Current Draft recommendations:

1. **More and more frequent baseline observations (e.g. vertical distributions, observations in the FT, rural observation networks, routine observations with key tracers (eg CO, NOy, PM, meteorology)-**

   a. **Low cost improvements;**

   b. **Improvements requiring more substantial investment;**

2. **Better coordination within and between experimentalists and modeling groups to develop consistent tools to identify baseline observation, trends, NCOS, sensitivity studies, uncertainties and sensitivity to local controls.**

3. **Improved use of existing data to evaluate, for example, key discrepancies in our understanding of USBO, statistical relationships between tracers and meteorological conditions, etc.**

4. Targeted studies on background O_3 (eg LVOS, FIREX, Discovery-AQ, ATOM, etc)

5. Improving models-

    a. Preservation of source contributions in boundary conditions.

    b. Assimilation of observations (satellite and other data);

    c. Increased use of sensitivity studies in source apportionment to allow for targeted research focused on largest sources of uncertainty and biases;

6. Model evaluation:

   a. Model evaluation depends on model use. Models should be extensively evaluated with observations that are most relevant to the model application.

   b. Evaluation of boundary conditions in time and space.

   c. Evaluation of vertical mixing using routine observations (eg radiosonde) processes and mixing ratios.

   d. Evaluation of daily observations at regionally representative sites and over multiple years;

   e. Multi-model comparisons.

   f. Development of more process level approaches to quantify model uncertainty and biases;

   g. Evaluation with non- O3 tracers where available.

7. Further development of integrated air quality management systems. The characteristics of such a system would include real time model forecasts of global using multiple models, boundary and national AQ conditions, integration and evaluation of satellite observations, real-time estimates of USBO and the sources contributing to USBO and continuous calculation of model evaluation metrics.   Regional and national examples for this type of system exist developed at:

    a. WSU-Airpact

    b. EPA-system

    c. NOAA system-

    d. Florida AQMS

    e. GIT- system

    f. NCAR- system

While none of these systems currently has the depth or range of what we envision is needed, the existing systems display some of the general characteristics described above