UCAR FY09 Advocacy Goals and Actions

FY09 Advocacy Context

It has long been recognized that pursuits that are important to the public interest, but have disproportionately large societal returns as opposed to individual returns, often of necessity become the province of government. But...US federal support of research in the physical sciences, mathematics, and engineering—when adjusted for inflation—has been stagnant for two decades. [A]s a percentage of GDP, federal government in research in the physical sciences and engineering has been reduced by more than half since 1970.

Norman R. Augustine, Is America Falling Off the Flat Earth?
The National Academies Press, 2008

The landmark 2005 study, Rising Above the Gathering Storm, warned that without dramatic improvement of federal funding for science and technology, the quality of life of all US citizens would be threatened. The Administration seemed to heed this message and announced the American Competitiveness Initiative (ACI) in February 2006, proposing the doubling of funding for the physical sciences including the National Science Foundation (NSF) and the Department of Energy’s Office of Science. The mid-term elections of that November brought a sea-change (albeit by a thin margin) to the U.S. Congress as Democrats took over the House of Representatives and the Senate. As a result of leadership changes and the 2007 release of the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report, congressional interest in climate change research increased exponentially. Hearings were conducted on the integrity of communicating science. The release of the National Academy’s decadal survey on Earth systems observations was met with great interest, producing several congressional hearings on survey recommendations. The President’s FY08 Budget Request for science, released in February 2007, was the strongest in years and was followed by Congressional support in the August 2007 America COMPETES Act that authorized spending beyond what was called for through ACI. During the spring and summer of 2007, Appropriations budget reports bumped many funding levels above the President’s request.

And then the bottom dropped out.

Pressures on the budget, including escalating national security costs, two wars, tax cuts, and growing entitlement spending (and now the threat of recession), produced an impasse between the Administration and Congress. The President, whose budget request had boosted science but undercut services like law enforcement and veterans’ health care that had to be reinstated, refused to raise the budget limit and Congress refused to eliminate thousands of earmarks. Science, particularly NSF and the DOE labs, got caught in the Omnibus Bill cross-fire resulting in flat budgets and cuts.

The President’s FY09 Budget Request is once again very strong, with numbers that get ACI back on track. But once again, there are unrealistic cuts in many programs that are congressional priorities, the same players are in the White House and Congress, and we are in all likelihood facing a similar impasse. Given the upcoming November election, it is entirely possible that we
could end up with a Continuing Resolution until there is a new Administration in office. It ain’t ever over ‘til it’s over, but this year it really, really ain’t.

On the bright side, we have maintained good relationships with both sides of the congressional aisle, so are well positioned to work with the new leadership. This fall’s general election is the backdrop for all activities on the Hill. As a community, we must ensure that presidential candidates, and then the new Administration and Members of Congress, care about our priorities in the contexts of national security, safety, quality of life, and the environment. Given the presidential front-runners of the moment, it appears that we will have leadership that is intelligent about the importance of science and the immediacy of the climate change crisis. We need to begin to build on that certainty now.

Advocacy is a critical component of UCAR services to the UCAR community. We are fortunate to have the services of Lewis-Burke Associates LLC, a very well-respected, influential, and successful firm that handles scientific interests exclusively, as well as an engaged and politically savvy board.

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We are arranging this document according to the way in which we organize our efforts which focus primarily on appropriations and authorizing bills – and this year on the government transition. Our tactics, which apply to the strategies outlined below, include:

- meetings with key congressional staff and Members as possible, as well as White House staff (OMB, OSTP)
- invitations to key congressional staff and Members to see the community’s facilities in Colorado
- action alerts to mobilize the community (multiple signatures on strategic letters have been effective)
- budget testimony for NSF, NASA, NOAA, the DOE Office of Science, and possibly the FAA
- suggestions for hearings that are relevant to the work of the community
- nominations of potential witnesses to appear at relevant hearings – distribute experts roster
- assistance for our community’s hearing witnesses as appropriate
- suggestions of strategic questions for relevant hearings
- suggestions of language for relevant legislation
- preparation of background materials for congressional staff
- education of our community regarding relevant legislation through Washington Updates and the UCAR Office of Government Affairs web site
- strategic partnerships in advocacy activities – leverage in numbers and “speaking with one voice” – our most active partnerships are with the American Meteorological Society, the American Geophysical Union, the Weather Coalition (more in the NOAA section below), Friends of NOAA, the Coalition for National Science Funding, and the Congressional Hazards Caucus Alliance.
Transition to the New Administration and Congress

