Sustainability After School

School of Sustainability students and alumni learn from career experts and industry leaders who offer real tools, knowledge and experiences for working in sustainability in the real world.

Carbon Nation™ Conversations

Carbon Nation Conversations, hosted by Carbon Nation™ Director and Producer Peter Byck, are climate-change solution conversations (that don't even care if you believe in climate change).

Sustainability events take place across the university and are often sponsored or co-sponsored by the Julie Ann Wrigley Global Institute of Sustainability.
sustainability.asu.edu/events

research

Sustainability Scientists and Scholars

Arizona State University established its community of sustainability scientists and scholars to accelerate the pace of discovery in the field of sustainability. Experts from across the university integrate practical experience with knowledge and action drawn from the spectrum of disciplines in the natural and social sciences, medicine, engineering, mathematics, humanities and the arts.

By formalizing this community, ASU leverages the broad reach of its sustainability activities and education. Initiated in 2011 with 215 faculty members, Arizona State University's community of sustainability scientists and scholars now numbers over 300 and is growing rapidly, with plans to extend the community beyond institutional and international boundaries.

To foster increased collaboration among ASU's growing number of sustainability scientists and scholars, the Julie Ann Wrigley Global Institute of Sustainability provides research proposal services, meeting space, telecommunications facilities, technical and communications support and general administrative assistance.

The community of sustainability scientists and scholars continues to grow. To learn more about services available, or to nominate a scientist or scholar, visit ***sustainability.asu.edu/concierge***.

Sustainability Headquarters

Headquarters of the Julie Ann Wrigley Global Institute of Sustainability, Wrigley Hall is the convening spot for sustainability scientists and scholars from across the university. The building offers videoconferencing space, private offices by appointment, a quiet coffee lounge for informal conversations and a concierge to arrange services as needed. Renovated in 2007-08, Wrigley Hall is a LEED silver-certified building.

Central Arizona—Phoenix Long-Term Ecological Research

The Central Arizona–Phoenix Long-Term Ecological Research (CAP LTER) program advances research and education on urban ecology and urban socioecological systems. Launched in 1997, it is one of two LTER sites funded by the National Science Foundation that specifically studies urban ecology. In total, there are 24 NSF-sponsored LTER sites in the United States.

CAP LTER researchers investigate the urban socioecological system in a metropolitan area that includes the nation's sixth largest city, Phoenix. Biological, physical, engineering and social scientists conduct research that provides a foundation for understanding sustainability in an arid, rapidly growing metropolitan area.

Educating the next generation of urban ecologists is a core mission of CAP LTER. The Ecology Explorers program engages K-12 students and teachers, while undergraduate and graduate students are active researchers whose work is published in leading scientific publications.

The Central Arizona–Phoenix Long-Term Ecological Research project is a unit of the Julie Ann Wrigley Global Institute of Sustainability.
caplter.asu.edu

Tres Rios Wetlands

The Tres Rios wetlands, constructed by the city of Phoenix as an alternative to traditional wastewater treatment, are a living laboratory for CAP LTER scientists. Researchers investigate how these wetlands treat wastewater in an arid environment through understanding the function of wetland plant species. These studies involve high school, undergraduate and graduate students in field and lab work. Research results are communicated to the city of Phoenix to inform management of the wetlands.

Decision Center for a Desert City

The Decision Center for a Desert City advances scientific understanding of environmental decision-making under conditions of uncertainty. Established in 2004, DCDC conducts climate, water and decision research and develops innovative tools to bridge the boundary between scientists and decision-makers, with the goal of providing useful information to those whose concern is for the sustainable future of Greater Phoenix.

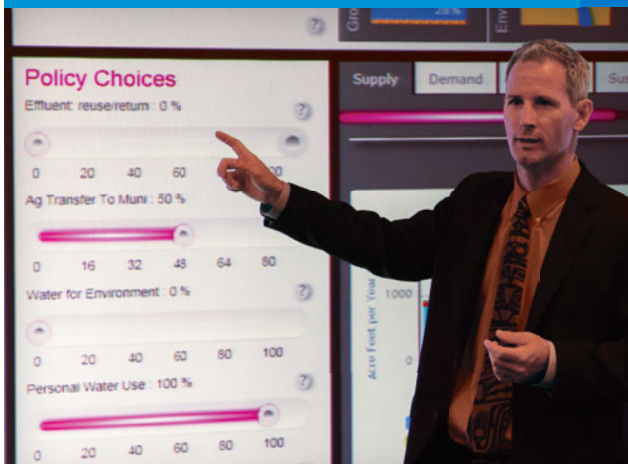
With a focus on water sustainability and urban climate adaptation, DCDC researchers work to develop and implement decision-support processes for environmental decision-making. Through an integrated approach to research and education, DCDC trains a new generation of scientists who work successfully at the boundaries of science and policy and builds bridges between science and policy to foster local-to-global sustainability solutions.

