



Soil and Water Conservation

Our program focuses on soil characteristics and management that influence productivity and sustainability of cropland systems. As such we focus on soil quality characteristics that impact productivity such as compaction, and organic matter. An additional focus area is soil carbon sequestration and greenhouse gas emission from cropland soil management.

Jason Warren



Cotton Research and Extension

Generate cotton production research information that is pertinent to Oklahoma cotton producers; conduct cotton variety performance, herbicide, harvest aid, no-till, and other experiments and demonstrations; develop educational materials. The team launched the newsletter entitled "Cotton Comments" key times during the growing season. Over the last several years, efforts in cotton concerning no-till practices, biotech varieties, and weed, fertility and irrigation management have resulted in record high yield and quality from Oklahoma cotton farms.

Randy Boman & Shane Osborne



Agro-Environmental Chemistry Research (AECR)

Focuses on the application of chemistry to solve environmental problems and increase agricultural production with minimal environmental impact. Current research includes the use of industrial by-products for improving water quality, investigation of mechanisms of phosphorus uptake by wheat in order to develop a more phosphorus efficient variety, evaluation of potential environmental impact of land application of oil-based drilling mud, and manure management for maximum productivity and decreased environmental risk.

Chad Penn



The Soil, Water and Forage Analytical Laboratory (SWFAL)

provides reliable and timely soil, plant, water, and waste material testing, and unbiased result interpretations for the agricultural community, homeowners, researchers, government agencies, and other laboratory users. The lab analyzes about 60,000 various samples annually.

Hailin Zhang



Soil Fertility/Nutrient Management Research & Extension

Recent products of the program include release of the Pocket Sensor, Online NH3 Loss from Urea Calculator and Protein Optimizer, SBNRC's for Cotton and Canola. Current work includes Foliar N on yield and quality, Foliar P projects, Seed Placement and development of Sesame SBNRC. The Extension program is working on NPKS Response demos, N-Rich/SBNRC outreach and field scale demos, Nutrient Product Eval., and demonstration of Soil acidity on Sunflower, Sorghum, Canola, and Sesame.

