



GEORGE MASON UNIVERSITY
CENTER *for* CLIMATE CHANGE
COMMUNICATION



2021

ANNUAL REPORT

MESSAGE FROM THE DIRECTOR

EDWARD MAIBACH, MPH, PHD

Dear Friends,

In 2021, United Nations Secretary-General António Guterres called out climate change for exactly what it is, a “code red for humanity.”

Hopefully Mr. Guterres’ call to action will prove to be a turning point in humanity’s response to the climate crisis. His simple, clear message is being amplified by many trusted voices in our country and around the world—which is the basis of all effective public communication campaigns. For all of us working to prevent further harm from climate change, this is our moment to reinforce his message of urgency and opportunity to respond to the “code red for humanity.”

In this annual report, I’m proud to present what Mason’s Center for Climate Change Communication is doing to rise to the “code red” challenge—with cutting-edge research on public understanding of climate change, and high-impact public education and engagement initiatives involving some of America’s most-trusted voices.

Highlights include:

- Our **Climate Change in the American Mind** polling data shows there has been a large increase in public concern about climate change over the past 5 years. Americans who understand that global warming is happening outnumber those who think it is not by a ratio of more than 6-to-1. And, for the first time in 2021, a

majority of Americans (52%) say they have personally experienced the effects of global warming.

- Our **Climate Matters in the Newsroom** program (in partnership with Climate Central and others) is now helping more than 1,000 local TV weathercasters—nearly half of America’s weathercasters—to educate their viewers about the local relevance of global climate change.
- This year our **Medical Society Consortium on Climate and Health** grew to 37 member medical societies—that collectively represent 70 percent of all physicians in the U.S.—and we are actively supporting 17 state-based “clinicians for climate action” groups. Our recommendations for advancing equitable climate and health solutions through federal programs—made to the Biden Administration and to the U.S. Department of Health and Human Services—found purchase, including in the creation of the new DHHS Office of Climate Change and Health Equity.
- Our engagement initiative for Republicans, by Republicans—**republicEn**—continues to attract and activate conservative Americans concerned about climate change. Dozens of events, podcasts, conversations and collaborations have grown the republicEn community to nearly 13,000 people.



- Our **climate communication internship program** hosted in partnership with the National Park Service graduated an outstanding cohort of interns and launched a new website, which curates the climate communication products and toolkits developed by interns over the life of the program.
- In collaboration with the Global Climate and Health Alliance and the World Health Organization, we conducted a number of ground-breaking research studies, which found that health professionals worldwide are eager to engage in climate and health advocacy. We also helped these organizations develop the **Healthy Climate Prescription**—national policies necessary to protect human health and our climate—which was endorsed by more than 600 health organizations worldwide and delivered to heads of state and their delegates at COP26 in Glasgow.

Although the climate crisis is truly a “code red for humanity”, the prospects for both an informed electorate and for science-informed climate policies are improving. Although much work remains to be done, my optimism is sustained by the progress I see in our programs that engage so many trusted voices in American life, and beyond.

Please read on for more details about the work at our Center. I’m so proud of the creative and dedicated faculty, staff and students who do the work, and of our wonderful fiscal sponsors who make it possible.

Onward and upward!

Ed Maibach
Fairfax, VA

@MaibachEd @Mason4C

OUR MISSION

We develop and apply social science insights to help society make informed decisions that will stabilize the earth’s life-sustaining climate, and prevent further harm from climate change.



TRACKING AND EXPLORING PUBLIC UNDERSTANDING OF CLIMATE

Our influential *Climate Change in the American Mind* (CCAM) program—in partnership with the Yale Program on Climate Change Communication—tracks and explores American public understanding of climate change and support for climate policies. This program of twice-yearly national polls has been ongoing since 2008.

Our research reveals a significant increase in public concern about climate change over the past five years. The proportion of Americans “alarmed” about climate change has doubled, and the proportion who are “dismissive” has contracted by more than one third.

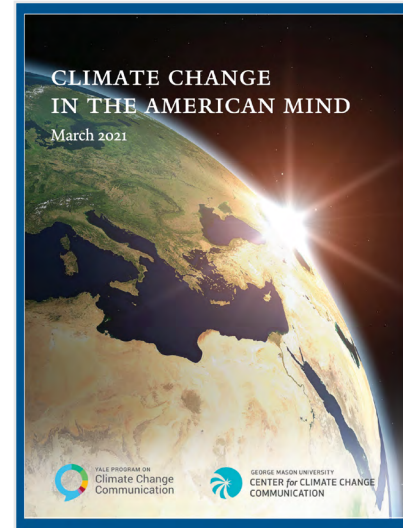
In 2021, Americans’ views on climate change shifted substantially. Americans who think global warming is happening now outnumber those who think it isn’t by more than 6 to 1, and a record 70% say they are somewhat or very worried about it. And for the first time, a majority of Americans (55%) now say that people in the United States are being harmed “right now” by global warming.

