

# In-line CMAQ5.1-NMMB via NUOPC

Celebrating  
10 Years

Air Quality  
Awareness Week

Show How You Care  
About the Air

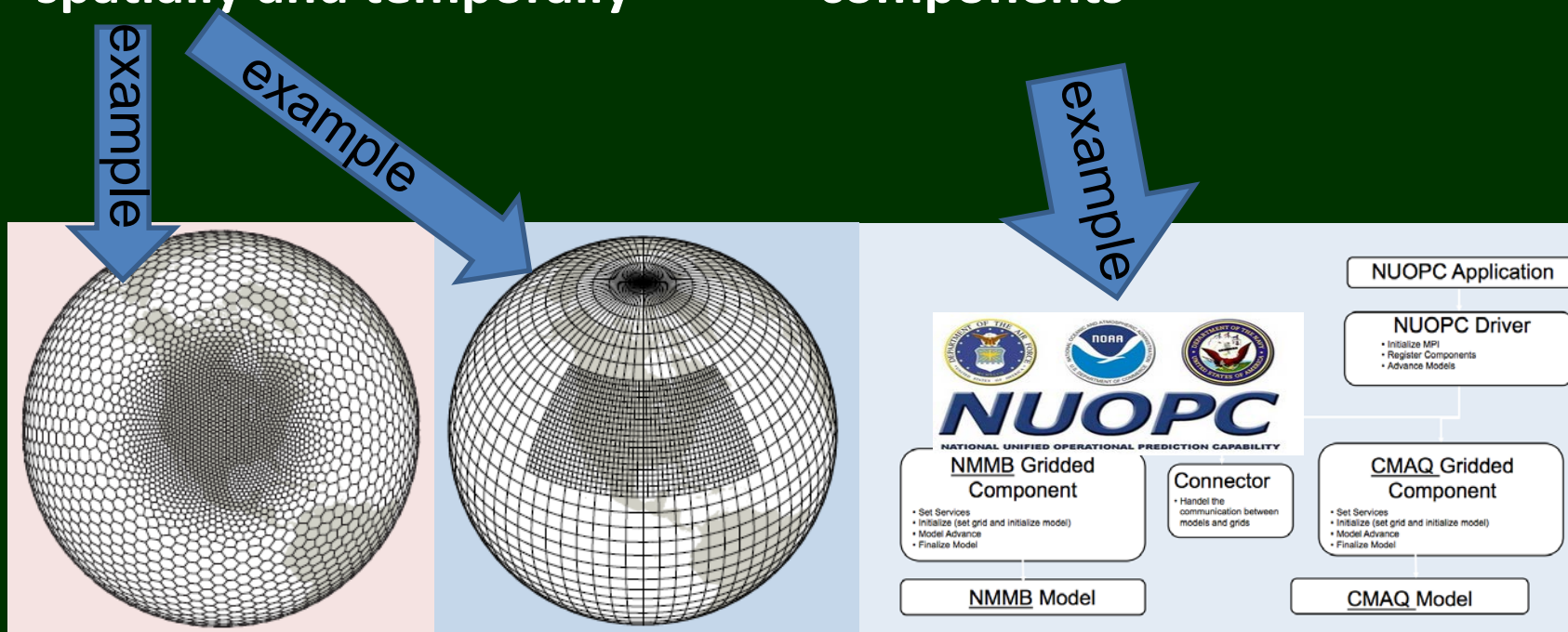
Pius Lee and  
Barry Baker

NOAA/Air Resources Laboratory

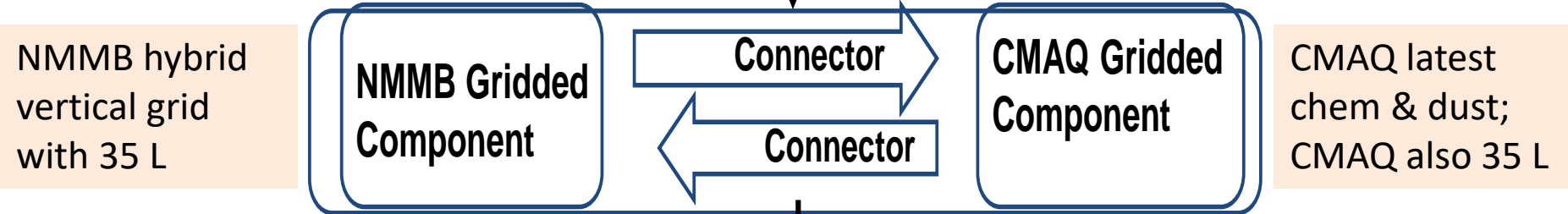
# NWS Next Generation Global Forecasting System

