OBSERVATIONAL AND EXPERIMENTAL RESEARCH BREAKOUT SESSION
UCAR Members Meeting 2012

REPORT / SUMMARY

Yvette Richardson
Steve Cohn
Sensors: Needs and emerging technology – MEMS, nanotechnology, chemical sensors.

- Application to atmospheric chemistry, air quality, upper troposphere

Best way of using and supporting the full suite of NCAR (LAOF and non-LAOF) + University-based instruments

Observations in difficult places – specifically mentioned ocean-atmosphere interface, polar regions.

Community need for facilities such as wind tunnel and cloud chambers
UAVs – great potential – severe storms, chemistry and air quality, boundary-layer, ... Consider roles of NCAR and Universities to create a broadly useful/usable capability.

A focused effort to bring together modeling and observational talents. For both model improvements and observing strategies. Also data assimilation.

Development of a deployable network of sensors for emerging science questions – example air quality focus with surface-based measurement of pollutants on an urban scale, combined with satellite observations to better forecast air quality and health impacts
A need for more “rapid” deployment capability to address short-lived but high-impact events – fire weather, evolving storms, ...

More diversity of observing platforms: helicopters, large balloons.

Concern. “Do no harm” to current capabilities; Maintain the aircraft and capabilities we have.

Much discussion of cloud physics, and electrification as an area that needs attention. Processes affect climate.

Education: reaching broader base of students. Ensure education combined with field projects as much as possible. More NCAR scientist and instruments going out to universities.
Need improved capabilities for water (vapor, cloud, etc.) on many scales, through the boundary layer and UTLS region. Also, to understand atmospheric rivers.