

**INTRODUCTION**

- The Climate and Corn-based Cropping Systems Coordinated Agricultural Project ("CSCAP") is a transdisciplinary team working towards adaptive and mitigative strategies for Midwest corn-based cropping systems in response to a changing climate. The team is comprised of 9 states, 11 institutions<sup>†</sup>, and 140 members.
- Physical and social data sets are generated by the team and span: 35 agricultural research sites (with 50 treatments, 80 data variables, and 100 plot management options; see Figure 1), survey of 5000 farmers, and 200 farmer in-depth interviews.
- Data management needs: web applications that allow team to self-manage data, decoding of disciplinary languages, quantitative and qualitative data at varying frequencies, and flexibility necessary for field site variations.
- Data management goals: minimization of data versioning, allowance for live data editing, and ease for the scientific user.

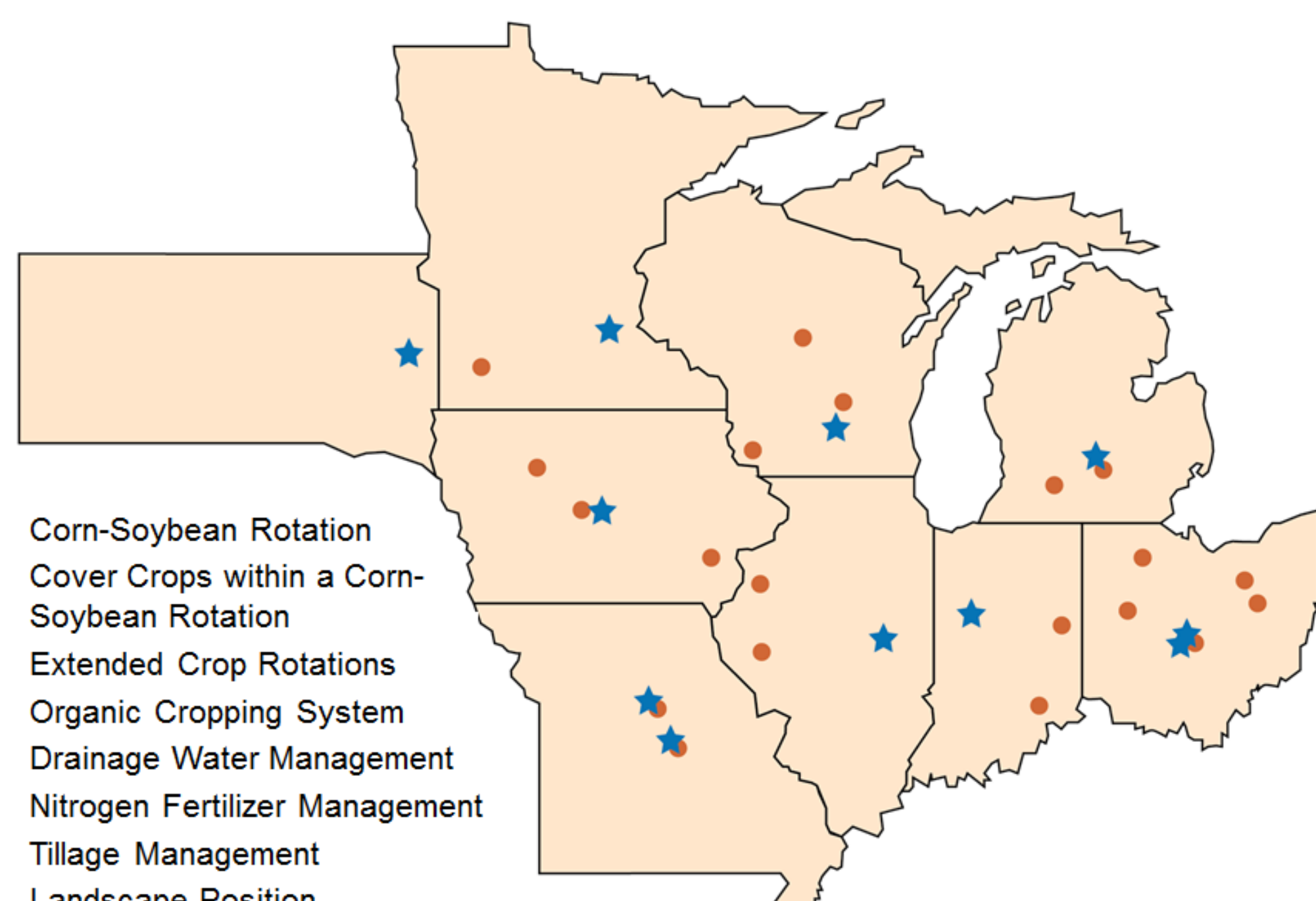


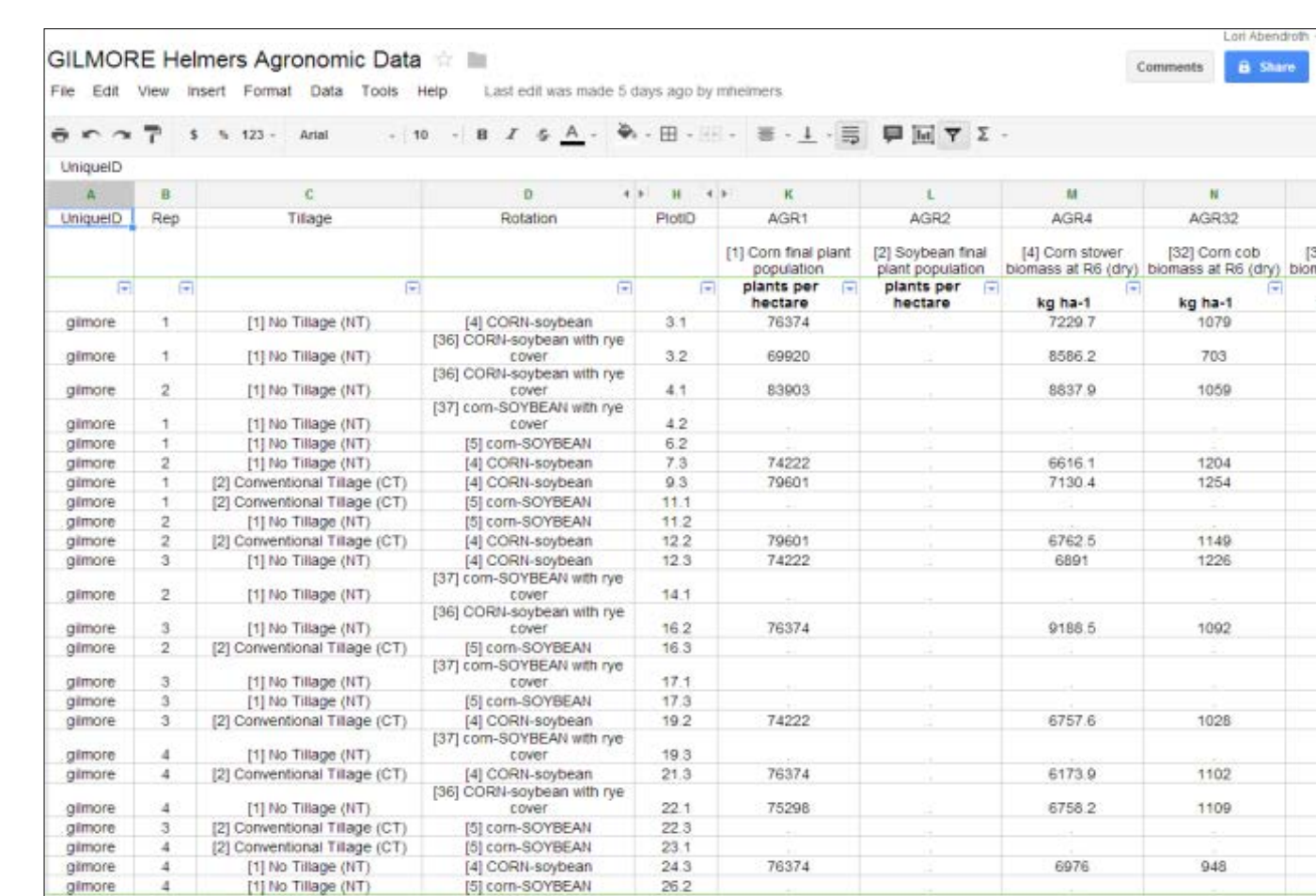
Figure 1. Field Research Sites

- Corn-Soybean Rotation
- Cover Crops within a Corn-Soybean Rotation
- Extended Crop Rotations
- Organic Cropping System
- Drainage Water Management
- Nitrogen Fertilizer Management
- Tillage Management
- Landscape Position