Reaching out to communities of students, educators, public and private agencies and elected officials is vital to the center's mission of linking science and societal action. Outreach enriches research efforts and provides valuable experiences for students.

The Decision Center for a Desert City
is a unit of the Julie Ann Wrigley
Global Institute of Sustainability.
dcdc.asu.edu

WaterSim

WaterSim is a computer-simulation model that allows researchers, policy managers and the general public to investigate how alternative climate conditions, rates of population growth and policy choices interact to affect future water supply and demand conditions in Phoenix. WaterSim is available in three ways: WaterSim in the Decision Theater, WaterSim on the Web and WaterSim API, a public domain model programming interface.



Institute for Humanities Research

Established in 2005, the Institute for Humanities Research promotes excellence and innovation in humanities scholarship through research and community engagement. Using historical, philosophical and creative perspectives, the institute's scholars explore such concepts as sustainability, human origins, immigration and natural disasters.

Through the institute's transdisciplinary research, ASU humanities scholars of art, theater, literature, film and media studies, history, philosophy and religion collaborate regularly with engineers, biologists, geographers, social scientists and others – applying a humanities perspective to research projects in many fields.

Since 2007, the IHR has been supporting scholars working across disciplinary lines to articulate the role of the humanities in environmental issues. Humanists focus on ideas, values, language, culture and history to understand humans' beliefs about their relationship to nature and inform human policy and development toward a responsible, sustainable future.

The Institute for Humanities Research is a research unit of the College of Liberal Arts and Sciences.
ihr.asu.edu

Humanities for the Environment

This global project was funded by the Andrew W. Mellon Foundation to identify, explore and demonstrate the contributions that humanistic and artistic disciplines can make to understanding and engaging with global environmental challenges. The project's North American Observatory, based at ASU, is a growing network of humanists whose work engages with both the science and the public aspects of sustainability.

LightWorks

Since its inception, LightWorks has provided solutions to the world's most pressing global energy challenges through a simple idea: energy from sunlight. ASU LightWorks discovers and invents energy solutions to the world's fuel, electric and social challenges.

LightWorks pulls light-inspired research at Arizona State University under one strategic framework. It is a multidisciplinary effort to leverage ASU's unique strengths, particularly in renewable energy fields including artificial photosynthesis, biofuels and next-generation photovoltaics.

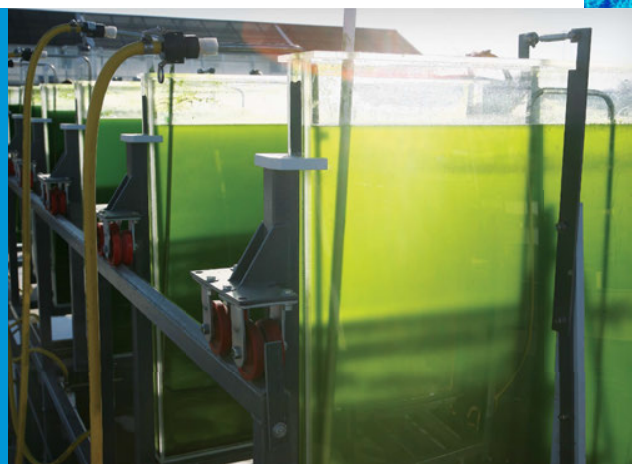
The LightWorks initiative brings together a broad spectrum of expertise and resources from the university and external partners to revolutionize the use of energy and the large-scale conversion of sunlight, carbon dioxide and water into useful products.

LightWorks is a unit of the Julie Ann Wrigley Global Institute of Sustainability.
asulightworks.com

With over 300 sunny days each year, Arizona has the potential to be the nation's leader in solar energy.