Bill Raun and Brian Arnall



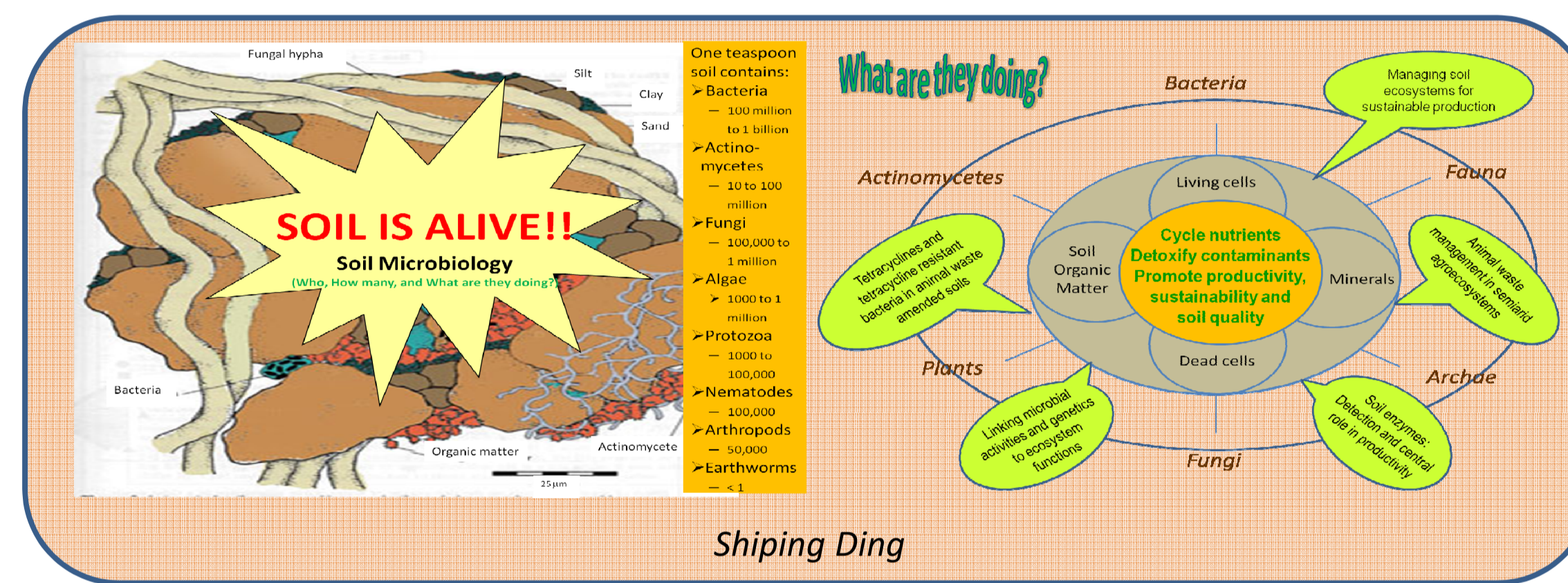
Extension Weed Science

Performs evaluation and testing of new herbicide and weed control products in winter wheat, winter canola, corn, grain sorghum, soybean, sesame and other crops. Development of effective weed control programs for conventional- and conservation-tillage crop production systems. Confirmation of herbicide-resistant weeds in Oklahoma.

Joe Armstrong

National Recognition of PaSS Students

Samantha Ambrose Ladoga, IN – Frank D. Keim Graduate Fellowship,
Jared Crain Woodward, Ok – IPNI Scholar Award
Romulo Lollato Londrina Brazil – 3rd place CSSA Division C3 M.S. Poster Competition
Meagan Morris Cushing, OK– Cross-Cultural Experience Scholarship
Austin Terhune Perryton, TX– Golden Opportunity Scholar
Andrew Whitaker Davis, OK– Golden Opportunity Scholar
Tyler Grimes Pond Creek, OK– 3rd place Undergraduate Research Symposium
Ethan Wyatt – Chattanooga, OK & **Austin Terhune** – Perryton, TX – 5th place Club Poster
Cameron McAnally White Deer, TX– incoming SASES corresponding secretary
Cody Claflin – Sheldon, MO & **Elke Grether** Perry, OK – outgoing SASES officers
Kristen Hansen Broken Arrow, OK– outgoing SASES committee chair
Sarah Lancaster Advisor



Shipping Ding



Cropping Systems

Production of alternative crops has increased to greater than 1.6 M acres since 2004, according to Oklahoma NASS. This is an increase of 38% since 2004! Soybean acres have increased 56% since 2004. This substantial increase in acres being rotated is no doubt associated with the increased no-till acres, which has increased 25% since 2004 in the state. The ecosystems services from an increase in no-till and crop rotation in Oklahoma are immense.

