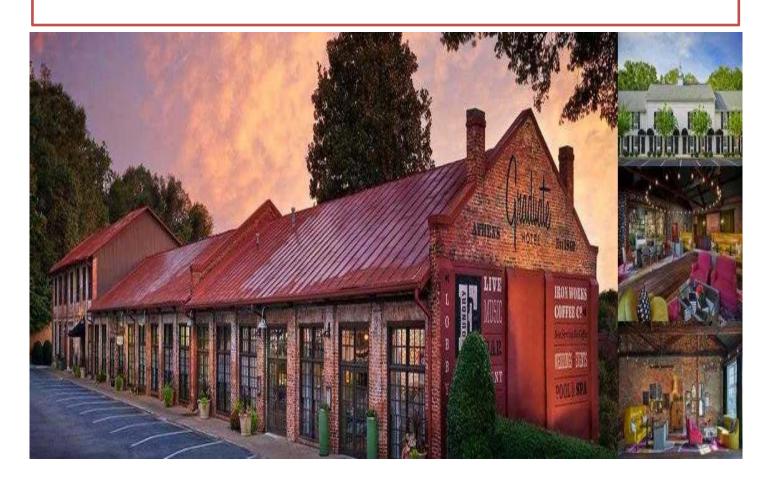
SERA-IEG-6 2018 ANNUAL MEETING THE GRADUATE HOTEL 295 E. DOUGHERTY St ATHENS, GA 30601 JUNE 10-12



THE GRADUATE HOTEL

Administrative
Leticia Sonon, Chair
Tony Provin, Vice-chair
Gobi Huluka, Secretary
Tom Obreza, Advisor
Nathan McKinney Advisor

2018 SERA 6 Meeting Agenda					
June 10, Sunday					
5:00-9:00 PM Sunday Evening Session (The Graduate Hotel, Ballroom and Ga	alleria I)				
5:00-6:00 pm	Registration				
6:00-7:30 pm	Welcome Reception and Dinner				
7:30-8:30 pm	State Reports, Moderator Gobena Huluka				
 Alabama 	 Oklahoma 				
 Arkansas 	South Carolina				
• Florida	North Carolina				
• Georgia	 Tennessee 				
 Kentucky 	• Texas				
• Louisiana	• Virginia				
Mississippi					
8:30-8:40 pm	Agricultural Laboratory Proficiency Program (ALP) – Bob Miller				
8:30-8:40 pm	LECO Corporation – Andy Flores				
8:40-9:00 pm	Elementar Americas – Doug Steve				
9:00-9:10 pm	Agilent – Kirk Holladay				
9:10-9:20 pm	Spectro – Bob Dussich				
June 11, Monday					
Welcome and University of Georgia Extension Address					
8:00-8:05	Introduction and Meeting Notes – Leticia Sonon UGA				
8:05-8:15	Welcome Address – Dr. Sam Pardue, Dean CAES				
8:15-8:30	State of UGA Extension – Dr. Laura Perry Johnson, Assoc. Dean for Extension				
Technical Session					
8:30-8:55	Developing Critical Leaf Chloride Concentrations in Soybeans – Nathan Slaton, AR				
8:55-9:20	K calibration work with corn and soybeans – David Hardy, NC				
9:20-9:45	Testing Fertilizer recommendations by yield goals for corn and cotton – Glenn Harris, GA				
9:45-10:45	Break and Sponsors' Exhibit Viewing				
10:45-11:15	Use of Gypsum in Agriculture - Malcolm Sumner				
11:1511:40	P and K calibration in Caribbean Soils – David Sotomayor, PR				
11:40-12:05	Cation Exchange Capacity – Measurements and Interpretations – Bob Miller, ALP				
12:05-12:15	Timberline				
12:15-12:25	Automation Techniques – Kevin Rackers				
12:25	Leave for restaurant (lunch)				
12:30-2:00 pm	Lunch				
2:00-5:30	Laboratory Visit (Jason Lessl, Uttam Saha, Teresita Ona) and N Mineralization Calculator Demo (Julia Gaskin)				
5:30 pm	Return to Hotel				
6:30 pm	Leave Hotel for Dinner				
June 12, 2018					
Technical Session, Moderator Jason Lessl					
8:00-8:20	Soil Quality Testing at Auburn University Soil Testing Lab – Charles Mitchell – Auburn University				
8:20-8:30	EA Consummables				
8:30-8:40	LabFit				
8:40-9:00	Administrative Advisor Reports: Dr. Nathan McKinney, University of Arkansas (Research) and Dr. Tom Obreza, University of Florida (Extension)				
9:00-10:00	Break and Exhibit Viewing				
10:00-12:00	Reports and Business Meeting				
20100 22100	NAPT Report				
	NCERA-13				