AzCATI

The Arizona Center for Algae Technology and Innovation partners with the rapidly growing algae industry to propel Arizona into the forefront of innovation in biofuels and bio-product research and development. AzCATI serves as a statewide and international intellectual and resource hub for algae-based goods, finds innovative commercial uses for algae and operates as a learning environment for next-generation scientists. It facilitates collaboration between higher education, industry and national entities and is a national test bed for algae technology.



Kyl Center for Water Policy

The Kyl Center for Water Policy at Morrison Institute, launched in 2014 with a gift from the Morrison family, serves as a forum for public evaluation and public education. The center generates policy proposals to be evaluated by the public and considered for possible action or adoption.

As an Arizona State University resource, the Kyl Center promotes research, analysis, collaboration and open dialogue, with the goal of ensuring sound water stewardship for Arizona and the Western region for generations to come.

Welcoming input from the public, public utilities, private water companies, urban and rural interests, agriculture, conservationists, environmentalists, recreationists, industry and tribes, the center works to identify opportunities for consensus, collaboratively addressing many of the state's water challenges.

The Kyl Center for Water Policy is a unit of the Morrison Institute for Public Policy, part of the College of Public Service and Community Solutions.
morrisoninstitute.asu.edu

"The whole concept of the Kyl Center is to be a facilitator for everyone who wants to get together to work on [long-term water] problems. Anyone is welcome."

***—Jon Kyl**, Former U.S. Senator*

Walton Sustainability Fellowship Program

This program gathers the brightest minds from across the globe to collaborate with the Arizona State University community on novel research, projects and solutions that identify scalable global impacts and benefits that address the world's toughest problems.

Walton Fellows represent the highest level of practitioners and scholars from business, government, non-governmental organizations, universities, and public and nonprofit research institutions.

Each fellow brings unique expertise and perspective to sustainability to blend with ASU students, faculty, researchers and staff as they explore, discuss and develop new approaches to the economic, social and environmental challenges that our planet confronts each day.

The Rob and Melani Walton Sustainability Solutions Initiatives are made possible by a generous investment by the Rob and Melani Walton Fund of the Walton Family Foundation.

sustainabilitysolutions.asu.edu

Imagination and Climate Futures Initiative

A collaboration of the Walton Initiatives, the Virginia G. Piper Center for Creative Writing and the Center for Science and the Imagination, this initiative explores how the literary genre of climate fiction shapes our imagination, how it relates to climate science and how it might affect social and political life. The initiative combines future-oriented science with human imagination through its research, education and public outreach. The program welcomed world-renowned author Margaret Atwood as its first lecturer in 2014.

Swette Center for Environmental Biotechnology

Center researchers combine engineering with microbiology, molecular biology and chemistry to gain an integrated understanding of how microbial ecosystems work and can be optimized to reclaim polluted water, generate new sources of clean, renewable energy and improve public health and sustainability. ***environmentalbiotechnology.org***

Complexity Science @ ASU

This initiative focuses the university's growing interdisciplinary strengths on solving complex global challenges – in areas such as health, sustainability, security and education – where a novel approach is required and an integrated effort is essential. ***complexity.asu.edu***

Center for Biology and Society

Committed to drawing from the liberal arts and sciences while promoting excellence in teaching, research and engagement with the larger community, this center promotes research and education related to study of the life sciences and their interconnections with society. ***cbs.asu.edu***

Center for Environmental Economics and Sustainability Policy

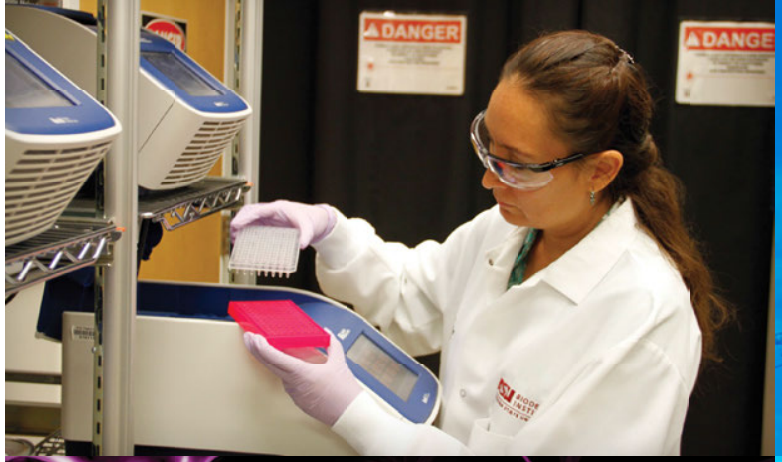
Developing research in environmental and resource economics that is relevant to policy needs, this center pays special attention to sustainability in the context of environmental, energy and resource management. ***research.wpcarey.asu.edu/ceesp***