- **Chemical Analysis: homogeneously generated fields over multiple years**
- **NAQFC in finer resolutions: Chemically, spatially and temporally**

- **Incorporation of air-surface exchange processes in air chemistry**
- **Air chemistry as one of NWS Earth Modeling System Framework components**



- Initialize ESMF MPI Virtual Machine
- Create Clock
- Create Grid
- Register Gridded Components & Set Services for exchange
- Call Initialize, Run and Finalize in gridded Components



- Destroy Clock
- Finalize MPI Tasks

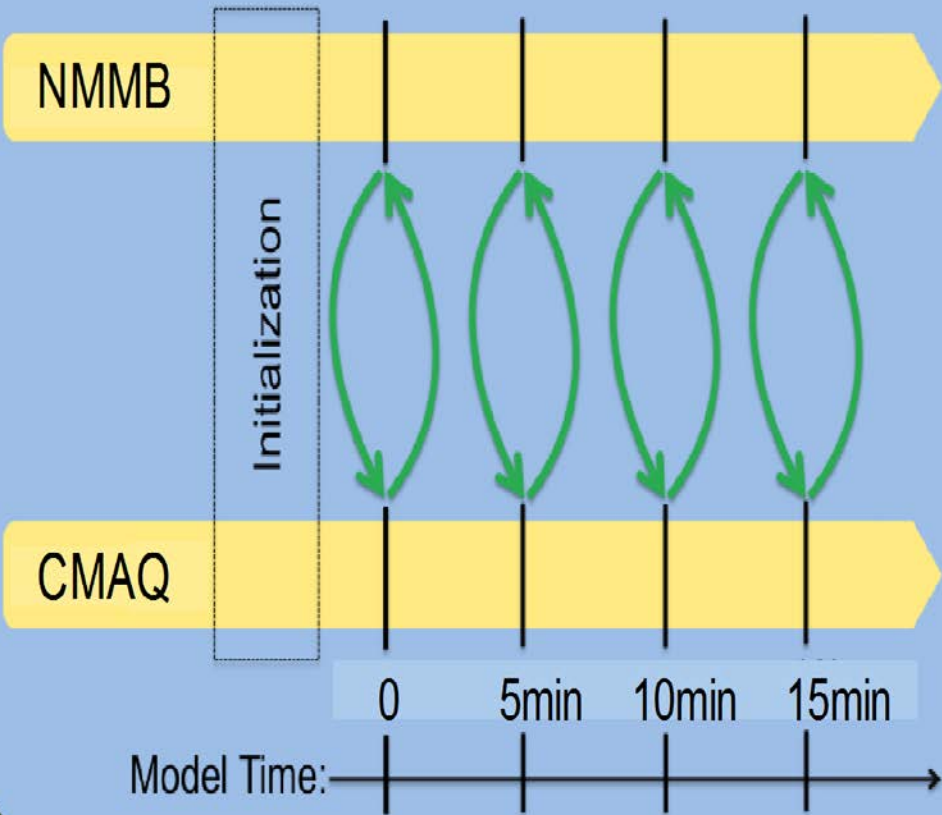
Driver: SIMPLE

Model:  
NMMB

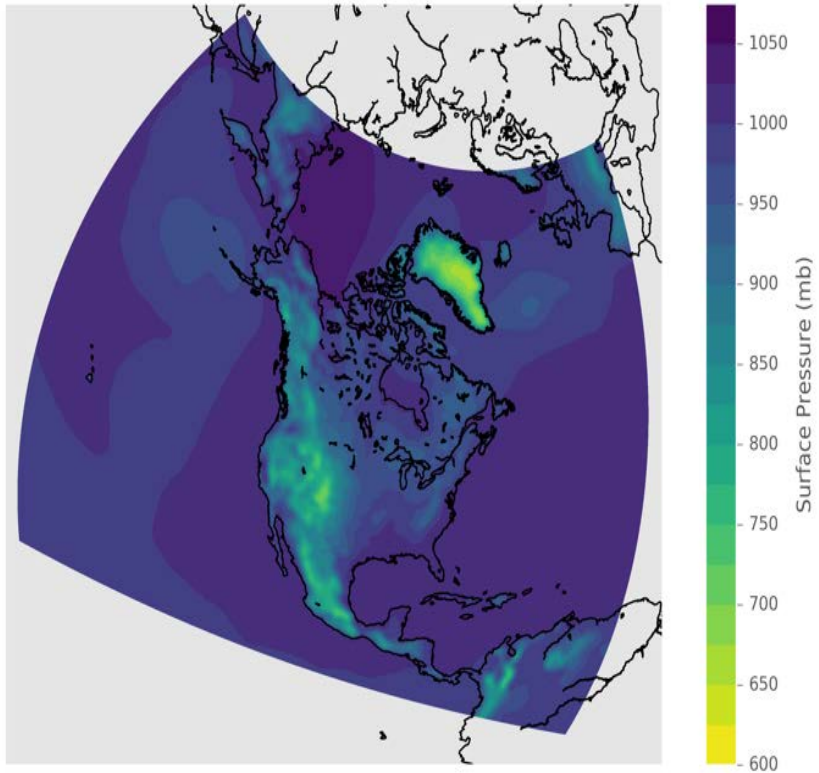


Model:  
CMAQ

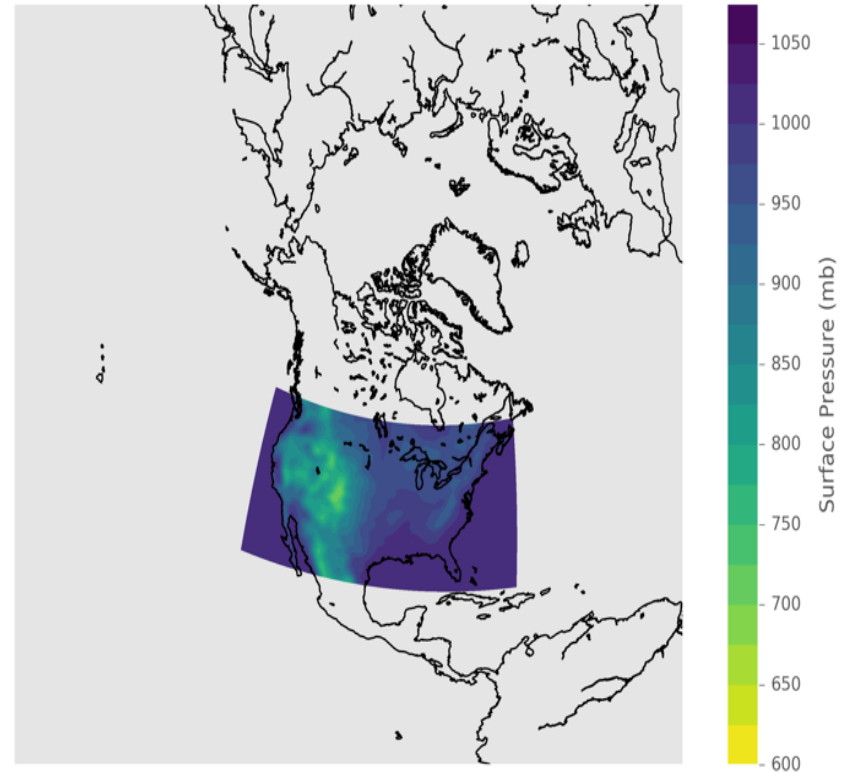
Driver: SIMPLE EXPLICIT COUPLING