2018
SERA 6 Conference Registrants and Sponsors

	NAME	AFFILIATION	
	ALC LOL		
1	Alford, Shannon	Clemson University	
3	Bergeron, Jamin Beverly, Reuben	University of Florida	
4	Duniho, Tyler	Auburn University	
5	Farmaha, Bhupinder	Clemson University Clemson University	
6	Gamble, Audrey	Auburn University	
7	Grove, John	University of Kentucky	
8	Hardy, David	NCDA – Soil Testing	
9	Heckendorn, Steve	Virginia Tech	
10	Herron, Cindy	University of Arkansas	
11	Hicks, Kristin	NCDA&CS	
12	Jackson, Patricia	Clemson University	
13	Jones, Keri	MS State University	
14	Kissel , David	Univ of Georgia	
15	Lafex, Diane	University of Arkansas	
16	Lessl, Jay	University of Georgia	
17	Martin, Amanda	University of Kentucky	
18	McKinney, Nathan	University of Arkansas	
19	Miller, Bob	ALP-CTS	
20	Mitchell, Charles Mowrer, Jake	Auburn University Texas A&M Agrilife	
22	Nathan, Manjula	University of Missouri	
23	Obreza, Tom	UF/IFAS Extension	
24	Oldham, Larry	MS State University	
25	Ona, Teresita	Univ of Georgia	
26	Osmond, Deanna	NC State University	
27	Pena-Yewtukhiw, Eugenia	West Virginia Univ	
28	Poffenbarger, Hanna	University of Kentucky	
29	Prasad, Rishi	Auburn University	
30	Ritchey, Edwin	University of Kentucky	
31	Saha, Uttam	Univ of Georgia	
32	Savoy, Hugh	University of Tennessee	
33	Slaton, Nathan	University of Arkansas	
34	Sonon, Leticia	Univ of Georgia	
35	Sotomayor, David	Puerto Rico	
36 37	Spargo, John	Penn State University	
38	Villines, Cheri	University of Arkansas	
39	Wang, Jim Woodley, Alex	Louisiana State University North Carolina State Univ	
40	Yuangen, Yang	Univ of Georgia	
41	Zhang, Hailin	Oklahoma State Univ	
11	<u>. </u>	s/Exhibitors	
	NAME	AFFILIATION	
	TVAIVE	ALTERNATION	
1	Bury Ellis, Sara	Timberline	
2	Divis, Jeremy	Questron Technologies	
3	Etzel, Ryan	LECO	
4	Flores, Andy	LECO	
5	Holladay, Kirk	Agilent	
6	Hughes, Sandy	EA Consumables	
7	Keene, Doug	Texas Scientific	
8	Kelly, Jon	Spectro-Ametek	
9	Larson, Mark	Elementar	
10	Leibenguth, Sara	Seal Analytical	
11	Leiken, Sergie	Texas Scientific	
12	Mains, Jada-Star		
13	Marsico, Ryan	Spectro-Ametek	
14		Elementar Automotion Techniques	
	Rackers, Kevin	Automation Techniques	
15	Tsourides, Deion	Spectro	
16	Warrenfeltz, Dennis	LabFit	
17	Yates, Al	Skalar	

Highlights of the 2018 SERA-IEG 6 Meeting

- * The largest number of attendees in for the region in my opinion (18 Universities were represented; see group picture and attendees list).
- * The largest number of sponsors and exhibitioners for the region in my opinion (see list above).
- SERA-IEG 6 funding is renewed for the next 5 years (until 2022).
- * Jim Wang of LSU was elected as an incoming secretary for SERA-IEG 6 and, Tony Provin and Gobi Huluka will be the incoming chair and vice-chair, respectively.
- * The 2019 SERA-IEG Annual Meeting will be hosted by Oklahoma State University on June 9 11, 2019 and Hailin Zhang will be coordinating.
- * Papers presented during the meeting will be available at http://aesl.ces.uga.edu/sera6/MIN/2018.asp
- * The Southern Working Group CIG-P (conservation innovations grants on phosphorus index) for Southern States was held for one day after the end of SERA-IEG 6 meeting at the same location.