This year’s presidential election will cause much distraction on the Hill. Dramatic change is promised by the leading candidates for both major parties, including increased attention to climate change issues from any new Administration. It is essential that we educate the candidates about the broad policy relevance of our work and the overall “return on investment” value to the nation. The UCAR transition document, also supported by AMS, AGU, and the Weather Coalition, has been disseminated to the candidates and may be accessed at http://www.ucar.edu/td/. This site includes more detailed background information on recommended actions as well as an opportunity for people to make nominations for key leadership positions in the new administration. These nominations will be turned over to the transition team and every attempt will be made to get them in the hands of people who will have influence over the process.

Early in 2009, there will be a new Administration, many new Members of the 111th Congress (there are already over 30 Members retiring or seeking other elected positions), new chairs of congressional committees, and many new staff members. We can anticipate a rush of new and revisited legislation relevant to climate and weather issues, along with the associated demand for hearing witnesses. Depending on the Presidential and Congressional election outcomes there may be a significantly higher chance of various pieces of legislation being enacted.

On the budget front, it is quite likely that like this year we will have both ongoing FY09 and initial FY2010 issues in play. Given the speed with which a new Administration needs to act on the FY2010 budget, we need to think ahead to be ready with educational materials (building on the current, relatively concise Transition Document) that can be disseminated to all members of Congress and relevant members of the new Administration.

There is obviously strength in numbers and in having consistent messages and themes across organization and coalitions. In addition to our traditional partnerships within the geosciences community, we are reaching out to other organizations to collaborate in our transition activities and advocacy priorities. Since the last UCAR Board meeting, we have researched approximately 40 potential additional partners who are influential in the policy arena and are approaching roughly a dozen of them to explore informal or formal areas for advocacy cooperation. These include the Union of Concerned Scientists, Brookings, the World Resources Institute, the Center for American Progress, and the Presidential Climate Action Project.

Appropriations Bills
(Please see http://www.ucar.edu/oga/html/budget/index.html for budget history, detailed FY09 Budget Request numbers, and request language excerpts.)

Commerce, Justice, Science and Related Agencies (CJS)
CJS is by far our most important focus on behalf of the community, given that it contains the budgets of NSF, NASA and NOAA -- our key agencies. We know the Senate Appropriations subcommittee staff well and will get to know the new majority clerk on the House side as soon as possible. We are on very good terms with the minority staff member. Through our UCAR
Member Reps and Academic Affiliates, we have good access to CJS House and Senate Subcommittee Members.

**National Science Foundation (NSF)**

**NSF Overall and GEO.** NSF remains our highest advocacy priority. The FY09 Budget Request for NSF makes up for the lost opportunity of FY08 and gets NSF back on the ACI doubling track. That focus is the physical sciences, the ACI definition of which oddly does not include the geosciences. Nevertheless, the “virtual” wealth of the FY09 requested increases includes a 12.8% bump (over FY08 estimates) for GEO and a 13.6% bump for ATM, with NCAR slated for a 9.5% increase. We certainly can’t take that to the bank yet, but we can do the following things to attempt to make it reality:

- Advocate for the health of the agency by supporting the overall increase of 13.6%.
- Support the increases for GEO, ATM and NCAR. (The ATM and NCAR levels do not usually make it into the Appropriations bill, so support at the GEO level is key.)
- Support the America COMPETES Act authorization of NSF to reach $11.2B by FY 2011 during visits to OMB and argue for the inclusion of the geosciences in ACI.
- Hold Hill briefings featuring NSF-supported research.
- Unless Mercury continues to be in retrograde, a new assistant director for GEO will be chosen this year. We will obviously meet with that person as soon as possible.