Chad Godsey



Forage & Pasture Management

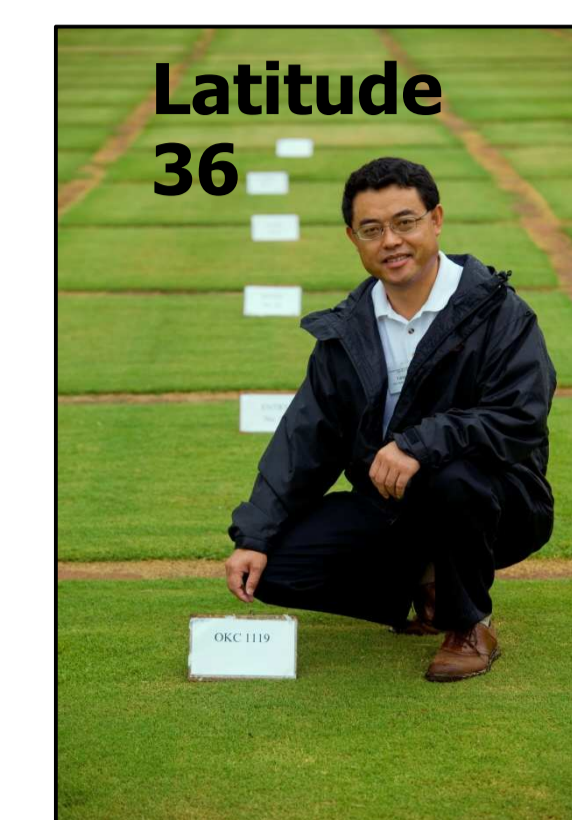
Develop economical strategies to expand forage production, through either grazing management or forage management and implement integrated forage/livestock systems based on manipulating the plant and animal factors that limit production. The economic impact of forage and pasture management in Oklahoma is dramatic. Based on total acreage and production of individual forage species and the forage value, the economic impact the forage produced in Oklahoma is **\$891,417,700**.

Daren Redfearn

Canola Research and Extension

To provide research, education and demonstration to stimulate the development of winter canola as a major profitable rotational crop in Oklahoma.

Tom Peeper, Mark Boyles, and Josh Bushong



Grass Breeding and Genetics

Development of superior cultivars in bermudagrass for turf industry and forage producers, and in switchgrass for future bioenergy feedstock farmers. A general impact statement would be: New cultivars developed in our program will benefit sod producers, home owners, turf managers, ranchers, farmers, and other societal sectors via those agricultural producers in a sustainable manner for the state in particular and the nation in general.

Yanqi Wu



Sorghum Extension

Extension responsibilities for grain sorghum, conducts grain sorghum performance trials statewide. Grain sorghum trial results were used by RMA to move early planting date from May 1st to April 20th. Also conducts research on crop rotation in both irrigated and dry-land systems. Long term no-till vs. conventional tillage rotations in the panhandle have shown increase in grain sorghum yields due to no-till practices.

