

SilverLining Announces \$3 Million Safe Climate Research Initiative Supporting Research On Rapid Climate Interventions

Five award recipients to receive funding from SilverLining

Washington, D.C. (October 28, 2020)—[SilverLining](#), a nonprofit dedicated to ensuring a safe climate, today announced the [Safe Climate Research Initiative \(SCRI\)](#) to advance critical research in the historically underfunded field of solar climate intervention. In its first funding effort, SilverLining is awarding \$3 million across a number of outstanding research programs in the U.S., U.K., and Global South.

Historic weather extremes, natural disasters, and changes such as the weakening of Antarctic glaciers pose unprecedented risks to human safety, our economy, and the stability of natural systems in the next 10-20 years. Reducing the greenhouse gases that cause climate change is essential but may act too slowly to address near-term catastrophic risks. Scientists have found that one of the most promising ways to reduce warming within a few years (or less) is based on one of the ways that nature can cool Earth's temperature—increasing the reflection of sunlight from particles and clouds in the atmosphere, or "solar climate intervention" (SCI). However, research is required to fill enormous gaps in our understanding of the potential and risks of SCI approaches.

Recent events have demonstrated the importance of science to decision-making about major threats to public safety. Rapid advances in scientific research are required to help inform policymakers and the public about potential "emergency medicine" for climate.

"Climate change is here—we are experiencing its devastating effects in recent extreme events. The Safe Climate Research Initiative supports research on promising means of reducing warming rapidly to help keep people safe and natural systems stable," said Kelly Wanser, Executive Director of SilverLining. "We do not have enough information to know whether climate interventions are viable or can be undertaken safely. The work of these groundbreaking research teams will help ensure we have science to inform decisions in this critical area."

Five prestigious programs conducting groundbreaking research will receive awards in the first funding effort:

- The National Center for Atmospheric Research Climate and Global Dynamics (CGD) Laboratory
- The University of Washington Marine Cloud Brightening (MCB) Project
- Cornell University Climate Engineering Program
- Rutgers University Impact Studies of Climate Intervention (RISCI) Program
- SRMGI's DECIMALS Fund (Developing Country Impacts Modelling Analysis for SRM)

Additionally, Colorado State University Department of Atmospheric Science will join the SCRI as a collaborator.

The SCRI is an effort to catalyze private and public research, as well as financial support, to advance the knowledge and tools required to assess and develop interventions to ensure a safe climate. The awards are supported by donors whose interest is safety in climate and science-led climate response, including Lowercarbon Capital, Pritzker Innovation Fund, and philanthropists Matt Cohler and Bill Trenchard. We are deeply grateful for their support in advancing this important work at a critical time.

"Decarbonizing is necessary but going to take 20 years or more," said Chris Sacca, co-founder of Lowercarbon Capital. "If we don't explore climate interventions like sunlight reflection now, we are surrendering countless lives, species, and ecosystems to heat."

"The Pritzker Innovation Fund is really pleased to support the Safe Climate Research Initiative. More importantly, we are thrilled to see the Initiative deploy \$3M of vital research funding into this dramatically underfunded area of study, including in the developing countries that will be most impacted by climate change," said Rachael Pritzker, founder and president of the Pritzker Innovation Fund. "We will need every tool at our disposal to address climate change, and this research is a critical next step to understanding whether and how climate intervention can be one such tool."

For more information about the SCRI, partners, and award recipients please visit www.silverlining.ngo/safe-climate-research-initiative.

SPONSOR ORGANIZATION

SilverLining

SilverLining is a non-profit 501c(3) organization dedicated to ensuring a safe climate. Our mission is to prevent human suffering and sustain natural systems in the context of uncertain risks of near-term catastrophic climate change. To achieve this mission, SilverLining advances effective U.S. and international policy and drives improvements in capabilities for predicting climate and research in interventions to reduce warming. As part of these efforts, SilverLining engages with researchers, policymakers, philanthropists, advocates, technologists, and people from all walks of life.