Results in a combined model of traditional and Cloud technologies

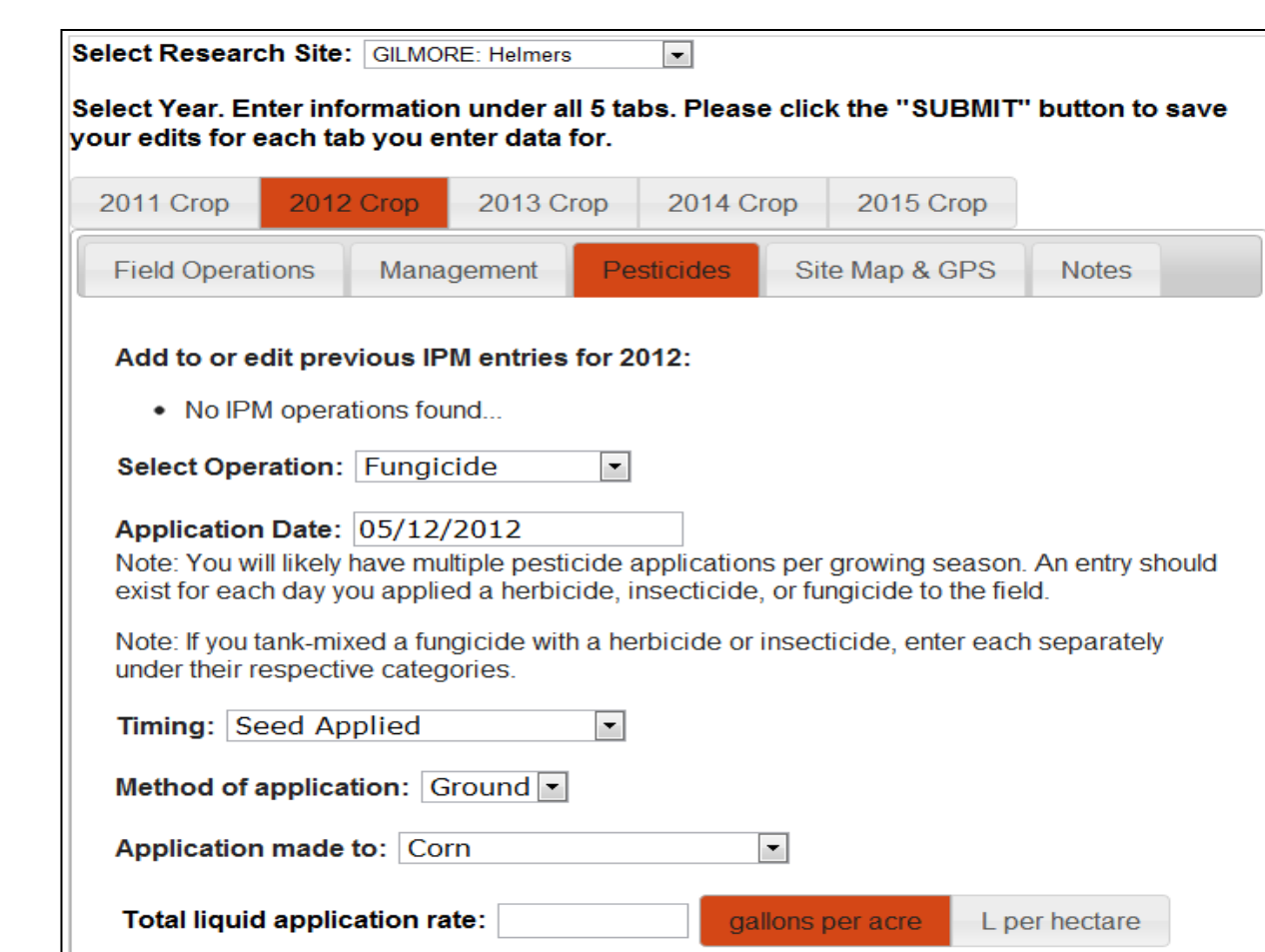
**TECHNOLOGIES**

**Web Spreadsheets**



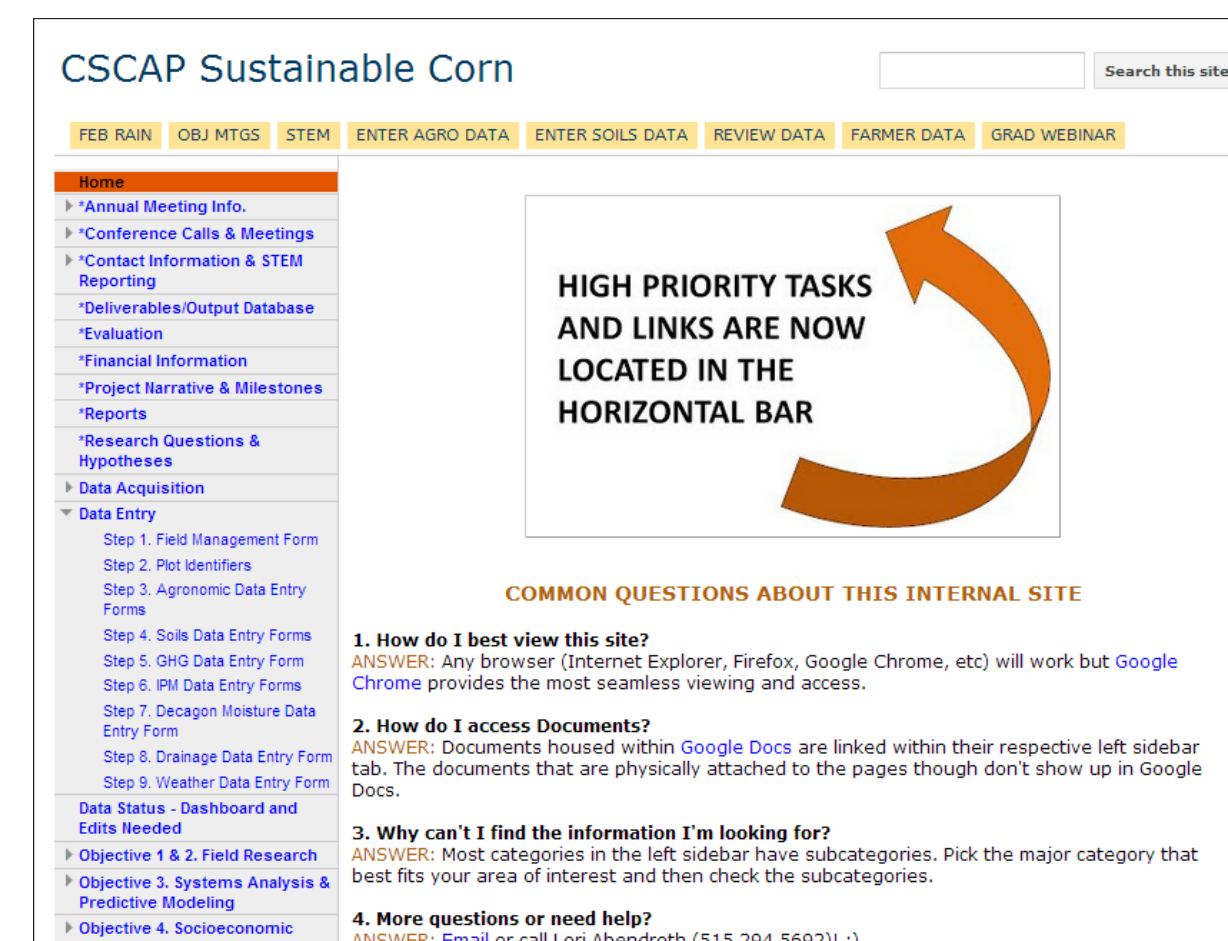