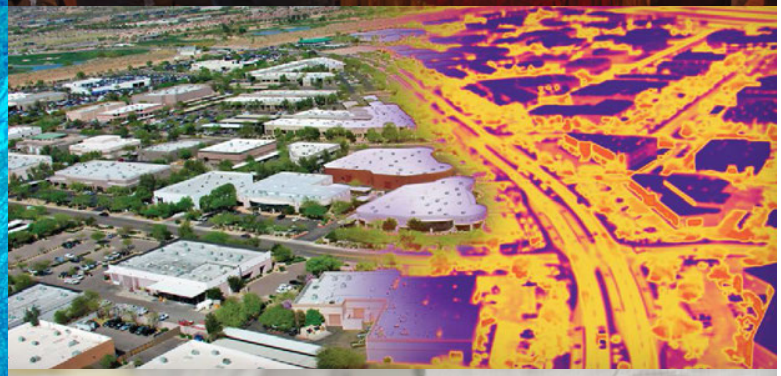
Urbanization and Global Environmental Change

This project works to understand the interactions and feedbacks between global environmental change and urbanization at the local, regional and global scales. UGEC translates abstract knowledge about global environmental change into a local context to aid decision-making. ***ugec.org***

Center for Law, Science and Innovation

The first and largest academic center focused on the intersection of law with science and technology, this center explores innovations in law and policy, fostering the development of legal frameworks for a world of rapidly changing technologies and advancing the informed use of science in legal decision-making. ***law.asu.edu/lsi***





Consortium for Science, Policy and Outcomes

This intellectual network includes faculty and staff from across ASU, as well as groups from universities around the world. The consortium works to enhance the contribution of science and technology to society's pursuit of equality, justice, freedom and overall quality of life. ***cspo.org***

LiveData

This initiative, funded by the Arizona Board of Regents, seeks to improve research data management within the three public universities in Arizona by producing shared infrastructure and functionality to benefit all three institutions and provide a competitive advantage for researchers and faculty within the Arizona university system. ***sustainability.asu.edu/live-data***

National Center of Excellence on SMART Innovations

Providing climate and energy system solutions to governments and industries around the globe, this center's research seeks to quantify complex climate-energy system interactions throughout all phases of a product or technology's life cycle and to develop cost-effective solutions to reduce any negative impacts. ***ncesmart.asu.edu***

Food Systems Transformation

This initiative connects community partners – to ASU and to each other – and supports them through solutions-focused, transdisciplinary research. The goal of the initiative is to create more equitable, diverse and resilient food systems. ***foodsystems.asu.edu***

Biomimicry Center at ASU

This center brings together biologists, designers, engineers, business professionals, communicators, material scientists, chemists and others to address sustainability challenges using strategies inspired by nature. A collaboration between ASU and the consulting and training firm Biomimicry 3.8, this center's education and research programs work to create sustainable solutions by emulating biological forms and strategies. ***biomimicry.asu.edu***

solutions

Global Sustainability Solutions Services

Established in 2012, the Global Sustainability Solutions Services provide practical, effective and affordable solutions to help governments, businesses, nonprofits and communities define, analyze and solve the economic, social and environmental sustainability challenges they face every day.

Through its work with external partners, the initiative strives to educate, discover solutions and implement practices that will help people drive the transition to a sustainable world. The initiative offers expertise in international development, sustainable business practices, energy and resource efficiency and systems analysis, and functions as an access point to more than 300 sustainability scientists and scholars across the university.

The initiative provides services including green building assessment, greenhouse gas and resource mapping and assessment, regional sustainability and circular economic planning, waste and natural resource management and innovation, circular materials product research and development, education and research, and national energy strategies.