While concern about global warming is at an all-time high, our polling also reveals the ideological divide about this issue remains high.

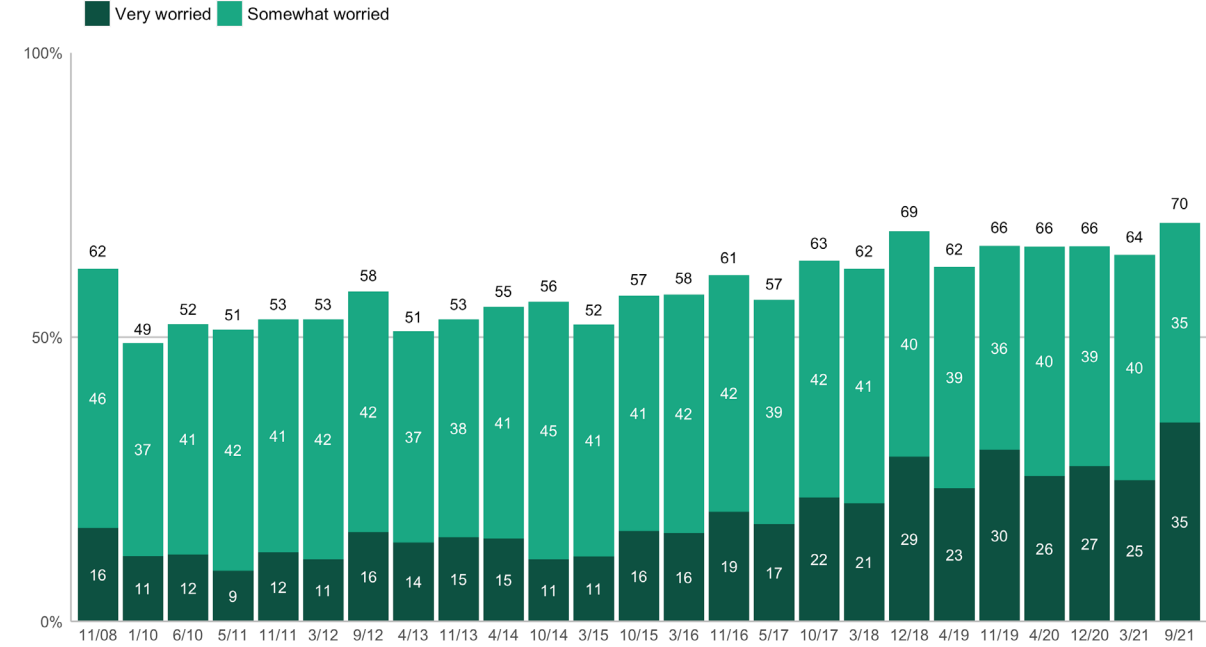
A potentially important exception to this trend, however, is seen among young conservative voters who are much more likely to be concerned than people in their parents or grandparents generation.

This is happening at a time when there’s never been more attention to—and more at stake for—international coordination on climate action. Our polling shows strong public support for the US to engage with other nations in addressing the problem. This includes support for: our government’s pledge to other nations to reduce U.S. carbon pollution by 50% by the year 2030 (73% support this pledge); providing financial aid and technical support to developing countries to limit their greenhouse gas emissions (66% support); and our government pressuring other countries to reduce their carbon pollution (78% support).

We use this research to inform our own public education initiatives—including Climate Matters in the Newsroom, the Medical Society Consortium on Climate and Health, and republicEn—and we freely share the information with other organizations educating Americans about climate change. These polls—and our related message testing research—provide the cornerstone for our “research to action” approach that aims to mobilize trusted voices across America with simple clear messages that will help Americans understand the realities of climate change.