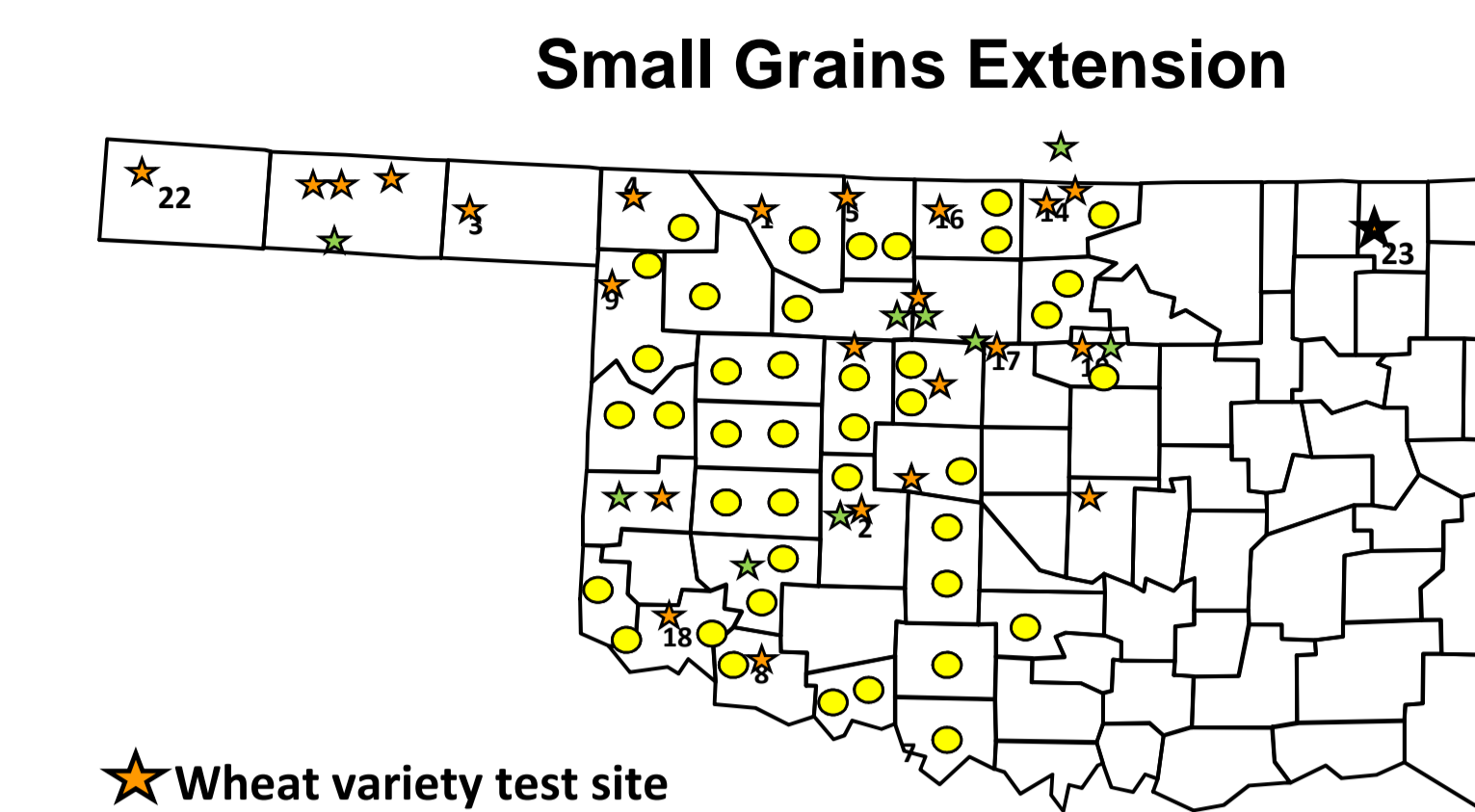
Rick Kochenower



Soil Physics Research

Is tied together by the central theme of soil moisture. We are working to better monitor and understand the variability of soil moisture across a range of scales. We are also seeking to discover management practices and cropping systems which result in optimal capture and use of available water. Our work has contributed to the creation of the Marena, Oklahoma In Situ Sensor Testbed (MOISST), a unique research site involving collaborators from around the world who are helping to develop calibration and validation approaches for NASA's upcoming soil moisture satellite, SMAP.

Tyson Ochsner



★ Wheat variety test site
 ★ Wheat breeding test site
 ● Wheat demonstration site

Jeff Edwards

Wheat Improvement Team

Wheat cultivars developed by the OSU WIT account for nearly 50% of Oklahoma's wheat acreage, with Endurance and Duster being the two most commonly planted varieties in the state in 2011. Field-day attendees represented 1.7 million acres of wheat and the wheat variety trials resulted in over \$37 million in perceived value by farmers.



Wheat Breeding Project

Develops winter wheat cultivars custom-fit for the Oklahoma wheat industry, with emphasis on numerous trait systems crucial to wheat production and marketing, including grazing adaptation, tolerance to soil acidity, disease resistance, and gluten quality. Breeding methods incorporate field and laboratory procedures which enable accurate assessment of both phenotype and genotype. Cultivars released since 1998 include three hard white cultivars and twelve hard red winter wheat cultivars.

Brett Carver



Bioenergy Crop Production

This program is dedicated to the development of new bioenergy crops and their production systems and train Scientific Corps in Bioenergy Crop Production that will strengthen the efforts at Oklahoma State University where a comprehensive, multi-disciplinary, bioenergy research team has been formed from multiple departments and across colleges. Program also collaborates extensively with researchers in Oklahoma and across the nation, in addition to several industry partners. Gopal Kakani