The Rob and Melani Walton Sustainability Solutions Initiatives are made possible by a generous investment by the Rob and Melani Walton Fund of the Walton Family Foundation.

sustainabilitysolutions.asu.edu

Resource Innovation and Solutions Network

Recognizing the opportunity to transform waste from trash into a resource, the city of Phoenix set a goal to divert 40 percent of its waste away from the landfill by 2020 and partnered with ASU to develop the Resource Innovation and Solutions Network. Now a global network of public and private partners, RISN focuses on creating value and economic development opportunities from solid waste streams.

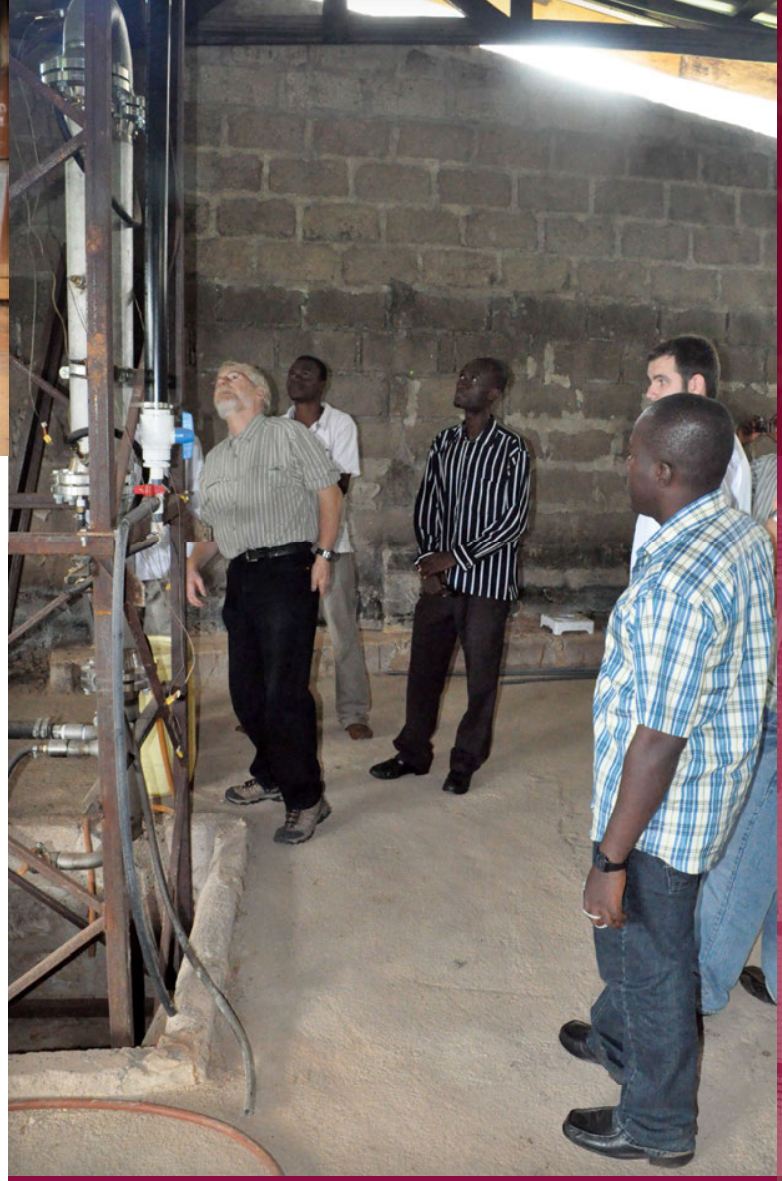
GlobalResolve

GlobalResolve is a social entrepreneurship program that helps communities around the world solve challenges through sustainable research and development. Established in 2006, the program involves Arizona State University students in semester-long projects that directly improve the lives of underprivileged people and people in under-developed nations throughout the world.

Through GlobalResolve, ASU students and faculty collaborate with international universities, residents of rural villages, local governments, financial institutions and non-governmental organizations to develop and disseminate no-tech, low-tech and high-tech solutions that address pressing public health or environmental needs.

Because solutions developed by GlobalResolve are designed to be replicable locally, regionally and internationally, the solutions also create the potential for profitable new business ventures that generate sustainable income streams for impacted populations.