Seven in ten Americans are worried about global warming



How worried are you about global warming?
September 2021



69% of voters

support requiring fossil fuel companies to pay a tax on carbon pollution they produce, and using that revenue to reduce other taxes (e.g., federal income tax) by an equal amount

75% of voters

support regulating carbon dioxide as a pollutant

86% of voters

support providing tax incentives or rebates to homeowners, landlords, and businesses to make existing building more energy efficient

Source: George Mason University / Yale University, *Climate Change in the American Mind*, Sept. 2021

SUPPORTING TV WEATHERCASTERS AND JOURNALISTS WITH LOCAL CLIMATE REPORTING MATERIALS

We are proud of the fact that nearly half of America’s local TV weathercasters now participate in our **Climate Matters in the Newsroom** program—operated in partnership with Climate Central and others. This program provides weathercasters and other local journalists with local climate reporting resources designed to help them—trusted voices in their community—educate their audience members about the local relevance of global climate change.

In 2021, we reached two major milestones—enrolling our 1,000th TV weathercaster, and our 800th journalist, into the program. In total, these news professionals work in more than 95% of America’s media markets.

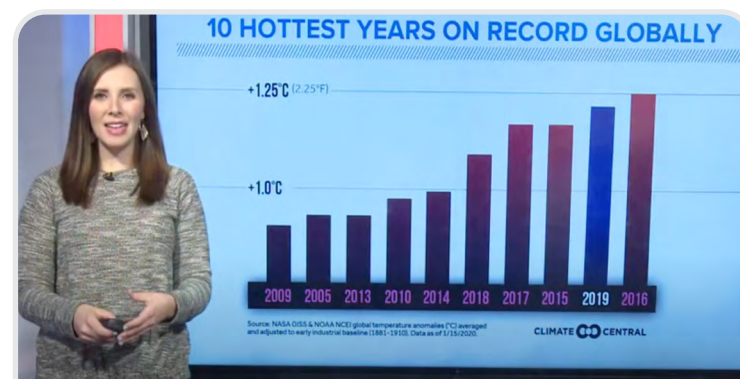
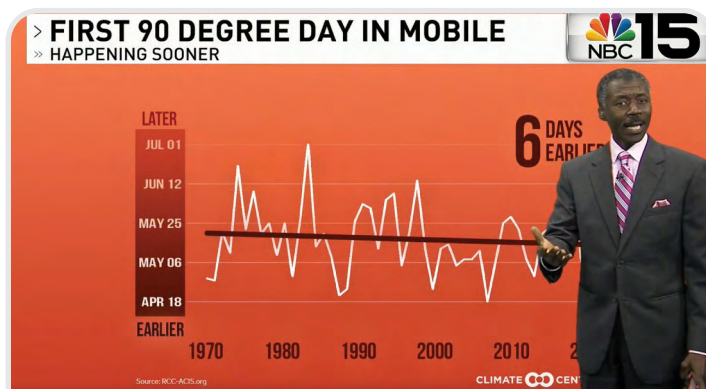
This year they reported more than 4,000 TV news stories about climate change, a more than 50-fold increase in the rate of reporting since we launched the program nationwide in 2014.



Also in 2021, environmental publication *Tools of Change* selected Climate Matters as a “Landmark climate change social marketing case study” through their peer review process. The designation recognizes the program as being, “one of the most successful, innovative, replicable and adaptable in the world.”

Last year, we published two papers in leading scientific journals (BAMS, and *Weather, Climate & Society*) that prove this reporting is making a difference in helping the public understand climate change as a “here, now, us” problem in communities.

Next year, we hope to greatly expand the impact of *Climate Matters in the Newsroom* by bringing important new organizations into a local climate reporting partnership—tentatively called the *Code Red Local Climate Reporting Initiative*.



In 2010, in partnership with Climate Central and former WLTX-TV (Columbia, South Carolina) Chief Meteorologist Jim Gandy (pictured above), we launched a one-year pilot program to test a hypothesis—if TV weathercasters are helped to report on the changing weather patterns in their community, viewers will come to better understand climate change as a “here, now, us” problem. Our test in South Carolina was highly successful, and in the ensuing decade we have scaled-up Climate Matters into a highly impactful climate reporting resources program designed to help TV

weathercasters across America, and other local journalists, report on local climate impacts and solutions in science-based yet engaging ways. Over the years, more organizations joined the Climate Matters in the Newsroom partnership, including: the American Meteorological Society, American Collegiate Press, Climate Central, Climate Communication, Covering Climate Now, Local Media Association, National Association of Hispanic Journalists, National Scholastic Press Association, NASA, NOAA and the Society of Environmental Journalists.