AWARD RECIPIENTS

[The National Center for Atmospheric Research Climate and Global Dynamics \(CGD\) Laboratory](#)

"At the NCAR Climate and Global Dynamics Laboratory, we develop climate models and tools for the research community in the United States and globally. The funding and computing partnerships offered as a part of the SCRI will help us accelerate our modeling efforts, which are critical for advancing our understanding of impacts of climate interventions on global and regional climate" said Jadwiga Richter, Scientist at National Center for Atmospheric Research (NCAR).

NCAR's CGD lab develops state of the art Earth system models that are used to study the past and present and predict and future climate. In its GLENS effort, NCAR performed the world's first large ensemble of simulations of controlled release of aerosols in the stratosphere with the world's most complex climate model. Its forward program will examine impacts of several solar climate intervention

scenarios with a focus on climate extremes and rapid climate transitions, which will form the foundation of research for SCRI teams and for a global community of scientists.

[University of Washington Marine Cloud Brightening \(MCB\) Project](#)

"The SilverLining SCRI joins funding from NOAA, the Department of Energy, and other donors to advance our ambitious program to understand cloud-aerosol interactions and marine cloud brightening as an approach to reduce global warming," said Sarah Doherty, Program Director of the University of Washington MCB Project. "The SCRI program will also foster collaboration in a way that will accelerate other research into interventions that could cool the planet by reflecting sunlight."

The MCB Project is an academic research program studying interventions to cool climate through increasing the reflection of sunlight from clouds as well as the effects of aerosol particles on clouds and climate, one of the critical uncertainties in near-term climate prediction. Led by prominent cloud and climate scientists, the MCB Project is a collaboration of over 25 distinguished experts from the University of Washington, Palo Alto Research Center (PARC), Pacific Northwest National Laboratory (PNNL), and other institutions in an effort that includes technology research, local, regional and global model simulations, and small-scale field experiments.

[Cornell University Climate Engineering Program](#)

"While reducing greenhouse gases is paramount, interventions may play a role in stabilizing the climate system over coming decades. SilverLining's initiative supports our program to understand how to best optimize climate intervention in the stratosphere and to quantify uncertainty and risks," said Douglas MacMartin, Senior Research Associate, Sibley School of Mechanical and Aerospace Engineering at Cornell University and Cornell Atkinson Faculty Fellow.

Cornell Climate Engineering applies engineering and system methods to evaluating climate interventions. The effort focuses on system design and optimization and uncertainty analysis for stratospheric aerosol injection (SAI) and the role that different methods, designs, and levels of uncertainty play in projected climate effects. Seed funding for this program was provided by Cornell Atkinson Center for Sustainability, the hub of collaborative sustainability research at Cornell University. The center's funding and programming accelerate groundbreaking research to change opinions, practices, products, and policies that move humanity toward fair and generationally sustainable resource use.

[Rutgers University Impact Studies of Climate Intervention \(RISCI\) Program](#)

"Thanks to this initiative, we will be able to expand our efforts to analyze the risks and impacts of solar climate interventions against the effects of warming in areas that are essential for communities, such as the productivity of agriculture," said Professor Alan Robock, Distinguished Professor, Department of Environmental Sciences, School of Environmental and Biological Sciences at Rutgers University. "This builds on Rutgers' work in leading science and expanding scientific collaboration in solar climate intervention, and we are very pleased to be a part of it."

The Rutgers RISCI Lab studies the impacts of various proposed climate intervention approaches to increase sunlight reflection to cool Earth, with a focus on stratospheric aerosol intervention (SAI). The

team uses computer models and data analyses of analogs such as volcanic eruptions to evaluate the potential benefits and risks of solar climate interventions so that in the future, society can make informed decisions about their advisability and design. Their work includes study of the potential outcomes for agriculture, hydrology, and other critical aspects of human life in projected scenarios of warming and intervention.

