



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
OFFICE OF OCEANIC AND ATMOSPHERIC RESEARCH
Environmental Research Laboratories
1315 East West Highway
Silver Spring, Maryland 20910

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MEMORANDUM FOR: James Kimpel, Director
National Severe Storms Laboratory

FROM: David L. Evans *David L. Evans*
Assistant Administrator

SUBJECT: Summary of and Action Items Resulting from the
June 22-23 NSSL Review

I want to thank you and your staff for directing an excellent review of your laboratory on June 22 and 23. I have heard that you and your staff were gracious hosts to the review panel, Louisa Koch, the Office of Oceanic and Atmospheric Research staff, and other guests.

I have received and digested the written reviews from each of the eight panelists and I have gotten input from Louisa Koch and the staff who attended your laboratory's review. I would like to take this opportunity to present my summary of the reviews and staff comments, including the many common threads and the significant, unique perspectives. In addition, I include suggested actions that you or I should take in order to address some of the critical issues. These actions and time-lines are in bold.

There was strong panel consensus that the National Severe Storms Laboratory (NSSL) is a high quality laboratory and is leading the Nation and probably the world in weather radar research and development and applied research in severe summer convective storms. The reviewers concluded that the research being done at NSSL fits its mission well. The Warning Decision Support System (WDSS) is a superb tool and efforts should continue with the National Weather Service (NWS) to complete development of the system and to incorporate it into the Advanced Weather Interactive Processing System (AWIPS). Your laboratory's interactions and linkages with the NWS Operational Support



Facility (OSF), Storm Prediction Center (SPC), and the local weather forecast office (WFO) are excellent and to the benefit of both NSSL and these NWS organizations. NSSL's coordination with the Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) is very good and appropriately takes advantage of the capability of CIMMS to draw new, world-class scientific talent to your laboratory. The NSSL link to the University of Oklahoma (OU) appears strong, but there are some issues discussed below. The addition of a public affairs specialist was applauded. The accomplishments of the public affairs specialist should be documented to provide support for renewing the temporary position. **Please provide such documentation to me by October 29, listing accomplishments from the time the position was filled.** Your efforts directed toward the exploration of phased array technology for possible use in the NEXRAD system were also complimented. **During this exploration, you should insure that NSSL interacts with SPC, OSF, the Techniques Development Laboratory (TDL), and other appropriate NWS Centers and Offices during the period of the exploration of phased array technology.**

All of the panelists emphasized the inadequacy of the building in which NSSL is housed. As you know, we have been struggling with this issue for several years. Louis Uccellini mentioned that it would help to provide him with more information on the interactions between NSSL and the NWS organizations in your area so that he can strengthen the arguments on the NWS side for a new building. It was also mentioned that the mutual advantages of NSSL/OU collocation should be more clearly specified. **I request that you submit to me a short report, by October 29, outlining the current collaborative environment between NSSL and the NWS organizations not currently collocated with NSSL and between NSSL and OU. Follow this section in the report with a description, with as many details as possible, listing the advantages of collocation with these organizations.**

There was a consensus that, since the Director's discretionary funds are an excellent management device, a goal should be to increase the funds from the current \$100-200K to 5-10% of the NSSL budget. **I request that you set a goal such that your discretionary funding reach a level between 5% and 10% of the NSSL base budget by the next NSSL review.** Along these same lines, these funds could be used as tools to prioritize the areas in which research is initiated. Most of the panelists were unclear about the decision process by which new research is initiated and by which progress is measured. **In future reviews, a portion of the presentations must clearly discuss links between strategic and operating plans and detailed performance measurements.**

Related to the issue of priorities is the appropriateness of NSSL maintaining a small seasonal-to- interannual project in a laboratory clearly devoted to short term forecasting problems. Most of the panelists felt that this PALS project, which has merit, should not be based in NSSL. **Please submit a short statement to me by October 29, providing information supporting the continuation of this position in NSSL. I will discuss my evaluation of this information with you.** Depending on my evaluation, we may discuss options which might include a move of this scientist to another laboratory more appropriate to his work.

The addition to your staff of an expert in radar data assimilation was applauded by all of the panelists. However, they also felt that NSSL's expertise in assimilation of satellite data into mesoscale and convective storm analysis and models should be strengthened as well. This does not necessarily require new hires. It can more practically be accomplished by increasing NSSL's links to the National Environmental Satellite, Data, and Information Service (NESDIS), for example, with its Office of Research and Applications (ORA), or between CIMMS and the Cooperative Institute for Research in the Atmosphere/Regional and Mesoscale Meteorology (CIRA/RAMM) Team. I offer any help needed from OAR management to accomplish this. **In order to initiate this discussion, I request that you submit a report to me by October 30, outlining a plan to accomplish this linkage and interaction in order to increase the expertise of NSSL in the use of satellite data for analysis and assimilation into models.**

Several of the panelists and headquarters staff pointed out that WDSS-type and radar analysis tools would be useful to NWS's Tropical Prediction Center (TPC) and Hydrological Prediction Center (HPC) and that some of the same radar and severe weather analysis products could be used by NWS's Environmental Modeling Center (EMC). Strengthening these links can be accomplished in several ways, but one of the best is short- and longer-term visits by NSSL scientists to EMC, TPC or HPC and shorter-term reciprocal visits of EMC, TPC, and HPC personnel to NSSL. The strengthening of science/service links is a broad NOAA concern. **These links require support between the Line Offices and, concerning the OAR/NWS linkages in the area of weather, I will begin a dialogue between myself and Jack Kelly, with your participation, which I hope will lead to an understanding on this issue.** If we do reach an agreement, you should be able to move forward with a program of visitations.

Finally, another issue that crosscuts all of the reviewers' comments and is not only an NSSL problem, is the apparent weakness in ties, linkages, and cooperative, synergistic research

between NSSL and other OAR laboratories. The Forecast Systems Laboratory (FSL) was mentioned as a laboratory with which NSSL should have the strongest ties given the apparent overlap between WDSS and FSL's Local Data Acquisition and Display System (LDADS) and Local Analysis and Prediction System (LAPS), for example. There is also great potential for cooperative research between NSSL and the Environmental Technology Laboratory (ETL) on radar techniques and between NSSL and the Atlantic Oceanographic and Marine Laboratory's Hurricane Research Division (AOML/HRD) on precipitation processes in hurricanes at and after landfall. For example, WDSS could be ported to HRD and the Area Mean Basin Estimated Rainfall (AMBER) for flash floods could be ported to FSL. I fully expect that my office will increasingly be able to assist with cross-laboratory collaborations given that the OAR reorganization is focused around research themes rather than organizational structure such as laboratories. However, NSSL should take the initiative in searching for opportunities to establish such collaborations. **I request suggestions, by November 19, outlining how this interaction can be improved between NSSL and other appropriate laboratories.** Developing these suggestions will obviously require discussions with the Directors of the other appropriate labs.

It is clear that the NSSL review was productive, thanks to you and your staff and to the excellent review panel. Now we must respond and work toward addressing the key issues discussed here. This will necessitate further discussions of strategy between you and me, Louisa Koch, and appropriate staff. John Gaynor, leader of the OAR atmospheric research team and Joe Golden, atmospheric research team member and primary OAR Headquarters/NSSL liaison, will be your initial contacts for each of the action items for which you are responsible. They will also assist me, as appropriate, with some of the items for which I have responsibility. The review panel agreed that NSSL is doing a good job, especially in the area of weather research and with the linkages to the operational forecasters in storm prediction. I definitely agree with this assessment.

cc: R - L. Koch
R/E - J. Calder
R/E - J. Gaynor
R/PDC - J. Golden