MEDICAL SOCIETY CONSORTIUM ON CLIMATE AND HEALTH

RESPONDING TO CLIMATE CHANGE AS A HEALTH EMERGENCY

Our **Medical Society Consortium on Climate and Health** organizes, empowers, mobilizes, and amplifies the trusted voices of doctors and other health professionals to advocate for equitable climate solutions that protect and promote human health. Launched in 2016 under the direction of Mason 4C professor **Mona Sarfaty**, the Consortium is composed of American medical societies, state “clinicians for climate action” groups, and other health organizations including the American Lung Association, American Heart Association, and American Cancer Society.

This was a year of rapid growth and significant impact for the Consortium. Our membership now includes 37 medical societies (an increase from 29 last year) that collectively represent more than 70% of all U.S. doctors (600,000+ physicians). In addition, this year we fostered the development of seven additional state “clinicians for climate action” groups, increasing the number of states with such a group to 17. We also added 13 new partner organizations to the Consortium, which now has 60 partner health organizations. In total, more than 100 health organizations—that represent millions of professionals across the spectrum of healthcare and public health—are now working together to address the human health crisis that is being created by fossil fuel use and our changing climate.

In February 2021, the Consortium sent a letter to President Biden encouraging him to “go big” on America’s Nationally Determined Contributions to the Paris Agreement. We also developed, solicited endorsement from other U.S. health organizations, and then briefed senior Biden Administration officials on two sets of federal policy recommendations to



advance equitable climate and health solutions—one set pertaining to how to mobilize an “all of government” approach, and the other focusing on how to fully mobilize the Department of Health and Human Services (DHHS).

On August 30, 2021, the Department announced the creation of the DHHS Office of Climate Change and Health Equity to lead federal efforts to develop equitable health and climate solutions.

Additionally, in advance of the November 2021 United Nations climate change conference (COP26) in Glasgow, Scotland, we worked in partnership with the Global Climate and Health Alliance (on whose board we sit) and the World Health Organization to develop the Healthy Climate Prescription—a set of policy recommendations necessary to protect human health and our climate. The Healthy Climate Prescription letter was endorsed by more than 600 health groups worldwide that represent more than 46 million health workers (pictured above).

A group of concerned health professionals cycled together to carry the Healthy Climate Prescription from the World Health Organization in Geneva, Switzerland, to London, and then to COP26 in Glasgow—delivering it to the meeting organizers who urged all heads of state and their national delegations to take urgent action to address the climate crisis.



The Consortium recruited and enrolled a select group of six physicians of color from southeastern states to a year-long Climate and Health Equity Fellowship. Next year, we are expanding the number of physicians in the fellowship program.



Over 1,000 Consortium advocates sent 4,000 messages to Congressional representatives in support of the Invest in Promoting and Protecting Health in Response to Climate Change letter to Congress.



We grew from 32 to 39 member societies, and 59 to 64 affiliates (17 are state clinician groups), and from 970 individual advocates to 1180 individual advocates. Our societies now represent 70% of U.S. physicians and our affiliates represent millions of health care professionals.

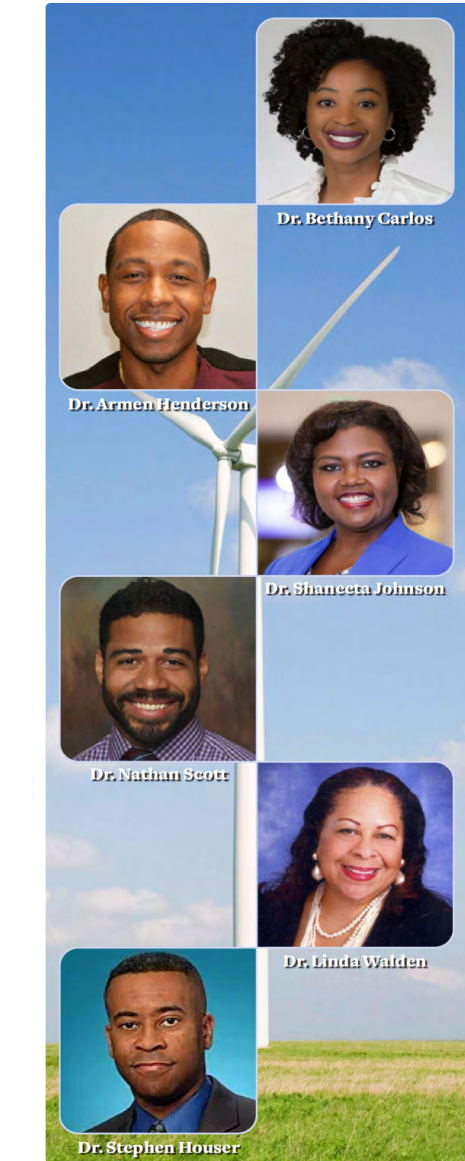


Individual physician advocates remain active. They have made 655 presentations, 594 visits to policymakers, published 128 research papers, and have generated 603 media hits over the past three years for a total of 1,980 actions.



