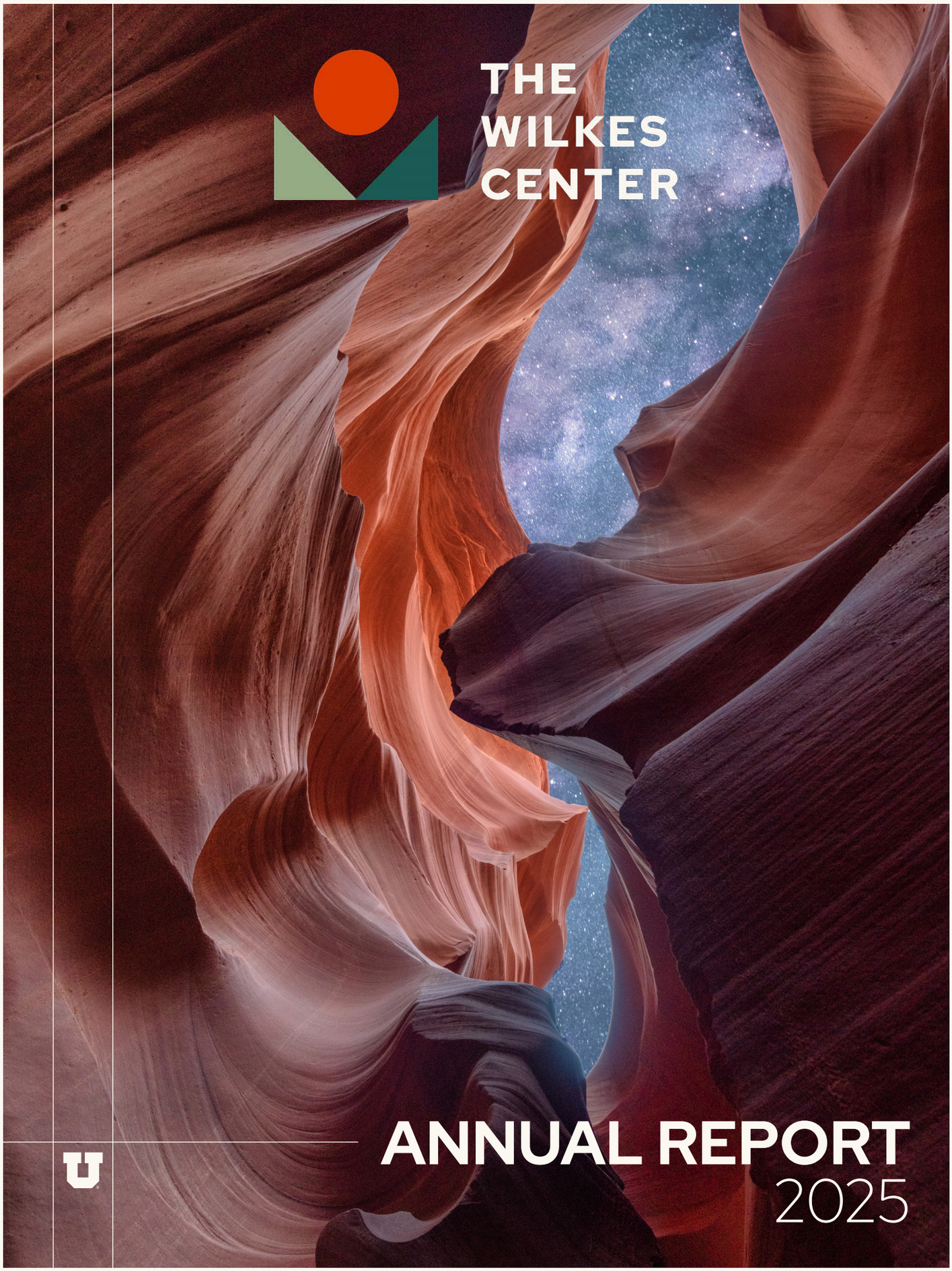

THE
WILKES
CENTER
ANNUAL REPORT
2025

REPORT CONTENTS

May 16, 2025

A few years back in the middle of another hot and dry summer, I was camping with my family down a remote mountain road in Utah. Unbeknownst to us, a wildfire had started a few miles away and was rapidly burning towards the only egress road. Another camper driving on an ATV past our campsite stopped and warned us that we needed to evacuate. Terrified as we raced down the rocky road out of the forest, we ultimately made it out just as the fire had burned within about thirty yards of the road, passing a number of firefighters coming up the road to contain the fire.

As someone who has spent a lot of time in the mountains, this experience was a shock and a wake-up call. There are a number of lessons that I learned that day. On the concrete end, as climate change drives more frequent and severe droughts and wildfire seasons, we need to better plan for the climate risks that are already affecting our families and communities. More broadly, we have to look out for each other, the other travelers alongside us on the roads, and we have to remember that data is crucial to decision-making. Finally, it will take all of us to prepare for, adapt to, and tackle climate change. It will take all of our dedication, ingenuity, and passion to solve these challenges and scale up the practical solutions that are already out there.

In these challenging and dynamic times, the two-fold goals of the Wilkes Center of getting cutting-edge science into the hands of decision-makers and accelerating practical climate solutions have never been more important. We pursue these goals through research, entrepreneurship, education, and outreach, elevating the scholars and students across disciplines working on climate change at the U.

WE NEED TO BETTER PLAN FOR THE CLIMATE RISKS THAT ARE ALREADY AFFECTING OUR FAMILIES AND COMMUNITIES.

In our third year, we've worked to become a nexus by bringing world-class scientists to the U in our speaker series, including the highlight of former Secretary of Energy and Nobel Laureate Steven Chu, and the third annual Wilkes Climate Summit. The impact of the science and innovation at the Wilkes Center has been covered in a wide variety of national media outlets. We're growing our engagement with stakeholders and developing a suite of web tools to help get rigorous science into the hands of decision-makers and policymakers around wildfire, energy, water, air quality, and ecosystems. Finally, the enthusiasm around the Wilkes Climate Launch Prize continues to astound—we received over 1,100 initial applications for the 2025 competition.

As wildfire seasons bring into stark contrast, Utah is particularly vulnerable to climate change impacts. At the same time, Utahns bring a pragmatic, solutions-oriented approach, and Utah stands to benefit enormously from the transition to a clean energy economy if we will step up to the plate. We also have an immense opportunity over the next decade to show the world an environmental success story by tackling our climate and water challenges by the 2034 Olympic and Paralympic Games.

In the year ahead at the Wilkes Center, we plan to increase our impact through tools to help decision-makers, growing partnerships in Utah and across the globe, and increasing the vibrant community of scholars and students at the U. I hope you will join us.

Sincerely,

William Anderegg
Director

MISSION

The Wilkes Center for Climate Science & Policy at the U strives to provide transformative, integrative, and cutting-edge science, education, entrepreneurship, and practical solutions to tackle climate change in Utah, the United States, and around the Earth. Researchers affiliated with the Wilkes Center are working on the defining issues of our age.

Clay Wilkes, Founder

LEADERSHIP

William Anderegg, *Director*
Professor, School of Biological Sciences

John C. Lin, *Assoc. Director*
Professor, Department of Atmospheric Sciences

Tim Collins, *Team Member*
Professor, Department of Geography, Environmental & Sustainability Studies Program

Sara Grineski, *Team Member*
Professor of Sociology & Environmental Studies

Gannet Hallar, *Team Member*
Professor, Department of Atmospheric Sciences, Director, Storm Peak Laboratory

STAFF

Kyla Welch, *Programs Manager*

Ross Chambless, Marketing and *Community Engagement Manager*

Max Seawright, *Assoc. Director of Research Development*

Praveenaa Kulandhaivel, *Web Tool Developer Sr.*

EXTERNAL ADVISORY COMMITTEE

David Cumming
VP, Board of Directors of Powdr Corp; Cumming Foundation

Tim Hawkes
General Counsel at Great Salt Lake Brine Shrimp Cooperative, Inc., Senior Fellow at the College of Science

Amy Luers
Global Director, Sustainability Science - Strategy & Solutions at Microsoft

Stephen Pacala
Frederick D. Petrie Professor in Ecology & Evolutionary Biology, Princeton University

James Randerson
Ralph J. and Carol M. Cicerone Professor of Earth System Science at UC Irvine

Rebecca Shaw
Chief Scientist and Senior Vice President, Global Science, World Wildlife Fund Inc

Clay Wilkes
Founder of the Wilkes Center for Climate Science & Policy, Founder of the Red Crow Foundation

FOUNDERS

Clay and Marie Wilkes
Founders Clay and Marie Wilkes have worked on humanitarian projects for decades, leading education and economic initiatives in Salt Lake City, Peru, and Nepal. The Wilkes Center for Climate Science and Policy was created in 2022 as a result of their desire to urgently address threats created by climate change.