Google Spreadsheets replicate Microsoft Excel functionality within a web browser.

**Google Gadgets**



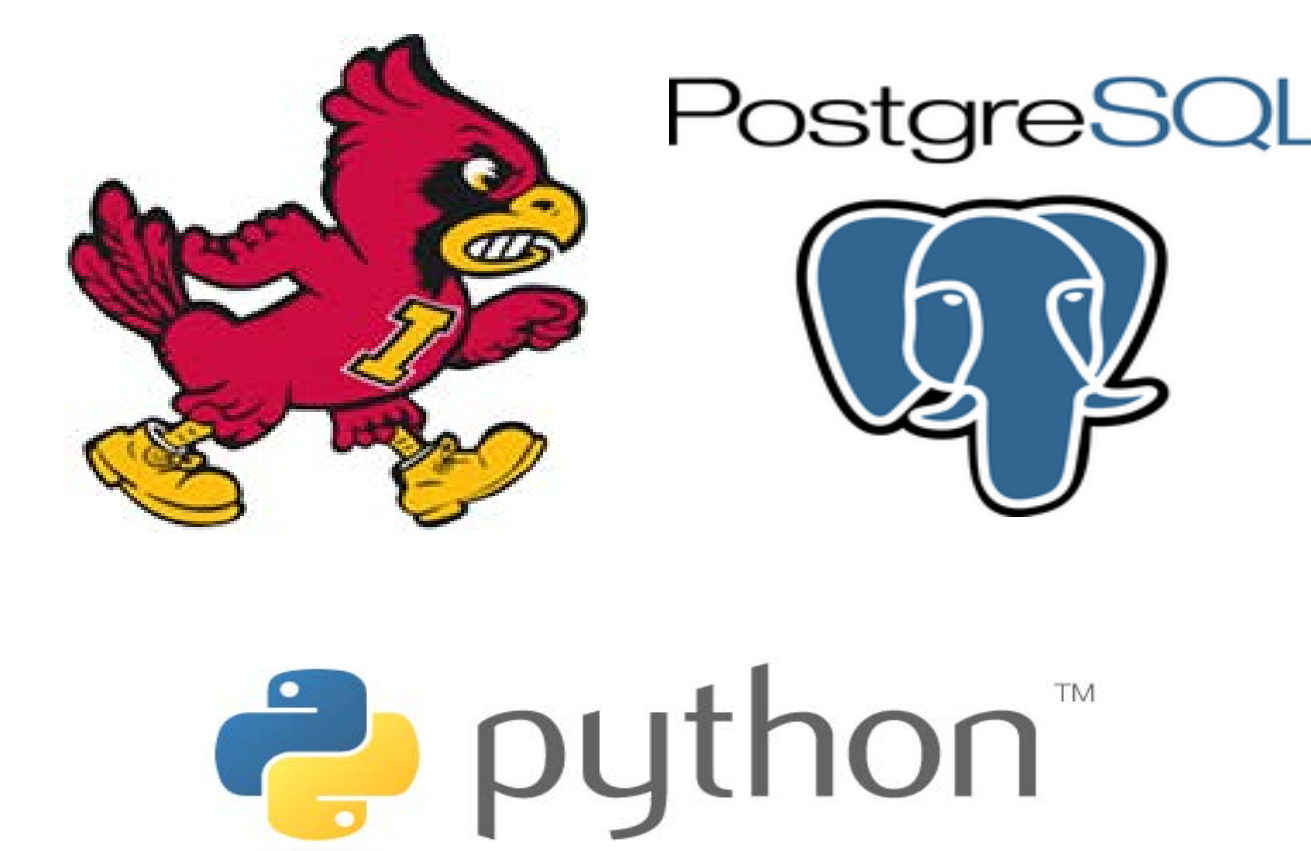
Google Gadgets provide custom interfaces for data entry, review, and download.

