

UC3 2018 Progress Report

# RESEARCH FOR SOLUTIONS

Convening Stakeholders to Galvanize Local Climate Action



**UC<sup>3</sup>**

University Climate  
Change Coalition

# ACKNOWLEDGEMENTS

This report has been prepared by Second Nature with input from the University Climate Change Coalition (UC3) member schools. We would like to thank Christine S. Nelson and Bloomberg Philanthropies for supporting the University Climate Change Coalition.

We would also like to thank the University Climate Change Coalition members for providing the case-studies, data and materials that form the basis of this report.

The report layout, map, diagrams and illustrations were designed by Zac A. Brooks.



Second Nature is committed to accelerating climate action in, and through, higher education. We do this by mobilizing a diverse array of higher education institutions to act on bold climate commitments, to scale campus climate initiatives, and to create innovative climate solutions. We align, amplify, and bridge the sector's efforts with other global leaders to advance urgent climate priorities. The Climate Leadership Commitments are a signature program of Second Nature and include a Carbon Commitment (focused on reducing greenhouse gas emissions), a Resilience Commitment (focused on climate adaptation and building community capacity), and a Climate Commitment that integrates both. The Climate Leadership Network comprises almost than 600 colleges and universities in every state and the District of Columbia who have committed to take action on climate and prepare students through research and education to solve the challenges of the 21<sup>st</sup> century. Learn more at: [secondnature.org](https://secondnature.org).

The colleges and universities in Second Nature's Climate Leadership Network have been pursuing carbon neutrality in campus operations, creating new climate solutions through innovative research, and preparing students to solve the urgent climate challenges of the 21st century for over a decade. UC3 was built on this work and the vision of higher ed taking a leading role in climate action by leveraging strengths of research institutions.

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## Letter from the Leadership Lead

Global climate change is among the most urgent challenges of our time, with the potential to affect every human on the planet. Over the past year, the resilience of international commitments like the Paris Climate Agreement has demonstrated a global concern about the dangers posed by climate change. Still, we need to do even more. Continuing to reduce our emissions and adapt to a warming climate will require bold leadership and collective action at every level.

As president of the University of California, I've seen firsthand the role that universities and institutions of higher education can play in galvanizing impactful, coordinated climate action. Students serve as a driving force for sustainability, organizing climate research projects and advocating for climate solutions on campus and beyond. And universities' cutting-edge research, operational resources, and strong community partnerships make them uniquely suited to bring together elected officials, business leaders, and environmental advocates to forge a path toward a sustainable future.

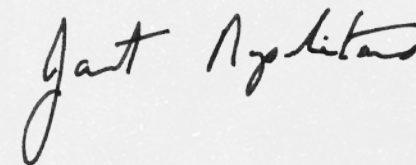
For decades, UC has lived this commitment, identifying climate and sustainability solutions that can succeed not only on our campuses, but could be scaled up across California, the nation, and the world. From our ambitious pledge to achieve systemwide carbon neutrality by 2025, to our groundbreaking "Bending the Curve" report outlining 10 scalable solutions to reduce greenhouse gas emissions, we have worked to accelerate our climate commitments and ensure our partners have the tools to do the same.

This year, we took an even bigger step forward, bringing together 17 research universities to form the University Climate Change Coalition, or UC3, a higher education climate partnership dedicated to working across sectors to help local and regional partners achieve their climate goals.

Representing more than 1.5 million students across the United States, Canada, and Mexico, UC3 member universities have a proven track record of translating knowledge to action around complex issues like climate change. They also have the ability to use their campuses as living laboratories to identify best practices, develop clean energy sources, and engage students and faculty in ambitious sustainability research and action.

This summer, UC3 members convened a series of climate forums that brought together community, government, and business leaders with other stakeholders to discuss local and regional efforts to combat climate change. This progress report reflects these critical and ongoing conversations and will serve as a roadmap for the future work of our Coalition. The report is also designed to serve as a starter guide for other communities and institutions that are interested in building connections that can advance their own climate goals.

Sharing these insights and best practices with our local and regional partners and across the UC3 coalition is one way we can trigger a positive ripple effect on climate action that extends far beyond our own institutions. We invite you to join us in this effort.



*President Janet Napolitano,  
University of California*

## Letter from the Research Lead

Repairing the climate is everyone's business. Our work together in the Coalition can play an important role mitigating climate change in our communities, states and regions. As leading research universities, we have the expertise, resources and experience to bring stakeholders to the table, inform the discussions that follow, and develop meaningful policies.

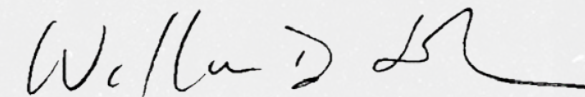
Real solutions require these bottom-up contributions. That has been our experience in the ongoing recovery of the Chesapeake Bay. Based on data and input from research universities, federal, state and regional cooperation has produced measurable improvements to the Bay's health. Further progress will require even more cooperation.

National Science Foundation figures show that Coalition universities perform about one-quarter of all environmental research by U.S. institutions. Our expertise in satellite imaging and flood monitoring, for example, helps define the problem and measure progress. Fundamental research improves understanding of the complex interactions that govern the climate. Policy expertise helps translate knowledge into action. As responsible community members, we set an example for others through our commitments to carbon neutrality by 2050.

By mobilizing local/regional stakeholders and arming them with tools and data, the work of the University Climate Change Coalition promises to shape and accelerate needed action. We can play an outside role in building strategy, resilience and compliance.

Each Coalition member is convening a cross-sector/climate change forum to gather insights from our research and policy experts; community and business leaders; elected officials; and other local voices. When all these are completed, the University of Maryland will distill the results into a report to help each of us plan future actions.

As the research lead for the project, the University of Maryland is committed to making our network a force for concerted community action—preparing each of our regions to withstand the growing challenges ahead. We look forward to your input and contributions.



*President Wallace Loh,  
University of Maryland, College Park*

## Letter from the Network Lead

The challenges posed by climate change are complex and systemic, large-scale solutions to these challenges have proven difficult to implement. Testing new models of action and developing new theories of change are therefore necessary to accelerate progress towards our shared climate goals. Cross-sector collaborative climate action between businesses, local and state governments, and higher education is one of these emerging models.

Higher education is a sector primed to lead collaborative climate action. Most higher education institutions are non-profit organizations, so by definition they have to provide a public benefit. Baked into the DNA of these types of institutions is a mission to serve a good that is greater than itself. Collaboration can be a key part of this mission, but putting those ideals into practice is not as easy as it seems. While faculty and researchers collaborate regularly, institutional collaboration within the sector is the exception rather than the rule as competition for students and resources drives institutions apart.

Ironically, the ability for institutions to collaborate with other sectors around a pressing topic like climate change may be an easier proposition. The strengths of higher education allow local, place-based activity to fit well within traditional educational pursuits as well as provide new avenues of shared opportunity. Other sectors (e.g. businesses, cities, states, etc) have climate goals and ambition that align with higher education institutions physically located nearby. Designing cross-sector programs that drive climate solutions faster than what otherwise would happen in isolation is a ripe opportunity for progress. In the report that follows, we describe some places around the country where this is happening.

This model can't just be implemented at a single location, however. If the global magnitude of the climate challenge is to be addressed, we must go beyond actions happening cross-sectorally in single locations and scale the impact across sites as well. This is the role of a network organization like Second Nature. For the past

decade, we have run the Climate Leadership Network, a group of higher education institutions that share a commitment to climate action. While the commitments are made individually, collectively Second Nature facilitates learning, develops resources, builds relationships, and catalyzes actions that are done by more than a single institution.

It is both this cross-sectoral approach and network design that has formed the basis of the University Climate Change Coalition. The participating institutions bring their research capacity and convening power to a shared desire to meet climate goals. Working with municipal and business leaders, these location clusters then aligning priorities to accelerate future action. This wouldn't happen if research institutions were pursuing a "business-as-usual" approach to their academic work. Additionally, the sites are connected through a network supported by Second Nature. This allows for communication, best practice sharing, and development of an overarching research agenda to be developed. It takes an external network organization to manage these types of functions.

It's through this type of new model-building - cross-sector leadership and intentional network design - that transformative, scalable climate solutions can be developed. As the UC3 matures, we look forward to innovating and iterating on both of these approaches so that in and through higher education we can solve the grand climate challenge.



