# Appendix E. Cumulative Scoring Worksheet

This worksheet (Table 2) is designed for reviewers to use while evaluating and scoring each assigned proposal. Scores are based on the point ranges defined in each of the six categories listed on the Cumulative Scoring Rubric (Table 1). As previously stated, to reduce reviewer biases and better standardize review scores, a cumulative scoring rubric has been developed with a maximum possible score of 100 points. Please use both this rubric (Table 1) and Appendix C when scoring proposals. **For Atmospheric Composition proposals, do not submit reviews into Grants Online until after the Panel Review, which will be held in late February 2022.**

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| **Table 2.** **Scoring Worksheet** | **Poor***Do not recommend* *for funding* | **Adequate***Recommend only if* *funding is available* | **Good***Recommend for* *funding* | **Outstanding***Strongly recommend**for funding* | ***Score*** |
| **Relevance of Proposed Project to Program Goals***(30 points)* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(***Score Range: 0 - 8)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 9 - 15)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 16 - 22)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 23 - 30)*** |  28/30 |
| ***Comments/Questions:***Ozone over-prediction over the eastern US is a long-standing issue for the NOAA National Air Quality Forecast Capability. This proposal is targeted to improve ozone prediction by incorporating a multi-layer canopy (MLC) model to replace the big-leaf model in the RRFS-CMAQ inline system. The proposal is highly related to the NOAA program priorities on “support new air quality observing and forecasting applications by including better forecast model and techniques”.  |
| **Technical or Scientific Merit***(35 points)* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 0 - 9)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 10 - 18)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 19 - 27)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 28 - 35)*** |  32/35 |
| ***Comments/Questions:***To improve ozone prediction, the applicants propose1. To develop and implement a multi-layer canopy (MLC) model with the RRFS-CMAQ inline system;
2. To improve canopy representation with high resolution satellite retrieval datasets such as the Global Ecosystem Dynamics Investigation (GEDI);
3. To assess the impact of MLC model on the RRFS-CMAQ ozone predictions through numerical sensitivities and eventually improve the RRFS-CMAQ inline system ozone prediction.

The proposal approach is technically sound and innovative. All the numerical experiments are well designed and the readiness levels are clearly specified. The only concern is that the forecast canopy height may be not high enough (see Fig.4) as compared to the first-layer height of the CMAQ model, that may limit the MLC performance.   |
| **Qualifications** **of Applicants***(15 points)* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 0 - 3)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 4 - 7)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 8 - 11)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 12 - 15)*** |  14.5/15 |
| ***Comments/Questions:***The PI has a lot of experience of doing meteorology-chemistry model coupling. He plays a critical role in leading the development and improvement of the current NOAA operational air quality forecast system. He implemented near-real-time greenness vegetation fraction (GVF) to improve air quality predictions. He has strong capability of doing research and has a potential of publish peer-reviewed articles. The whole team has lot of experience of doing model improvement. They know the operational and RRFS-CMAQ inline system very well.  |
| **Project Costs***(10 points)* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 0 - 2)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 3 - 5)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 6 - 8)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 9 - 10)*** |  10/10 |
| ***Comments/Questions:***The requested costs are realistic, reasonable, allowable, and allocable given the workload.  |
| **Outreach & Education***(5 points)* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 0)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 1 - 2)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 3 - 4)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 5)*** |  3.5/5 |
| ***Comments/Questions:***The proposal provides a plan for sharing the code but do not provide a plan to educate undergraduate students and no plan for educating K-12 students.  |
| **Diversity & Inclusion (D&I)***(5 points)* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 0)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 1 - 2)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 3 - 4)*** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***(Score Range: 5)*** | 4.8/5 |
| ***Comments/Questions:***The proposal provides clear statement on how to address and promote diversity, inclusion, and accessibility and how to further advance diversity and inclusion.  |
| **Total****Points** |  |  92.8 /100 |

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