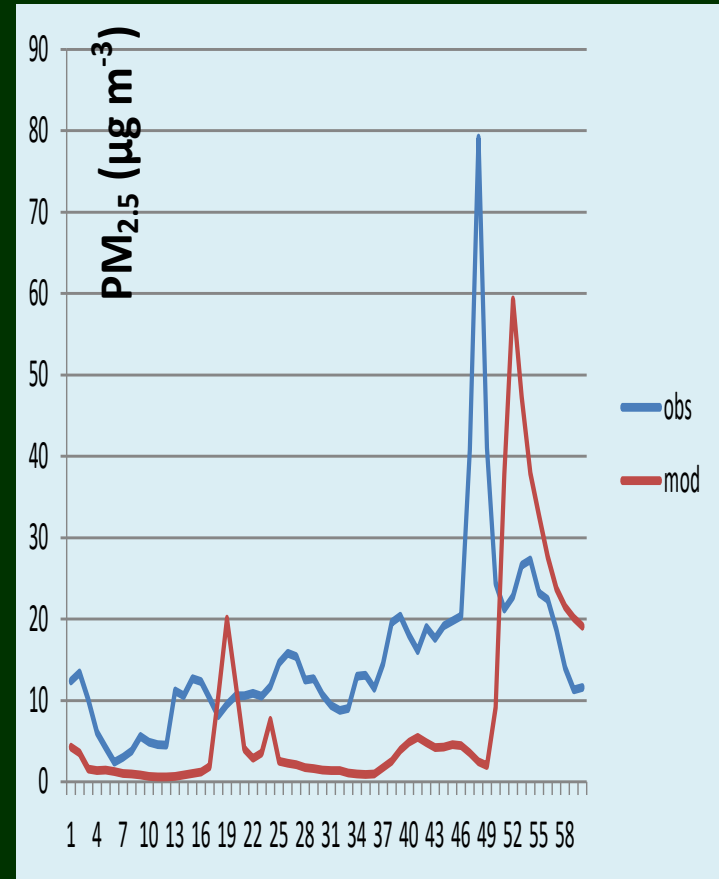
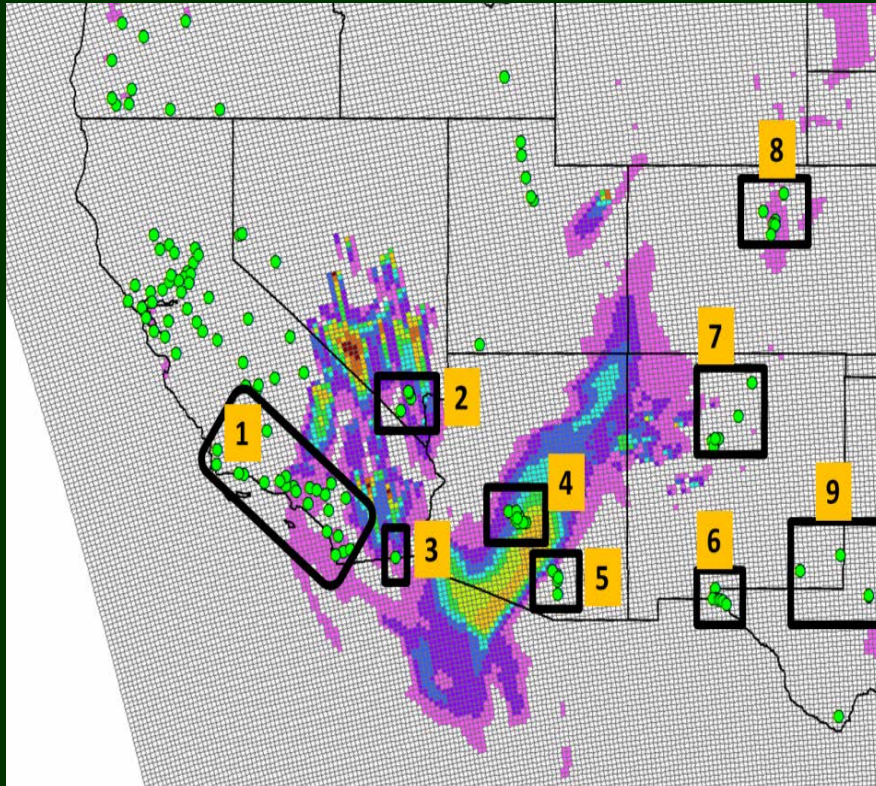


NMMB



CMAQ

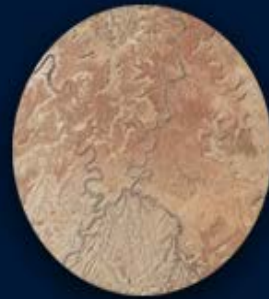




**Verification of Region 9 over forecast hours initialized at 12Z May 10, 2014**



US EPA Village Green project



Lithosphere



Hydrosphere



Biosphere



Cryosphere



Atmosphere

Think scientifically globally  
and act locally