*Dr. Timothy Carter,  
President of Second Nature*

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University of California Riverside

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# INTRODUCTION

## SUMMARY

2018 for the University Climate Change Coalition



In February  
the Coalition  
was formed



Convened over 2600  
leaders from academia,  
the public sector & the  
private sector



4 additional  
research universities  
joined the Coalition

12 cross-sector climate forums were  
held in the Spring and Summer with  
more planned for the Fall and in 2019



Participated in 3 high level events:

- Higher Education Climate Leadership Summit
- Center for Strategic and International Studies Panel
- We Are Still in Forum at the Global Climate Action Summit



UC3 Presidents  
onstage at the  
Coalition launch in  
Tempe, Arizona (from left  
to right): ASU President Michael  
Crow, Second Nature President  
Timothy Carter, CU Boulder Chancellor  
Philip P. DiStefano, OSU President Michael  
Drake, UC President Janet Napolitano,  
SUNY Stony Brook President Samuel L. Stanley.

# MISSION

**The University Climate Change Coalition is committed to leveraging their institutional strengths as leading research institutions to foster a robust exchange of best practices and lessons learned in pursuit of accelerating local climate solutions that reduce greenhouse emissions and build community resilience.**

**UC<sup>3</sup>**

University Climate  
Change Coalition

## The Coalition

The University Climate Change Coalition (“UC3” or “the Coalition”) is a group of 17 distinguished research universities throughout the United States, Canada and Mexico committed to leveraging their research and resources to help communities accelerate local climate action. Conceived by President Napolitano of the University of California, UC3 launched the initial cohort of 13 schools on February 6th at the 2018 Higher Education Climate Leadership Summit in Tempe, Arizona. Focusing on their strengths as knowledge generators, convening entities, and anchors within their respective communities UC3 brings together local stakeholders to galvanize local and regional climate solutions. UC3 also combines their research expertise to develop best practices and shares knowledge across institutions in a peer to peer network of professionals, academics, and administrators from across their schools.

The Coalition brings together a variety of voices in the higher education research community including public and private institutions, international schools from developed countries and a developing country with varying national commitments to addressing climate change, and geographic diversity within the United States where regional climate action is most critical in the absence of national leadership.

All of the Coalition members have demonstrated leadership in addressing climate change through their own campus operations. They have pledged to reduce their institutional carbon footprints, with commitments ranging from making more climate-friendly investments to becoming operationally carbon neutral, in line with the goals of the Paris Climate Agreement and the Under2 MOU for subnational climate leaders.<sup>1</sup>



## Our Geographic Diversity

Arizona State University (ASU)

Boston University (BU)

California Institute of Technology (CalTech)

La Universidad Nacional Autónoma de México (UNAM)

Tecnologico de Monterrey (TdM)

The Ohio State University (OSU)

The State University of New York (SUNY)

The University of British Columbia (UBC)

The University of California (UC)

The University of New Mexico (UNM)

The University of Washington (UW)

University of Colorado Boulder (CU Boulder)

University of Connecticut (UConn)

University of Maryland College Park (UMD)

University of South Florida (USF)

University of Toronto (UofT)

Washington University in St. Louis (WashU)

 Private University

 Public University

Each UC3 member school committed to convening a cross-sector climate change forum to bring together community and business leaders, elected officials, advocates and other stakeholders in their region. Forums are tailored to local and regional objectives, focusing on research needs and science-based climate solutions. The ultimate goal is to use the outcomes from these forums to produce a report that will synthesize the research gaps, priorities, and recommendations into a framework for continued progress on climate change goals that can be scaled-up from the local level.

## Our Shared Commitment and the Non-federal Context

Given the urgent need to bend the emissions curve, UC3 believes that much of higher education's business-as-usual approach to climate action is not enough. While universities have long been sources of leadership in the climate arena, and create high-quality, independent research and analysis that has been deployed in support of the climate agenda, the scale and immediacy of change requires a shift in research and operational models. This shift happens through alignment of universities together, and with other sectors.

In 2015, 195 countries, including the United States, reached an unprecedented consensus on a global policy framework known as the Paris Agreement which aims to limit global warming to well below 2 degrees Celsius. In 2017 the United States expressed its intent to withdraw from the agreement, but non-federal actors including universities stepped up and took the lead and committed to striving towards the national targets agreed to in Paris, known as Nationally Determined Contributions (NDCs). It is in this context that the American UC3 members seek to accelerate non-federal action alongside their colleagues from Mexico and Canada, whose countries have remained committed to the Paris Agreement, seek to accelerate it in their localities as well as in ways that are nationally scalable.

## The Research Institution's Role in Cross-sector Collaboration

At a moment when addressing climate change demands ambitious solutions, higher education can be direct contributors to that effort but not without working with partners outside of academia.

As leaders in their own right when it comes to the impact their operations has on the environment, colleges and universities also possess specific strengths needed to support and drive the decisions and actions of states, cities, and businesses.

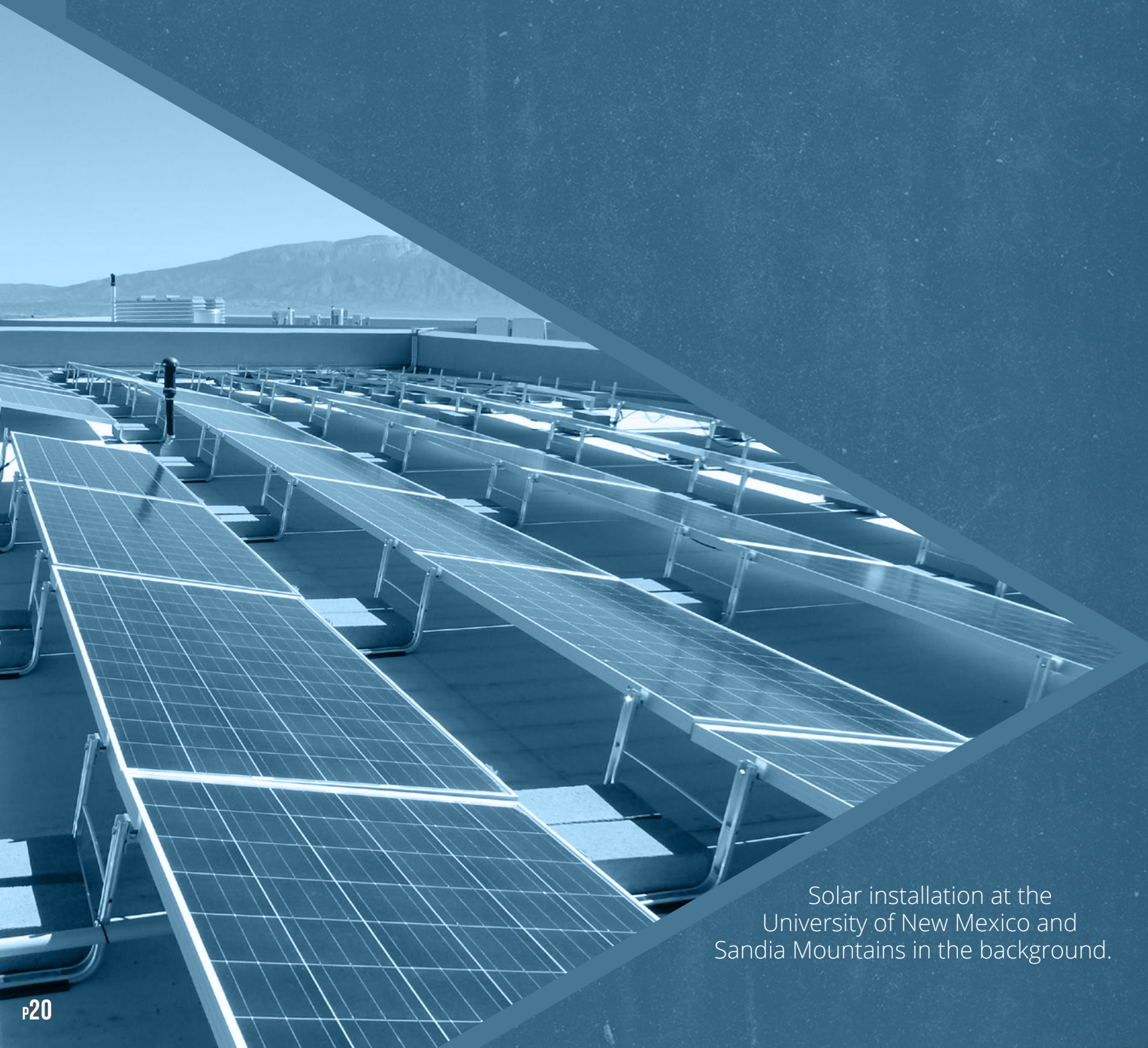
**1 - Knowledge Generator:** Research universities are the generators of new knowledge through the research they perform, accumulators of knowledge created at their institutions and accessed via other institutional, and utilize that knowledge to innovate often times acting as a loving laboratory.