**NSF Computing.** The UCAR community needs substantially greater computing capabilities to answer questions concerning escalating climate change at a global scale as well as questions concerning regional impacts. For the benefit of the country, higher model resolution and complexity must be achieved, both of which require exponentially more computing power. Within NSF, the atmospheric sciences community may be supported by the Office of Cyberinfrastructure (OCI) in the creation and deployment of the next generation of computing capacity. UCAR will support the President’s request of an 18.8% increase for FY09 over the FY08 estimate of $185.33M.

**NSF Science Education.** The Education and Human Resources (EHR) Directorate receives an 8.9% increase in the FY09 request. We will continue to support funding for EHR, focusing on the National Sciences Digital Library (NSDL), funded out of the Division of Undergraduate Education (DUE) and based in UOP with partners at Cornell and Columbia. NSDL continues to be valued by the broad scientific education community and is providing a unique service. It has encountered recent serious funding issues that threaten to end the program’s critical Core Integration activity without which the materials funded through its small grants program are of far less use to teachers and students. Ironically, NSDL receives a $250M increase and much praise in the FY09 budget request. We are working with NSDL staff now to attempt to protect the program before the scientific education community loses this valuable asset.

**National Aeronautics and Space Administration (NASA)**

When FY08 rescissions and accounting changes are taken into consideration, NASA’s Science Mission Directorate (SMD) is essentially flat-funded in the President’s FY09 Budget Request.
Within that account, Earth Science does far better than Heliophysics and Astrophysics with a 6.8% increase, second only to the 6.9% increase for Planetary Science. Even so, the Earth Science funding request of $1.367B may fall short of the recommendations of the National Research Council report, *Earth and Space Science Applications from Space: National Imperatives for the Next Decade and Beyond*, otherwise known as the Decadal Survey. Out year funding, as planned now, absolutely falls short with the gap between what is requested and what is needed growing with time and inflation.

The increase for Earth Science provides additional Research and Analysis awards, development of the two (out of four) Decadal Survey 2010-2013 timeline missions of SMAP and ICESat II, and continued funding for Landsat Data Continuity Mission (LDCM), Glory mission, NPOESS Preparatory Project, Global Precipitation Measurement (GPM) mission, Aquarius, and other ongoing precursor missions to maintain the current schedule. In addition, it allows for initial development and formulation of three other missions—two Decadal Survey missions and one Venture-Class Explorer. Alan Stern, associate administrator for SMD, has stated that NASA will look closely at formulation for CLARREO and DESDynl, the two remaining Decadal Survey recommendations in the 2010-2013 recommended line-up. The community must push for this if the NRC recommendations have any chance of starting off on track.

Revitalizing NASA’s Earth Science funding is a high priority politically because of the growing public concern about climate change, but there is concern that flat funding for SMD means that increases for observing programs are coming at the expense of other research priorities within the Earth Science and other SMD accounts. It is unlikely that additional funding will be forthcoming from Congress, given shortfalls in the Administration’s request that will have to be addressed. Because other communities funded by NASA fare far worse than does the Earth sciences community, UCAR will support the requested increase for this NASA theme, but will emphasize, during all relevant Hill appointments and in testimony, that much more must be done in future years to meet the pressing needs of the country related to climate change. Additional key advocacy activities include:

- Request that Science be funded at $4.583B ($142M more than the request) to keep pace with 3% inflation in order to have a fighting chance to fulfill its many responsibilities.
- Meet with OMB NASA examiners to discuss the gap between what is needed to keep pace with Decadal Survey recommendations and what is planned to be funded in out years.
- Use NRC materials and message points on the Hill that focus on the underlying scientific and societal needs being met by the recommended Decadal Survey missions and timeline.
- Further engage and coordinate community stakeholders to educate congressional staff and Members on the value of Earth Science priorities for the nation.
- Support the formulation of CLARREO and DESDynl in FY09.

With a new Administration, the community will have to be vigilant about advocating for the full complement of missions recommended in the Decadal Survey. Given the Moon-Mars initiative, the Space Station, and plans for a new shuttle program, funding will be stretched far too thin for many years and difficult choices will have to be made. With climate change accelerating more rapidly than expected, there are few NASA responsibilities more important than monitoring the Earth’s environment. We must continue to press that message.
NOAA has struggled for many years to gain champions in Congress and even to clarify its mission. Established in 1970 by an Executive Order from President Nixon, the agency has never had an Organic Act delineating its responsibilities. It operates instead through hundreds of pieces of legislation that mandate its diverse operations. Its major congressional champion, Senator Hollings, retired several years ago. Gigantic cost overruns and long delays for NPOESS have won it few friends. Promises of productive partnerships with the academic and private sectors have morphed into conflict as years of tight budgets have caused the agency to pull back to protect their own staff. In short, it’s an agency in need of friends and strong, new leadership.

