

PhD Position in AI-Enabled Modeling of Agricultural Nitrogen Cycling

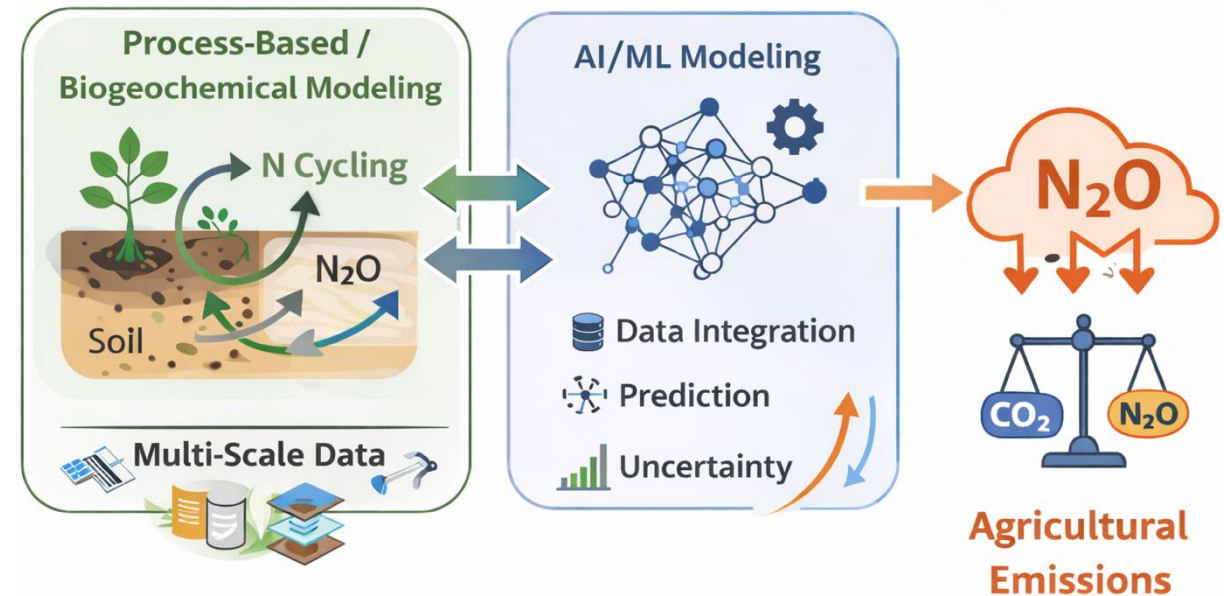
A fully-funded PhD position is available in the Soil Science Program at North Carolina State University to work on AI-enabled modeling of nitrogen cycling and greenhouse gas emissions in agricultural systems. The student will contribute to a multi-institutional collaborative project focused on improving predictions of nitrogen use efficiency, N₂O emissions, and nitrogen losses using advanced modeling and multi-scale data integration, with a start date in Fall 2026 or Spring 2027.

Research Focus

- Process-based/biogeochemical models
- AI-enabled agroecosystem modeling
- Model–data fusion & uncertainty quantification
- Integration of high-frequency field measurements, soil microbiome data, and environmental datasets
- Predicting nitrogen budgets and greenhouse gas fluxes

Desired Background

- Programming experience (Python, R, Julia, Fortran, C++, or similar)
- Experience with ML/AI frameworks, statistical inference, ecosystem/biogeochemical modeling
- BS/MS in Earth system science, environmental/soil science, data science, computer science, engineering or related fields



Prospective students are encouraged to send CV and brief research interest to Debjani Sihi (dsihi@ncsu.edu).