GlobalResolve is a unit of the Ira A. Fulton Schools of Engineering, in partnership with the Julie Ann Wrigley Global Institute of Sustainability.
globalresolve.asu.edu



Gel Fuel Production in Ghana

In a village that once cooked over smoky indoor fires, GlobalResolve has partnered with the village chief to produce a smokeless gel fuel made from locally acquired corn. The resulting product reduces indoor air pollution, improves health effects and stimulates local economic activity.

Center for Sustainable Health

The mission of the Center for Sustainable Health is to sustain health through the prevention and early detection of disease to improve health outcomes at lower costs. The center was established in 2009 on the belief that health systems must shift their current focus from expensive and ineffective late-stage disease response toward more outcome-based and cost-effective prevention and early intervention strategies.

The center's research has focused on molecular diagnostics for early detection and behavioral intervention for the prevention of lifestyle diseases such as cancer, diabetes, heart disease and neurodegenerative diseases.

Through Project HoneyBee, the center contributes to and capitalizes on recent advances in digital health, using technologies to dramatically improve our ability to detect, diagnose and prevent disease through effective, evidence-based solutions to sustaining health for generations to come.

The Center for Sustainable Health is a unit of the Biodesign Institute, in partnership with the W. P. Carey School of Business, the Ira A. Fulton Schools of Engineering and the College of Health Solutions at ASU.
sustainablehealth.org

Project HoneyBee

The honeybee is nature's best collector and communicator of data and serves as an inspirational model for the collection and validation of data to sustain human health. Project HoneyBee uses biosensors to continuously record physiological parameters, using the collected data to pinpoint the transition from health to disease and intervene more effectively for improved health outcomes at a reduced cost.

American Indian Policy Institute

The institute works with tribal governments to identify their needs and collaborates on transdisciplinary, participatory research and tribally-driven solutions. Its work empowers tribes, tribal communities and American Indian students through projects that support self-determination and build tribal capacity. ***aipi.clas.asu.edu***

Center for Biodiversity Outcomes

This center integrates research from many disciplines and brings together researchers, policy makers and community members to identify viable solutions to biodiversity through resource management, policy change and process change. ***biodiversity.asu.edu***

Entrepreneurship and Innovation at ASU

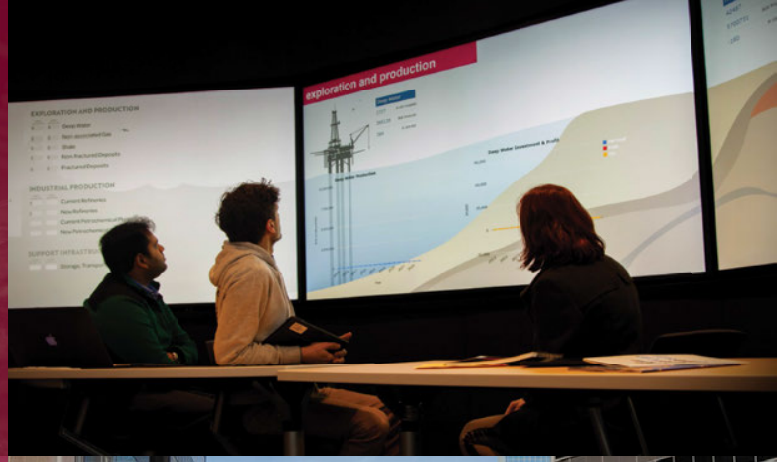
ASU is committed to entrepreneurship and innovation throughout the institution. The university supports students, faculty and members of the ASU community through programs including innovation challenges, startup bootcamp experiences, the Furnace Technology Accelerator, the ASU incubator and the Edson Student Entrepreneur Initiative. ***entrepreneurship.asu.edu***

Energy Policy Innovation Council

Through policy briefs, informative videos and custom reports and presentations to policymakers at the municipal, county and state levels, this group informs and educates policymakers on current, complex issues in energy policy that impact Arizona and beyond. ***energypolicy.asu.edu***

Quantum Energy and Sustainable Solar Technologies

By accelerating commercialization of solar energy technologies through industry partnerships and expanding opportunities for education in energy engineering, QESST works to address one of society's greatest challenges: sustainably transforming electricity generation to meet the growing demand for energy. ***qesst.asu.edu***



Decision Theater Network

The Decision Theater Network actively engages researchers and leaders to visualize solutions to complex problems. By providing expertise in collaborative, computing and display technologies for data visualization, modeling and simulation, this network addresses cross-disciplinary local, national and international issues. ***dt.asu.edu***