BY THE NUMBERS
(FY 2024/25)

7
faculty projects awarded seed grants

6
climate-focused postdoctoral researchers funded

8
funded graduate students

20
graduate research & travel grants funded

17
Wildfire Hackathon submissions

11
speaker events

$250,000
climate launch prize

1,108
total international climate prize submissions

65
undergraduate Wilkes Scholars

87
students doing climate-focused SRI research

RESEARCH LEADERSHIP

TRANSFORMATIVE, INTEGRATIVE, CUTTING-EDGE

Wilkes Center Faculty Leadership are accomplishing groundbreaking research to help policymakers make informed decisions for addressing climate change.

WILLIAM ANDEREGG has been recognized by the National Science Foundation's Alan T. Waterman Award, Presidential Early Career Award in Science and Engineering (PECASE), National Science Foundation Faculty Development Early Career Science Program (CAREER); Blavatnik Foundation National Laureate in Life Sciences, Web of Science Global Highly Cited Researcher; Packard Foundation Fellow for Science and Engineering; and as an Early Career Fellow of the Ecological Society of America. He joined the faculty at Utah in 2015 and served as an Associate Research Scholar at the Princeton Environmental Institute, Princeton University until 2016. He was a NOAA Climate & Global Change Postdoctoral fellow at Princeton, and earned a B.A. in Human Biology and Ph.D. in Biology from Stanford University.

JOHN LIN has over 20 years of experience researching the emissions and transport of greenhouse gases and atmospheric pollutants, publishing over 100 peer-reviewed journal papers to date. He was selected as a Earth Leadership Fellow in 2022 and participates regularly in national and international research efforts such as with the World Meteorological Organization and the European Union. Lin's research group is carrying out greenhouse gas and air quality observations in the Salt Lake area, as well as in the Uinta Basin. John also works regularly with satellite observations from NASA to determine carbon emissions from cities around the world. He has recently served on the Great Salt Lake Strike Team to synthesize scientific knowledge and inform policy decisions surrounding the Great Salt Lake. Lin received his AB, AM, and Ph.D. degrees from Harvard University and was a NOAA Climate & Global Change Postdoctoral fellow.

TIMOTHY COLLINS is Co-Director of the Center for Natural & Technological Hazards. He has co-authored numerous studies that document how racial/ethnic minority and low- socioeconomic-status populations in the US experience disparate exposures, adverse experiences, and health impacts from climate and weather hazards such as air pollution, flooding, and extreme heat. Recent projects have focused on the socially disparate impacts of large climate-related disasters, including Hurricane Harvey and Winter Storm Uri. Collins is a member of the USEPA Board of Scientific Counselors. Collins received his Ph.D. from Arizona State University as an National Science Foundation (NSF) Integrative Graduate Education and Research Traineeship fellow in urban ecology, and his bachelor's and master's degrees from Chico State University.

SARA GRINESKI co-directs the Center for Natural and Technological Hazards where she collaborates with undergraduate and graduate students on research related to environmental injustice, environmental hazards, and health. She came to the University of Utah in 2018 after working as a faculty member at the University of Texas at El Paso. Through the Wilkes Center, she co-directs the Wilkes Scholars Programs (for undergraduate researchers) and collaborates on research on the health effects of wildfire smoke and social disparities in dust from the Great Salt Lake. Sara earned her Ph.D. and M.A. from Arizona State University with the support of a NSF Fellowship.

GANNET HALLAR leads the research team titled HART (Hallar Aerosol Research Team). This includes work at the U's mountaintop Storm Peak Laboratory in Colorado. The team has recently published findings that human-caused emissions are producing aerosol in the atmosphere under conditions of turbulence in the Heber Valley—a finding that could help increase the accuracy of climate forecasting models. The overarching theme of Hallar's research is using high quality measurements of trace gases, aerosol physical and chemical properties, and cloud microphysics to understand connections between the biosphere, atmosphere, and climate, along with the impact of anthropogenic emissions on these connections. More specifically, her current research uses high-elevation sites, combined with airborne measurements, to study the formation processes of both ice and cloud condensation nuclei. In 2025, Hallar's group was busy actively conducting measurements for the field campaign titled "Snow Sensitivity to Clouds in a Mountain Environment" (S2noCliME), which leverages many NSF-funded resources in addition to the Storm Peak Laboratory's instruments to improve snowfall forecasts and climate change projections in the western US mountains.

AWARDED FACULTY SEED GRANTS

The Wilkes Center Seed Grant Program provides initial support for impactful research, exploring the fundamental processes surrounding climate change as well as the policy impacts and opportunities. This year we awarded a total of $203,657 in seed grant funding. The Wilkes Center awarded seed grant funding to the following University of Utah faculty projects in Spring 2025:

PI: Adrian Bell
Department of Anthropology
Building a cross-cultural program to mitigate ecological knowledge loss and promote climate adaptation in island and coastal communities

PI: Jessica Brown
School of Biological Sciences
Climate change and the evolution of fungal pathogenesis

PI: Eric Herschthal
Department of History
Carbon Conscripts: Slavery and the Origins of Climate Change

PI: Judy Ou
Pediatrics Department, U of U School of Medicine
Identifying the national impact of wildfires on pediatric respiratory health

PI: Sara Warix
Department of Geology & Geophysics
Investigating the climate change impacts on Wasatch Mountain water resources

PI: Haoning Xue
Department of Communication
Tackling Overconfidence: A Sustainable Solution to Media Literacy Disparities for Climate Justice among Communities of Color

PI: Heejin Yoo
School of Biological Sciences
Unraveling the role of volatile organic compounds in plant immunity and climate adaptation: bridging molecular mechanisms and broader impact

Read more here:

2023 FACULTY SEED GRANT AWARDEE UPDATES:

2023 Wilkes Seed Grant awardee **Juan Carlos de Obeso**, Assistant Professor of Geology and Geophysics, recently published his research (the journal FUEL, April 2025) into how we may better capture and store CO_2 in basaltic aquifers through a method involving water-alternating-gas (WAG) injection to capture more carbon at a lower energy cost.

‘23 awardee **Jeff Rose**, assistant professor-lecturer in the Department of Parks, Recreation, and Tourism, recently presented his work on leisure spaces and tree shade to mitigate extreme urban heat in Detroit, MI, and Pittsburgh, PA.

THE WILKES CENTER
FOR CLIMATE
SCIENCE & POLICY

The Wilkes Center postdoctoral scholar program is creating the next generation of leaders in climate science and policy. We endeavor to attract spectacular recent Ph.D.s in science from around the world that address studies with relevance to the Wilkes Center climate research and climate policy goals, ranging from data-informed climate forecasting; wildfire and climate extremes such as heat waves, droughts, and floods; climate impacts on local communities, economies, ecosystems, and human health; and the development of tools to mitigate, adapt, and manage climate impacts. Wilkes Postdoctoral Fellows create their own climate-related research projects under the guidance of faculty mentors.