**2 - Community Anchor:** Research universities are place-based, long-standing and credible institution uniquely positioned to understand and work with the community on local solutions.

**3 - Collaborative Convener:** Research universities can use their influence and physical space to bring together public officials, business professionals, or leaders of community or nonprofit organizations to collaborate.

By leveraging these particular strengths, UC3 can accelerate the transfer of knowledge to government and private industry in order to scale up solutions. Additionally, UC3 aims to create a new and scalable model for place-based, cross-sector engagement that can transform the current climate research agenda to a demand-driven one.

# STRATEGY



Solar installation at the University of New Mexico and Sandia Mountains in the background.

## Five Key Components

The Coalition is piloting a new, iterative strategy for cross-sector climate engagement in order to serve their goal of creating a research agenda that is demand-driven and will better serve the needs of their localities. First each institution gains leadership support at the highest level. Next they establish a network across other institutions (the Coalition) and come together to foster a robust set of best practices reducing greenhouse emissions, and building community resilience. Then they brought together their community, and partners in the public and private sectors with the goal of sharing information and listening to their objectives and needs. Through this exchange of information, UC3 can continue to exchange information amongst the network to build a research agenda and partnerships within their respective communities that will enable businesses, cities, states and other actors to do more, faster.



**Institutional Leadership**



**Cross-Sector Convenings**



**Collaborative Networks**



**Demand-Driven Research**

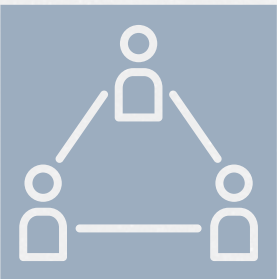


**Solutions-Oriented Partnerships**



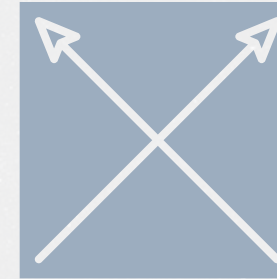
## Institutional Leadership

The UC3 member schools demonstrate leadership by building internal consensus and committing to mobilizing institutional resources. Research universities tend to be large and often siloed organizations. UC3 aims to break down the silos starting at the top. The head of each university (President/Chancellor/Rector) appoints liaisons involved in campus sustainability operations, academic climate research, and external communications. These liaisons then build an internal team that will liaise with the rest of the Coalition members. This aspect of the Coalition design assumes cross-campus liaisons can bring all the strengths of the institutions to bear on the climate challenge.



## Collaborative Networks

The UC3 member schools come together on a monthly basis to share their knowledge of local climate solutions and best practices across institutions and provide peer feedback. The network also serves as a proxy for a larger national or international climate solution laboratory which doesn't currently exist where researchers can connect, and share resources. This network design relies on a network manager, Second Nature, that serves as the connector between the institutions.



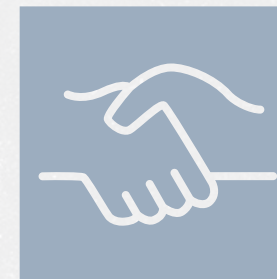
## Cross-Sector Convenings

The UC3 member schools identify local, cross-sector stakeholders and convene them in what we call cross-sector forums. These forums can be large public conferences or smaller more private roundtables. The unifying factor with of each is bringing together various actors in the region with the purpose of discussing climate risks, challenges and pathways to solutions. Not only do these convenings help to inform an impactful research agenda, but builds relationships within the local climate action community.



## Demand-Driven Research

Together the Coalition will evaluate outcomes from their forums and begin to develop research priorities and gaps based on their findings. Additionally, based on their experiences planning and convening the cross-sector forums they will provide thought leadership on how higher ed and specifically research institutions can best engage with other stakeholders. This analysis will yield a synthesis report highlighting opportunities for demand-driven climate research that can produce science-based climate solutions.



## Solutions-Oriented Partnerships

The Coalition plans to leverage relationships, existing programs and networks to establish mutually beneficial, cross-sector partnerships that drive climate solutions in their communities.

# COHORT CASE STUDIES



Tecnologico de Monterrey  
Director of the  
Water Center for Latin  
America & The Caribbean  
and leader of the Strategic  
Research Group on Energy and  
Climate Change, Alberto Mendoza  
with government authorities, members of  
the industry, academic and social leaders and  
students at the Forum "Creating Shared Goals and  
Solutions to Cope with Climate Change

In this section of the report you will find summaries of the progress UC3 has made since its launch in February 2018 and descriptions of the cross-sector forums that have taken place to date.

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- ▶ **Washington University in St. Louis** (p54)  
*Connecting corporate, government, university and non-profit leaders committed to climate solutions*

# ARIZONA STATE UNIVERSITY

Arizona State University (ASU) is designed to empower discovery and innovation that has a profound impact on our community and our world. ASU researchers work collaboratively across disciplines to adapt to and mitigate the effects of a changing climate to ensure a resilient, healthy and prosperous future.

In partnership with ASU Lightworks®, ASU Facilities and Maintenance, and the Office for Naval Research, the Unit for Data Science at ASU Library is developing a technology to perform predictive maintenance--the computer-aided assessment of mechanical systems to inform their upkeep and replacement--for large campuses and installations. Where current technology development emphasizes sensor networks and internet of things (IoT) infrastructure, the Unit's work leverages document and support ticket archives to inform planners, technicians, and executives. Used in lieu of IoT-based approaches, or as a way to improve their rollout and use, historical and document-based predictions play an important role as organizations aim for more efficient and reliable facilities.

Additionally, ASU has developed a platform called RISE (Resilient Infrastructure Simulation Environment), which integrates resiliency into power and water networks. The RISE platform uses complex systems modeling and optimization to develop data-driven models and analysis software for exploring complex systems dynamics. Some examples include infrastructure interdependency simulation for exploring resilience theory and practice, and also electrical generation and distribution network simulation during normal operating conditions, environmental stressors, and anthropogenic events. Much of this work is open source to facilitate open discussion and scientific inquiry.

As a result of these capacities, and ASU's enduring commitment to regional resilience, the Maricopa County Board of Supervisors recently asked Arizona State University to help the region ensure a future with cleaner air, fewer heat-related illnesses and deaths, and greater investment in energy innovation. To serve the County's needs, ASU has established a new initiative that will convene education, research and discoveries to empower solutions to mitigate urban heat and air quality to ensure Maricopa's County continued economic growth through improved quality of life of our region's residents. The focus of this initiative is a solutions-focused research, policy and technology incubator designed to rapidly test, develop, and deploy heat-mitigation and air-quality improvement strategies and technologies in collaboration with practitioners and community members to create a healthy city and population across Maricopa County. Deploying a regenerative operational model that uses technology and policy outcomes to fertilize future research and development, this initiative will translate air quality and urban heat-related research into policy action, novel technology, and commercialized intellectual property.

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*“We are at a precipitous time in human history where the actions of humans are directly affecting the health of Earth. We can either ignore these signals or we can act on them and help make our planet more resilient and able to sustain future generations. At ASU, we are committed to finding solutions to this important problem. Higher education is key in overcoming what has become a threat to the habitability of our planet. This is why ASU established the first free-standing School of Sustainability in the U.S. in 2006, offering the first degree program in sustainability. While college and university campuses across the country are, in aggregate, responsible for only about 3 percent of the total greenhouse gas emissions emitted in the U.S., we are educating 100 percent of our future political, business and social leaders. This fact alone places significant accountability on higher education and its leaders to take action.”*

— Arizona State University President Michael M. Crow



**73,500 MWH**

renewable energy used in FY17, enough to power 5,900 homes annually



**40.5%**

diverted of total waste from the landfill in FY17



**21.5%**

decrease in wastewater generated per on-campus student since FY07

# BOSTON UNIVERSITY

Boston University (BU) is a large private research university located in the heart of Boston, but with global impact. BU's commitment to sustainability was reaffirmed in 2017, when the Board of Trustees approved an aggressive Climate Action Plan by which the University aims to reduce emissions to net 0 by 2040. Building on the University's 25 percent reduction of emissions six years ahead of a 2020 goal, the plan outlines efforts that include sourcing 100 percent of electricity from wind farms and boosting energy efficiency by 31 percent. The plan calls for funding of infrastructure improvements to prepare for flooding and heat surges, and calls for the creation of an academic Initiative on Climate Change and Sustainability, which will use the campus and city of Boston as a living laboratory for research and education.