The Friends of NOAA Coalition, established by Joel Widder, government relations consultant to UCAR, and Kevin Wheeler of The Consortium of Ocean Leadership (formerly CORE), unites the oceans and atmospheric communities in high level advocacy for NOAA. UCAR will join many other institutions in supporting the Friends recommendation of $4.5B for NOAA overall, an increase over the $4.1B FY09 request.

Joel Widder is also involved with the Working Group to Examine Advisory Options for Improving Communications appointed by NOAA’s Science Advisory Board (SAB) to explore options for NOAA to improve its interactions and communications with the weather and climate communities. This activity grew out of advocacy on the part of the Weather Coalition, a membership group of public and private sector stakeholders in the weather enterprise, managed by the UCAR Office of Government Affairs with much input from Joel. This coalition has been pushing for years for an independent advisory committee (FACA or otherwise) to be established to provide advice to NOAA regarding weather and climate research, operations, partnerships, and services. The SAB Working Group is very close to making a recommendation on which UCAR and the Weather Coalition will weigh in and become as involved as is possible and appropriate.

The NOAA FY09 budget request of $4.1B is up 5.5% over the FY08 enacted level, but the bulk of that increase is reserved for the Procurement, Acquisition and Construction (PAC) account, while Operations, Research and Facilities (ORF) takes a 0.5% cut. However, there are bright spots for the atmospheric sciences community in this budget request.

Collaboration with the ocean sciences community is critical to the work of the atmospheric sciences. Within NOAA’s National Ocean Service, several programs are of particular importance including continued work on the Integrated Ocean Observing System, which receives a $7M increase in the request, and the Ping to Chart Infrastructure Streamlining to manage the increasing size of hydrologic datasets, which receives a $1M bump in the request.

Within Oceanic and Atmospheric Research (OAR), Climate Research increases by $2.6M, Weather and Air Quality Research increases by $5.4M. All of the program highlights for FY09 are of value to our community including the National Integrated Drought Information System (NIDIS), Water Vapor Research, Unmanned Aircraft Systems, and Improvements to Operational
Weather Forecasts. The USWRP/THORPEX line is moved back again to OAR from the National Weather Service (NWS) and appears to lose about $350,000 in the transfer.

NWS overall receives an increase of $19.2M with several of the highlighted programs being of interest including improved hurricane services and infrastructure support (including the operation and maintenance of weather data buoys for real time hurricane observations), the acceleration of improvements to advanced fire weather modeling capacity, the improvement of aviation weather services, and conversion of the NOAA Profiler transmitters.

The National Environmental Satellite, Data, and Information Service (NESDIS) receives a small decrease in the ORF account and a PAC account increase of $216.6M with all of that and more (for a total of $242.2M) allocated to the GOES-R series, the “current” expected life-cycle cost of which is estimated at $7.67B through 2028. The launch of GOES-R is delayed from December 2014 to April 2015 because of cuts in the FY08 budget, increasing the potential risk to the overall data coverage should GOES-O or GOES-P fail. It is imperative that the request for GOES-R be funded. But it should be noted that NOAA’s Earth observing satellite programs threaten to overwhelm the NOAA budget for years to come. The NESDIS request calls for a decrease of 43% to the National Polar-orbiting Operational Environmental Satellite System (NPOESS) for a total of $287.9M. The budget summary states that the adjustment to the NPOESS budget will bring it “into alignment with the Department of Defense certified Nunn-McCurdy program estimate,” and will be used to “continue the development and production of the NPOESS spacecraft and instruments.” Two NPOESS climate sensors that were previously de-manifested, the Clouds and the Earth’s Radiant Energy System (CERES) and the Total Solar Irradiance Sensor (TSIS), are reinstated with a request of $74.0M. While this is good news for the climate community, one might wonder how such low levels of funding for NPOESS are going to allow the development of a program that is suffering billions of dollars in cost overruns.