CURRENT POSTDOCS

Jyorthana Rajappa Muraldihar
Chemistry
Global Zero Emission Research Center, AIST West, Japan

Smriti Srivastava
Geography
Ph.D. Indian Institute of Technology (IIT), Indore, India

Malcolm Araos
Geography
Ph.D. Sociology, New York University

Alfred Mayhew
Atmospheric Sciences
Ph.D., University of York, UK

Liz Mahon
Geology and Geophysics
Ph.D., University of Melbourne

Jacob Levine
Quantitative ecology
Ph.D. Princeton University

NEW REGIONAL PARTNERSHIPS

The WIRED Global Center
The new U.S.-Canada Center on Climate-Resilient Western Interconnected Grid, (WIRED Global Center), launched in 2023 and is jointly funded by the National Science Foundation and Natural Sciences and Engineering Research Council of Canada (NSERC). This center will lead critical development of power grid resilience in an era of increasing climate challenges affecting the Western electrical grid that spans 136,000 miles and serves nearly 80 million people across two Canadian provinces and 11 Western US states. With intensifying climate challenges affecting the electrical grid, including more frequent and extreme weather disturbances, this interdisciplinary center will pioneer solutions to fortify the Western Interconnection, safeguarding against floods, winds, droughts, and other climate-related events to ensure a resilient energy landscape for generations to come.
> resilience.utah.edu

Southwest Sustainability Innovation Engine (SWSIE)
In 2023, the NSF announced creation of a new multi-institutional enterprise, the Southwest Sustainability Innovation Engine (SWSIE), that includes the University of Utah and six core academic partners that will confront the climate challenges facing the desert Southwest and spur economic development in the region. Led by Arizona State University, SWSIE aims to equitably transform water security, renewable energy, and net carbon emissions in the region by incentivizing new technology and governance, expanding infrastructure and capacity for knowledge translation, and preparing a diverse and highly skilled workforce. SWSIE will use these challenges to catalyze economic opportunity and seeks to establish the Southwest as a leader in carbon capture, water security and renewable energy, and bring high-wage industries to the region. SWSIE unites academic, community, nonprofit, and industry partners across Arizona, Nevada and Utah that are committed to this goal. The Wilkes Center is a key partner with SWSIE on research, innovation, and workforce development.
> swsie.asu.edu

GREAT SALT LAKE STRIKE TEAM

In January 2025, the Great Salt Lake Strike Team released its 2025 data and insights summary for state legislators. The report highlights the numerous economic, ecological, and human health benefits of the lake, and the significant costs of inaction to the economy, human health, and ecological conditions if lake levels continue to decline. It also summarizes the meaningful progress the state is making with water conservation, infrastructure investment, statutory and regulatory reforms, and identifies actions needed over the next ten years and beyond to preserve the benefits Great Salt Lake provides to Utah and the world.

The Great Salt Lake Strike Team—a collaboration of technical experts from Utah's research universities and state agencies, including the Wilkes Center—was created in 2022 when Utah legislators requested a comprehensive assessment after the lake dropped to record low levels. The Strike Team has shown to be a national model for making an impact on local policy action through engaging and collaborating with key stakeholders to tackle this major climate-related challenge.

MICROSOFT WHITE PAPER

The Wilkes Center partnered with Microsoft in supporting its newly published white paper "Investing in nature for a sustainable future: Lessons from science and practice." The paper, released on October 9, 2024, puts forward eight actions for what is needed to empower companies to maximize the sustainability impacts of their nature-based investments.

The policy paper makes a strong case for how companies have an important leadership role to play with investing in nature-based solutions such as carbon dioxide removal, water replenishment, or biodiversity conservation. The specific benefits of these investments hinge on the health of the whole ecosystems which provide these services.

XPRIZE WILDFIRE SUMMIT COLLAB

In October 2024, The Wilkes Center collaborated with the XPRIZE wildfire team to host a four-day summit at the University of Utah. XPRIZE Wildfire is a four-year, $11 million competition incentivizing the innovation of firefighting technologies that will end destructive wildfires. Over the course of the Summit, a diverse group of over 100 professionals, including fire managers, climate experts, insurance providers, utilities, investors, UAS experts, SMEs, partners, sponsors, and the exceptional Qualified Teams, gathered to exchange insights and expertise on addressing destructive wildfires.

2024 WILKES SUMMIT

The annual Wilkes Climate Summit at the Eccles Alumni House at the University of Utah convenes leading policymakers, and nationally-recognized scientists, foundations, and innovators to discuss the most promising and cutting-edge solutions for climate change.

The two-day event in May 2024, featured pitch sessions by seven finalists for the $500,000 Wilkes Climate Launch Prize, in addition to influential keynote speakers and solutions-focused breakout panels on urban heat, wildfire, water, methane, AI and emerging tech, and winter sports. The summit also showcased 77 student research projects.

The 2025 Summit, to be held May 15, 2025, will again feature a promising array of climate launch prize finalists, along with keynote speakers: Jane Lubchenco, University Distinguished Professor at Oregon State University, and former Administrator of the U.S. National Oceanic and Atmospheric Administration (NOAA); and Conor Walsh, Assistant Professor in the Economics Division at Columbia Business School, working on the macroeconomics of the global rise of solar power. Topical breakout panels will focus on energy innovations and policy in Utah; climate change and outdoor recreation; wildfire and insurance; water resources; and agricultural solutions to climate change. This year's summit will also include an undergraduate lightning talk session to highlight the stellar research done by undergraduate scholars at the U. Read more here:

Talking Climate

Read more here:

PODCAST

Ross Chambless, Community Engagement Manager for the Wilkes Center, has continued to host the Talking Climate podcast that features conversations about transformative research happening in the fields of climate science and policy at the University of Utah. Talking Climate brings University of Utah climate change researchers and their work into focus.

As of May 2025, the podcast has produced two seasons with 29 episodes so far, with over 1,500 downloads across the world since launching in November 2023.

SPEAKER SERIES 2024/25

Each semester the Wilkes Center Speaker Series provides a welcoming venue for scientists, researchers, and policymakers to discuss challenges and solutions for the defining issue of our age - climate change. The series seeks to create a platform for distinguished researchers to share insights, to foster meaningful opportunities for dialogue and collaboration, and to enhance awareness and motivate effective policy action.

Read more here:

Community Symposium: Urban Forest Strategies for a Future Climate
Tony Gliot

Charlie Perington

Alexandra Ponette-Gonzalez

Sarah Hinners (moderator)

Co-hosted with Red Butte Garden and Arboretum Orangerie
(September 23, 2024)

XPRIZE Wildfire
Autonomous Wildfire Response Team Summit

Eccles Alumni House
(October 14-17, 2024)

Fire Weather: On The Front Lines Of A Burning World
John Vaillant

Co-sponsored with American West Center and NHMU
(November 7, 2024)

1st Oxford Environmental Change Institute (ECI) Virtual Roundtable
Michael Obersteiner

William Anderegg

Tonie van Dam

Fielding Norton (Moderator)

Eccles Alumni House
(November 1, 2024)

2nd Oxford ECI Virtual Roundtable
Samira Barzin

Jon Wang

Crocker Science Center
(November 26, 2024)

Greenhouse Gases, Air Quality, and Future of The Wasatch Front
John Lin

Co-hosted by Friends of Alta Salt Lake City Main Library - Auditorium
(November 13, 2024)

Great Salt Lake Strike Team: Gardner Policy Institute Newsmakers Breakfast
2025 Great Salt Lake Data and Insights Summary release discussion
(January 14, 2025)

Pediatric Health Equity Symposium panel: Wilkes Center for Climate Science and Policy: The Air We Breathe, The Heat We Feel
Sara Grineski

Tabitha Benney (Panelist)

Jeff Rose (Panelist)

Quang-Tuyen T. Nguyen (Moderator)

John Lin (Moderator)

Hosted by Intermountain Children's Health & Primary Children's Hospital and the University of Utah Department of Pediatrics
(February 7, 2025)

College of Science Frontiers of Science Lecture
Steven Chu
"My Random Walk in Science"

Natural History Museum of Utah
(February 18, 2025)

3rd Oxford ECI Virtual Roundtable
Divya Chandrasekhar

Tom Harwood

Paul D. Brooks

Crocker Science Center
(March 3, 2025)

From Data to Dialogue: Applying Science to Assess Ecosystem Carbon Management Strategies
Sara Kuebbing

Virtual
(April 4, 2025)

WILKES CENTER IN THE MEDIA

Courthouse News Service
(Jun 21, 2024)
"Toxic dust from the Great Salt Lake disproportionately affects Utahans of color, low-income residents"

@TheU
(Jul 1, 2024)
"Airborne dust from Great Salt Lake playa has bigger impact on communities of color"

Deseret News/KSL
(Jul 2, 2024)
"How Great Salt Lake dust impacts people of color"

KSL
(Jul 3, 2024)
"Pacific Islanders, other minorities face higher risk from blowing Great Salt Lake dust, study finds"

News from the States
(Jul 5, 2024)
"Dust from the Great Salt Lake has outsized impact on disadvantaged communities, study says"

Axios
(Jul 10, 2024)
"Great Salt Lake dust disproportionately impacts Latinos and Pacific Islanders"

NewsWise
(Jul 12, 2024)
"How do we stop the burn? - Wildfires in the US: A Growing Concern"

@TheU
(Jul 28, 2024)
"Unraveling Utah's summer ozone puzzle"

Salt Lake Tribune
(Jan 4, 2025)
"U. of Utah's $500K prize backs proposal to use crop waste to store carbon"

KSL
(Jan 12, 2025)
"Study says 2 key crops are harming Great Salt Lake; state unsure on recommendations"

Fox 13 News
(Jan 14, 2025)
"New report says Great Salt Lake still at risk, needs long-term support"

Standard Examiner
(Jan 14, 2025)
"Here's how much water is needed to get the Great Salt Lake back to 'healthy' by 2050s"

Deseret News/KSL
(Jan 14, 2025)
"Renewing a natural wonder: Utah's path to sustaining the Great Salt Lake"

Utah News Dispatch
(Jan 15, 2025)
"Report details the state's 'meaningful' progress getting more water to the Great Salt Lake"

Phys.org
(Jan 15, 2025)
"Technology for oxidizing atmospheric methane won't help the climate, researchers say"

KSL
(Jan 15, 2025)
"2024 was Utah's second-warmest year on record. These counties broke records"

@TheU
(Jan 15, 2025)
"Great Salt Lake is rebounding but dust monitoring needs improvement"

Climate Central
(Jan 22, 2025)
"Fastest-Warming Seasons"

@TheU
(Feb 12, 2025)
"U, Cote-d'Azur students tackle climate-water solutions"

KSL
(Mar 4, 2025)
"Here's why Salt Lake City has higher per-vehicle carbon monoxide emissions than LA"

Neighbors of Park City
(Mar 4, 2025)
"Could the LA Wildfires Happen Here? Sometimes, The Best Places to Live Are the Most Dangerous"

New York Times
(March 25, 2025)
"Spring Allergy Season Has Arrived. Here's What to Know."

THE WILKES CENTER
FOR CLIMATE
SCIENCE & POLICY

CLIMATE TOOLS AND DATASETS

The Wilkes Center website is home to a growing number of interactive visualization tools that illustrate findings and scenarios from research undertaken by Wilkes Center faculty.

Global Forest Climate Risk Modeling
Interactive tool showing carbon storage potential in forests in the US.

Utah Greenhouse Gas Monitoring Tool
Provides real-time data on CO_2 and methane emissions at strategic monitoring sites across northern and eastern Utah.

High-Resolution US Forest Risks Modeling Tool
This map shows harmonized projections of risks to forest carbon from fire, drought, and insects under a changing climate.

US Forest Carbon Futures Modeling Tool
Projects the relative risk to Earth's forests globally during the 21st century based on multiple approaches, datasets, and climate change scenarios.

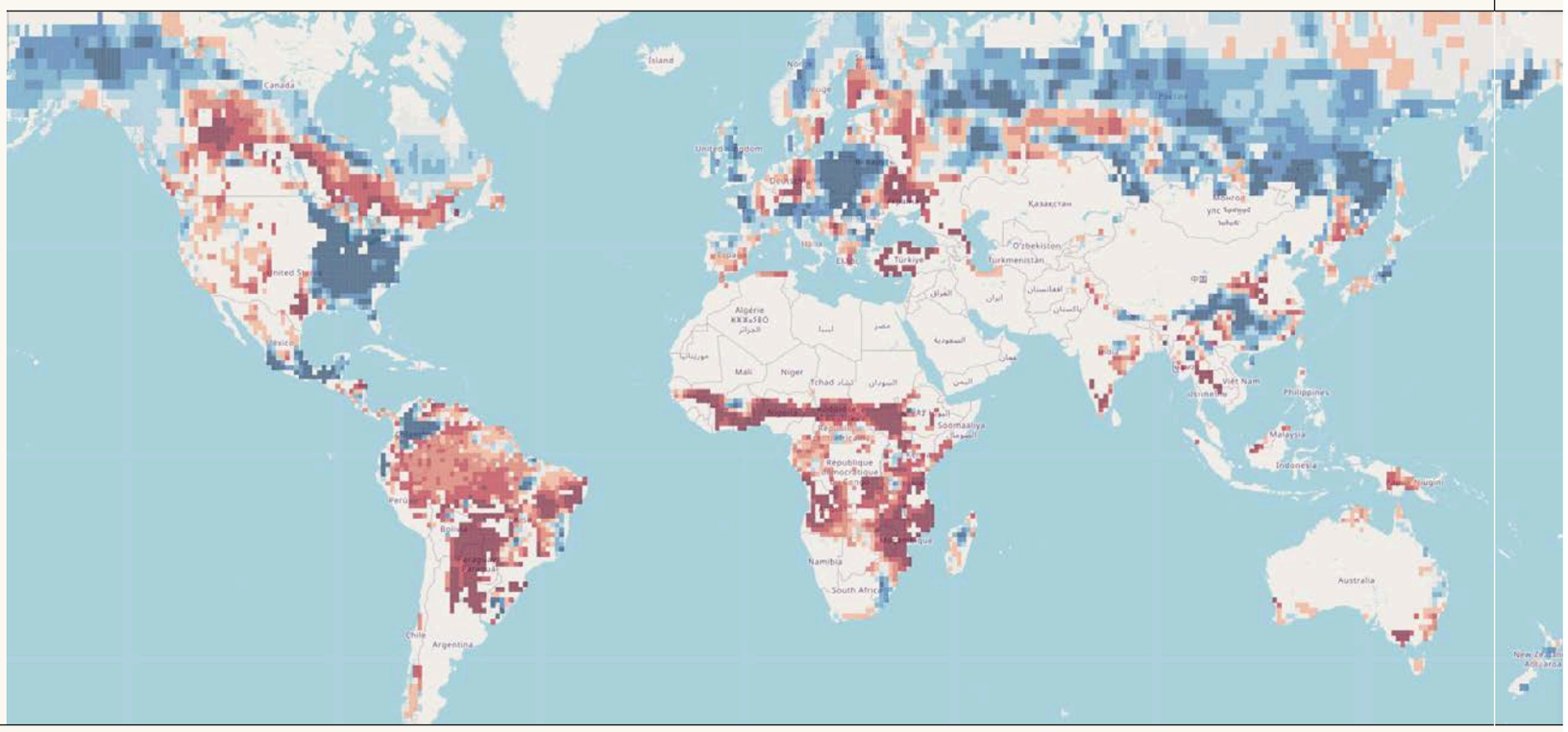
Balsam Woolly Adelgid Monitoring Tool
Maps current and future exposure to climate-facilitated balsam
woolly adelgid damage to subalpine fir trees in Northern Utah.

PM2.5 Visualization Tool
Shows PM2.5 air quality data from Smoke across the US.

US Carbon Reversal Risk Tool
Visualizes the 100-year carbon reversal risk of forests under different disturbances and severity scenarios.

See them all here:

Wilkes Center's Global Forest Climate Risk Tool



WILKES SCHOLARS PROGRAM

FALL ‘24 / SPRING ‘25

The Wilkes Scholars Program (WSP) enables outstanding undergraduate students to explore pressing climate challenges facing our state, region, and planet through transformative research. In coordination with the Office of Undergraduate Studies, Wilkes Scholars work with a mentor to advance research related to the mission of the Wilkes Center for Climate Science and Policy—catalyzing innovative science and solutions to address climate change.

Ainsley Parkins
Biology
Unveiling Cryptic Avifauna Diversity Using “Nanopore DNA Sequencing: A Case Study in the Passerine Genus Emberiza (Passeriformes: Emberizidae)”

Alec Roberts
Psychology
“A Study of Identity and Behavior in Reaction to Critical Climate Change Information Utilizing Mobile Eye Tracking in a Museum Setting”

Allison Perkins
Biology
“Quaking Aspen Pathogen Defense in the Presence of Climate Change Related Drought”

Anya Otterson
Civil Engineering
“Assessing the efficacy of spatially continuous snow water equivalent mapping products employing machine learning”

Auriana Dunn
Anthropology
“Comparing Historical and Modern Mammal Distribution at Bear River Basin: Has climate had an effect?”

Autumn Hartley
Geoscience
“The Cause of Excess Magmatism in the Northern Atlantic Margin”

Bennett Davenport
Geoscience
“Evaluating the Effects of Climate Change on the Feeding Ecology of Uinta Mountain Rodents”

Bitia Robles
Health, Society and Policy
“Evaluating the Impact of Discontinuing Carbon Credit Use and Its Effect on Corporate Emissions”

Brandt Winn
Biology
“Water Use of Native vs. Invasive Plants in Riparian Zones”

Celeste Maybell
Environmental & Sustainability Studies
“Shade, Urban Heat, and Public Transportation in Tucson, Arizona”

Christopher Johanson
Earth and Environmental Science
“Exploring Changes in Tropical Cyclone Mean Rainfall Due to Climate Change”

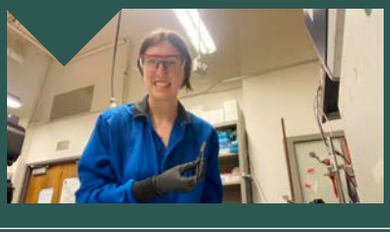
ALLISON PERKINS is researching the effects of climate change on Quaking Aspen populations. She hypothesizes that Sudden Aspen Decline (SAD) is not just caused by a lack of water, but also disease. Increasing drought due to climate change may be affecting these aspens’ ability to fight off microbial pathogens. Allison is working to deepen our limited understanding of the mechanisms that link SAD with specific microbial diseases.

continued...

continued from pg16...

Christopher Kennedy
Environmental & Sustainability Studies
"Historic Paleoclimate Reconstruction and Dating of West Desert/Dugway Site Through Sediment Core Analysis"

Delaney Miller
Chemistry
"Organic Mixed Ionic-Electronic Conductors for Green Energy Storage"



Drew Hooker
Atmospheric Sciences
"How Wildfire Smoke as an Exceptional Events affect Human Health"

Eliana Massey
Museum Studies & Philosophy of Science.
"Food Sovereignty Possibilities for Pacific Islanders in Salt Lake City's West Side"

Gabriella Karakcheyeva
Biology
"Evaluating carbon isotope ratios in burned versus unburned trees during drought years"

Gracyn Hinojosa
Anthropology
"The Impact on Ranching Culture and Livestock Management in the Baja California Peninsula"

Ilinca Mocuta
Atmospheric Sciences
"Investigating Effects of Fine Scale Air Quality Changes on Animal Behavior"

Isabella Calhoun
Biology and Anthropology
"Using Taphonomic Analysis to Reveal Ecological Interactions and Depositional History at the Thundershower Cave Site"

Izabelle Chick
Environmental & Sustainability Studies
"Understanding the Interplay of Emotions, Risk Perception, and Climate Change: Towards Political Action and Policy Support"

Jacob Sussman
Physics
"Environmental niche model of Coccidioides presence using mammal distributions"

Jailyn Primero
Biology
"Analyzing Past Ecological Disturbances to Understand The Response of Vegetation"

CELESTE MAYBELL

is researching shade equity in the city of Tucson. They predict that land surface temperature (LST) will be higher and shade will be less around bus stops serving neighborhoods with lower incomes and higher racial/ethnic minority composition. Utilizing data derived from the United States Geological Survey on LST, sociodemographic data from the United States Census, and primary data gathered on bus stop shade environments in the City of Tucson, Celeste is hoping to determine what relationship exists between these factors. Then they can develop a strategy on how the data can be used to change cooling designs for bus stops throughout the city and establish shade equity.

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continued from pg17...

Jane Darmstadt
Biology
"Using Past Ecosystems to Understand Modern Climate Change: A Case Study from Utah's House Mountain Range"

Jasmine Aguilar Lopez
Communication
"Atrapadxs en un Hoyo: Reproductive Justice and Environmental Health of Latina Mothers and Children in Salt Lake City Utah"

Juliana Moyano
Anthropology
"Impacts of Drought and Economic Variability on Ranch Abandonment in Baja California Sur, Mexico."

Kaitlyn Landers
Biology
"Determinants of Phalarope Numbers on Great Salt Lake"

Kaylee Meyers
Biochemistry
"Long and Short Term Spatiotemporal Response of Common US Mammals to Extreme Weather Events"

Kierra Forthman
Chemistry
"Heavy Metal-Free Green Energy Storage Devices Operating in Water-Based Electrolytes"

Kyle Pope
Geoscience
"Monitoring Seasonal Aquifer Storage Change in the Salt Lake Valley using Repeat Microgravity and GPS Measurements"

Kyler Pak
Chemical Engineering
"An Analysis on The Accuracy of Current Weather Forecast Models on Extreme Weather Events"

Lamia Hajdarevic
Biology
"Impacts of Wildfire on Xylem Anatomy in Four Tree Species Located in Southwest Colorado"

Lexi Bohman
Geoscience
"Chambered Nautilus: Fundamental Challenges with Biomineralization Alongside Climate Change"

Lucy Leary
Mathematics
"The world in color: how different types of noise affect ecological transient dynamics"

Madeline Sellers
Geoscience
"Updated Inventory of the Rock Glacier in the La Sal Mountains"

Melanie Osuna
Environmental & Sustainability Studies
"The Reconstruction of Fire History in the West Desert"

Natalia Lopez
Undeclared
"Resident Perspectives on Air Pollution and Environmental Injustice in Salt Lake County"

Nate Stovak
Computer Science
"Predicting Monthly to Seasonal Southwestern United States Precipitation Anomalies"

Nathan Murthy
Biology
"Migration Path Analysis of Booted and Steppe Eagles in the African-Eurasian Flyway"

Preston Aiken
Earth and Environmental Science
"Emphasis in Climate Forecasting Support for the 2025 Summer Ozone Study"

Rachael Noble
Geoscience
"Cosmogenic 3He Surface Dating: Alpine Glaciers of Fish Lake Plateau and Boulder Mountain, Utah"

Rachel Christensen
Geography
"Stomatal Density as a Proxy of Changing Atmospheric Conditions in Pinus longaeva: exploring responses in stomatal conductance"

Riley Cummings
Anthropology
"Impact of Natural Disasters and Climate Shocks on Risk Perception in the Baja California Peninsula"

continued...

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Rylie Gagne
Computer Science
"Enhancing Models of Optimal Polar Bear Movement in the Arctic through Advanced Data Science and Image Processing"

Shaylee Whipple
Anthropology
"Evaluating the Effect of Climate Change on Body Size of Animals in Owl Cave"

Sofia Perez
Chemistry
"Controlling Phase Transitions in Dialkylammonium Halide Salts for Green Energy Storage"

Sofia Price
Anthropology
"Drought Affectedness of Ranches in the Baja California Peninsula"

Tobias Armstrong
Computer Science
"Exceptional Event Demonstration Tool Development"

Zhiyao Lin
Mathematics
"The Dynamics of the Microbial Community within Sea Ice"

WILKES SCHOLARS PROGRAM
SUMMER '25

Camryn Carr
Geoscience
"Hydrologic Shifts from Climate Change: A Study of Two High Mountain Watersheds"

Colby Estey
Geoscience
"Comparison of GPS and GRACE/GRACE-FO Geodetic Observations with Hydrologic Observations in the Salt Lake Valley"

Ellis Foster
Geography
Using Drone-Based Remote Sensing and Geospatial Information Systems (GIS) to Analyze Vegetation Health and Stream Discharge in Wasatch Mountain Streams"

Gavin Mclean
Architectural Studies
"Exploring the Potential of Ailanthus Altissima as a Zero-Waste Building Material"

Kaitlyn Landers
Biology
"Determinants of Phalarope and Eared Grebe Numbers on Great Salt Lake"

Megan Jones
Applied Mathematics, and Environmental Science
"The Paper Nautilus: Differences of and Climate Implications for Argonauta Shells between Species"

Sydney Smith
Environmental & Sustainability Studies
"Impact of Clausius-Clapeyron Thresholds and Monsoon Patterns on Extreme Precipitation Events in the Salt Lake Region"

SRI RESEARCH STREAMS

The Wilkes Center currently funds ten different Science Research Initiative (SRI) streams through the College of Science. The SRI program offers College of Science students the opportunity to participate in discovery-based scientific research and chances to build connections with faculty across the University.

- **Pollination Biology**

Stream Leaders: Josh Steffen & Heather Briggs

Students: 7

- **Microalgae in the Great Salt Lake**

Stream Leader: Andrea Halling

Students: 16

- **Biogeography of Nematodes**

Stream Leader: Michael Werner & Julie Jung

Undergraduate students: 2

- **Climate Change and Utah's High Elevation Ecosystems**

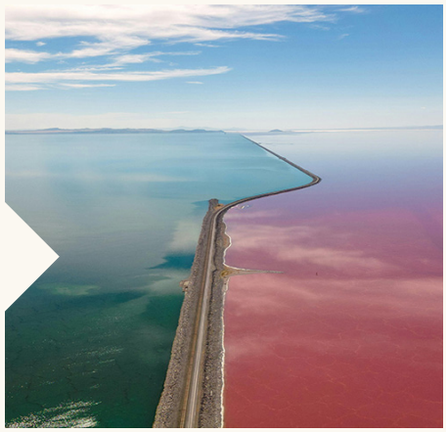
Stream Leader: Kasey Cole

Undergraduate students: 16

- **Human/Wildlife Coexistence**

Stream Leader: Austin Green

Undergraduate students: 15



- **Monitoring Forest Disturbance from Space**

Stream Leaders: Jon Wang & Yahampath Marambe

Students: 3

- **Botanical Conservation**

Stream Leader: Sarah Hinners & Kara Hastings

Undergraduate students: 4

- **Reducing Food Loss and Waste: A Triple Win for the Climate, People, & Planetary Health**

Stream Leaders: Yusuf Jameel

Students: 2

- **Revealing Environmental Change Through Lake's Memory**

Stream Leader: Susan Velasquez-Franco & Mitch Power

Students: 4

- **The Beaver Stream**

Stream Leaders: Rachel Havranek

Undergraduate students: 16

SRI STREAM

MONITORING FOREST DISTURBANCE FROM SPACE

Forests are increasingly threatened by climate change and human activity. To understand these threats, we must know when, where, and how forests have been affected by wildfires, drought, and other disturbances. Jon Wang, Yahampath Marambe, and their team of student researchers utilize machine learning and satellites to detect forest disturbance from space. Ultimately, they will produce better maps of forest disturbance that can be used to protect these important ecosystems.

From left to right: Amichi Ameh (current SRI), Gwyn Pleatman (current SRI), April Radford (lab tech), Yahampath Marambe, Tyler Shek (former SRI),Olivia Saenz (current SRI) Not pictured: Emilie Parra (former SRI)

GRADUATE DISSERTATION FELLOWSHIPS

THE WILKES CENTER FOR CLIMATE SCIENCE & POLICY

This year the Wilkes Center created a new Dissertation Fellowship to support the dissertation writing phase for Ph.D. candidates whose dissertation projects focus on the broad themes of climate science and climate policy. Applicants can apply for one or two semesters of support to complete a research-based, dissertation-required Doctor of Philosophy (Ph.D.) degree. Funds are intended to support the final semesters of writing and defense of the dissertation.

This year we awarded a total of eight Graduate Dissertation Fellowships. The Wilkes Center awarded Graduate Dissertation Fellowships to the following University of Utah students in Spring 2025:

Brenna Kelly
Population Health Sciences, Clinical & Translational Epidemiology Emphasis

Annapurna Post-Leon
Biology

Sara McCormack
Organic Chemistry

Thibaut Martinon
Chemistry

Hayley Kievman
Anthropology

Lewis Kunik
Atmospheric Sciences

Baylee Olds
Geology and Geophysics

Abby Baka
Anthropology

Read more here:

GRADUATE STUDENT TRAVEL & RESEARCH GRANTS

The Wilkes Center Research and Conference Travel Award (max of $500, one time), is designed to provide graduate and undergraduate students the opportunity to travel for the purposes of either conducting research or presenting their climate science and policy research accomplishments to the academic community. The opportunity to attend a conference provides networking opportunities that may lead to future research and employment connections.

This year we awarded **20** Research and Conference Travel Awards, totalling **$10,476**.

Read more here:

WILKES CLIMATE LAUNCH PRIZE

Read more here:

The Wilkes Climate Launch Prize highlights and accelerates bold ideas for combating climate change. Each year, by elevating and honoring innovative climate solutions, this University of Utah prize aims to accelerate international progress and encourage technological advances. Our goal is to develop effective climate change solutions quickly for the benefit of people and ecosystems worldwide.

Both for-profit and nonprofit organizations at all stages, anywhere in the world are eligible to submit solutions to be considered for the Wilkes Climate Prize.

The top prize submissions are reviewed and considered by some of the sharpest minds in the scientific and sustainability fields today. The top prize is awarded to the idea with the most scalable impact, the most feasible concept, and the solution most likely to benefit communities, economies, or ecosystems.

The number of worldwide applicants for the Launch Prize in 2025 was both overwhelming and exhilarating. The Wilkes Prize has become globally recognized as a valuable attainment for climate solution innovators.

YEAR 1

77 Applicants

5 Finalists

Winner: **Lumen Bioscience**

Award: $1,500,000

YEAR 2

215 Applicants

7 Finalists

Winner: **Applied Carbon**

Award: $500,000

YEAR 3

1,108 Applicants

7 Finalists

Winner: **Pending...**

Award: $250,000

WATER RESOURCES HACKATHON

Wilkes Climate Solutions Hackathons are events where students come together to find creative solutions to a specific climate problem or challenge. They are fast-paced, with participants working in teams over 24 hours to develop and present their ideas. The 2025 theme was Water Resources, with options to focus on municipal water supply, inland and coastal flooding, agriculture, drought, or water and energy infrastructure.

This year 88 students participated and 17 total slide decks were submitted. Additionally, five French Université Côte d'Azur graduate students and two staff leaders traveled to the University of Utah to participate through a newly formed U partnership with the French university.

Proposals were evaluated according to four criteria: problem definition and analysis; uniqueness and innovation; idea feasibility; implementation and scalability. A detailed overview of the hackathon, including past events and competition winners, is available on our website.

WINNING SUBMISSIONS

FIRST PLACE
SmartFLOW City Program

(Sam Carter, Baylee Olds, Tyler Yoklavich)

SECOND PLACE
GreenSight

(Clement Chatelain, Isabella DeBoer, Delia Leonard, Bode Packer, Jaxon Smith)

THIRD PLACE
PhosCycle

(Thibaut L. M. Martinon, Maria I. Quiros, Zinan Yu, Maryam Amirpour Nobles)

FIRST PEOPLE'S CHOICE AWARD
GreenSight

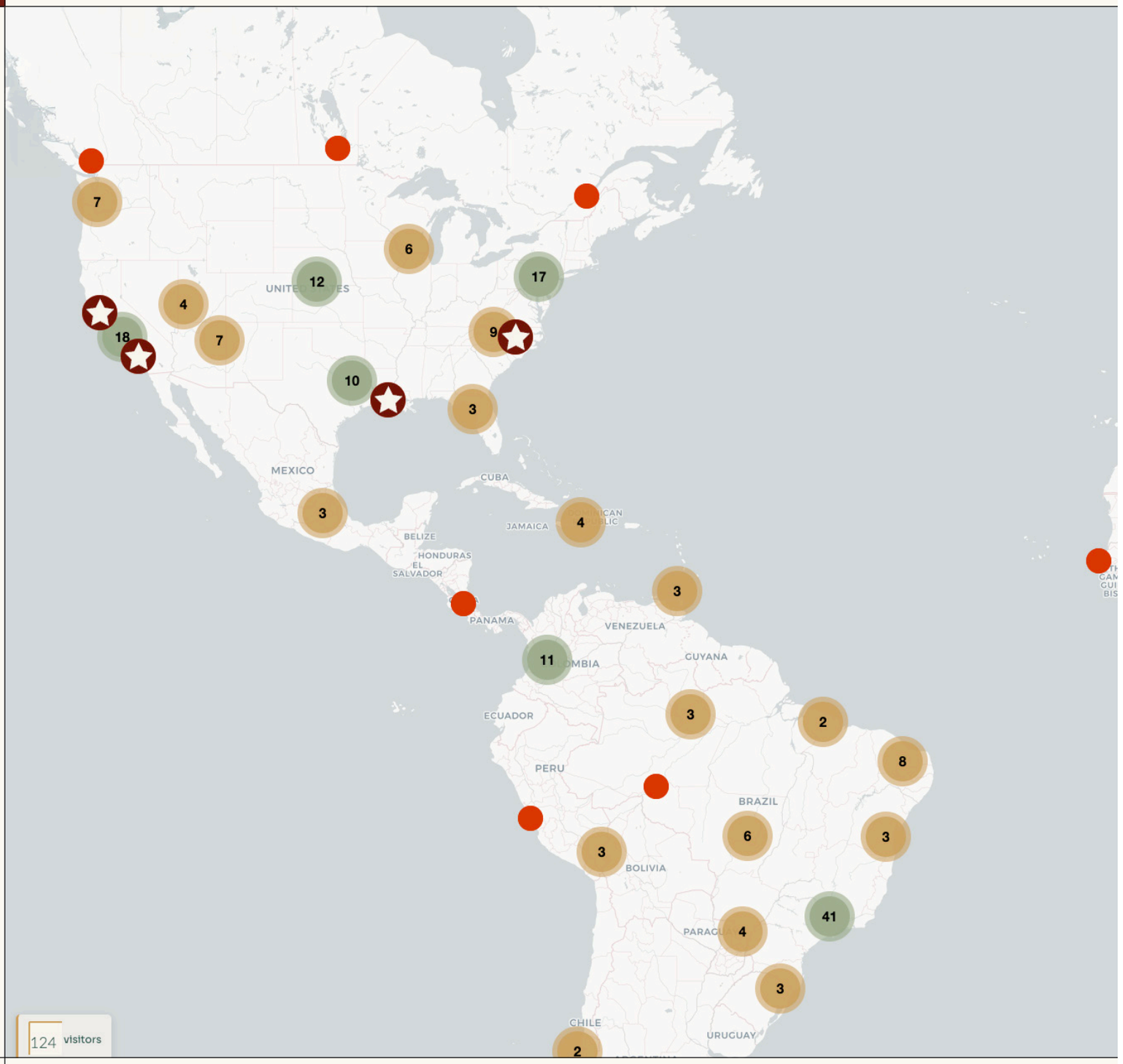
(Clement Chatelain, Isabella DeBoer, Delia Leonard, Bode Packer, Jaxon Smith)

SECOND PEOPLE'S CHOICE AWARD
Blue Roots Alliance

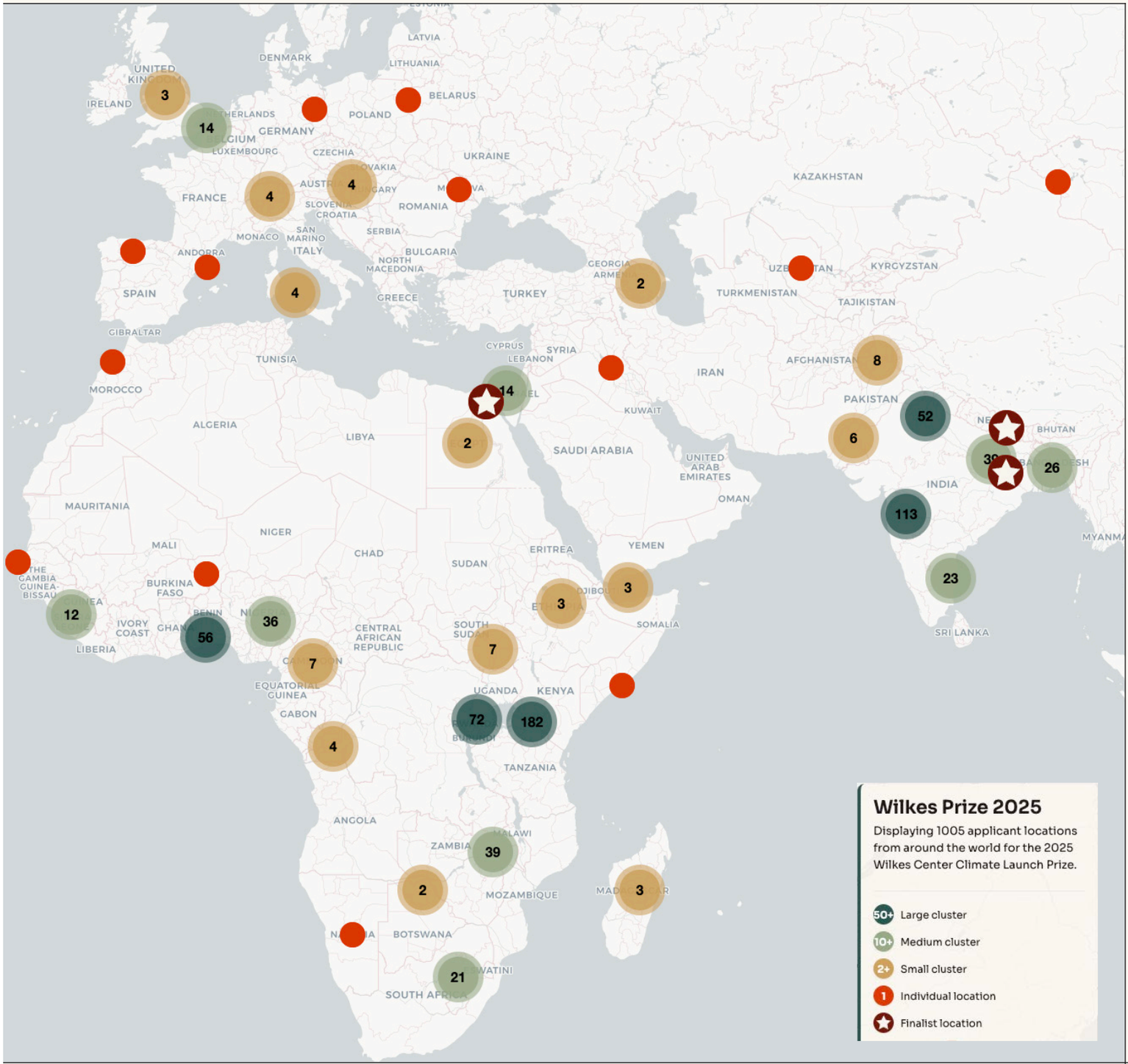
(Jasmine Malhi, Chase Canning, Nathan Murthy, Savannah Jordaan, Alta Fairbourne)

Read more here:

This map shows the breadth of locations around the world from where groups applied for the $250,000 Wilkes Climate Launch Prize in 2025. Of the 1,108 teams that applied, proposed projects ranged from sustainable farming initiatives, waste water treatment, reforestation, agroforestry, green energy, landfill waste reduction, direct air capture, nature based climate change solutions, to economic sector reforms. The expanse of innovative projects happening across the world is truly inspiring.