On June 7th Boston University hosted the *International Mayors Climate Summit*<sup>2</sup>. The Summit was developed as a collaboration between the offices of City of Boston Mayor Walsh and Boston University President Brown. The summit hosted around 150 international actors including over two dozen mayors from across the globe, NGOs, research faculty, industry leaders from the finance and energy fields. The event was focused on sharing best practices on the topics of climate resilience, energy, climate finance and transportation. Notably, Boston Mayor Walsh and Los Angeles Mayor Garcetti announced a partnership to aggregate the load of US cities that could lead to the largest renewable energy (RE) aggregation project in the country. Twenty cities are now participating in a request for information (RFI) and BU is working with the city of Boston to develop a solutions-focused forum to engage major property owners in Boston around renewable energy procurement and to share strategies for aggregation.

“

*“Boston University’s Climate Action Plan provides a critical framework for mitigating the impact of anthropogenic climate change. It is a major step forward in the University’s response to threats caused by extreme weather patterns and the increased likelihood of problems caused by flooding and heat waves.”*

— **Boston University President  
Robert A. Brown**



**100%**  
renewable energy  
starting in 2020



**2040**  
year of  
carbon neutrality



**31%**  
reduction  
in energy  
demand  
by 2032

# CALIFORNIA INSTITUTE OF TECHNOLOGY

Caltech is a world-renowned science and engineering institute located in Pasadena, California, that marshals some of the world's brightest minds and develops transformative and innovative instruments to address fundamental scientific questions and pressing societal challenges. Caltech's faculty and students are expanding our understanding of the universe and inventing the technologies of the future. The Institute is equally committed to reducing its own environmental footprint, implementing plans that will reduce greenhouse gas emissions from its campus to 1990 levels by the year 2020 and decarbonize its electricity supply by 2024, and developing a utility master plan to decarbonize thermal utilities. Caltech has achieved a 22% reduction in greenhouse gas emissions since 2008 as a result of a focus on energy efficiency and the deployment of on-site distributed energy resources, and currently has 2.8 million square feet of LEED certified buildings, with an additional 300 thousand square feet under construction, including the Bechtel Residence, the first planned net-zero carbon building on campus.

Caltech is taking a comprehensive approach to climate action which starts with robust data on emissions including complete scope 1 and 2 emissions and scope 3 emissions from student, faculty and staff commuting. Caltech is focused on reducing greenhouse gas emissions to meet California's statewide 2020 and 2030 goals under AB32 and SB32, respectively. A cornerstone of progress to date has been Caltech's pioneering utilization of a green revolving loan fund to finance energy conservation efforts. Achieving future greenhouse gas emissions reduction targets will be guided by the recently completed Energy Resource Plan which identified a path toward deep decarbonization of Caltech's electricity supply by 2024 including the retirement of fossil fuel based cogeneration. Planning for deep decarbonization of the thermal utility system is underway with the ongoing Utility Master Plan set to be completed this fall.

With the Energy Resource Plan in place, Caltech is actively engaged with the local utility, Pasadena Water & Power, on the completion of their energy integrated resource plan. Once complete, Caltech will host a forum to discuss the integration of both plans and how intra-city coalitions can be built to realize Pasadena's renewable energy future.

In March, Caltech contributed to the state-wide conversation by hosting the Bryson Symposium on Climate and Energy Policy which brought together experts from across the state to explore how new research and innovations in both public policy and scientific research are contributing to the mitigation of climate change.



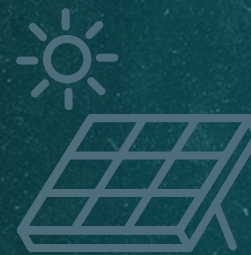
*“Climate research presents fundamental scientific issues as well as opportunities for technological interventions that can improve the human condition. For decades, Caltech faculty have leveraged scientific discoveries to solve global climate challenges. Our researchers established the link between smog and automobile emissions, identified the toxic impact of lead, which catalyzed the formation of the Environmental Protection Agency, and currently strive to quantitatively understand and potentially mitigate the sources of climate change. Moreover, we are committed to doing our part to help the community meet its climate goals, and have reduced significantly both carbon emissions and water usage on campus.”*

— California Institute of Technology  
President Thomas F. Rosenbaum



**9 GWh**

electricity saved through energy efficiency projects since 2015



**100%**

of eligible campus rooftop space will be covered by solar photovoltaics in 2020



**2024**

electricity generated by fossil fuel combustion will be replaced with renewable sources



# LA UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

La Universidad Nacional Autónoma de México (UNAM) is Mexico's largest and oldest institution of higher education and the largest university in Latin America, with undergraduate programs at 22 schools located in Mexico City and the surrounding area, with attendance of some 350,000 students. Scientific research is a primary focus at UNAM, conducted across nineteen institutes, ten centers, and five research programs across Mexico. One of these programs, the Programa de Investigación en Cambio Climático de la UNAM PINCC/UNAM and Climate Change Research program of the UNAM<sup>3</sup> (PINCC/UNAM), was created in 2010 in the face of the threats posed by climate change to Mexico's development, with the purpose of coordinating efforts to produce multidisciplinary research useful for policy making.

On May 24 and 25, 2018, UNAM held its first working meeting to devise a strategy for consolidating the climate data and research being conducted across the various schools. In this session, 35 people participated, including directors of UNAM's institutes and centers, researchers, federal and local government officials, as well as NGO representatives. These stakeholders gathered to better understand the breadth of academic climate research UNAM is conducting across its campuses and identify ways in which the university and public sector can collaborate. A primary objective of the university is to implement a Climate Action Plan that complements the federal government's goals and their existing portfolio of sustainability work such as their waste management and energy efficiency programs and water inventories.

The university has an existing greenhouse gas (GHG) emissions inventory that dates from 2011, but is in need of updating in order to make methodologically sound estimates for potential for GHG reductions. A key outcome of this meeting was a commitment to identify and compile the scattered information that has been generated by the different institutes of UNAM regarding mitigation of and adaptation to climate change, which will be carried out by the UNAM Climate Change Research Program. In the long term, the objective is to use the information collected to design UNAM's Climate Action Plan and create a methodology as well as scientific and technological products that can be offered to various actors (academia and private sector) who are also interested in developing climate action plans. As a co-benefit, these actions have the potential to contribute to the compliance of Mexico's Nationally Determined Contribution (NDC) for the Paris Agreement.

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*“Climate change and the depletion of vital resources accompanied by disasters and natural emergencies have acquired such importance and a magnitude that to prepare society for these challenges needs a deep understanding of these very complex phenomena. UC3 provides the opportunity of expanding the knowledge base and human resources necessary to devise the actions and activities to be deployed to adapt to changes and to achieve sustainable development within a low carbon economy and very importantly with a regional reach.”*

— Director Dr. Carlos Gay Garcia (PINCC/UNAM)



Mexico's NDC is to reduce its emissions by **25%** of BAU by 2030



UNAM is the **1<sup>ST</sup> AND OLDEST** university in Latin America



**35** Attendees at first UC3 cross-sector forum

# TECNOLOGICO DE MONTERREY

Tecnologico de Monterrey has among its main principles a commitment to sustainable development, which translates into an institutional effort to balance its three pillars (economic, social and environmental) across all the academic and operational activities. This commitment is also shown in the approach that Tecnologico de Monterrey has at both the undergraduate and graduate level, where future leaders are being trained to face the challenges posed by the new climatic realities through strategic research projects in energy, water and climate change. More than 50% of the energy consumed at Tecnologico de Monterrey comes from renewable sources, which is why this institution is emerging as a success case in the commitments assumed by Mexico before the international community on the issue of climate change. DistritoTec<sup>4</sup> initiative seeks to be an example of a community where it is demonstrated that the efficient use of resources in the urban environment is possible through citizen participation. We are exploring sustainable mobility, smart buildings that use clean energy generated by themselves, reuse of water<sup>5</sup>; this is something that already happens in some places and our commitment is to show that these success stories are possible in the urban environments of our country.

