Aerosols and Atmospheric Composition WG Membership

- Gregory Carmichael (U. Iowa)
- Arlindo DaSilva (NASA/GSFC)**
- David Edwards (NCAR)
- Gregory Frost (NOAA/CSD)
- Paul Ginoux (NOAA/GFD)
- Georg Grell (NOAA/GSD)
- Larry Horowitz (NOAA/GFDL)
- Yu-Tai Hou (NWS/NCEP)
- Ed Hyer (Navy/NRL)
- Sarah Lu (SUNY-Albany)**
- Craig Long (NWS/NCEP)
- Stuart McKeen (NOAA/CSD)
- Jeff McQueen (NOAA/NCEP)**
- Rohit Mathur (EPA)
- Mariusz Pagowski (NOAA/GSD)
- Steven Pawson (NASA/GSFC)
- Brad Pierce (NESDIS/STAR)
- Ivanka Stajner (NWS/STI) **
- Ariel Stein (NOAA/ARL)**
- Rick Saylor, Pius Lee, Daniel Tong, Barry Baker (NOAA/ARL)
- Jun Wang (NOAA/NCEP)

Co-Chair **
Atmospheric Composition WG
Project Milestone Accomplishments

• **SIP project accomplishments to date:**
  – **10.1 Model**
    • Created NUOPC cap and included in GSD/GOCART in FV3 framework
    • Transitioned initial FV3GFS-Chem to EMC; C384 real-time runs begun
    • Added aerosols to latest FV3 UPP
  – **10.2 Data Assimilation**
    • Developed VIIRS AOD DA using ENKF with FV3GFS-Chem
  – **10.3 Emissions**
    • Included Global Emissions in FV3GFS-Chem: HTAP and CEDS

• **SIP project issues:**
  – Regional FV3 CMAQ chemistry coupling delayed (dependency on standalone regional FV3 CAM and NUOPC FV3-GOCART)
  – Closer collaboration needed with the DA WG on the Aerosol DA plan
  – Removing dependency of EPA chemistry suite on embedded physics to couple with FV3 physics
  – Computing resources for more complex chemistry
  – Uncertainty in funding
**FV3GFS-GOCART in real-time**

Model forecasts are running at ESRL on C384 resolution, same physics as planned for operations this winter, 168hr forecasts take a little more than 3 hours on 264 processors.

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**Dust burden, showing dust transport to US from Sahara 5 day forecast for Friday/Saturday**

**AOD from organic carbon. 168hr forecast loop**

Large impact from wildfires
Atmospheric Composition WG
Team Coordination and Dependencies

- **System Architecture WG**: Developed NUOPC cap coupler
- **Verification WG**: MET+ based verification; developing evaluation protocol and test plan for adoption of new capabilities for the full system and for AAC component
- **Post-processing WG**: Extension of NCEP post for atmospheric composition parameters and meteorological variables for offline use
- **DA WG team:**
  - Coordinate timeline for aerosol DA development/T2O
  - GSI, JEDI coordination on coupling atmospheric composition with meteorological variables; development of CRTM for CMAQ/other
  - Request an AAC representative on DA team
- **Physics, LSM teams:**
  - Ensure physics consistency with chemistry modules
  - Include tracers in transport and interactions with physics
  - Emissions from the surface - coupling with land and physics