Abstract: For more than 40 years a number of important field experiments have been conducted in the tropics and mid-latitudes in which large amounts of resources were expended to make special or intensive observations over selected locations of interest around the globe. Examples of such field campaigns are ATEX, BOMEX, GATE, MONEX, TAMEX, OK PRE-STORM, AMEX, TOGA COARE, SCSMEX, NAME, and AMMA. The data from these field campaigns have been invaluable as the main observation bases for advancing tropical, monsoon, and midlatitude research in the last four decades, much of it involving processes associated with deep convection. These data sets were collected and used by various organizations and research groups and their archival status varies from one field program to another since no consistent data management strategy was applied. Researchers who wish to access these data often have to contact a variety of places to obtain the data (if it is even easily accessible). With the passage of time there is a certain danger that some or many of these data will be difficult to find or even lost, especially as "corporate memory" of such data status slowly fades away.

The component of field program data sets that tends to have the greatest long-term value to the scientific community is the atmospheric vertical profile represented by upper air sounding data. These observations are used most commonly for diagnostic studies for the development of cloud parameterizations for weather and climate models, and calibration and validation of independent datasets. Many of these data are also used in special model reanalysis efforts. Upper-air datasets from field programs are generally of higher quality because the large suite of instruments deployed in these field campaigns allows for cross-calibration that can greatly enhance data accuracy.

Unfortunately, there is currently no central location for access of all research-quality sounding data from past national and international field experiments. NCAR has holdings from most recent experiments, but collections from older experiments are incomplete. From what we can tell so far, sounding data for many of these older experiments do not reside at NOAA’s National Climatic Data Center (NCDC), but efforts are underway to determine the extent of these archives.

It is proposed that NCAR will collaborate with the Colorado State University (CSU) Department of Atmospheric Science to undertake a data stewardship effort to: (1) Identify past field programs for which central collections of sounding data do not exist, (2) Track down existing holdings of sounding data for those field programs, to the extent they exist, at centers, laboratories, and universities, (3) Extract sounding data that are found from old storage media (i.e., 9-track tapes, printouts, etc.), and place into a consistent, common digital format, (4) Carry out standard quality control of the sounding data including objective gross limit and vertical consistency checks, and (5) Prepare a catalog and a central, publicly