The Consortium increased its focus on racial injustice by developing an anti-racism plan and the Consortium state network of 17 state affiliates expanded its anti-racism work.

Our 2021 Climate and Health Equity Fellows



Our Climate Change in the American Mind surveys have repeatedly shown that a large majority of Americans support climate solutions. Seven in ten registered voters think global warming is happening. This includes nearly all liberal democrats, a large majority of moderate/conservative democrats, and most liberal/moderate republicans. Climate change is not political—it is a matter of physics, chemistry, and biology—forces that don't have a political ideology.



republicEn is a grassroots community-building effort founded by Mason 4C professor **Bob Inglis**, who served six terms in Congress representing the state of South Carolina. Once a critic of climate change, Bob changed his views and began advocating for a carbon tax to stoke innovation and reduce carbon emissions and dependence on fossil fuels. Bob started republicEn.org to provide educational and community support for conservatives committed to building public understanding of free enterprise and its promise to solve energy and climate challenges. Members of republicEn are conservatives, libertarians, and pragmatists of diverse political opinion.

republicEn.org is a home and launching pad for conservatives who care about solving climate change—currently more than 12,700 and rising. republicEn engages these “EcoRight” conservatives with events, media, field trips, and opportunities to educate lawmakers and take action in their communities. They're enfranchising more and more of conservative America in pursuit of climate solutions, often by partnering with national and local conservative leaders and organizations. The program also finds and equips rising-star conservatives to act as powerful spokespeople for the EcoRight movement where they live and work in the media.



Mason 4C's Bob Inglis speaks to young conservatives at a republicEn event.

- Since October 2020, **republicEn generated 133 media hits** in print publications, and they had 43 multimedia hits on TV, radio and podcasts featuring republicEn team members and their spokesperson team.
- The first-three seasons of the **EcoRight Speaks podcast** (pictured top-right) includes 41 total episodes and 39,633 total downloads/listens. Season 4 starts in February 2022. Subscribe on Apple Podcasts or Spotify.
- Over 12,000 members are delivered weekly briefings called the **Climate Week En Review** and are invited to take part in educational action campaigns two to three times per month. The weekly newsletter published each Friday features climate news involving the EcoRight—conservatives around the country who are demonstrating climate leadership. While most of the focus is on elected officials at the local, state, and federal level, it also features change-makers working in their communities.
- In May 2021, **republicEn hosted a boat trip and site visit** (pictured right) with U.S. Rep. Nancy Mace (R-SC-1) to see the impact of sea-level rise. NOAA has recorded a 10-inch rise in Charleston, South Carolina's harbor since 1950.
- Since launching the **republicEn.org** brand in late 2014, Bob and the team have programmed more than 600 events. The most typical event is a virtual or in-person community climate town-hall co-sponsored by republicEn and one or a few local conservative, business, faith, or civic organizations.

EcoRight Speaks Podcast

Nicole Kirchoff
Live Advantage Bait

Jerome Hewlett
Citizens Climate Education



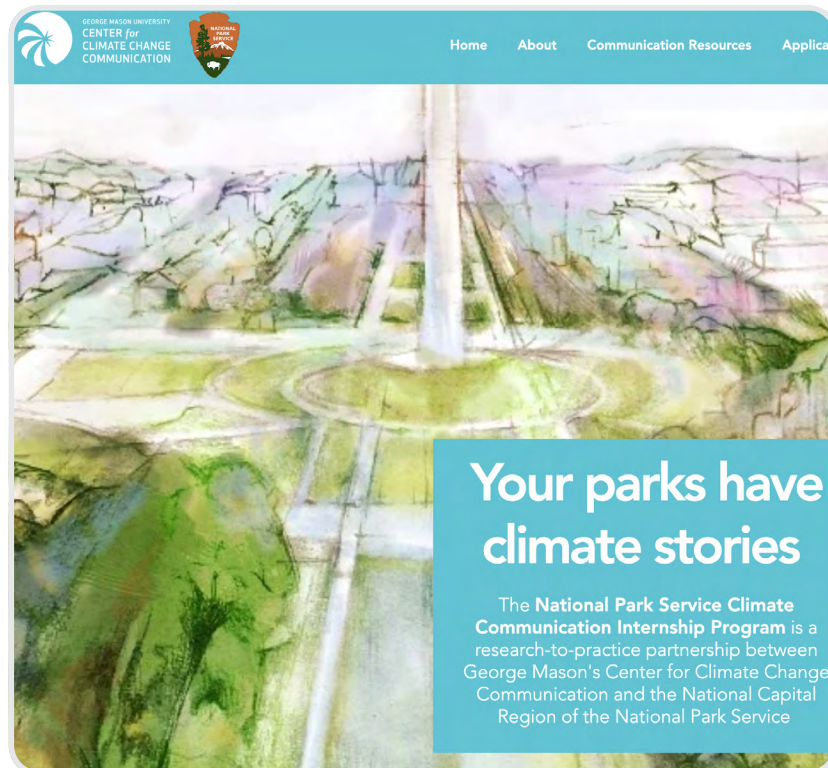
CLIMATE COMMUNICATION INTERNSHIP PROGRAM

