

CMMAP 11th Team Meeting

10 August 2011

The Role of Science in Climate Policy

The World is Changing – Are We Ready?

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UCAR Vice President

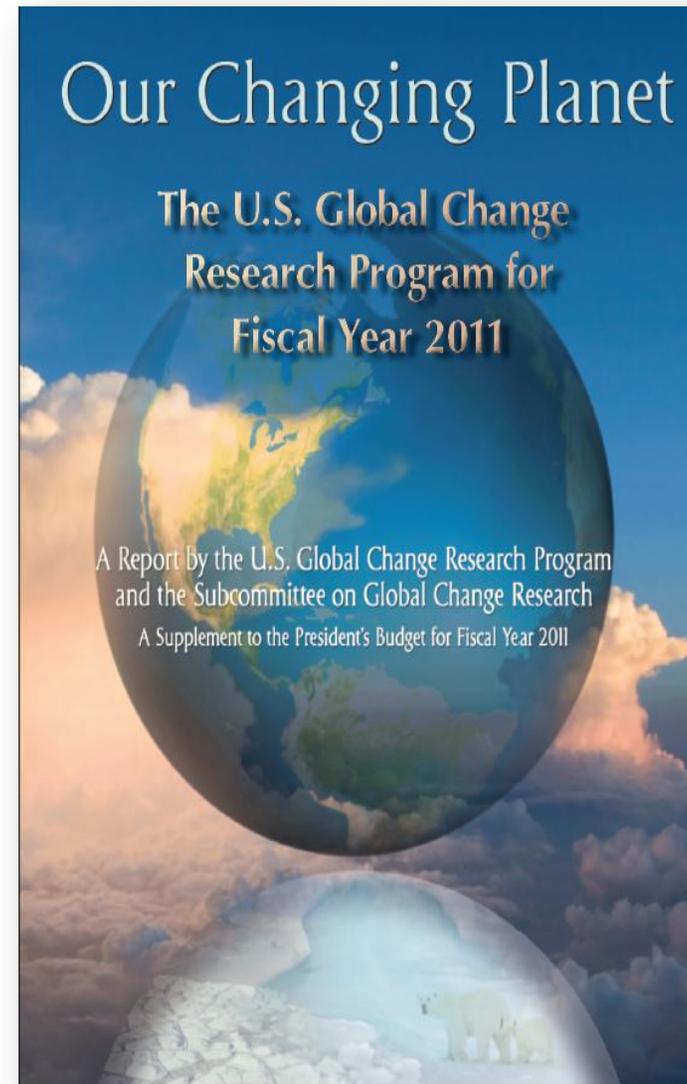
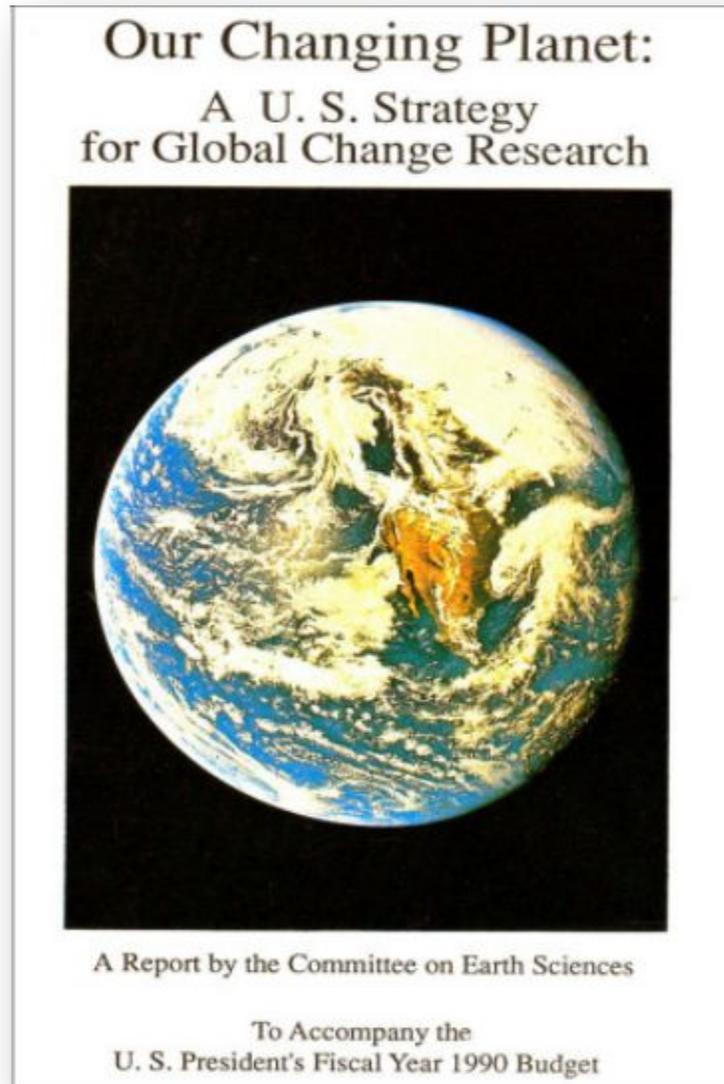
Topics