2018 SERA-IEG 6 Group

Summary of Events for 2018 during June 10-12, 2018 June 10

- Dr. Leticia Sonon welcomed all the participants to Athens and made overview of the program for the next two days.
- * She thanked sponsored and named them in categories of Gold, Silver and Bronze.
- * After introduction of each person, dinner was served.
- * State Reports were presented after dinner and a call was to submit the report to the secretary.
- * Sponsors presentations continued after State Reports according to the program. ALP, Leco, Elementar America, Agilant and Labfit.

June 11

- * Dr. Leticia Sonon welcomed the group again and introduced Dr. Sam Pardue, Dean CAES and Dr. Laura Perry Johnson, Associate Dean of Extension who spoke on the state of agriculture in Georgia in particular and US in general.
- * Technical Sessions continued according to the schedule: Developing Critical Leaf Chloride Concentrations in Soybeans Nathan Slaton, AR; K calibration work with corn and soybeans David Hardy, NC; TestingfFertilizer recommendations by yield goals for corn and cotton Glenn Harris, GA;
- Break and Sponsors' exhibit viewing; Use of Gypsum in Agriculture Malcolm Sumner; P and K calibration in Caribbean Soils – David Sotomayor, PR; Cation Exchange Capacity – Measurements and Interpretations – Bob Miller, ALP
- * After lunch, UGA laboratory visit was conducted by Jason Lessl, Uttam Saha, Teresita Ona and N Mineralization Calculator Demo by David Kissel and Julia Gaskin.

June 12

- * Soil Quality Testing at Auburn University Soil Testing Lab Charles Mitchell Auburn University
- Presentations by Sponsors and exhibit viewing
- * Administrative Advisor Reports: Dr. Nathan McKinney, University of Arkansas (Research) and Dr. Tom Obreza, University of Florida (Extension)

Dr. Tom Obreza:

Thanked SERA-6 leadership for the largest attendance and spoke on the following subjects:

- * Explained the role of SERA-6, its administration protocol and said that "administrators are not bad people but they try to help you."
- * Budgets are getting better in some Southeast states
- * A need for hemp recommendation for medicinal oil
- Soil quality/health is evolving with provide entities involved
- * Land grant soil labs should be consistent in making recommendations

Dr. Nathan McKinney

- * Thanked and seconded Dr. Obreza and spoke on:
- * Congratulated SERA 6 for securing funding until 2022
- The need for expected measurable outcome and impact reporting for the group
- * The need for unified testing procedures and making recommendations

Dr. Manjula, NCERA 13 Representative

- * She reported on difficulties facing public labs due funding
- * Regionalized recommendations are taking being adopted in some neighboring states
- * Soil health was the main topic of interest during a meeting

Whitepaper is in the working on S & P determinations

Business Meeting

- Oklahoma will be hosting the next annual meeting
- Jim Wang was elected incoming secretary
- UGA will host the SERA 6 website and listserve

ADJOURN

STATE REPORTS

ALABAMA (Reuben Beverly –Auburn University)

The past year has been one of profound change for the Auburn University Soil, Forage and Water Testing Laboratory, in terms of organization and administration, staffing, and instrumentation and programming. Similar to past years, in calendar year 2017 the lab reported 25926 routine soil samples, 3471 special soil samples of various kinds, 927 forage and feed samples, and 451 other samples.

The organizational change came about as the lab was transferred from administration by the Crop, Soils and Environmental Science Department to the Agricultural Experiment Station Administration. This was the result of a strategic plan analyzing the current and future operation of the laboratory. With this change, Dr. Dale Monks was appointed Director of the Laboratory, and Reuben Beverly was hired as Associate Director to provide daily direction. As part of this reorganization, Dr. Gobi Huluka was transferred to full-time teaching and research responsibilities in the CSES Department. Also, Dr. Charles Mitchell, Extension Soil Fertility Specialist, retired, and has been replaced by Dr. Audrey Gamble. The lab also had two technicians to retire in December, and we have been covering the labor needs with part-time (TES) and student workers.