For the past decade, we have partnered with the **National Park Service's (NPS)** Urban Ecology Research Learning Alliance on a "research-to-practice" summer internship program.

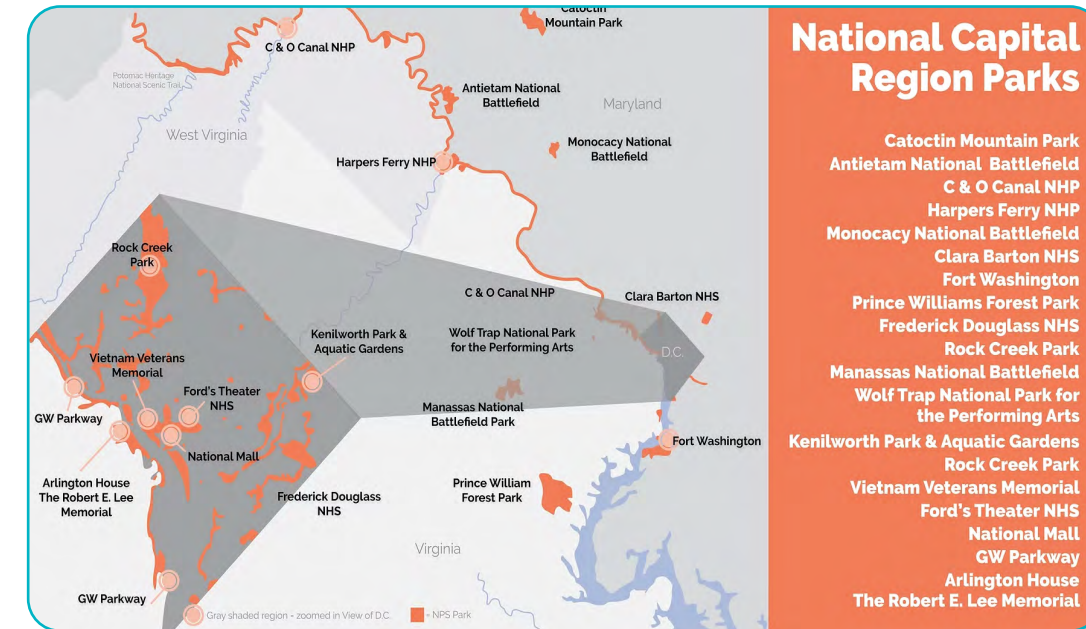


Materials created through this program are rooted in social science insights (e.g. trusted sources, social norms, place-based learning), climate science, and the communication needs of participating regional parks. As a result, the products (e.g., websites, videos, ranger toolkits) produced by the interns fulfill many functions: increasing public awareness of climate impacts on park resources; nurturing the connection between people and places; meeting evolving interpretation demands by developing material for a variety of channels, effectively engaging visitors in climate dialogue; and helping parks lead by example by addressing how a changing climate can alter cultural, natural, historical, and recreational resources.

Despite federal funding cuts from the previous administration, we carried on with our National Park Service Climate Internship program with bridge funding provided by our Center. Student interest in the program was greater than ever—with more than 500 applicants for five internship positions.



In early Summer 2021, the virtual intern group began their efforts to archive and publish the important communication materials that have been developed over the past few years for Capital Area NPS brochures and communication materials. This library of content is published on a new Mason 4C / NPS Internship website (screen shot above).