- CMMAP Vision:
 - **Research.** Dramatically improve how clouds are represented in climate models so those models can be used more effectively in climate-related policy decisions.
 - **Targeted Training.** Help develop the next generation of climate modelers who are also sensitive to climate-related policy and societal issues.
 - **Broader Impacts.** Help the more general population better understand the climate-human system (particular focus on under-represented groups).
- Topics
 - Brief story about how I got involved in science policy
 - How the world is changing and why the CMMAP vision is more important than ever (and some other ideas...)

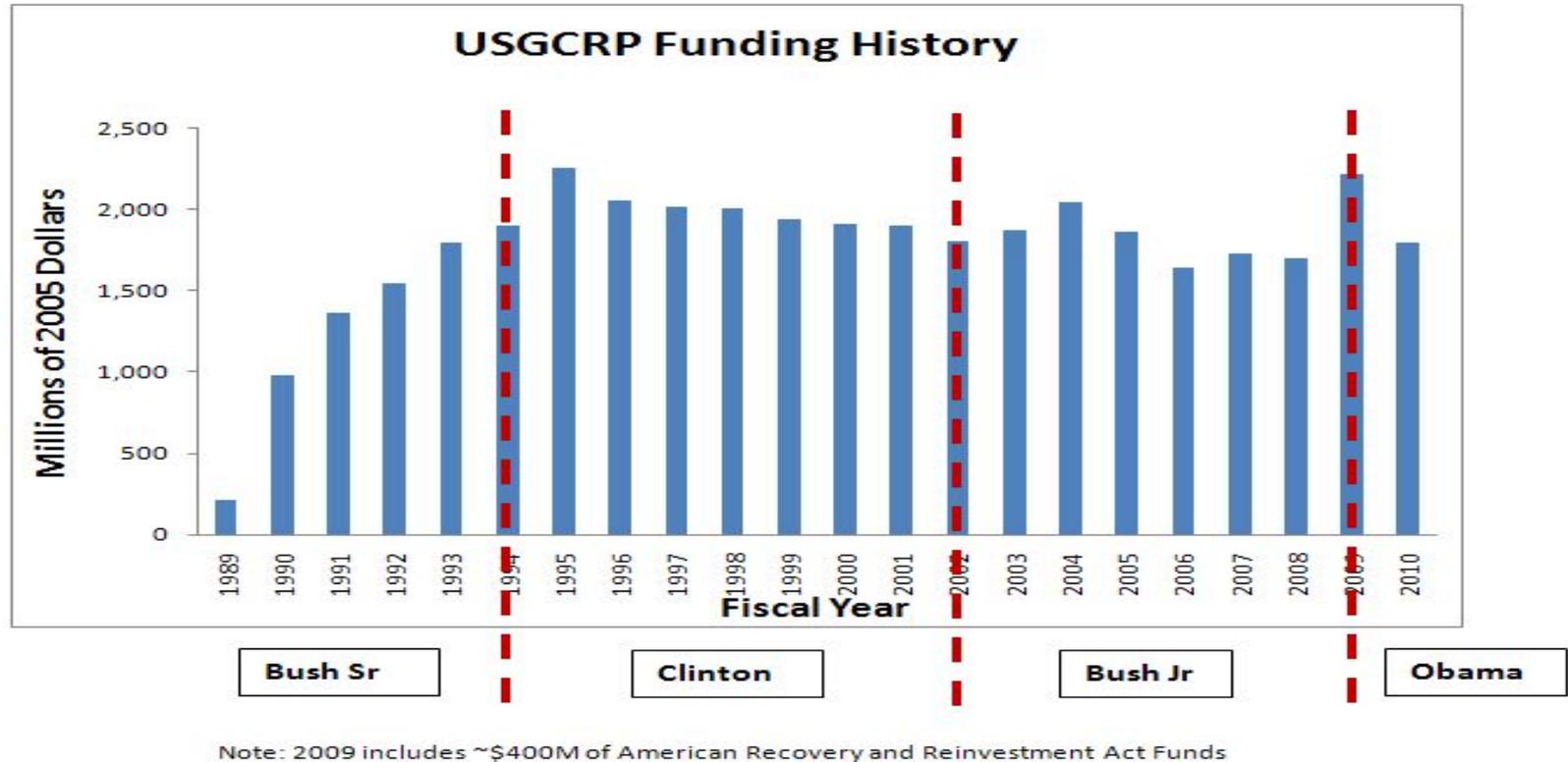
My Background

- **Pre-1983.** Research faculty member at the University of Maryland conducting research on the use of satellite data in hydrologic models.
- **1983.** Awarded a American Geophysical Union's Congressional Science Fellow and spent a year as a science consultant in the U.S. Congress.
 - <http://www.ametsoc.org/atmospolicy/congressionalfellow.html>
 - http://www.agu.org/sci_pol/cong_fellowship/
- **1984-1997.** Executive Office of President's Office of Management and Budget (OMB) overseeing a portfolio of ~\$100 billion science programs, budget, and policy (NASA, NSF, etc).
- **1997.** Joined the University Corporation for Atmospheric Research as Vice President and Director of UCAR Community Programs.

Why I stayed at OMB



~20 Years of Climate Funding and Politics History



- **Bush Sr.** Pro-research investment versus policy action, focused S&T priorities, strong WH leadership, Bretherton Report, great interagency tools and people.
- **Clinton.** Pro-policy action versus research, hundreds of S&T priorities that diffused interagency tools and leadership.
- **Bush Jr.** Little interest in topic. Focus on other policy issues.
- **Obama.** Finishing third year and not much progress. Focus on other policy issues.

We have plenty of policy direction

- **2009 NRC Report: Restructuring Federal Climate Research to Meet the Challenges of Climate Change (Ramanathan)** http://books.nap.edu/catalog.php?record_id=12595
 - Reorganize the USCRP around integrated scientific-societal issues.
 - Establish a comprehensive climate observing system .