SRMGI's DECIMALS Fund (Developing Country Impacts Modelling Analysis for SRM)

"If the world is going to make informed and equitable decisions about climate intervention in the future, developing countries must have a central role in research and discussions," says Andy Parker, Program Director for the SRM Governance Initiative and its DECIMALS Fund. "The SCRI expands our ability to support research teams across the Global South. They will explore how climate intervention could affect their regions and will lead critical conversations about the drawbacks and benefits of sunlight reflection."

The SRM Governance Initiative (SRMGI) builds developing countries' capacity to evaluate solar climate intervention and to promote informed participation in global decision-making. The DECIMALS Fund provides grants for research teams in developing countries to study the potential effects of climate intervention. Its first cohort included researchers in Argentina, Bangladesh, Benin, Indonesia, Iran, Ivory Coast, Jamaica, and South Africa.

COLLABORATORS

Colorado State University Department of Atmospheric Science

"The SCRI will improve our ability to collaborate across programs to improve climate predictions and advance climate intervention research," said James W. Hurrell, Professor and Scott Presidential Chair in Environmental Science and Engineering. "Working with partners is crucial for achieving progress in research, which is why we're so excited to join this initiative. Even the most aggressive emissions reductions may not be enough to avoid some of the most severe impacts of climate change, so it's important that we have a wide toolkit of potential responses to ensure a safe climate."

Colorado State University's Department of Atmospheric Science is among the top programs of its kind, focusing on graduate education, cutting-edge research, and public service. Its diverse areas of [research](#) include cloud microphysics, severe storms and mesoscale meteorology, atmospheric chemistry and air quality, radiation and remote sensing, climate and atmosphere-ocean dynamics, data assimilation and machine learning, and global biogeochemical cycles and ecosystems.

FUNDERS (PARTIAL)

Lowercarbon Capital

Lowercarbon Capital backs teams slashing CO₂ emissions, sucking carbon out of the sky, and buying us time to heal the planet. While most of our investments are in for-profit companies that make real money reducing carbon in the atmosphere, we also fund non-profit research to advance science and policy that will save countless millions of lives. This includes research into reflecting sunlight and cooling the planet so the Earth doesn't get too hot. Lowercarbon Capital was founded by Chris and Crystal Sacca.

Matt Cohler

Matt Cohler has been a partner at Benchmark since 2008, serving as a board member and investor at numerous Internet and enterprise software companies. Prior to Benchmark, Matt was among the first employee hires and a member of the management team at Facebook and LinkedIn. He also serves on the investment committee at Chan Zuckerberg Initiative and the Yale Investments Office, as a board member at Environmental Defense Fund and the San Francisco Symphony, and as an officer at various social welfare organizations. Matt holds a B.A. in music from Yale University.

Pritzker Innovation Fund

The Pritzker Innovation Fund (PIF) supports the development and advancement of paradigm-shifting ideas to solve the world's most wicked problems. PIF's Climate and Energy program supports think tanks, academic institutions, and advocacy organizations driving new ideas in the climate and energy debate. The Fund seeks to leverage its resources by focusing on areas of the climate and energy debate that are often overlooked and underfunded, such as climate intervention research. PIF is run by sister and brother Rachel Pritzker and Roland Pritzker.

Bill Trenchard

Bill is a managing partner at First Round, a seed-stage venture fund. He collaborates with founders who look to solve big problems in the world, with investments including Uber, Looker, Flexport, Verkada, Superhuman, LendingClub, and many others. Prior to becoming an angel and full-time seed investor, he was co-founder and CEO of LiveOps and Jump Networks (acquired by Microsoft).

The LAD Climate Fund

The LAD Climate Fund supports research and advocacy of solar radiation management (SRM)—technologies that cool the earth by reflecting sunlight back into space—as part of a comprehensive, four-pronged climate strategy also including emissions mitigation, adaptation, and atmospheric restoration (carbon dioxide removal).