Student interns with backgrounds in science, writing, film making, and design produce science-based climate communication content for use in parks in the National Capital Region (pictured left)

The Project Manager of the 2021 Climate Change Communication Internship was Mason 4C doctoral student Eryn Campbell

Our 2021 Class of Interns:

- Shannon Stanforth, University of Dayton*
- Samantha Ye, Colorado State University*
- Margaret Orr, George Mason University*
- Yiwen Zhao, Lake Braddock Secondary School*
- Ganesh Rayavarapu, Chantilly High School*

4D PROJECT

UNDERSTANDING AND COUNTERING CLIMATE MISINFORMATION

A multifaceted problem like climate misinformation requires a multi-disciplinary approach. The **4D Project**, led by **Dr. John Cook**, synthesizes four research themes, developing tools to *detect*, *deconstruct*, and *debunk* misinformation, then applying this research by *deploying* real-world applications.

Detection. While this research—recently published in the Nature journal Scientific Reports—is eventually intended for real-time detection of online misinformation, it has already provided insights by building a decades-long history of climate misinformation efforts.

Deconstruction. Critical thinking is a crucial tool for identifying misleading techniques and fallacies in misinformation. We developed the FLICC framework, which is being adopted by educators across the country.



Debunking. We have experimentally tested a diverse range of debunking techniques such as logic-based vs. fact-based corrections, humorous vs. non-humorous debunkings, and passive vs. active inoculation.



Deployment. The 4D Project applies its research in a number of real-world projects. We've collaborated with the National Center for Science Education to develop climate change curriculum that is being used by high school teachers across the country.

John Cook published the *Cranky Uncle vs. Climate Change* book, using critical thinking and cartoon humor to counter climate misinformation. In December 2020, the *Cranky Uncle* game, a smartphone app that builds resilience against misinformation, was released with support from 4C. Teachers from 36 U.S. states and 16 other countries have already signed up to use the game in their classes.



OUR 4C TEAM

FACULTY & STAFF

Mohamed Ahmed
Chris Clarke
Sara Cobb
John Cook
Wendy Cook
Richard T. Craig
Nicole Duritz
Rob Gould
Beverly Harp
Kate Hoppe
Bob Inglis
Sojung Claire Kim
John Kotcher
Edward Maibach
Mark Mitchell
Teresa Myers
Colin Nackerman
Daniel Reed
Connie Roser-Renouf
Mona Sarfaty
Kimberly Williams
Xiaquan Zhao

POSTDOCTORAL RESEARCHERS

Kate Luong
William A. Yagatch

STUDENTS

Adebanke L. Adebayo
Amanda Borth
Eryn Campbell
Savannah Martincic
Rochelle Davidson Mhonde
Sammi Munson
Margaret Orr
Shaelyn Patzer
Kristin Timm
Sophia Whitaker



The @Mason4C lunch bunch is getting back into full swing, outdoors. [@johnfocook](#)

The Mason 4C team shares a meal outside our Fairfax offices, adapting to the challenges presented by COVID.

