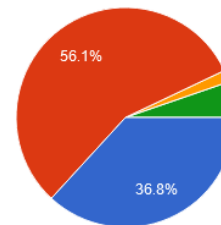# Metrics Workshop Survey 1 Air Quality

15 December 2020

Tara Jensen, Geoff Manikin, Burkely Gallo, Jack Settelmaier, Linden Wolf, Sarah Lu, Deepthi Achuthavarier, Cristiana Stan, Yan Xue and UFS V&V AT

Air Quality Application (57 responses)

57 responses (1 duplicate)
Top 3/6 fields for each subsection (mean, number of criticals)

9/32 forecasters

For CHEM (40 responses)
Top 3 fields among 7 fields

Ozone	4.8	36
NO2	4.15	16
VOC	3.95	4

For AEROSOL (43 responses)
Top 3 fields among 13 fields

PM2.5	4.74	34
AOD	4.15	14
smoke/ash	4.10	13

For SFC FLD (37 responses)
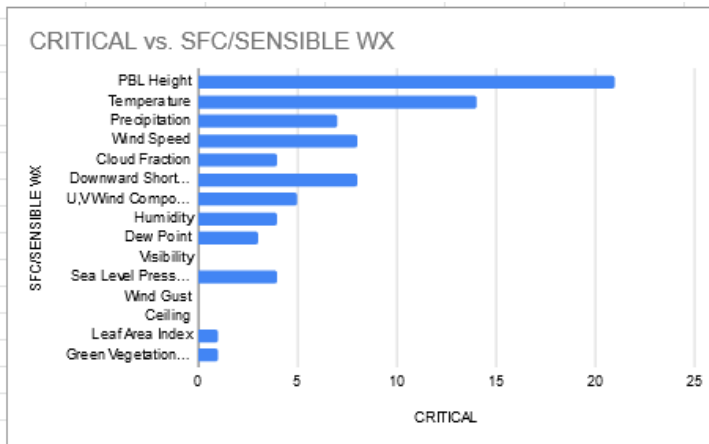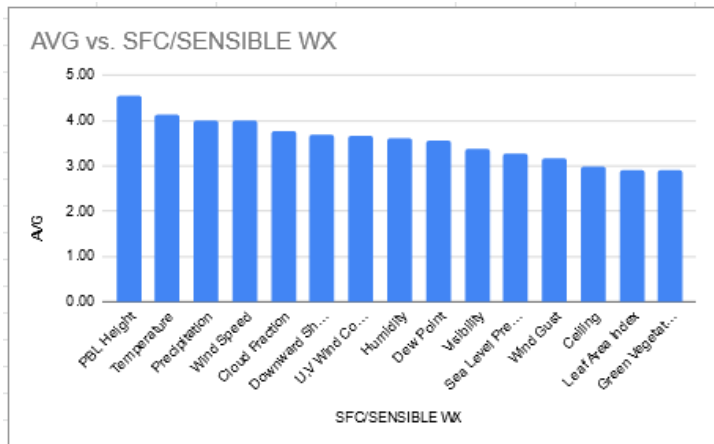Top 6 fields among 15 fields

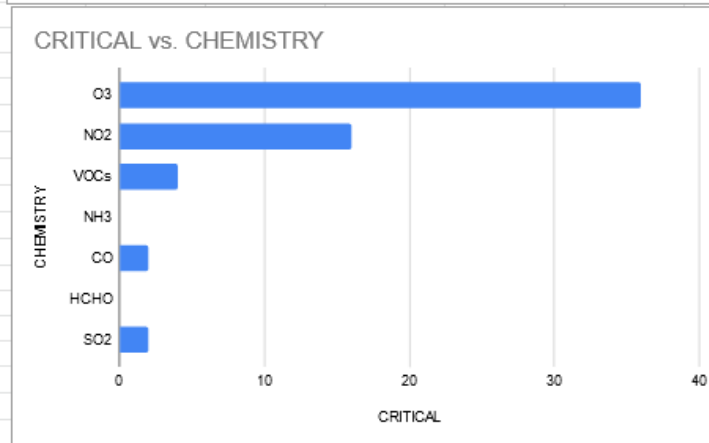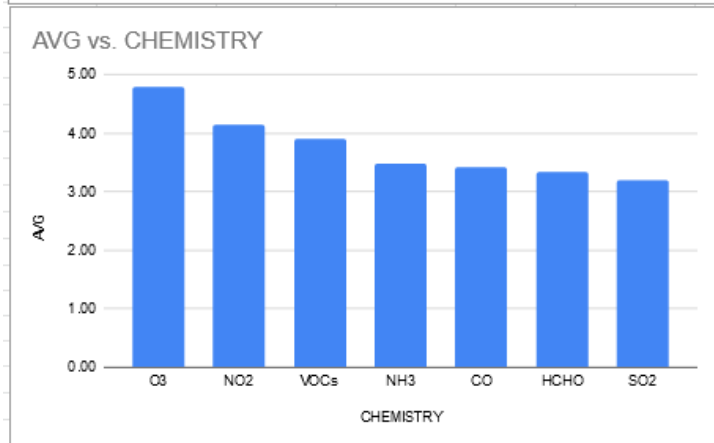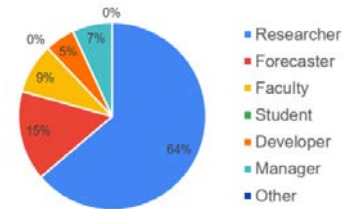|		
PBHL	4.56	21
Temp	4.11	14
WindSpd	4	8
Precip	4	7
CldFraction	3.76	4
SW flx	3.74	8

