Annual Meeting Report

2011

Jim Anderson
Arizona State University
The Members may appoint a committee to be known as the Scientific Programs Evaluation Committee ("SPEC") to evaluate the quality, as distinguished from the scientific goals (the latter being the responsibility of the Board of Trustees), of all or certain of the corporation's scientific programs. The SPEC shall be appointed at intervals no greater than once every five years, and no more frequently than once every three years. The SPEC may appoint subcommittees or panels to assist it in said evaluation. The SPEC, and any such subcommittees or panels, may include scientists who are not Members Representatives. The SPEC shall report to the Members as directed in the resolution of the Members appointing the members of the SPEC.

UCAR Bylaws: http://www.ucar.edu/governance/members/ucar_bylaws.pdf
Mary Jo Richardson, Texas A&M University, Chair
Jim Anderson, Arizona State University
Bob Dickinson, University of Texas - Austin
Dick Johnson, Colorado State University
Jim Kinter, George Mason (unable to attend)
SPEC Charge 2011

The UCAR Scientific Programs and Evaluation Committee (SPEC) will work with the NCAR Advisory Council to:

1) review the NCAR science programs based on an assessment of NCAR progress against the scientific goals and objectives articulated in the most recent (28 August 2009) NCAR strategic plan and 2) assess the progress made on the proposed activities in the 2007 UCAR proposal to manage NCAR.

This review and assessment should be based on the individual NSF science reviews of the NCAR labs/observatory (CISL, EOL, NESL, RAL, and HAO) that were conducted during the spring of 2011, the NCAR responses to these reviews, and the SPEC’s own view of the progress made on the NCAR Strategic Plan and 2007 UCAR proposal to NSF. It will entail examination of the written material referenced above and other materials provided by NCAR and UCAR, followed by a 2–day workshop in Boulder on August 16-17, 2011 for discussion and writing. The review and workshop will include participation of SPEC members, the NCAR Advisory Council, and the Chair of the NCAR Budget & Programs Subcommittee of the UCAR Board of Trustees.

The SPEC write a short written report that responds to the charge above and present this report to the UCAR Members at the October 2011 Members’ meeting.
SPEC and the NCAR Advisory Council met in Boulder on 16-17 August to hear presentations from the NCAR labs and write a report to answer the following questions (some of which deal with NCAR’s Strategic Plan):

1. What are the most important results from the NSF science reviews (e.g., common themes, appropriate center-wide activities, scientific productivity, consistency with the goals stated in the Cooperative Agreement, etc.)?

2. Do any of the individual science reviews have implications for NCAR as a whole?

3. Are NCAR’s planned responses to the science reviews appropriate?

4. Do the science reviews warrant changes to NCAR’s strategic plan? Should NCAR modify its imperatives and frontiers?

5. Are there other factors, such as emerging scientific opportunities or the likelihood of level or diminished federal funding that should lead NCAR to change its strategic plan?

6. Has UCAR made progress on the proposed activities in the 2007 UCAR proposal to manage NCAR? What remains to be done?
1. What are the most important results from the NSF science reviews (e.g., common themes, appropriate center-wide activities, scientific productivity, consistency with the goals stated in the Cooperative Agreement, etc.)?

• NSF reviews affirmed that NCAR's primary research activities remain consistent with the goals in the UCAR Cooperative Agreement with NSF to manage NCAR and with NCAR's Strategic Plan.

• Reorganization of NCAR in 2004, and modifications and leadership changes since, have been handled well by both UCAR and NCAR.
NCAR has played a critical role in developing careers of young professionals in the atmospheric and related sciences and as well as enhancing diversity. Making great strides in increasing the number of women progressing through the ladder-track ranks.

A significant achievement for NCAR and the scientific community is the advancement in supercomputing at the new supercomputer center being built in Wyoming.
2. Do any of the individual science reviews have implications for NCAR as a whole?

- Each of the individual science reviews recommended increasing the amount of NSF core support to that specific laboratory/observatory (difficult obviously in current budget climate).

