Dr. Kuruvilla John, Professor and Chairman

Department of Mechanical and Energy Engineering

Ambient Air Quality Monitoring of Pollutants; Atmospheric Photochemical Modeling; Emissions Assessment; Big Data Analytics for the Environment; Energy and Environmental Sustainability

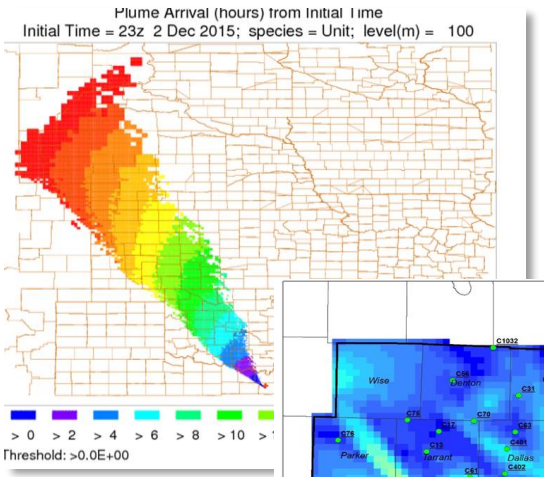
Research Group: Two Ph.D., one MS and one undergraduate research students
Funding: State of Texas through the City of Corpus Christi; National Science Foundation; and a local private foundation.

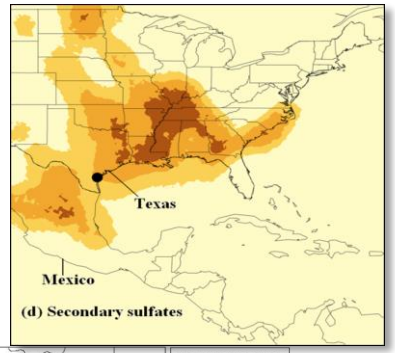
Atmospheric Modeling

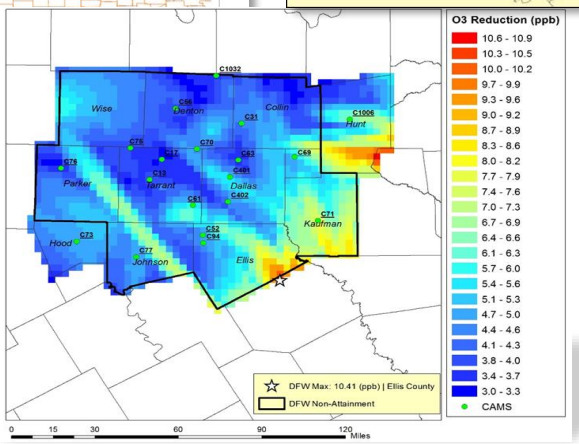
- Urban and regional-scale photochemical model development
- Meteorological model evaluation
- Source-receptor modeling
- Source apportionment analysis using EPA models and deep learning techniques

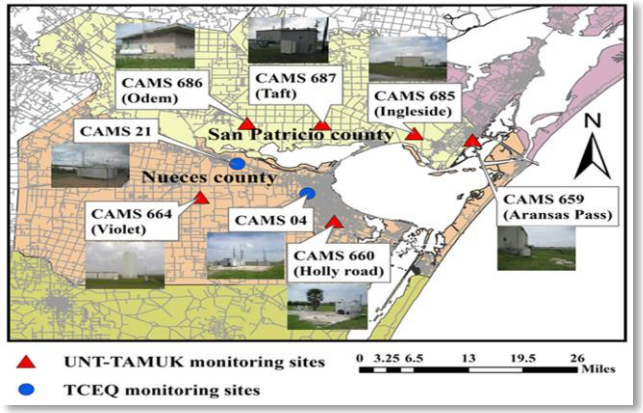
Ambient Air Quality Monitoring

- Outdoor measurement of pollutants such as ozone, fine particulate matter, oxides of nitrogen, volatile organic compounds and meteorological parameters
- Indoor air pollution
- Portable low-energy sensors









Zero Energy (ZØE) Research

Developing a state-of-science low-power environmental monitoring system attached to the Net Zero Energy house in Denton, Texas