**Collaboration WIKI**



Google Sites provide an internal project home for group organization and database hub.

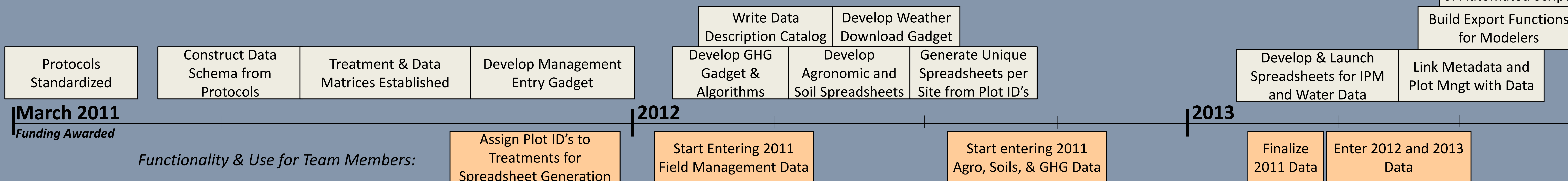
**Central Database**



Cloud tools are synced to a local database housed at ISU for archiving and analysis.

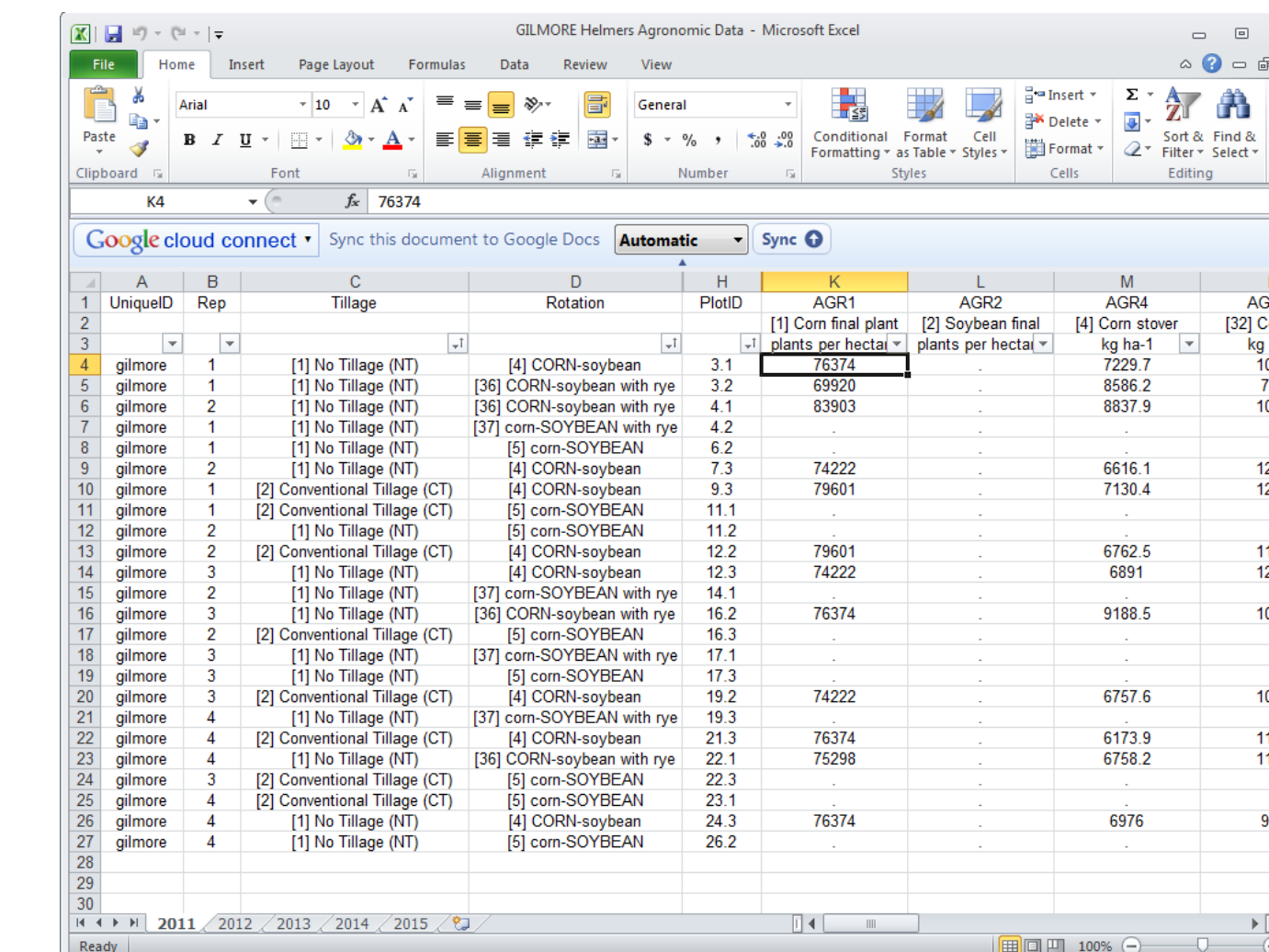
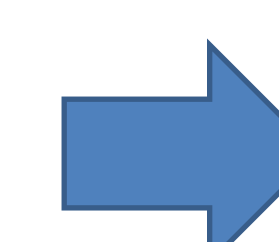
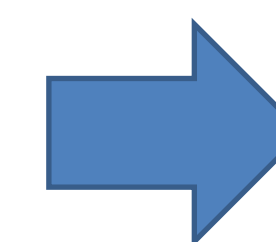
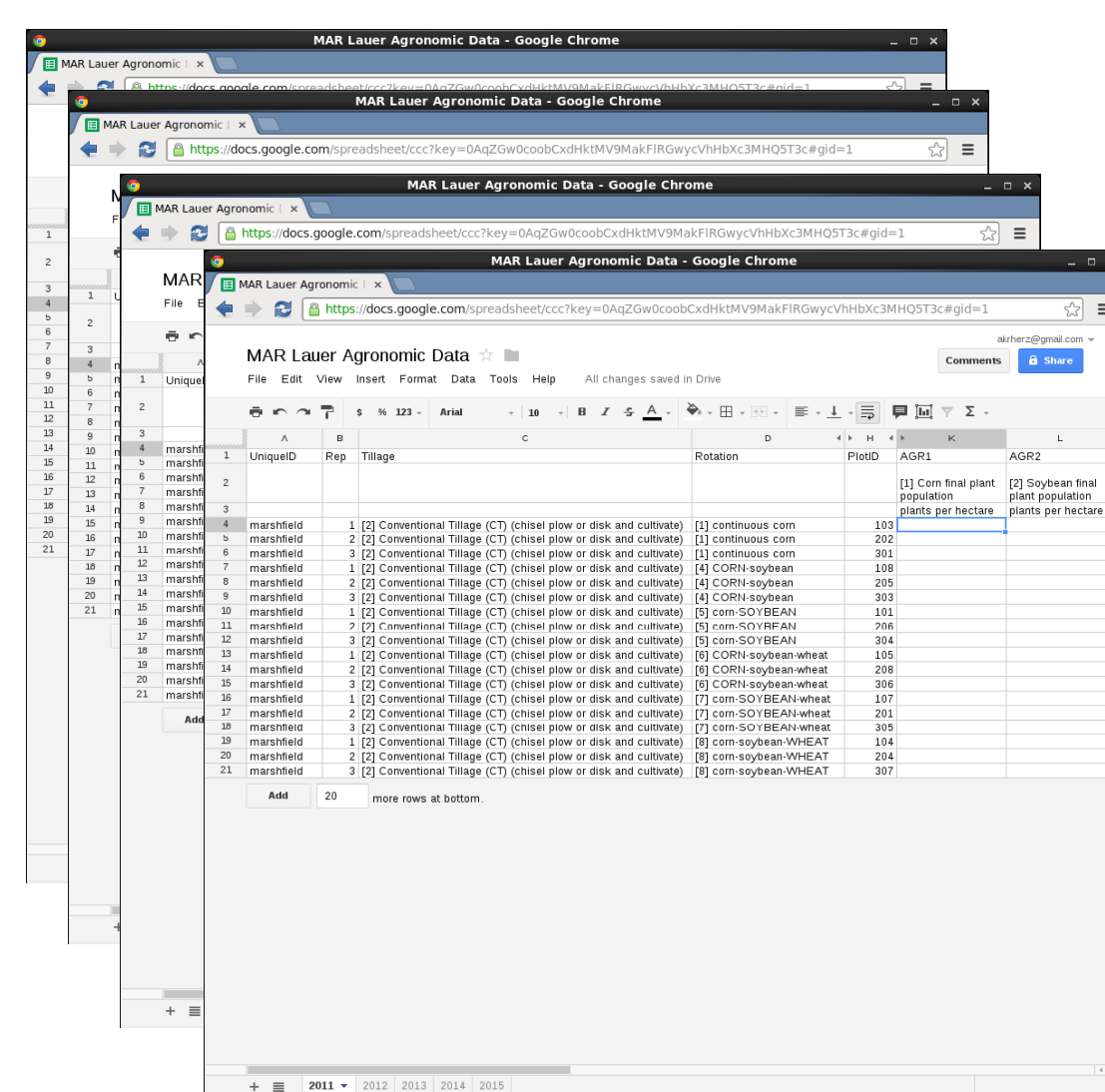
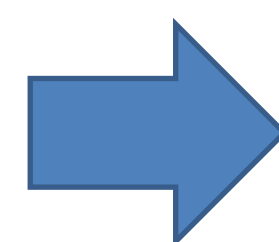
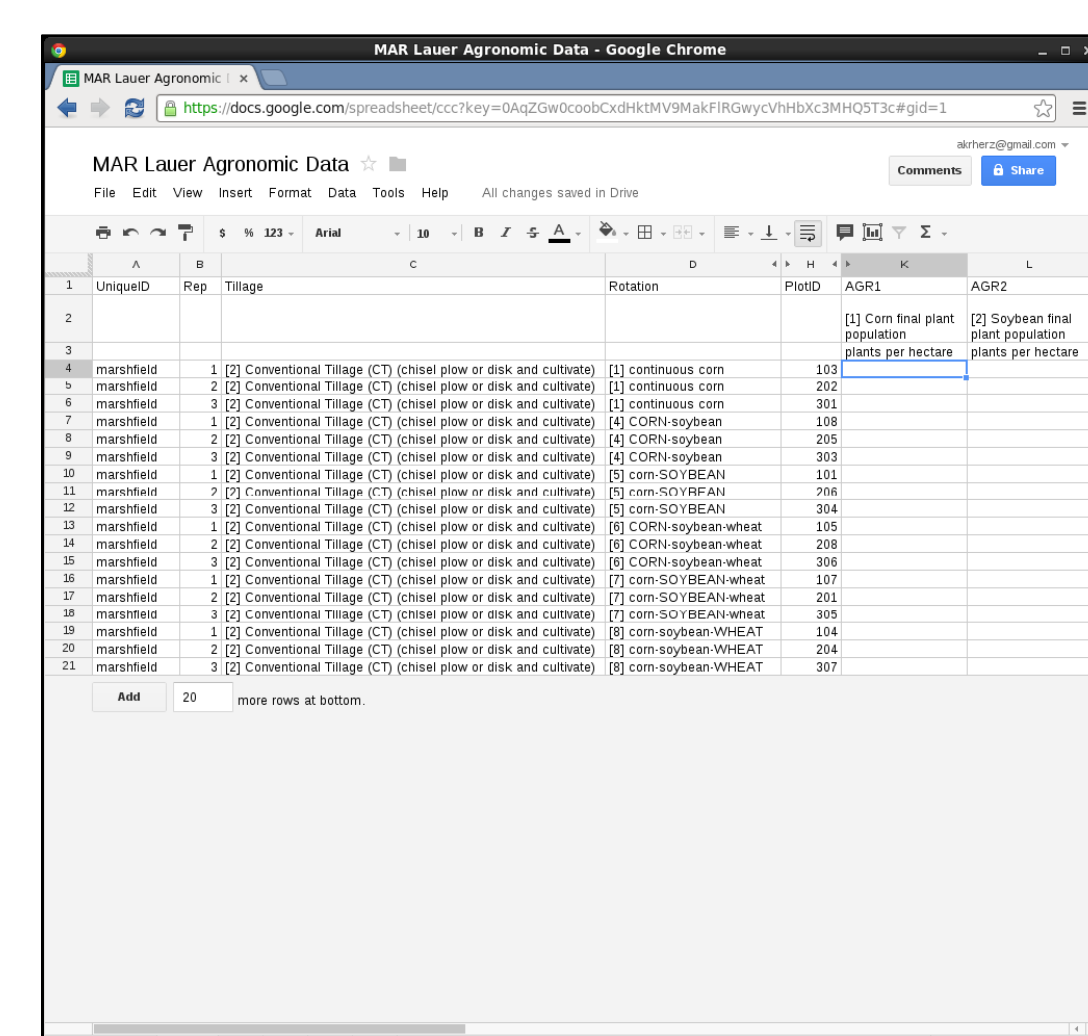
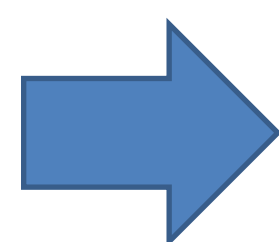