Air Quality Application

With which of these job descriptions do you most identify?

AVG vs. SFC/SENSIBLE WX

CRITICAL vs. SFC/SENSIBLE WX

AVG vs. CHEMISTRY

CRITICAL vs. CHEMISTRY

Air Quality and Composition Application

- Researcher — 64%
- Forecaster — 15%
- Faculty — 9%
- Student — 0%
- Developer — 5%
- Manager — 7%
- Other — 0%

Air Quality Application
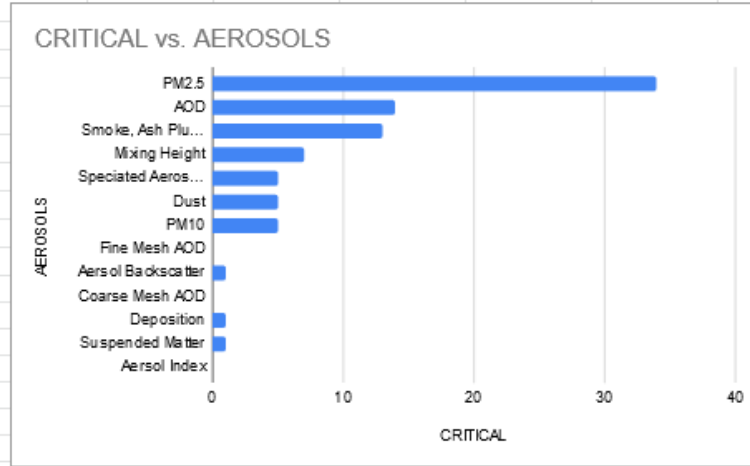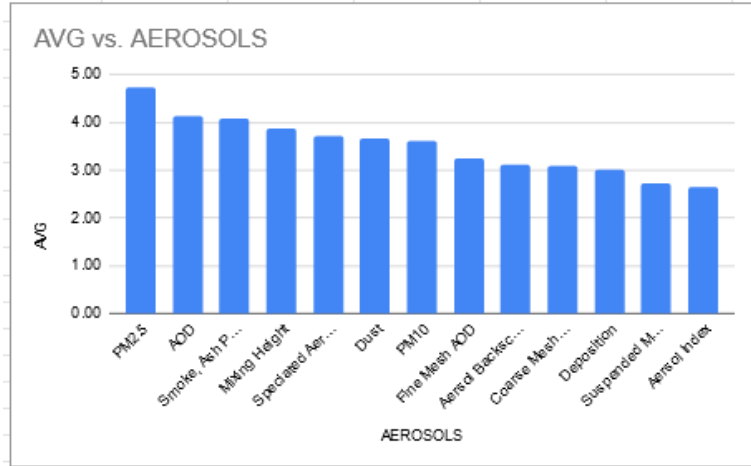
Air Quality Application (cont'd)

For SFC FLD: (1) wide range of 'nice-to-have' fields, such as canopy height, high-resol land use, cloud hydrometeros, LCL, sensible/latent heat flux (2) derived products are mentioned, such as lake effect products, weather alerts, (3) AQ fields are mentioned, such as AQI, daily tropospheric columns of air quality relevant gases (NO2, HCHO, CO...) and aerosols (and/or AOD, AAOD, etc), 3D daily ozone.

For AEROSOL: 'nice-to-have' optical properties (extinction profiles, asymmetry parameter), speciated information (PM1, aerosol precursor, OA/BC), physical properties (size distribution), and volcanic ash

For CHEM: 'nice-to-have' profile information (ozone, PM profile) and speciated information (organic N, specific VOCs), and fire-related emissions

Key takeaways: (1) parameters identified in SFC FLD are mostly available, (2) for CHEM and AEROSOL, information to resolve chemical & physical properties are of interest, (3) information on episode event (dust, smoke) is also of interest