- NCAR management is currently and will continue to be faced with difficult budgetary and staffing decisions. Salary commitments to senior scientists in laboratories/observatories exceeding the core NSF budget necessitates increasing amounts of soft funding support and tapping other resources for new initiatives in their “frontier” areas.
• NCAR should also consider retirement incentives for its senior scientists that are beneficial to the organization as a whole.

• Model development at NCAR is one of its signature achievements, culminating in the CESM, the WRF model, and the Whole Atmosphere Community Climate Model (WACCM). Future models require collaborations with multiple groups to provide critical pieces of the code.
3. Are NCAR's planned responses to the science reviews appropriate?

- NCAR's responses to the science reviews appropriately address the concerns and recommendations made. All reviews note the increasing demand on the NSF core funding.

- Another general concern was insufficient progress in recruitment of underrepresented minorities. NCAR has strong programs attempting to address this issue across the community NCAR serves, rather than within NCAR alone.
• (ACD). A significant weakness identified is the large shrinkage in NCAR's capabilities to do *in situ* chemical measurements. To address this concern, NCAR will reorganize their atmospheric chemistry activities to be a single facility, guided by planning with the community, making sure they do not duplicate university activities and provide data through a single portal.

• NCAR needs to protect the core modeling activities while finding ways to limit the direct demands on staff from user support.
4. Do the science reviews warrant changes to NCAR's Strategic Plan? Should NCAR modify its imperatives and frontiers?

- NCAR's strategic goals, priorities and objectives are laid out in the NCAR Strategic Plan that is revised every five years.
- The plan provides the framework for future program development and gives examples of NCAR's nimbleness in recognizing new frontiers and opportunities as they arise and successfully pursuing those new developments.
- Adjustment to changing frontiers is a great strength of NCAR that should continue to be an important part of strategic planning.
5. Are there other factors, such as emerging scientific opportunities or the likelihood of level or diminished federal funding, that should lead NCAR to change its Strategic Plan?

• NCAR has developed the Annual Budget Review (ABR), a process tied to the Strategic Plan that allows response to emerging scientific opportunities or a diminished budget within a +5% to -10% range.

• The ABR process can accommodate pursuit of emerging scientific frontiers that are consistent with the broad goals and objectives of the Strategic Plan.

• Short-term adjustments should (and currently do) come through the ABR process and the Strategic Plan is used for long-term adjustments to goals, priorities and objectives.
6. Has UCAR made progress on the proposed activities in the 2007 UCAR proposal to manage NCAR? What remains to be done?

- A top priority in Goal 4.2.1 (Improve understanding of the atmosphere, the Earth system, and the Sun) is earth system modeling. The CESM represents a highly successful accomplishment related to this goal.
- Goal 4.2.2. (Provide robust, accessible, and innovative information services and tools) has also met with considerable success. The top priority was to replace NCAR’s aging supercomputer center.
- Goal 4.2.3 – (Provide world-class ground, airborne, and space-borne observational facilities and services), the use and evolution of the Gulfstream V aircraft was identified as the top priority. This goal has also been met with great success as the aircraft instrumentation has advanced and unique field campaigns have been undertaken. (e.g. HIPPO).
- Goal 4.2.5 (Cultivate a scientifically literate and engaged citizenry and a diverse and creative workforce) has been the target of a number of UCAR/NCAR activities. One objective has been to expand the number and scope of ASP postdoctoral appointments to include engineering, education, computer science, another relevant disciplines. (ASP has been protected in the face of NCAR-wide budget cuts)
Highlights of the SPEC Report

Additional questions from the SPEC:

• What process will UCAR/NCAR use for budget allocation with significant to severe cuts in the near future?

• What value does UCAR management bring to the management of NCAR?

• What is the process for arriving at decisions for balancing the distribution of core NSF funds across the labs?

• What's the Integrated Science Program’s (ISP) mission and why was it formed? (ISP is a “virtual” program that fosters initiation and early development of multidisciplinary projects – current ISP model is unsustainable.)

• With regard to NCAR's contributions to the nation, is a cost-benefit analysis needed? (And how would one do it?)
Conclusion:
NCAR is a unique center. It has made fundamental contributions in atmospheric and related sciences. There is every reason to celebrate prior achievements and look forward with confidence to more success in the future.