



**CHEM 452 Project**

**Improving Swine Lagoon Sludge Sampling and  
Characterization**

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# Swine Lagoon Design



# Sludge buildup



# Sludge Composition

- Highly variable, depends on sampling technique
- Takes a long time to accumulate
- **Goal**
  - Develop standardized sludge sampling technique
  - Understand the how depth impacts the composition of the sampled sludge
  - If applicable, develop techniques to selectively recover valuable\* fractions of accumulated sludge

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\* **Valuable** → Nutrient profile useful for agricultural crops, or high energy content suitable for bioenergy uses

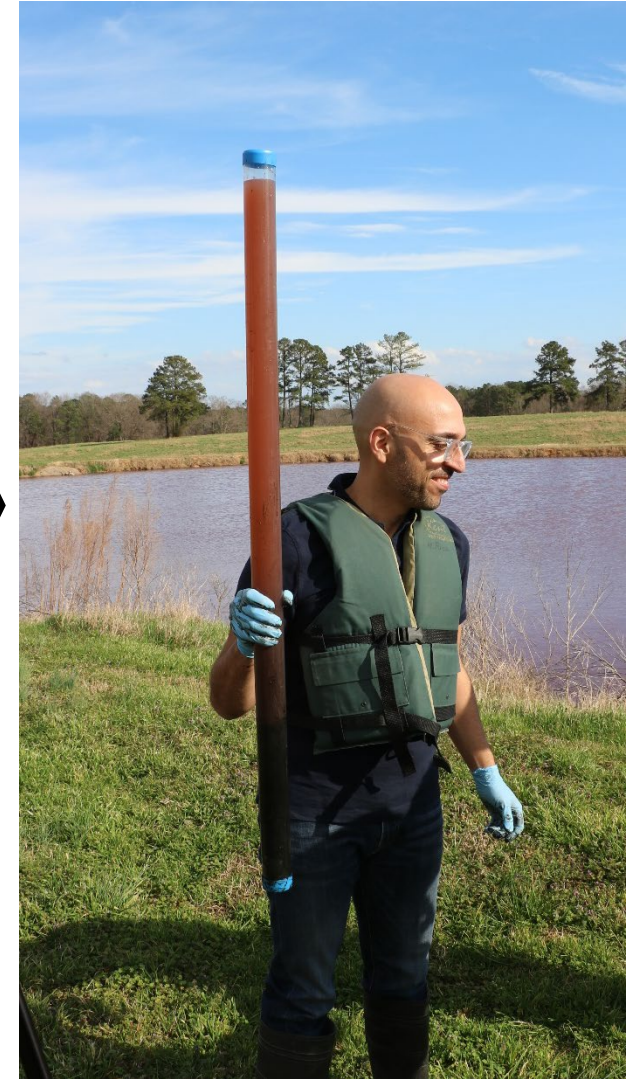
# Sludge Sample Collection



**Sampler Preparation**

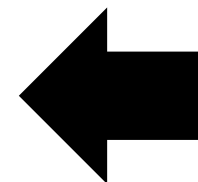
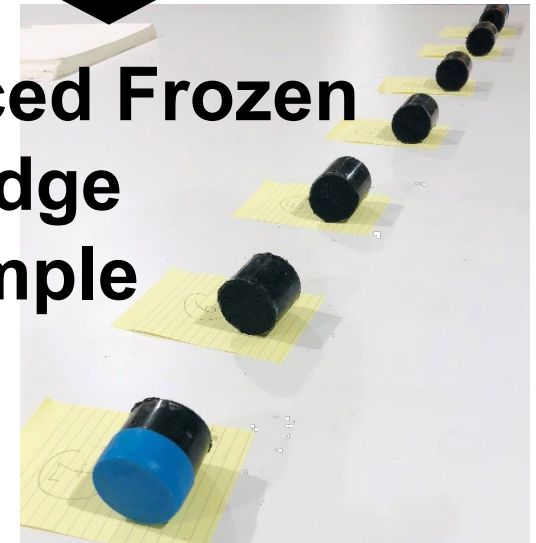
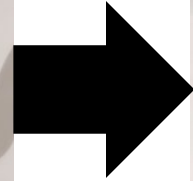
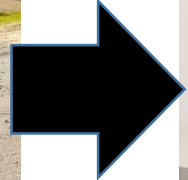


**Sample Collection**



**Sample acquired!**

# Sludge Sample Preparation



Before oven drying

# Sludge Sample Moisture Content