While the CLARREO and GPSRO missions are not mentioned in the FY09 language, these are the missions recommended to NOAA in the Decadal Survey. Responsibility for CLARREO is shared with NASA, the leadership of which has mentioned the potential for funding in FY09, as mentioned above. Should NASA focus attention on CLARREO, as will be recommended by our community, NOAA will also have to step up to the plate. With GPSRO not being mentioned, that will presumably delay the start of this mission that will provide temperature, water vapor, and electron density profiles for weather, climate, and space weather.

For years, people in our community have worried that the D and the I in NESDIS are being short-changed to the extent that the data being collected by the S side of the house are of less use in research and applications activities. The FY09 funding levels for NESDIS illustrate that problem dramatically. The budget request for NESDIS overall is $1.1B, $992.5M of which is slated for the PAC account, forcing a cut of 45% to NOAA’s Data Centers and Information Services, leaving them with a total budget of $53.5M.

For NOAA advocacy in FY09, UCAR, in coordination with the Weather Coalition in some areas, will focus on the following activities:

- Support $4.5B for NOAA overall.
• Support the establishment of an independent advisory committee to provide advice to NOAA regarding weather and climate research, operations, partnerships, and services.
• Support the NOS requests for the Integrated Ocean Observing System (IOOS) and Ping to Chart Infrastructure Streamlining.
• Support the OAR ORF request.
• Support the NWS overall request.
• Support the NESDIS overall number, recognizing the importance of GOES-R.
• Protest the diminishing capacity of NESDIS to analyze and disseminate data.
• Question progress on NPOESS.
• Question the absence of CLARREO and GPSRO in FY09.

Energy and Water Development, and Related Agencies

Department of Energy (DOE) Office of Science. The DOE Office of Science is part of the Administration’s American Competitiveness Initiative and fares well in the FY09 request with an 18.8% increase which would catch the agency up on the ACI doubling track after a minor derailment in the FY08 Omnibus. We will advocate for full funding, focusing on Biological and Environmental Research (BER) which funds climate change related programs. BER overall is up only 4.4%, but its Climate Change Research Program funding request increases 13.2% over FY08 Omnibus levels with Climate Change Modeling increasing $14M for a 46.4% increase.

BER and DOE’s Advanced Scientific Computing Research (ASCR) sponsor (along with NSF) the Community Climate System Model maintained by NCAR. In the president’s request, ASCR is slated for a 5% increase which UCAR will actively support.

Agriculture, Rural Development, Food and Drug Administration, and Related Agencies

U.S. Department of Agriculture (USDA). USDA has not been a part of our advocacy plan in the past, but it is playing what may be an increasingly important role in climate change related work. The USDA Climate Change Program Office is the sponsor of one of the Climate Change Science Program (CCSP) reports involving members of the community. For FY09, USDA requests $13M for the Office of Chief Economist (OCE), including an increase of $1.5M to provide the Climate Change Program Office support for involvement in domestic and international discussions on climate change and to conduct studies of the impacts of climate change on agricultural, forestry, and land use practices in the U.S. Between this and the potential for USDA to be instrumental in future climate change adaptation and impacts mitigation work, we believe that the agency bears watching. We will research information about and monitor:

• the Climate Change Science Program,
• the Cooperative State Research, Education, and Extension Service, which funds extramural research in climate impacts and adaptation and is down by about 1% on the FY09 request,
• the Agricultural Research Service which funds biological and ecological research and is also down by about 1% for FY09, and
• the Economic Research Service which funds economic and social science research and is up by about 1% for FY09.
Authorization Bills

The National Oceanic and Atmospheric Administration Act, HR 250. As mentioned above, NOAA has never had an organic act delineating its purview. There have been several attempts to pass such a bill, but to no avail. HR 250, sponsored by Congressman Ehlers (who has been trying to move this bill since 2004), has been introduced in the House Committee on Science and Technology and referred to the House Committee on Natural Resources. UCAR has worked closely with staff on several versions of this bill and will:

- team with the Weather Coalition and Friends of UCAR on advocacy support for the bill,
- meet with Mr. Ehlers to offer support and ask how we can help,
- seek the community’s help in recruiting co-sponsors for the bill, and
- encourage development of a Senate companion bill.

National Hurricane Research Initiative Act of 2007, S 931 and HR 2407. These companion bills to improve hurricane preparedness are sponsored by Members of the Florida delegation. HR 2407 has been referred to the House Science Committee. S 931 has been referred to the Senate Committee on Commerce, Science and Transportation. The bills are bolstered by reports from the National Science Board, the NOAA Science Advisory Board’s Hurricane Intensity Research Working Group, the AGU Hurricane Assessment group, and a number of concerned scientists all calling for an ambitious program of enhanced research aimed at improving major deficiencies in hurricane forecast and impacts projection capacity. UCAR has provided comments on both bills, has held Hill briefings on hurricane research, and will:

- collaborate with the Weather Coalition on advocacy,
- continue to support both bills, and
- seek the help of the community in recruiting additional sponsorship.

The Global Change Research Improvement Act, S. 2307. The purpose of the bill is to update the Global Change Research Act of 1990. Introduced by Kerry, cosponsors: Klobuchar, Nelson, Snowe. Approved by the Senate Committee on Commerce, Science, and Transportation. No direct House counterpart bill, but the Global Change Research and Data Management Act of 2007, HR.906, introduced by Udall, has some similarities. UCAR will:

- support both bills,
- encourage progress on the Senate side, and
- continue to work with Congressman Udall to develop a more direct companion bill.

The Climate Change Adaptation Act, S. 2355. This bill directs the US Global Change Research Program to develop a National Strategic Plan for Climate Change Adaptation, and NOAA to develop a “National Climate Service” and prepare ocean and coastal impacts assessments and adaptation plans. Introduced by Cantwell, cosponsors: Klobuchar, Kerry, Lautenberg. Approved by the Senate Committee on Commerce, Science, and Transportation. There is no House companion bill. UCAR has provided comments, which have influenced the language of the bill considerably, and has been generally supportive of this bill. But we do have some reservations regarding potential overreach by NOAA. UCAR will:

- continue to work with staff to address remaining issues,
- encourage progress on the Senate side, and
- encourage development of a companion bill on the House side.

**America’s Climate Security Act of 2007, S. 2191.** This is the widely publicized Senate Lieberman-Warner bill that includes significant funding for adaptation, focusing heavily on wildlife conservation plans and international funding for vulnerable, less-developed countries. Senator Boxer (Chair of the Environment and Public Works Committee) is committed to a floor vote early in 2008. Senate Majority Leader Reid has indicated a possibility for floor action in the second quarter of 2008. There is no House bill, but Dingell, Boucher and the House Energy and Commerce Committee are expected to at least introduce legislation this year. There is obviously considerable opportunity for input in the House, and to some extent still in the Senate. This bill should be a priority for UCAR since the funding allocation is not well thought out in terms of funding for research versus implementation, and how the distribution matches the vulnerability of regions and sectors. UCAR will:
  - continue to work with staff to address remaining issues in the Senate bill, and
  - encourage development of a companion bill on the House side.

**The Federal Ocean Acidification Research and Monitoring Act, S. 1581.** Introduced by Lautenberg, cosponsors: Boxer, Cantwell, Kerry, Lautenberg, Nelson, Snowe, and Stevens. Approved by the Senate Committee on Commerce, Science, and Transportation, this bill has a house counterpart, the **FOARAM Act, HR 4174**, introduced by Allen with 14 cosponsors. The House bill has not seen any committee action yet, so needs to move this along quickly if it has any chance of passing. Joanie Kleypas of NCAR has testified and been very involved with an effective coalition of groups working this bill, so there is less need for UCAR time and effort on this one. UCAR will continue to monitor progress.

**Science and Engineering to Comprehensively Understand and Responsibly Enhance Water Act, S.2156.** The Senate Energy and Natural Resources Committee held a hearing on this bill which would increase federal assessment for water resource adaptation (so is focused more on implementation planning than research). Introduced by Bingaman, cosponsors: Cantwell, Domenici, Johnson, Salazar, and Tester. UCAR has not yet engaged substantively, although some of our scientists are interested in it. There is no House companion bill. UCAR will simply monitor progress for now.