The Sustainability Consortium

Comprised of more than 90 members – including non-governmental organizations, civil society and corporations from all corners of business – The Sustainability Consortium is jointly administered by ASU and the University of Arkansas. The global organization develops transparent methodologies, tools and strategies to drive consumer product sustainability. ***sustainabilityconsortium.org***

Reinvent PHX

Through this partnership with ASU and Saint Luke's Health Initiative, the city of Phoenix is engaging with neighborhoods near light rail stations to create safe, convenient, affordable and comfortable environments for walking, bicycling and using public transit. Building on existing neighborhood assets, the project develops long-range plans to create attainable, opportunity-rich communities. ***reinventphx.org***

Stardust Center for Affordable Homes and the Family

Stardust Center addresses economic and social sustainability by providing educational opportunities like outreach events, university-level courses and community resources that inform and promote sustainable, affordable housing. ***stardust.asu.edu***

Center for World Health Promotion and Disease Prevention

This center, a shared unit of the College of Nursing and Health Innovation and the College of Health Solutions, develops collaborations and implements culturally responsive health promotion and disease prevention interventions across the life continuum for the purpose of improving physical and mental health outcomes across the globe. ***chs.asu.edu/worldhealth***

operations

Maintaining a sustainable campus

Integrating sustainability into the campus environment reduces consumption and waste and enhances the quality of life for students, faculty and staff. ASU campuses house a variety of buildings, programs and design elements that demonstrate the university's innovative approach to sustainable operations.

Green building design reduces environmental impacts and operating costs while improving worker productivity and well-being. ASU is committed to at least Leadership in Energy and Environmental Design (LEED) Silver certification – incorporating energy and water efficiency, reducing waste and emissions, improving indoor environmental quality and stewarding resources – for all new university-owned and operated buildings.

ASU works to use services and products that are more sustainable and reuses materials whenever possible. For the maintenance of campus grounds, natural pest control methods are the first line of defense, and most watering takes place at night to minimize water loss through evaporation. Inside buildings, virtually all cleaning products are green-certified. From gardening to painting to building signage, materials reuse is common practice.

The university's purchasing policy supports this commitment. ASU's comprehensive Green Purchasing Policy covers energy, water, toxins and pollutants, bio-based products, forest conservation, recycling, packaging, green building and landscaping.

ASU Facilities Development and Management is responsible for university facilities, infrastructure and grounds, and manages planning, design, construction, renovation, maintenance and repair at each Arizona State University campus. ***cfo.asu.edu/fdm***

Conserving and generating energy

ASU has committed to eliminating 100 percent of its greenhouse gas emissions from building energy- and waste-related sources by 2025. A large portion of these reductions are already taking place through reduced energy consumption, increased energy efficiency and increased use of renewable energy.

By making utilities upgrades, ASU has decreased electrical and natural gas consumption as well as the use of chilled water for cooling. In addition, the university has established room temperature guidelines for its classrooms and offices and adheres to best power management practices for its computers and printers.

ASU has the largest solar capacity of any university in the U.S., with over 81,000 solar panels that generate about 50 percent of ASU's daytime peak load. Solar installations can be found on all four campus locations and the ASU Research Park and include panels that shade thousands of parking spaces, hundreds of stadium seats as well as busy walkways in front of the Memorial Union and along Gammage Parkway.

ASU's Solarization program is administered by ASU Facilities Development and Management, which is responsible for planning, design, installation and operation of ASU's solar systems.
asusolar.asu.edu

Healthy, local, sustainable food

ASU works to achieve sustainability in its food services through healthy food, responsible procurement, waste stream management, energy and water conservation, green buildings and transportation.

On the Tempe campus, Sun Devil Dining's signature location is Engrained Café, serving locally grown and harvested food made to order. Organic produce, fair-trade coffee, cage-free eggs, all-natural chicken and sustainable seafood are available from a seasonal menu. The café displays information about local farms and provides tips to help patrons incorporate eco-conscious behaviors into daily life.

A program called Campus Harvest engages the ASU community in planting and harvesting food from ASU's extensive urban campus to provide fresh, local produce for campus kitchens, for charity and for sale. Seville sour orange trees on the Tempe campus produce six to eight tons of fruit each spring. The university harvests one to two tons of dates each fall.

