2025 ANNUAL MEETING IMPACT REPORT

November 9-12 2025
Salt Lake City, UT

CANVAS
Where Crop, Agronomic, Environmental, and Soil Sciences Connect
November 9-12 | Salt Lake City, Utah

National Agricultural Producers Data Cooperative

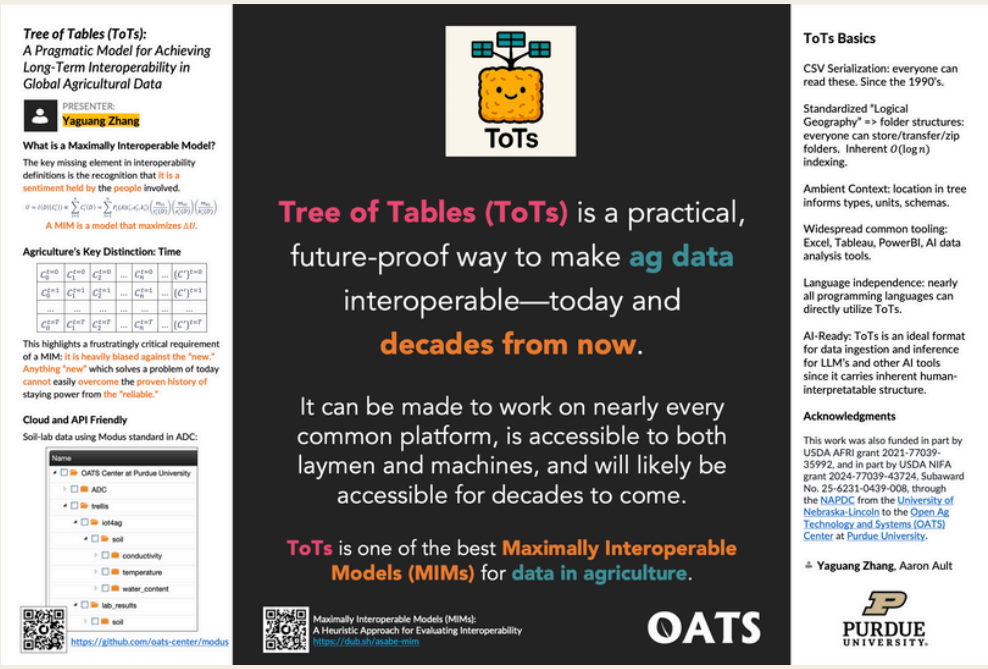
Designing a Strategic Framework for Increasing Production and Driving Innovation

NAPDC ENGAGEMENT

Poster Presentation:

Tree of Tables (ToTs): Model for Agricultural Data Interoperability

Dr Yaghuang Zhang, Purdue University



In recent work on Maximally Interoperable Models, interoperability is a human-centered property: data are truly interoperable when the time, effort, and specialized knowledge required to use them are minimized for the widest range of current and future users and systems. In agriculture, where decisions span seasons to decades, models also need "staying power".

To meet this need, the Open Ag Tech & Systems (OATS) Center developed Tree of Tables (ToTs): a simple but rigorous way to publish data as spreadsheets/CSVs (the leaves) organized in a clear folder hierarchy (the tree). The structure carries "traveling context" with files and "ambient context" in the folder structures, making data both human-legible and machine-ready.

Over the past year, the team has created an open-source Modus→ToTs conversion pipeline with Shapefile and GeoJSON support and a merge utility that links lab results to sampling locations. We are building a browser-based soil-health prototype (map + time-slider) that lets producers explore trends in soil properties over time while keeping their data in their own platforms.

Exhibitor Booth:

NAPDC in collaboration with GOAT

Gathering for Open Ag Technology is a collective that aims to coordinate existing development in the ag data space, invite new development, align technology and actual users and create a collaborative roadmap.

Different organizations such as NAPDC, Point Blue Conservation Science, The Soil Inventory Project, Terraso, University of British Columbia, etc have come together to address key challenges in the open-source development area such as data sharing, inter-operability, closed data ecosystems, etc. The shared booth showcased informational materials, handouts and interactive displays explaining the open ag tech landscape, current gaps and our collective vision. We also invited conference attendees to share challenges, solutions and connected with partners actively building the future of open ag technology, in the spirit of networking and dialogue.