A Brief Overview of RAL’s National Security Applications Program (NSAP)

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22 Feb ‘12
NSAP’s Role in the Research Applications Laboratory (RAL)

- Provide multi-scale numerical weather and climate prediction and coupled-modeling capabilities to support the missions of a number of government agencies involved in the armed forces, intelligence community, and homeland security.
- Support other RAL Programs with related scientific and technical capabilities that align to their roles, e.g., renewable energy, aviation, and hydrometeorology.
NSAP’s Principal Areas of R&D

- **Urban meteorology**
- **NWP Model Customization**
- **Climate downscaling & Mesoscale Climatology**
- **Data Assimilation & Meso-scale Ensemble Prediction**
- **Modeling LES-scale flows using immersed boundary method**
- **Source term estimation**
- **Modeling transport & dispersion**
- Post-processing NWP output, e.g., identifying primary springtime flows in N Korea using SOMs on WRF reanalysis model output
- Modeling climate relationship to disease spread, e.g., Dengue in S America and plague in Uganda