 - Develop a new generation of coupled Earth system models.
 - Strengthen research on adaptation, mitigation, and vulnerability.
 - Initiate a national assessment process.
 - Coordinate federal efforts to provide climate services.
- **America's Climate Choices.** <http://americasclimatechoices.org/>
 - Informing an Effective Response to Climate Change (Liverman/Raven)
 - Advancing the Science of Climate Change (Matson)
 - Adapting to the Impacts of Climate Change (Wilbanks)
 - Limiting the Magnitude of Future Climate Change (Fri)

And, reasonable management tools from the past!

So, why aren't we making more progress?

The World Today

- **Science Community.** Warming unequivocal and likely due to observed increase in anthropogenic GHG concentrations (4th IPCC Assessment).
- **Public.** Jan 2010 Yale/GMU poll:
 - American's belief that climate change is happening dropped from 71% in Oct 2008 to 57%.
 - Trust in scientists dropped from 83 to 74% and in Al Gore from 58 to 47%
- **Congress.**
 - House barely passed a climate/energy bill in 2009 (Waxman-Markey). Republicans strongly opposed this bill and targeted Democrats that voted for it.
 - Enter the Tea Party.....any hopes for such a bill have been abandoned.
 - 2011 language to cut IPCC and prevent NOAA from forming a Climate Service.

The World Today..continued

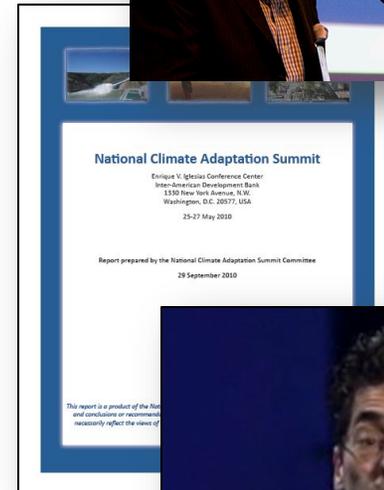
- **FY2012-13 Budgets.** With the Debit Ceiling Deal, the FY12-13 budgets likely to be below FY11 levels and the “soft Obama leadership” on climate will leave the agencies (and country) to fend for themselves.
- **Workforce.** By 2050, when will be facing challenges from climate change and a 50% workforce comprised by current minority groups (that traditionally don't go into the sciences), will we have the tools and workforce to deal with complex environmental challenges?
- **Next Generation of Students.** Not happy about the cost of a university education (perhaps the beginnings of a revolution?).
- **Local/Regional Leaders.** Sensing the Federal paralysis and faced with planning for the future, ~80% of states have adopted or developing a climate action plan (duplicative; no standards; lack tools, information, scientific support; workforce issues).

UCAR Conversations

Opportunities

Between 2008-2011, UCAR turned its attention to our community's role in making our nation more resilient to a changing climate and associated severe weather, including:

- **2008.** UCAR developed a *Transition Document* that outlined the communities resiliency priorities and the collaborations, tools, and information needed to address this issue. And, made recommendations on key weather and climate positions in the incoming Administration.
- **2009.** UCAR focused on building a national network of university-city climate adaptation partnerships and related “toolkits” – the **National Climate Adaptation Summit** grew out of this conversation (next slides).
- **2010.** 50th Anniversary focused on communicating science to the public and in the classroom – a bridge to the 2011 workforce discussions.
- **2011.** Developing a workforce appropriate for these complex environmental, economic, and societal challenges.



CSU's SueEllen Campbell & John Calderazzo



National Climate Adaptation Summit

- **Origins.** May 2009 Board discussion with the President's Science Advisor, Dr. John Holdren, led to UCAR convening the Summit. Held 25-27 May 2010.
- **Issue.** Many communities are struggling with how to plan for reliable water, food, energy, health, etc services in the face of a changing climate. No Federal strategy, confusion over roles, and what constitutes authoritative information.
- **Goal.** Bring together ~200 users and providers of climate information (50/50) to examine the needs, knowledge, and roles that could help climate research, program, and policy planning at all levels.
- **Summit Co-Chairs.** Shere Abbott, Rosina Bierbaum, and Jack Fellows
- **Summit Report.** Provided to Dr. Holdren and incorporated into the Obama Administration's climate adaptation planning.



National Climate Adaptation Summit



Users Panel



Interior Dep
Secretary David
Hayes



Ag Sec Tom Vilsack



NOAA Adm Jane
Lubchenco



Gov Richardson and HUD Dep Sec Ron Sims



Sci Advisor John Holdren



Andy Revkin, NY Times

Organizations Attending the Summit

American Association of State Highway and Transportation Officials	Joint Global Change Research Institute	Stratus Consulting Inc.
American Society of Civil Engineers	Metropolitan Transportation Authority, NYS	Subcommittee on Disaster Reduction
Analysis Group	Metropolitan Water District of Southern California	Susanne Moser Research & Consulting
Argonne National Laboratory	Miami-Dade County	Tampa Bay Water
Arizona State University	Moffatt & Nichol	The Ecosystems Center
Assoc. of Metropolitan Water Agencies	NASA Goddard Inst. of Space	The Kresge Foundation
California Energy Commission	NASA Headquarters	The Nature Conservancy and Chicago Wilderness
Center for Clean Air Policy	National Academy of Sciences	The Port Authority of New York and New Jersey
Center for Disease Control	National Center for Atmospheric Research	U.S. Agency for International Development
Ceres	National Grid	U.S. Department of Agriculture
Chicago Climate Exchange	National Institute for Environmental Health Sciences	U.S. Department of Energy
City of Chicago Dept. of Environment	National Research Council	U.S. Department of Environmental Protection
City of Keene, New Hampshire	National Sciences Foundation	U.S. Department of the Interior
City of Los Angeles	National Wildlife Federation	U.S. Department of Transportation
City of Phoenix	New Mexico Environment Department	U.S. Geological Survey
Climate Institute	New Mexico Governor	U.S. House Science & Technology Committee
Climate Science Watch	New Mexico State Police	U.S. Navy
Climate Wire	New York City Department of Environmental Protection	U.S. Senate Committee on Commerce, Science, and Transportation
CNA	NOAA	Union of Concerned Scientists
Con Edison	Noblis, Inc.	United Tribes of Michigan
Council on Environmental Quality	NYC Mayor's Office of Long-Term Planning & Sustainability	University Corporation for Atmospheric Research
CU-NOAA Western Water Assessment	Oak Ridge National Laboratory	University of Alaska Fairbanks
Department of Homeland Security	Office of Assistant Secretary of Army for Civil Works	University of Arizona
Department of Housing and Urban Development	Office of New Mexico Governor Bill Richardson	University of California
Dept. Global Ecology, Carnegie Institution	Office of the President, Arizona State University	University of Illinois
EcoAdapt	Oregon Climate Change Research Institute	University of Maryland, College Park
Electric Power Research Institute	Pace U. / New York Times	University of Michigan
Environmental and Energy Study Institute	Pacific Coast Shellfish Growers Association	University of Washington
Environmental Law & Policy Center	Pew Center on Global Climate Change	University of Wisconsin-Madison
ExxonMobil Research and Engineering Company	Portland Water Bureau	USFS Rocky Mountain Research Station
Gade Environmental Group, LLC	Public Health - Seattle & King County	Washington Department of Ecology
Georgetown Climate Center	Reinsurance Association of America	Water Services City of Phoenix
Google	Resources for the Future	Wesleyan University
Hunter College/CUNY	Russian Embassy	Western Governors Association
ICF International	San Francisco PUC/Water Utility Climate Alliance	Wharton School University of Pennsylvania
ICLEI USA	Seattle Public Utilities	White House Assistant to the President for Energy and Climate Change
Institute for Business & Home Safety	Smithsonian	White House Council on Environmental Quality
Institute for Sustainable Communities	South Carolina Department of Health and Environmental Control	White House Office of Management and Budget
Inter-American Development Bank	Southern Climate Impacts Planning Program, Adaptation Network	White House Office of Science and Technology Policy
Iowa State University	Southern Nevada Water Authority	WJLA Television Station
		World Wildlife Fund

These efforts continue.....

- **Resiliency Interest.** Through these efforts UCAR has identified ~65 universities interested/involved in university-city climate/severe weather adaptation partnerships and ~100 universities interested/involved in climate/severe weather adaptation curriculum development.
- **National Curriculum.** UCAR is leading an effort to develop a “portable and flexible” national climate adaptation curriculum program.
- **2011 UCAR Forum and Alliance Workshop.** The forum will examine stresses on universities due to demographic shifts and today’s students wanting alternative and less expensive approaches to education and training. The alliance workshop will focus on curriculum and the university-city partnerships approaches.
- **2011 Communicating Science Workshop.** This workshop will focus on hands-on media and policy communication and the place of science in public debates.
- **2012 Community Transition Document.**

- **Postdocs Applying Climate Expertise Fellowship Program.** Pairs early-career climate scientists with a research and decision-making institution to explore transfer advances in climate science/prediction into climate-related decision frameworks and tools. <http://www.vsp.ucar.edu/pace/index.html>
- **Climate Council.** Meets to exchange information and develop a more strategic approach to climate-related science, policy, service, education, advocacy, communication and outreach activities . First project: COMET-like Climate Modeling Tutorial that should be available to the community by April 2012.
- **Diversity Council.** Working on internal and broader workforce issues, including 2010 Denver Hispanics Listening Conference and 8 Sept Boulder-area Diversity Retreat (storm City Hall)
- **Summary.**
 - World is a tough place today and changing rapidly
 - Our role as climate scientists and policy people is really changing.
 - It will take “the” community to deal with this and some very different way of thinking
 - Research, Training, and Outreach – remain critical! We could learn from you.

What Made the Early USGCRP Work?

- A common framework, vocabulary, and priorities and significant trust and partnership between agencies.
- Key senior political leaders that provided critical tools (many times for all the wrong reasons):
 - **Time.** Focused priority guidance.
 - **Legitimacy.** NSTC and integrated budget hearings.
 - **Authority.** Fencing and coordinated OMB Passbacks.
- Less emphasis on policy action (stakes are higher now) and a lot of just plain luck.

The Role of Science/Scientists in Climate/ Science Policy

The World Today and Tomorrow:

- Climate public opinion based on political cues, not science.
- Mitigation legislation dead (science won't be run over by C&T).
- Budgets are bad and little Federal leadership.
- Local leaders need help and are tools aren't quite ready.
- Demographics are changing.
- Students are likely to be looking for different ways to get training and skills.

Ralph Cicerone (NAS President):
“scientist are necessary, but not
sufficient to solve the climate problem.”