ASU sponsors a regular farmers market at the Tempe campus during the school year to promote healthy eating and sustainability. The market features vendors of fresh produce grown by Arizona farmers and other local products.

Actively engaging the community

ASU engages its community through education, participation and collaboration aimed at encouraging individual initiative. The university certifies green offices, classrooms, housing, labs and shops that integrate sustainability into their daily operations.

ASU has student groups to match every sustainability interest. Employees can earn a certificate in sustainability, and staff evaluations include a sustainability component.

Through the President's Award for Sustainability, students and employees are recognized every year for their active role in sustainability at ASU. Some of ASU's award-winning programs are pictured here.

Green Labs ❶ Laboratories are responsible for disproportionately high energy use compared to other office buildings. Green lab practices reduce energy use and increase sustainable practices.

Grounds for Grounds ❷ This program collects used coffee grounds from locations across the university. ❸ The grounds are used as a natural fertilizer and soil amendment in campus gardens.

Green Waste ❹ Grounds Services staff hauls landscaping waste to a local farm for composting. Hundreds of tons of landscaping waste have been diverted from the landfill.

Ditch the Dumpster ❺ Introduced as a way to gather unwanted items during residence hall move-out, collection boxes can now be found at many ASU locations year-round. ❻ During residence hall move-in, ASU volunteers help recycle cardboard and other packing materials.

Getting from here to there

Alternative transportation options reduce traffic congestion, air pollution and personal automobile fuel and maintenance expenditures. ASU offers many options for alternative transportation.

Available at ASU for a discounted rate, the student U-Pass and the Platinum Pass for faculty and staff provide unlimited access to all four campuses and Greater Phoenix on Valley Metro bus routes and the METRO light rail. Free intercampus shuttles as well as several shuttle routes around the Tempe campus make it easy to get from one location to another.

Transit users who need the option to drive to campus periodically can purchase an Eco-Pass, which allows for 30 days of parking per year. For drivers with only an occasional need for a car, ASU offers a discounted car-sharing subscription. Individuals who regularly commute by car can use ride-matching services and take advantage of carpool-reserved parking spaces.

Drivers of electric vehicles – including members of the public – can use on-campus charging stations for up to four hours at a time. ASU, too, is switching to alternative fuels by converting its truck fleet to biodiesel. ASU is also replacing its owned fleet of general purpose vehicles with leased high-efficiency vehicles.

Cycling on campus benefits the entire campus community by reducing traffic congestion, minimizing the use of valuable campus space for parking and providing cleaner air for all. Cyclists at ASU can take advantage of free bike valet service, card-access parking facilities and space-saving storage racks. Students can borrow a bicycle at no cost from the bicycle co-op, which also offers expert maintenance and repair and discounted parts and bicycle accessories.

Reducing waste, increasing benefits

Arizona State University is committed to achieving zero solid waste across all campus locations. The university is working to reduce its landfill waste by 90 percent, averting some waste through reduced consumption and diverting the rest through recycling, composting, and reusing or repurposing.

In addition to reducing the amount of waste that ends up in landfills, becoming a zero waste university means saving energy by reducing the number of trucks that are required to haul our waste away. By recycling, reusing and repurposing materials – or not consuming them at all – we are conserving natural resources and wildlife.

A zero waste policy is economically beneficial as well. In addition to the university's general-purpose commingled recycling program, ASU separately collects cardboard, soft plastics, scrap wood and metal, lab glass, electronics, batteries, and many other specialty items. The university sends these items to a recycling facility at a cost that is lower than the cost to send items to the landfill, and sometimes collects an income for the sale of these materials. Composting is financially competitive with landfill disposal, too.

The university's zero solid waste goal goes beyond its current financial plans and any benefits that affect the existing campus community. ASU wants to avoid creating waste that would result in resource scarcity, supply limitations and pollution for our future students and surrounding neighborhoods.

ASU JULIE ANN WRIGLEY
GLOBAL INSTITUTE of SUSTAINABILITY
ARIZONA STATE UNIVERSITY

Arizona State University has made an institutional commitment to lead by example. One example is printing this brochure on recycled papers that are manufactured using 100% renewable energy. Another example is printing a limited number of brochures, being selective with who receives printed copies and posting the brochure online as a PDF download: ***sustainability.asu.edu/prospectus***.

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