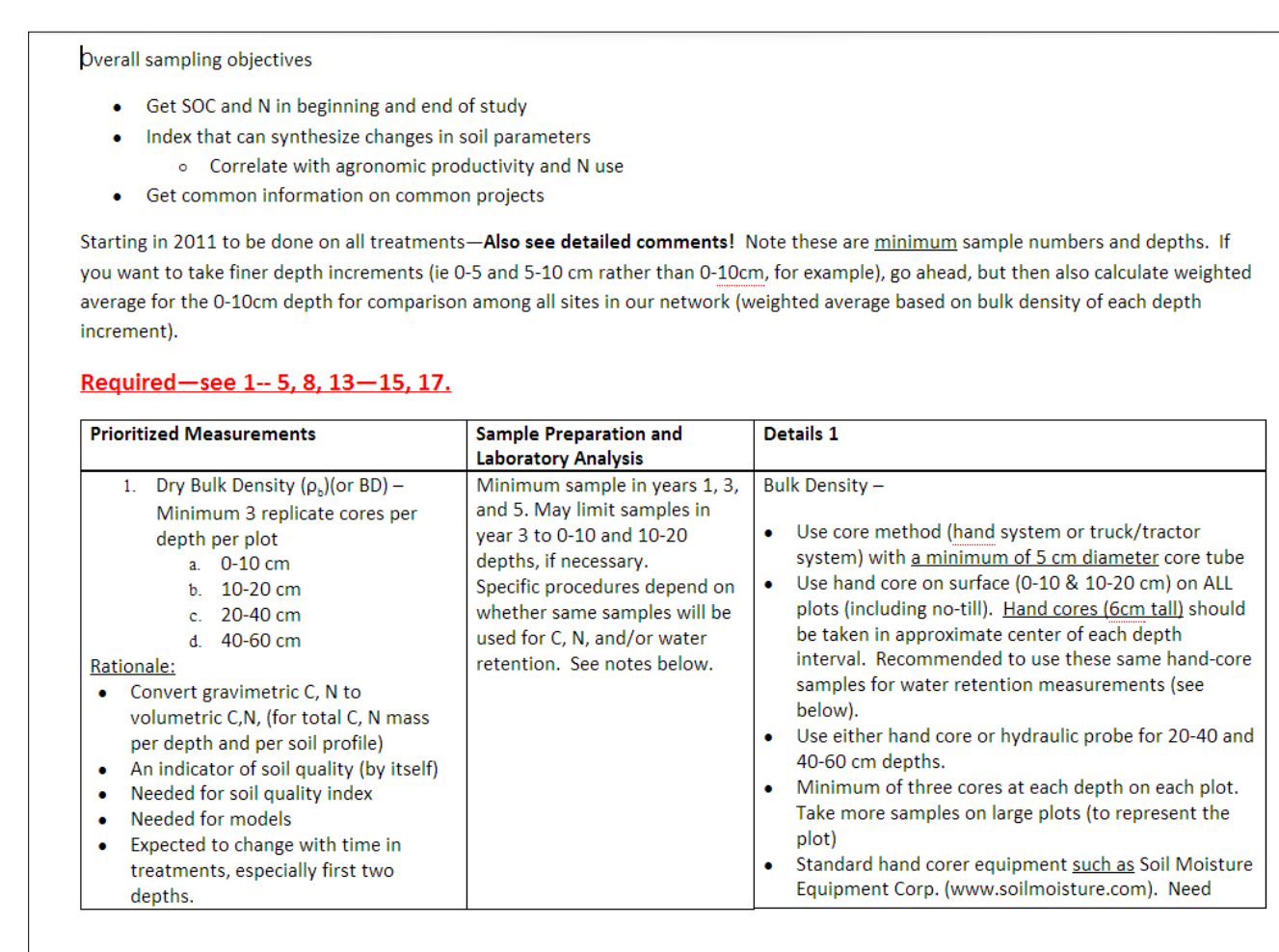
**TIMELINE**

Provide support to team members, review entries, and make edits to Gadgets and spreadsheets as needed; on-going →



**WORKFLOW**

1. Standardize Protocols
2. Spreadsheet Template
3. Automated Replication
4. Central Database
5. Export Data, etc.



<sup>†</sup>Eleven institutional-members are part of the *Cropping Systems Coordinated Agricultural Project: Climate Change, Mitigation, and Adaptation in Corn-based Cropping Systems*. Funding received by the USDA-NIFA, Award No. 2011-68002-30190: