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## Area of Expertise:

- Waste to energy technologies
- Manure management
- Anaerobic digestion
- Gasification
- Enhanced nutrient treatment and recovery from manure
- Modeling
- Life Cycle Assessments (LCA)
- Low-cost sustainable technologies

## Focus of Research:

- Anaerobic digestion of poultry litter
- Gasification of poultry litter
- Nutrient recovery after poultry litter digestion
- Nutrient modeling
- Antimicrobial fate and transport in manure management
- Hydrogen sulfide removal from biogas during anaerobic digestion

## **Current Funded Projects (Source):**

- Monitoring poultry litter anaerobic digestion and nutrient capture in Maryland (MDA)
- Evaluation and Analysis of Fluidized Bed Combustion of Poultry Litter (MDA)
- The fate of emerging contaminants in poultry litter digestion (USGS MWRRC)
- Ammonia removal from digested poultry litter (MIPS)
- Waste to energy: Gasification of poultry litter (MIPS)
- Use of Nanoparticles to Enhance Performance and Viability of Anaerobic Digesters (UMD AGNR)
- Quantifying and demonstrating scrubbing  $H_2S$  from farm-based anaerobic digestion systems (USDA SARE)
- Evaluating different manure management practices in controlling spread of antimicrobial resistance from dairy farms (USDA-AFRI)