Check out our interactive map to see all 2025 Wilkes Launch Prize application geographic origins.



UNIVERSITY COMMITMENTS

In the face of a dynamic and challenging landscape, the University of Utah remains steadfast in its commitments to address climate change and investing in climate science.

We are making great progress with new and exciting climate faculty hires and growing opportunities for experiential learning for undergraduate, graduate, and postdoctoral research. Moreover, the new Earth & Environmental Science Major and the U's School Of Environment, Society, and Sustainability continue to expand and meet growing student demand for forward-thinking climate-focused education and training innovative leaders in climate science and solutions.

The U continues to make progress on net-zero goal by 2040. Nearly 70 percent of the university's electricity is now derived from renewable sources, and the campus serves as a demonstration site for net-zero technologies, water metering, low-impact development, utilization of geothermal power, and other innovations. Furthermore, the U is pioneering world-changing geothermal energy innovation with its Department of Energy-funded Utah FORGE Project.

Finally, the Wilkes Center is prepared to move into its new home in the state-of-the-art L. S. Skaggs Applied Science Building set to be completed by July 2025.

These investments speak to the university's desire to serve as a regional example of how higher education institutions can model sustainable operations. Recognizing these efforts, the Association for the Advancement of Sustainability in Higher Education awarded the U a STARS Gold rating.

Information about the U's targets and progress toward the 2040 net-zero goal can be found at **climate.utah.edu.**

2024 - 2025 BUDGET

THE WILKES CENTER FOR CLIMATE SCIENCE & POLICY

Research	Budget
Seed Grants	$200,000
Postdoctoral Fellowships	$540,000
Named Chairs & Professorships	$280,000
Student Support	
Scholarships	$500,000
Experiential & Entrepreneurial Learning Programs	$350,000
Graduate Fellowships	$400,000
Outreach	
Workshops & Speaker Series	$200,000
Wilkes Launch Prize	$250,000
Operations	
Center Operations	$480,000

LOOKING TO THE FUTURE

Expand impactful, timely policy-relevant science around key focal areas by:

- Convening "Strike Teams" and "Working Groups", supported by communications and tool development infrastructure
- Tackling climate risks and the insurability crisis, particularly around wildfires
- Working with 2034 Winter Olympics Organizing Committee to lead efforts surrounding climate mitigation and adaptation
- Building rapid assessment and tool-based approach for Utah energy policies
- Strengthening connections between main campus and health science researchers, as well as with Law and Business Schools

Further educational and training missions by:

- Increased experiential and entrepreneurial learning opportunities to foster the next generation of leaders of climate science and solutions
- Fostering sense of community between Wilkes-supported students, postdocs, and faculty in order to make a more meaningful impact
- Leveraging new space in the L. S. Skaggs Applied Science Building for community-building activities

Build international impact by:

- Collaborations with Oxford University's Environmental Change Institute
- Expanding the acclaimed Wilkes Center Hackathon internationally, such as via partnerships with French (Winter Olympic host city connections) and Canadian (NSF WIRED center) universities.

Continue putting University of Utah on the map by:

- Attracting world-class talent to the university, building on and complementing successful hiring of recent excellent faculty
- Leveraging the Wilkes Climate Prize and Wilkes Climate Summit to engage key partners, including venture capital attendees

CONNECT WITH US

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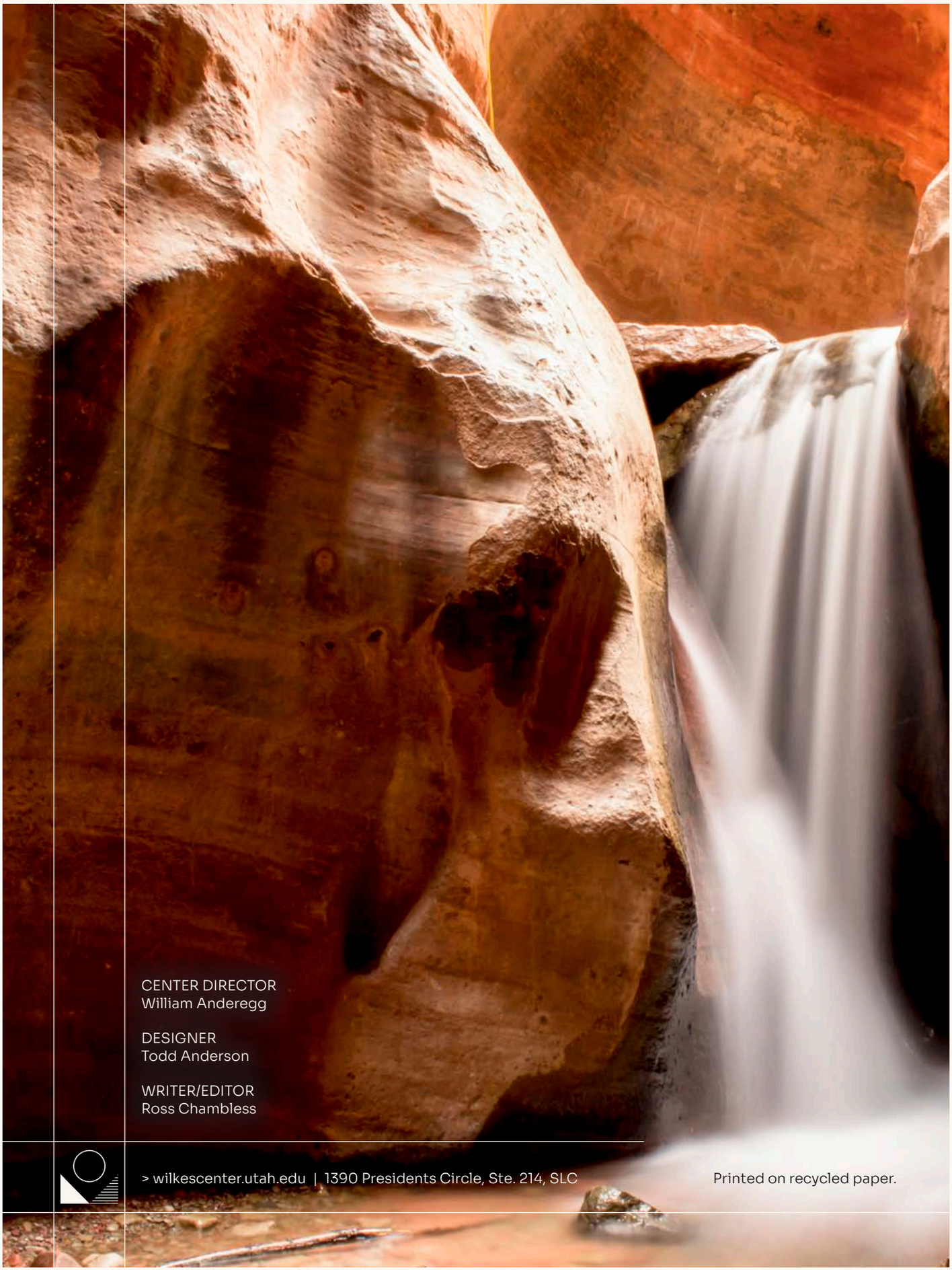

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