Agricultural and Bio Systems Lab Tour Content Summary

Two main areas of focus:

1. Education and Extension
   a. Iowa Learning Farms-graduate student go out into the community to educate others about conservation programs
   b. Project CS CAP- looks at how to make agriculture adaptable to climate change

   More information on these programs can be found at sustainablecorn.org

2. Water Drainage, Soil-Water Interaction, Pollutants
   a. **Water Drainage**
      i. Lab Equipment
      ii. Equipment can best be described as a system of individual containers with tubes that measure soil–water retention
      iii. Varying air pressures which are supposed to mimic natural climate systems (wind, gust, etc) are placed on various samples of soil for two purposes
         1) to assess how much water is lost and retained
         2) to assess how fast water moves through the soil
   b. **Soil Water Interaction**
      i. Want soil that can retain water during drought season
      ii. Application: looking at tillage and cropping treatments to see how those practices affect the soil water retention
   c. **Pollution**
      i. Conduct tests on bio mass from soil for the presence of elements like Nitrogen
      ii. Nitrate concentrations are examined in drain waters or run off to assess their potential impact on the environment

All three areas are looking to strike a balance between water infiltration and retention on soil. Its important that the water isn’t just running through the soil OR water logging the soil. Either would have damaging effects on what the soil is trying to grow.

This lab tour was given by Ryan Goeken, Graduate Student in ABE rgoeken@iastate.edu. If you have any specific questions or inquiries about this content, I encourage you to contact him.