The third ARM Mobile Facility (AMF3) deployment to the Southeastern United States (SEUS) provides exciting opportunities to improve understanding and model representation of aerosol, cloud, and land-surface processes and their couplings. This deployment will provide long-term observations in an environment strongly driven by local atmospheric conditions.

The initial research themes consist of five cross-cutting topics:

- onset of convective clouds
- deep convective cloud processes and properties
- aerosol properties and processes that control cloud condensation nuclei
- aerosol direct impacts on radiation
- land-atmosphere two-way interactions.

The Brookhaven National Laboratory-led team will develop a science plan and perform initial research activities for a multiyear deployment of AMF3 in the SEUS. This team will:

- inform AMF3 deployment and science strategies by conducting modeling studies, observation system simulation experiments, and analysis of existing measurements
- identify potential deployment locations
- provide scientific input on site layout and instrumentation needs
- develop new analysis algorithms, data sets, and software tools
- identify and develop collaborations with partners in the SEUS
- lead outreach within the broader research community for location, site design, and use promotion
- coordinate and conduct initial process-based research activities.