



External Review of the Cooperative Institute for Mesoscale Meteorological Studies (CIMMS)

A Presentation to the
NOAA Science Advisory Board

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Review Panel Chair

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Science Review Panel



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CIMRS and NOAA Collaborators



- Established in 1978 at University of Oklahoma (OU)
- Located at the National Weather Center (NWC), CIMMS is sponsored by NOAA's Office of Oceanic and Atmospheric Research (OAR) and is a strong partner with a number of NOAA programs in addition to programs located at the NWC.



CIMMS Research Themes



- Weather Radar
- Stormscale/mesoscale modeling
- Forecast and warning improvements
- Climate change and extreme weather events
- Societal and socioeconomic impacts of high-impact weather systems



Strategic Plan: Findings and Recommendations



- The key to CIMMS outstanding success is its interdisciplinary approach to research, outreach and education.
- CIMMS pursuit of its strategic plan is attempting to remain consonant with the shift in NOAA's mission.
- CIMMS is awaiting the successful completion of its search for a new Director, a crucial hire in regard to how the strategic mission will be realized.
- Selection of a new Director needs to be made swiftly for CIMMS to stay in alignment with NOAA's strategic plan
- CIMMS is avidly pursuing its stated strategic goals and successfully meeting objectives under each goal.
- The strategic goal on climate change should be reenergized



Science Review: Findings and Recommendations



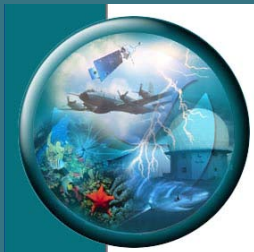
- CIMMS is well-positioned to be a leader in the area of storm-scale data assimilation and numerical modeling, utilizing a fusion of radar, satellite, lightning, and other observational data to improve understanding and prediction of high-impact weather phenomena.
- CIMMS should expand partnerships with OU faculty, investigators from other NOAA CIs, EMC, ESRL, NASA, Visiting Scientist programs, and collaborations with other Universities to further the growth of storm-scale satellite/radar/lightning data assimilation techniques.
- CIMMS should explore potential utility of developments in disciplines beyond the atmospheric sciences, such areas as data mining and machine learning.



Science Review: Findings and Recommendations (cont.)



- Research is excellent in most of the major CIMMS scientific themes (e.g., efforts in radar, storm-scale modeling and MRMS) and well aligned with the NOAA strategic plan and the needs of the NOAA units it supports. In fact, CIMMS contributions are essential for the success of several of the NOAA partners.
- The Hazardous Weather Testbed (HWT) has been exceptional for facilitating the evaluation of convection-allowing models, which are often developed in parallel, uncoordinated efforts across the numerical modeling community.
- Consider the possibility of enhancing HWT participation through the use of parallel experiments at remote sites, such as universities and other agencies, and possibly expanding the focus to include evaluation of storm-scale data assimilation efforts, which are similarly parallel and uncoordinated.



Science Management: Findings and Recommendations



- There is no career-track equivalent to faculty or federal promotions, such as assistant professor, associate professor and full professor, or the GS12, GS13, GS14, and GS15.
- Establish within CIMMS and the university framework job titles that distinguish between degrees of seniority and achievement.
- There is no formal mechanism for publicly recognizing achievements by CIMMS personnel or CIMMS contributions to federal awards.
- Establish a mechanism that recognizes these contributions and other achievements publicly.



Science Management: Findings and Recommendations (cont.)



- A major strength of the CI is its interdisciplinary approach, bringing together scientists and engineers from a range of disciplines.
- CIMMS is a major source of revenue and stature for the University of Oklahoma, and the investment by OU is not such that its full potential contribution to the University can be realized.
- OU should consider providing faculty lines to CIMMS, from the relevant disciplines within CIMMS, where the primary alignment is with CIMMS rather than a department. These lines should be geared toward establishing collaborations both within CIMMS and with departments at the University. Also, interdisciplinary research should be promoted and rewarded, through some internal funding or other support mechanisms.



Education/Outreach: Findings and Recommendations



- CIMMS partners have an impressive record of educational work at the post-secondary level, including service on M.S. and Ph.D. committees. CIMMS students have an outstanding record of accomplishments.
- Expand education efforts to the K-12 population, perhaps by exploring participation in the Oklahoma STEM network. Opportunities include module development for project-based learning or participating in local school district events.
- Through participation with the National Weather Festival, AMS conferences, public surveying, citizen-based science, and social media presence, CIMMS has strong outreach efforts with the local community as well as the greater public.
- Expand this beyond the local area, perhaps utilizing the recent communications specialist hire to develop a plan for greater outreach efforts.



Education/Outreach: Findings and Recommendations (cont.)



- CIMMS has had great success regarding education/training of NOAA/NWS forecasters, for example, through the HWT and the Warning Decision Training Division.
- Expand participation beyond the traditional NOAA forecasters, possibly distributing data and tools or providing remote access to outside Universities and other agencies; cast a wide net.



Overall Rating



OUTSTANDING



Questions?