Tecnologico de Monterrey held a cross-sector forum entitled “*Tecnologico de Monterrey and the Nuevo Leon State: Shared Goals and Solutions to Cope with Climate Change*” on August 21, 2018<sup>6,7</sup> that brought together stakeholders from different areas of expertise and backgrounds, including national and state level public officials, academics, private sector leaders, and non-governmental organization (NGO) representatives. The forum, which was held in the recently inaugurated library of Tecnologico de Monterrey, a LEED Gold certified green building, was open to the public and invited leaders. The program covered the General Law on Climate Change in Mexico, which establishes the basis for Mexico’s compliance with the Copenhagen Accord commitments and creates the legal frameworks and the financing mechanisms to move towards a low carbon economy, and featured panels on catalyzing green financing in the housing sector; the State government of Mexico’s mitigation and adaptation goals and needs to achieve them; public policy to cope with climate change; and how to articulate and reach climate goals.

During the forum, panelists emphasized the need to promote the quest for solutions and financial incentives on the incorporation of climate change mitigation measures among enterprises, particularly among small and medium-sized enterprises (SMEs). Panelists also identified specific areas for further collaboration, including the identification of research and information gaps to translate climate change scientific knowledge into measurable actions and practical guidelines.

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*“Tecnologico de Monterrey is committed to protecting our planet. The university has been a pioneer in the use of renewable resources, from small actions to big initiatives. The day-to-day activities have become Tec’s trademark, like using recycled water from our own water plant, providing donation bins for separating trash to public elementary schools, reusing our furniture, and planting trees in our nearby communities. These actions are pushing big changes in the Mexican society, where Tec de Monterrey is collaborating with the Ministry of Energy and other institutions in order to provide sustainable resources; with our in-depth projects called “Semana i”; and with the state-of-art research that our professors and students do. To move Mexico to a knowledge economy, we need take care of our natural resources.”*

— Tecnologico de Monterrey Chancellor Salvador Alva



**235** cross-sector forum attendees



**31** campuses located across 25 cities in Mexico



**76%** of energy will come from renewable energies by January 2019

# THE OHIO STATE UNIVERSITY

For nearly 150 years, The Ohio State University has fulfilled its land-grant mission to create and discover knowledge to improve the well-being of our state, national and global communities. Recognized for its leadership in developing durable solutions to the pressing challenges of sustainability, Ohio State supports an evolving culture of sustainability through collaborative teaching, pioneering research, comprehensive outreach, and innovative operations, practices, and policies. In 2015, strategic sustainability goals were developed to support Ohio State's core goals of teaching and learning, research and innovation, outreach and engagement, and resource stewardship, with a focus on the specific goal of achieving carbon neutrality by 2050.

The Ohio State University hosted three events across two days<sup>8,9</sup> (May 18-19, 2018) to raise awareness and discussion about climate change impacts and solutions. The events, a research forum, health forum, and public outreach event, were geared to different audiences and each event had a unique focus and topic area, while all ultimately emphasized the impact of climate change on our region and society overall. The research forum, *Building Resilient Communities in a Changing Climate*, was hosted by The Ohio State University, MORPC (Mid-Ohio Regional Planning Commission), ENGIE North America and Axiom Infrastructure and convened over 80 representatives from academia, health care, community planning, law, politics and other sectors around central Ohio. The Central Ohio regional focus of the forum provided an opening dialog to establish learning and engagement priorities for a larger, statewide event that the university will hold in January 2019.

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*“Ohio State is deeply committed to reducing our carbon footprint and promoting energy efficiency. Our participation in UC3 significantly advances several long-term sustainability goals, including the university’s commitment to achieve carbon neutrality by 2050. As a flagship public research university, we are leveraging our resources to explore cleaner energy sources and solve sustainability challenges in Ohio and around the world.”*

— Ohio State University President Michael V. Drake



## 2.3 DEGREES

in Fahrenheit Central Ohio's average temperature warmed from 1951 to 2012, faster than national and global rates



## 2050

year of carbon neutrality



3 climate forums over two days

# THE STATE UNIVERSITY OF NEW YORK

The State University of New York (SUNY) is the largest comprehensive system of higher education in the United States, with 64 college and university campuses located within 30 miles of every home, school and business in the state. As announced during Chancellor Johnson's 2018 State of the University System address, SUNY plans to source 100 percent of its grid supplied electricity from zero-net-carbon sources, including renewables and energy storage, as soon as possible. SUNY previously committed to improving its energy efficiency performance by 20 percent by 2020 from 2011 levels, as put forth by Governor Andrew M. Cuomo's Executive Order 88, and to reduce its greenhouse gas emissions by 30 percent by 2020 from 1990 levels per the NYS Clean Energy Standard and 28 percent by 2025 compared to 2005 baseline levels, as outlined in Governor Cuomo's Executive Order 166 mirroring the Paris Accord Goal. With this new net-zero goal, SUNY plans to hit these goals well ahead of schedule.

Stony Brook University's Advanced Energy Research and Technology Center (Stony Brook being one of 64 SUNY Campuses) hosted the 10<sup>th</sup> *Advanced Energy Conference*<sup>10</sup> sponsored by New York State agencies, several energy companies and multiple companies from the energy industry, bringing together over 1200 attendees from public and private groups from across New York State, the U.S., and the world. Approximately 20 other universities and research labs such as Brookhaven National Laboratory served on the scientific advisory council. Topics discussed covered an array of issues from increasing efficiency, to building resilient grid infrastructure. Areas of detailed discussion included emerging smart grid technologies, advanced sensing for smart energy management, exploration of opportunities to develop microgrids, meeting peak demand through energy storage, geothermal applications and emerging business models throughout 50 plenary and breakout sessions, led by utilities, researchers, businesses, manufacturers, engineering consultants, financial consultants, specialized energy counsel, and NYS government officials and agency staff.

Following the forum, a team led by the New York Power Authority (NYPA) engaged a consultant and convened a steering committee including the NYS Department of Public Service (DPS), the New York State Energy Research and Development Authority (NYSERDA), the Long Island Power Authority (LIPA), and SUNY System Administration staff, to develop a Roadmap for SUNY to reach the Chancellor's goals. The Roadmap includes six primary goals, three of which are shown to the right.

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*“Sustainability is a shared responsibility to preserve our civilization, and I am passionate about the leadership role SUNY can take in educating the next generation of sustainability leaders, researching climate change solutions, and creating energy-efficient environments across our 64 campuses. At my inaugural State of the University System address, I described how SUNY, as the country's largest comprehensive system of higher education, will achieve our own ambitious sustainability goals through important partnerships and collaboration. Today, by joining the coalition with other leaders in higher education we take that effort international. On behalf of SUNY, we are proud to join the University Climate Change Coalition and I am thankful to my fellow university leaders for their partnership in this effort.”*

— State University of New York Chancellor Kristina M. Johnson



**100%**

of grid supplied electricity source from renewable sources as soon as possible



**100%**

of the campuses increase resilience with feasibility studies to develop a microgrid for all or part of the campus



**100%**

of all new buildings designed to net-zero carbon standards

# THE UNIVERSITY OF BRITISH COLUMBIA

The University of British Columbia (UBC) is a global center for research and teaching, consistently ranked among the 40 best universities in the world. As one of the world's leading universities, the University of British Columbia creates an exceptional learning environment that fosters global citizenship, advances a civil and sustainable society, and supports outstanding research to serve the people of British Columbia, Canada and the world. UBC recently achieved a 34% reduction in its Vancouver campus emissions relative to 2007 levels. In line with the UBC Climate Action Plan, the university aims to reduce emissions by 67% by 2020, with a 100% reduction by 2050, against a 2007 baseline.

On July 18, 2018, UBC President Santa J. Ono and UBC's office of Community Engagement, office of Sustainability & Engineering and the UBC Sustainability Initiative hosted the *President's Roundtable: Building Resilient Partnerships for Climate Action*<sup>11</sup>. The planning committee for this event included officials from the City of Vancouver, Metro Vancouver, BC Hydro, the think tank Pembina Institute, and the event hosts. Over 50 leaders from local government, industry, First Nations communities, non-government sectors and academia gathered at the forum, with the intent to work together to address some of society's most pressing sustainability challenges. The roundtable helped build on the momentum of regional partnerships, identify next steps to achieving regional climate goals, and recommitted the University to continue acting as an agent of change in the region.

Key outcomes from the Roundtable include UBC's commitment to mapping climate action assets and networks, continuing to use the campus as a living laboratory to test new technologies that demonstrate climate mitigation and adaptation approaches, mobilizing climate action research to address regional needs, and convening thought leadership dialogue on climate solutions.

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*“At UBC, we have a long-standing commitment to exploring and embracing sustainability through groundbreaking research, education and innovative projects on campus. These efforts helped to significantly reduce waste and greenhouse gas emissions on campus, and to promote smart, healthy communities. We look forward to working with other members of this coalition to promote sustainability in our region and beyond.”*

— University of British Columbia President Santa J. Ono



**50+**  
stakeholders  
convened

**>2/3**



of all trips made  
to and from UBC  
will be made by  
walking, cycling  
or transit by 2050



**100%**  
reduction  
in GHG  
emissions by  
**2050**

# THE UNIVERSITY OF CALIFORNIA

The University of California is one of the world's premier public research institutions, with 10 campuses, five medical centers, three affiliated national labs and a statewide agriculture and natural resources program. UC combines education, research, operational sustainability, and public service to take on the local and global challenges of climate change. In line with its carbon neutrality initiative, UC is working to become carbon neutral in its operations by 2025<sup>12</sup>. Despite increased student enrollment, UC has reduced its systemwide emissions by 15 percent since 2009 through energy efficiency gains and the adoption of solar and other renewable energy generation. In 2017, UC made the largest solar purchase ever made by a U.S. university, generating 80 megawatts of solar power.

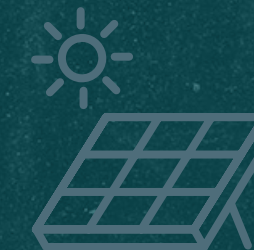
The University of California convened over 80 people in Sacramento on April 4<sup>th</sup>, 2018 for the *California Collaborative for Climate Change Solutions (C4S)* forum. Participants included California's governor, the heads of the four state agencies that fund climate solutions research, and many leading climate researchers from universities across the state. The forum featured 28 of California's leading colleges and universities, including UC3 members the University of California and the California Institute of Technology. The California State University system, Stanford University and the University of Southern California also participated. The meeting generated 51 innovative demonstration-based and solutions-oriented research proposals involving over 100 researchers across multiple disciplines and from all of California's major research universities. State leaders shared their climate goals and discussed how demonstration projects implemented by university partnerships with the private sector could help the state achieve its ambitious climate goals. The meeting demonstrated that all the major research universities in California, who compete for research funding, faculty, students, and donors, want to collaborate to provide research expertise and demonstration projects that help the state meet its climate goals. Notably, following the C4S meeting, California's legislature and governor approved a state budget that includes \$18 million for climate solutions research.

“

*“The University of California system is thrilled to partner with this group of preeminent research universities on an issue that has long been a major strategic priority for all of our institutions. No one is better positioned than we are to scale up research-based climate solutions. The UC3 coalition believes that addressing climate change is an area where some of the world's greatest research institutions can, and must, lead.”*

— University of California President Janet Napolitano

**#1** largest solar purchase of any U.S. university in 2017



**1.5 MILLION SQUARE FEET** of LEED certified buildings added in 2017

**\$30 MILLION** savings from energy efficiency investments in 2017 alone



# THE UNIVERSITY OF NEW MEXICO

Decades before the term “sustainability” was coined, the University of New Mexico (UNM) had been a pioneer in sustainability and conservation in order to preserve the finite resources of the earth. Efforts to reduce energy and water usage have been on-going and culminated in 2005 with a complete overhaul of the campus utilities district energy system to make it more efficient, which included the installation of two cogeneration units. UNM also implemented a building energy conservation program, which has led to at 26% avoidance of energy usage campus wide. UNM is also using solar on buildings that are not a part of our district energy system in order to further reduce our carbon footprint.

The most recent severe drought affecting the Southwest led UNM to intensify its campus water conservation program by reducing turf, installing more efficient toilets and sinks, and adding a reverse osmosis system on the boilers in the utility plant. These efforts are saving millions of gallons of water each year.

One significant effort towards water conservation was promoted by a neighborhood association that lobbied the Bernalillo County Commission to fund a project that would use blow down chilled water to irrigate a nearby UNM golf course. This project is saving 20 to 25 million gallons of water annually, or approximately a third of the previous usage, and has turned the golf course into one of the most popular open space destinations in the county.

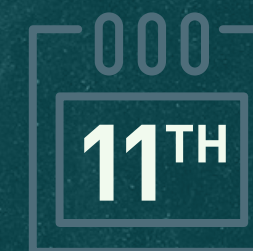
As a member of UC3, UNM is planning a symposium in April of 2019 to highlight our sustainability efforts in partnership with those of our local community college, the city of Albuquerque, and Bernalillo County. The event will be held the same day as the 11<sup>th</sup> annual Sustainability Expo, which is managed each year by students of the Sustainability Studies program and hosts local farmers, student clubs, sustainability vendors, alternative transportation and recycling demos.

“

*“We are excited about the possibility of partnering with other research universities to highlight our accomplishments and learn from each other, as each of our institutions strive toward carbon reduction and improving energy technologies for the future.”*

— Interim University of New Mexico  
President Chaouki Tanios Abdallah

**86%**  
nitrogen  
oxide  
emissions  
reduced



**YEAR**  
for the  
Sustainability  
Studies program

**2000  
TONS**  
waste diverted  
from the landfill



# THE UNIVERSITY OF WASHINGTON

The University of Washington's Carbon Leadership Forum<sup>13</sup> (UW CLF) is an industry-academic collaborative hosted at the College of Built Environment's Department of Architecture. Led by Director Kate Simonen – an Associate Professor at the Dept. of Architecture and a licensed architect and structural engineer – the UW CLF is a professional community of manufacturers, designers, builders and academics focused on reducing the carbon 'embodied' in building materials. Industry sponsorships fund embodied carbon research at the UW, and firm representatives lead initiatives to encourage adoption of low carbon standards and practices across industry. Academics and industry leaders work together to understand and reduce embodied carbon: leading by testing methods, sharing results and motivating each other to improve.

To enhance and accelerate progress toward its mission, the UW CLF launched the Carbon Smart Building Initiative<sup>14</sup> (CSBI) in Fall 2017. This ongoing initiative brought together a growing community of architects, engineers, contractors, building material suppliers, academics, and NGO and government professionals who aspire to create a thriving built environment that safely stores mass amounts of carbon every year, while minimizing greenhouse gas (GHG) emissions over the lifespan of buildings and building materials. The UW CLF is working with this group of interdisciplinary partners across sectors to define and implement a roadmap to help the building sector meet zero-net carbon (ZNC) targets by 2050.

To broadly communicate and accelerate progress toward realizing the CSBI's vision, the UW CLF is hosting a full-day *Carbon Smart Building Day* on September 11 at the 2018 Global Climate Action Summit in San Francisco. This public-facing conference aims to convene over 300 sustainability leaders from across the building industry (architecture, engineering, construction and manufacturing practitioners, and building owners), academic institutions, government agencies and "green building" NGO's to identify steps that governments, corporations, organizations, and individuals can take to lead industry transformation toward a ZNC built environment. The conference will inspire and equip participants with the latest tools, resources and programs to help them on organizational and individual levels implement ZNC practices.

“

*“Climate change isn't a future problem — it is affecting people's health and well-being right now. Universities have the capability to not only help understand the effects of climate change, but to also develop the technologies and policies to reduce carbon emissions. The University of Washington is proud to be part of the University Climate Change Coalition and to renew our commitment to protecting the health of our planet.”*

— University of Washington President Ana Mari Cauce



Created the  
**EMBODIED CARBON BENCHMARK STUDY**

resulting in the largest known database of embodied carbon from existing buildings



**300+**  
members in the Embodied Carbon Network from 92 cities worldwide



**4 OF THE 5**  
top concrete producers in US use the standard to report the carbon footprint of concrete developed by CLF



# UNIVERSITY OF COLORADO BOULDER

For more than half a century, CU Boulder has been a leader in climate and energy research, interdisciplinary environmental studies programs, and engaging in sustainability practices both on campus and beyond. These endeavors fit within CU Boulder's mission to improve communities through collaborative research, innovation and entrepreneurship. Campus leaders have set a goal of reducing greenhouse gas (GHG) emissions by 20 percent by 2020 from a 2005 baseline, a 50 percent reduction by 2030, and 80 percent by 2050.

CU Boulder hosted the *Leadership Forum on Climate Solutions* on July 26, 2018, bringing together local leaders from academia, government, non-profits and the private sector to forge positive change with a day-long exploration of actionable solutions. Following a morning round of speakers who framed the day by outlining major challenges presented by climate change, participants broke into working groups to envision future "headlines" touting the successes of climate solutions that can be implemented locally today. Working groups next reconvened to identify specific opportunities and projects that could be pursued locally that might help bring those future headlines to fruition.

The leadership forum identified specific areas for further collaborative, cross-sector action, including the establishment of three new ventures/task forces. The first of these was a new innovation zone in Boulder earmarked for experimentation with land use and zoning capabilities that span both city and university land. This would be a living laboratory in which we can start to understand how people interact with particular climate solutions and how we might shape policy accordingly. The second new venture was to establish an innovation center/incubator/think tank focused on climate solutions, including problems around technology, financing, workforce development, policy and scaling. The third venture was to address regional transportation solutions that connect the shared multi-modal transportation visions of all sectors.

The participants in the leadership forum were optimistic that this conversation will lead to actions that meaningfully impact climate action in Boulder and the surrounding communities. The convening of a wide breadth of expertise and leadership on this topic created an opportunity to learn from each other and have a conversation from a diverse set of perspectives. Progress will be assessed through regular meetings of the new ventures/task forces and through periodic updates to a broader constituency that builds through collaborative action.

“

*“With our university partners in UC3, we can meet the challenges of climate resiliency and sustainability. Through leadership and innovation, together we can positively impact humanity now and for generations to come.”*

— University of Colorado Boulder  
Chancellor Philip DiStefano



**474**  
sustainability-  
related courses  
offered



**#1**  
ranking for earth  
and atmospheric  
sciences<sup>15</sup>



**12%**  
2011-2016 campus  
energy decrease  
per square foot

# UNIVERSITY OF MARYLAND, COLLEGE PARK

The University of Maryland, College Park (UMD) is the state's flagship university and one of the nation's preeminent public research universities. UMD is a global leader in research, entrepreneurship and innovation, educating more than 38,000 students and advancing knowledge in areas of importance to the state, the nation, and the world. UMD is working to achieve a 50% reduction in carbon emissions (from 2005 levels) by 2020 and a 60% reduction by 2025. The university is committed to achieving carbon neutrality for all scopes of emissions by 2050 and will make major updates to CAP at least every five years to include strategies that are based on the best knowledge and technology available at that time.

The University of Maryland, College Park (UMD), the research lead for UC3, hosted a forum on September 7<sup>th</sup>, 2018 entitled Building Collaborative Approaches to Climate Policy. The half-day forum included stakeholders both internal and external to the University from multiple sectors (academia, non-profit, industry). Notable participants came from campus working groups on topics ranging from sustainable energy pathways, land use, multi-sectoral governance and climate resilience.

This forum was established with four main goals: introducing stakeholders to each other; identifying the main problems/barriers to change in order to better circumvent them; generating an organic and inspirational call-to-action; and encouraging participants to actively build collaborative approaches to climate policy. This foundational forum launched a process to develop future convenings, including a planned, expanded day-long campus-wide conference in the Spring of 2019 that will focus on bringing in a much broader policy community from within the university and external stakeholders for a series of parallel discussions.

“

*“As consumers, grassroots organizations, communities, businesses and states all have the power and responsibility to make a difference on climate change. We and other research universities are increasing sustainability on our campuses, and using scientific and policy expertise to assist communities. UC3 will extend this impact.”*

— University of Maryland, College Park  
President Wallace D. Loh



**28%**

reduction goal in  
greenhouse gases



**\$7.5  
MILLION**

in state funding towards the  
Maryland Energy Innovation Institute



**25**

compost collection  
sites, campus-wide

# UNIVERSITY OF TORONTO

The University of Toronto (U of T) is one of the world's top research-intensive universities, driven to invent and innovate. The university is an international leader in climate change research, internal energy production, and overall energy-efficiency. With the establishment of a Presidential Advisory Committee on the Environment, Climate Change and Sustainability in 2017, U of T plans a three-prong approach that will treat the campus as a living lab of sustainability, act as an agent of change for sustainability in the community, and eventually develop an initiative that would make it possible for all undergraduate students to add sustainability content to their programs. From 2008 to 2016, despite a growth of 26% in floorspace, and 18% in the number of students, the University of Toronto's total greenhouse gas emissions have declined by 32% (over 45,000 tonnes). Under the UC3 climate commitment, the university plans to organize activities around climate change initiatives and has set a target of 37% reduction (about 38,000 tonnes) in greenhouse gas (GHG) emissions from 1990 levels by 2030.

On June 19<sup>th</sup>, the University of Toronto and the School of the Environment's Environmental Finance Advisory Committee (EFAC) held a conference entitled *Carbon Markets and Climate Finance: Alternative Financing Paths to a Low-Carbon Future; The University of Toronto's Path Forward*<sup>16</sup>. The conference continued earlier EFAC activities and events on rapidly evolving carbon markets and financing challenges, but had a particular focus on the University of Toronto as an example of a cap and trade "covered emitter" with a public commitment to meet aggressive emissions reduction targets. Specifically, the conference focused on identifying the various financing options and market mechanisms currently and prospectively available to organizations such as U of T. Emphasis was placed on identifying alternative paths that represent future potential sources of climate finance for leading market participants such as the university sector. Touching on Green/Climate Bonds, structured finance, carbon market activities, innovative leverage strategies and more, the goal was to identify a broad array of ways to finance U of T's GHG emission reduction commitments, making use of both public and private market funding sources.

The outcome of the convening was engagement from a broad group of stakeholders, particularly those in the finance sector, that helped identify specific financing options and market mechanisms available to U of T and organizations like them seeking investment to implement climate mitigation and adaptation projects.

“

*“Universities have a critical role to play in meeting the challenge of climate change. The University of Toronto has an outstanding record when it comes to both research in the field and carbon reduction efforts across its three campuses, and we’re looking forward to working with other universities to maximize our collective impact.”*

— University of Toronto President Meric Gertler



**100+**  
attendees at  
their cross-sector  
forum



**45,000  
TONNES**  
GHG emissions reduction  
from 2008 - 2016



**37%**  
GHG emissions  
reduction goal from  
1990 levels by 2030

# WASHINGTON UNIVERSITY IN ST. LOUIS

Washington University in St. Louis is building a better world by preparing and supporting more effective leaders with the knowledge, experience, and creativity to tackle complex problems. Through cutting-edge education, research and practice, WashU's global community is accelerating the discovery and application of solutions to the great energy, environmental and sustainability challenges facing our planet. A leader in green building, the University committed in 2008 to meet or exceed LEED Silver certifications for all new construction or major renovations. The campus is now home to more than 2.25 million square feet of LEED certified space, the majority of which achieved LEED Gold or Platinum certification. In 2010, the university set a goal to reduce greenhouse gas emissions to 1990 levels by 2020 without purchasing carbon offsets. Just five years into this effort, the University updated the goal to make it even more ambitious – to reduce greenhouse gas emissions to 1990 levels by 2020 including all campus growth, which nearly doubles the reduction required by the previous goal.

Washington University in St. Louis along with the Mayor of the City of St. Louis, and leadership from Ameren Missouri, the Donald Danforth Plant Science Center and Spire Incorporated recently co-convened a regional forum to catalyze a collaborative model to help businesses and organizations in the St. Louis region achieve climate goals and accelerate the transition to a low-carbon future.

During the day long event on August 28, executive leaders and technical experts from nearly 30 corporations, non-profits and educational institutions discussed goals and actions for climate mitigation and adaptation at their individual organizations, and how they might work together in a coordinated effort to benefit the St. Louis region. Through facilitated discussions, the group identified best-practices and opportunities for accelerating carbon reduction through building efficiency, the transportation sector and energy source.

Forum outcomes included a desire to increase exchange of information, sharing of best practices and disseminating information on existing programs and activities. To move forward on these needs the group endorsed: 1) a process of working through the existing One STL<sup>17,18</sup> energy and emissions work groups and 2) to maintain executive level communications.