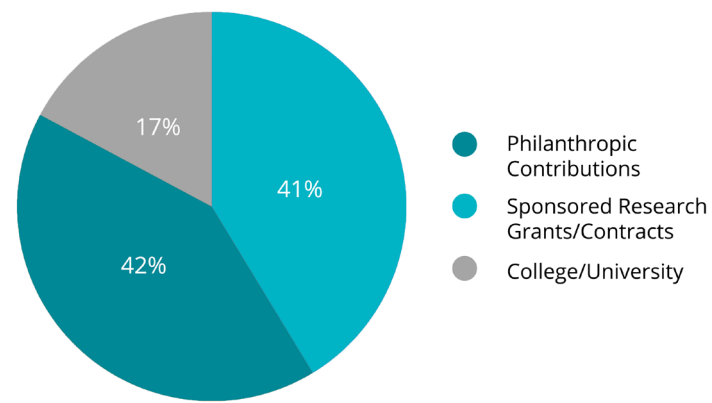
2020-2021 FINANCIAL SUMMARY

JULY 1, 2020 - JUNE 30, 2021

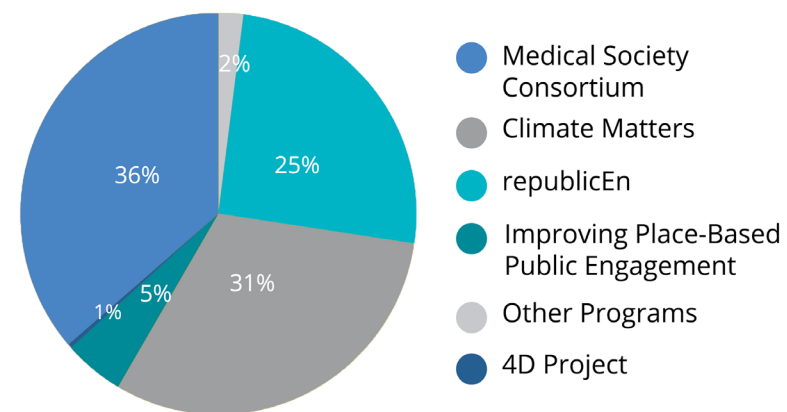
PROGRAM AREA	TOTAL FY21 EXPENSES	TOTAL PROGRAM REVENUES	CONTRACTS/GRANTS	CONTRIBUTIONS
republicEN	\$675,062	\$736,895	\$0	\$776,300
Climate Matters in the Newsroom	\$827,990	\$279,468	\$279,468	\$0
Climate Change in the American Mind	\$130,327	\$100,000	\$100,000	\$0
4D Project	\$9,350	\$500	\$0	\$500
Medical Society Consortium	\$966,633	\$1,299,171	\$837,000	\$548,211
Other Programs	\$54,239	\$22,780	\$0	\$22,600

REVENUE TYPE	AMOUNT
Sponsored Research Grants/Contracts	\$1,216,468
Philanthropic Contributions	\$1,347,671
College/University Support	\$506,069

REVENUES BY TYPE



TOTAL EXPENSES BY PROGRAM AREA



THANK YOU FOR YOUR SUPPORT

In addition to our major grant funders, which include the National Science Foundation, NASA, National Park Service, Grantham Foundation for the Protection of the Environment, Energy Foundation, Kresge Foundation, Rockefeller Family Fund, Robert Wood Johnson Foundation, Johnson & Johnson Services, Inc., High Tide Foundation, Merck, and the Skoll Fund. We would also like to thank Mason's College of Humanities and Social Sciences. We are especially grateful for the College generously supporting our work with vital resources including office space, utility costs, and salary support.

Furthermore, we are grateful for the generosity of all our philanthropic donors throughout the 2020-2021 fiscal year.

Our work would not be possible without the generous support of many.

\$100,000 – \$999,999

Anonymous

\$50,000 – \$99,999

Anonymous

\$5,000 – \$49,000

Cynthia Mahoney
Edward and Hilda Maibach
Siesel Maibach
MITRE Corporation
Fran and Bill Novelli
Jagadish and Anastasia Shukla
Walgreens Company

\$1,000 – \$4,999

Adirondack Trust Company
Community Fund
American College of Physicians
American Public Health Association
Anonymous
Gabriel Carroll
Infectious Diseases Physicians
Bob Fleshner and Phyllis Aaronson
Stuart Kogod
John Lemery
Maine Community Foundation
Kristin Mitchell
Natural Resources Defense Council
Jerome and Gwen Paulson
Bruce Piasecki
Renaissance Charitable Foundation


\$100 – \$999

Anonymous
Association of Maternal & Child Health Programs
Samantha Ahdoot
John Balbus
Lee Ballance
Sundance Banks and Claudia Dierkes-Banks
Sara Cate
Charles Chester
Michael Coburn
Kenneth Combs
Bob and Sylvia Cook
Thomas and Barbara Cooney
Robin Cooper
John Dayton, Jr.
Peter Elias
Jack Ende
Barbara Erny
David Fivenson
Marc Futernick
Robert Gould
Marc Gunther
Susan Hassol
Molly Herr
William Horton
Ronald and Naomi Jue
William Keydel

Peter Kotcher
Jennifer Lawson
Oliver Lewis and Rachel Harold
Ronda McCarthy
Douglas and Lori McCracken
Robert McLean
J. Henry Montes
Darilyn Moyer and Scott Rosenberg
Jay Nadel and Judy Weisman Nadel
Richard Needleman
Novo Nordisk Inc.
Johnathan Patz
Janet Perlman and Carl Blumstein
James Powell
Paul Robinson
Theresa Rohr-Kirchgraber
Holly Rosencranz and Warren Levy
Gary Stewart
Claude Tellis
Trine Vik
Mark Vossler
Robert Wald
The Weisman Foundation
Bradley Williams and Susan Poster
Mary Williams
Woodwell Climate Research
Martha Zaslow



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The Center is located on the campus of
George Mason University in Fairfax, Virginia.