**Climate Change Science and Policy**

**Climate Change Legislation.** In FY07, the climate policy debate shifted measurably from “is global warming real?” to “the science is settled; what can we do about it?” The great challenge for our community is to communicate to Congress that the role of physical science research in climate change is not over, but remains highly relevant to pressing policy questions.

While much congressional work in 2008 will involve questions of climate change policy design details, economics, and technology options, there is still a considerable need to provide information to Congress in three areas highly relevant to UCAR members’ expertise: basic climate science information, consequences of different emission reduction targets and timetables (e.g., the implications of different 2020 and 2050 targets in legislation), and research on impacts
and adaptation. For the first two areas, members of Congress and their staff are still absorbing many of the details of the IPCC AR4 and subsequent scientific research.

Relevant UCAR activities (including those listed in the Appropriations bill section above such as maintaining and upgrading earth observing systems and dedicated climate computing capacity) will be to:

- Recruit NCAR and UCAR member university scientists to continue to communicate with key Members and committees of Congress including the House Committee on Science and Technology; the House Committee on Energy and Commerce; the House Select Committee for Energy Independence and Global Warming; the Senate Commerce, Science, and Transportation Committee; and the Senate Committee on Environment and Public Works.
- Develop briefing materials for Congress describing the next stages of climate science research including the following: work already underway on short- and medium-term projections; increasing resolution and other modeling work that underpins impacts assessment; increased understanding of ice sheets; and model assessments of geo-engineering options.
- Arrange formal and informal opportunities for scientists to brief Congress, both in DC and during NCAR site visits. (For example, we are working now with Representative Diana DeGette, co-chair of the House Energy and Commerce Committee, to arrange briefings for other members of the committee as they develop legislation.)
- Partner with other organizations working on these issues including the Western Governors Association, AMS, AGU, NAS, etc.

**Climate Change Impacts and Adaptation.** One of the main “take home” messages from the IPCC report was that even with aggressive emissions mitigation policies we are committed to significant climate impacts. Impacts and adaptation is a societally relevant issue for which NCAR and UCAR members have an ability to contribute to policy making. This may be an opportunity also for increased funding for climate science, especially in the social and environmental sciences. At this point the “adaptation community” is relatively unstructured in its input to Congress and other decision makers. UCAR will focus on the following priority policy activities for impacts and adaptation:

- Increase and coordinate the input to policy makers from UCAR members with expertise in impacts and adaptation.
- Build relationships with congressional staff; many of these issues are under the jurisdiction of committees and subcommittees that are not our traditional targets.
- Support authorizing bills that give clear guidance to relevant federal agencies (e.g., USDA; NIH; USGS; AID) to assess how climate impacts affect their missions and that give direction for adaptation implementation.
- Advocate for impacts and adaptation research in climate legislation and for an appropriate allocation of efforts across the most vulnerable sectors and regions.
- Building relationships with other stakeholders, including groups with staff working on these issues, such as Union of Concerned Scientists and World Wildlife Fund, the Adaptation Network, and staff and members of the NAS Committee on the Human Dimensions of Global Change.
• Use the UCAR/AMS/AGU Transition Document with Congress to elevate the importance of building a network of institutions involved with adaptation modeling (a focus of the 2008 UCAR Annual Members Meeting).

Advocacy at the Local Level with National Benefits

CO-LABS. The UCAR Office of Government Affairs has been instrumental in creating a 501(c)3 called CO-LABS to protect and enhance the cluster of (mostly) synergistic, federally funded laboratories in Colorado. These include NCAR, the NOAA labs and cooperative institutes, the NIST lab, and the National Renewable Energy Laboratory. It benefits the nation that these laboratories are located in such close proximity, given the collaborative work that results. CO-LABS partners include the governor’s office, Colorado chambers of commerce, the corporate sector, regional economic development offices, the Colorado congressional delegation, the universities, and the labs. The project has received a start-up grant for $150,000 from the governor’s Office of Economic Development with which CO-LABS is to educate policy makers and citizens of this region about this federal investment and create opportunities for the corporate sector to learn about technologies in the labs that might have potential to be developed commercially. UCAR will continue to participate actively in this coalition, particularly in the interest of NCAR.

-- End of Plan --