“

*“Washington University in St. Louis recognizes that it is incumbent upon us, as a leading research institution, to help find solutions for the greatest challenges facing our planet. That includes climate change. Failing to reduce greenhouse gas emissions stands to irreparably harm our communities on a local, regional and global scale. Our university is committed to addressing climate change through our operations, curriculum, faculty research, and partnerships. These efforts have produced meaningful and measurable results: despite nearly doubling our campus’s physical footprint during the past 30 years, our university is on track to reduce its total greenhouse gas emissions to 1990 levels by 2020. We are proud to participate in the UC3 cohort, so together we can lead by example and share best practices to bring about lasting and positive environmental change.”*

— Washington University in St. Louis Chancellor Mark Wrighton



**2.25 MILLION**  
square feet of LEED certified  
space at WashU



**28% BY 2025**  
**80% BY 2050**  
emissions reduction  
below 2005 levels in the  
proclamation



**11**  
organizations - initial  
proclamation signatories;  
additional commitments are  
expected in the coming weeks

# CONCLUSIONS



University of British  
Columbia Director of  
Sustainability and Engineering  
John Madden with forum attendees  
at the President's Roundtable: Building  
Resilient Partnerships for Climate Action.

## Forum Reflections

The University Climate Change Coalition (UC3) recognizes the unique role Universities can play in driving local climate action. One of these roles is the convening power research universities possess. As part of the Coalition, each institution committed to convening local stakeholders from different sectors to discuss their local climate challenges and begin a path toward shared solutions. Each member university evaluated the climate action landscape of their locality, and in consideration of local mitigation and resilience priorities, organized their cross-sector forum. These convenings brought together around 120 individuals each, although some were smaller round table style discussions of less than 50 people while others were multi-day conferences with hundreds of attendees.

The UC3 model emphasizes a place-based approach to both convening leaders and creating a scalable research agenda. As a result, each forum was uniquely structured to suit the priorities of the region, and no two were alike. Topics discussed ranged from general climate science and regional modeling, climate impacts and community resilience, public health impacts and policy, finance mechanisms to support mitigation projects, sustainability in the built environment, renewable energy and electrification of energy systems, climate equity and more.

This diversity in both process and topics was one of the primary lessons from the UC3's first phase of work. Despite the similarity in types of institutions (e.g. large research universities), the institutional, cultural, and social contexts and starting points of engagement were widely divergent. This presents both a challenge and an opportunity. The challenge is that without common starting points, it was difficult to quickly synthesize topics and processes across the sites. As the forums took shape, it was important for all the participating institutions to agree on a set of outcomes to help level-set expectations and shape the agendas, especially for sharing lessons across the sites.

These are the outcomes the UC3 leaders all agreed to create or further develop at their forums:

- 1 - Connections and relationships with leaders from across sectors driving place-based climate action.
- 2 - A shared understanding of the current state of climate action in your self-defined area - including climate goals and climate solutions based on existing plans.
- 3 - A shared understanding of gaps and opportunities for accelerating climate action based on existing plans.
- 4 - A shared understanding of areas of higher education's research capacity that could be oriented towards place-based climate action.

The opportunity with the diverse approaches is that by tackling a broad set of issues and approaches, applying the strengths of the higher education sector will be better understood. Additionally, a larger menu of experience will be drawn upon for future cross-site opportunities and creates a wide topic pool from which deeper explorations and actions are possible. Finally, it provides an opportunity to expand the UC3 to include more institutions that may have an affinity or share a starting point that one of the members has surfaced.

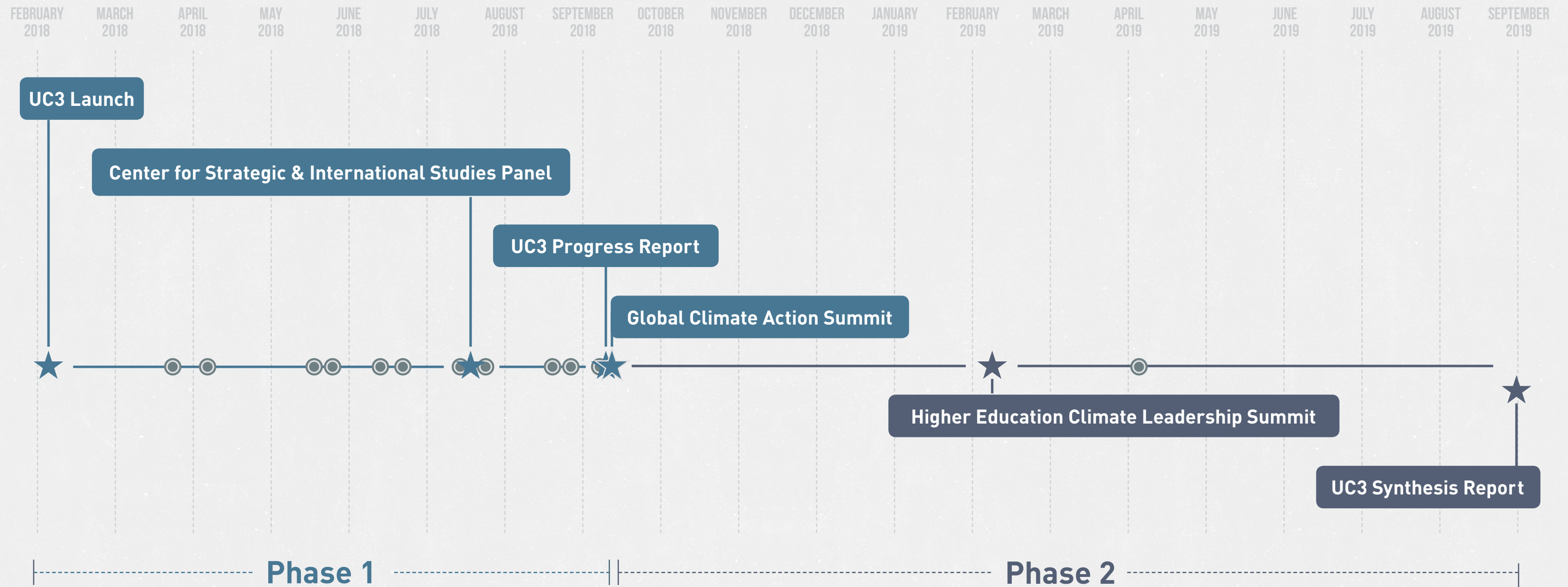
## Key Takeaways on Organizing a Cross-Sector Forum

**Send Intentional Invitations:** Be intentional and inclusive with who is invited to the conversation. Consider whether you want a public forum or if a cultivated list of private invitees will facilitate the best discussion. Depending on what your forum's objectives are, you may opt for more high-level forum content focused on leadership, which may be most appropriate for executive level attendees. Or, if your discussion is highly technical, it may be more appropriate for staff level participants accustomed to such detailed content. In addition to inviting the public and private sector actors, civil society groups and non-governmental organizations bring great value and context to these discussions.

**Frame the Conversation:** Be prepared with specific questions and topics you want to address and share those ahead of the convening. Consider preparing primers on the issues that will be discussed that could include background information, data summaries, and relevant policy considerations. By appropriately framing the forum before the event, attendees can come prepared to discuss the topics and reduce the amount of time needed to introduce the issues.

**Be Calendar Conscious:** Hold your forum in conjunction with other related events and consider the calendar cycle of the sectors involved. Leveraging existing conferences or events is a great way to convene leaders who may have competing obligations. In addition considering the election cycle and academic calendar when planning your forum can considerably improve engagement.

# A LOOK FORWARD



- Cross Sector Forum
- ★ Major Milestone

As UC3 moves past Phase 1, which was focused on convening leaders and building stronger cross-sectoral relationships and into Phase 2, the Coalition will begin a deeper analysis of the outcomes from the forums and begin to climate action activities, while continuing to build out the action steps. In the research-driven Phase 2, the Coalition will evaluate high priority research gaps and partnership opportunities that emerged from their convenings. By looking at areas of alignment between different sectors and the strengths of their own institutions, UC3 can then begin to conceptualize projects that will drive climate solutions in their region.

# APPENDIX



John Kerry, flanked by L.A. Mayor Eric Garcetti and Bank of America vice chair Anne Finucane at the International Mayor's Climate Summit held at Boston University.

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