Funding remains a challenge for the lab, but the Alabama Farmers Federation (ALFA) provided \$150,000 in funding to support instrument upgrades. We have replaced our pH robot, and we are in the process of purchasing a new ICP and a new nitrogen combustion analyzer. We expect to have these instruments implemented by the end of the summer.

Programmatically, we are trying to expand our current sample volume by reaching out to our traditional farmer clientele, as well as expanding into newer areas of service. We have partnered with livestock and forage Extension counterparts to encourage more soil and forage testing on pasture and hay production fields. We are working on a more user-friendly report form for our home lawn and garden and wildlife food plot customers. And, we continue to work to optimize the Soil Quality/Soil Health test so that it will be both reliable and useful for its intended purpose of encouraging farmers to use better soil-preserving and soil-enhancing production methods. Dr. Mitchell and Dr. Gamble will be presenting a discussion of this test during the technical session.

ARKANSAS (University of Arkansas Soil Testing and Research Laboratories, Marianna & Fayetteville – Nathan Slaton, Diane Lafex, and Cindy Herron

- ➤ The Marianna Laboratory analyzed 184,953 client samples in 2017 (Table 1). Grid samples (135,351) accounted for 73% of the total samples analyzed at Marianna. October and November continue to be the two busiest months with more than 98,000 analyzed in 2017. Turnaround time in 2016 was <14 days for 99% of the samples received.
- > Sample numbers at the Fayetteville Laboratory were comparable to prior years (Table 1).
- Implementation of LabLite LIMS is in progress with programming ongoing. The first on-site training occurred in May 2017. Pilot testing and implementation is tentatively scheduled for late summer. Prenumbered boxes with a barcode will be used with the LIMS.
- The Fayetteville Lab added a new NIR instrument in 2017.

- The annual summary of soil-test data and selected soil fertility and plant nutrition research was published in the Wayne Sabbe Arkansas Fertility Studies 2016 which is available on-line https://arkansas-ag-news.uark.edu/pdf/649.pdf.
- > Dr. Hatten left the Fayetteville Laboratory in February 2018 for other employment.
- ➤ Both labs are enrolled in ALP rather than NAPT in 2018.
- A video (soil test lab tour) was made in early 2018: https://aaes.uark.edu/research-locations/soil-testing-and-research-laboratory/Soil-testing-lab-virtual-tour.aspx.

Table 1. Laboratory analyses performed by the University of Arkansas Fayetteville and Marianna laboratories during 2017 (January-December).

Sample Category	Fayetteville Lab	Marianna Lab	Total
Forage/Feed	1,073		1,073
Diagnostic Plant	252		252
Diagnostic Soil	275		275
Manures-Total	1,198		1,198
Dry Manures	1086		1086
Liquid Manures	208		208
Strawberry Monitoring	408		408
Orchard Monitoring	0		0
Growing Media	12		16
Plant Samples	7,678	146	7,678
Soil Samples	2,103	184,953	187,056
Prepared Samples	14,627		14,627
Totals	27,626	185,099	212,725

FLORIDA (Jamin Bergeron, University of Florida)

From June 1, 2017 through May June 30, 2018 the laboratories processed

Laboratory	Samples processed June 2017- June 2018	Samples processed June 2016-May 2017	Year to Year comparison
ARL (Analytical Research)	21937	11490	91% increase
ESTL (Extension Soil Testing)	15174	18087	16% decrease
EWQL (Environmental Water Quality)	195	2067	90% decrease
LWTL (Livestock Waste Testing)	470	386	22% increase

The laboratory purchased 2 Hamilton automatic dilutors this year and one new TKN digestion block from Seal. Last year the lab purchased an Elementar Vario Max cube CNS Analyzer and a LabFit pH robot. These instruments, pH robot and automatic dilutors, have helped the lab more efficiently process samples. The combustion methods are about to be introduced to extension clients. The standard soil fertility test is in process of being revised to include micro-nutrients with each sample submitted for \$10 price instead of \$12 currently.

The WebLIMS is being used in production, with lots of improvements happening. Many bugs and glitches are being worked through and around, but improvements are noted.

Personnel changes – the lab has recently lost one of the chemists and is in the process of hiring another right now. We have hired a new laboratory technician in the last month.

EWQL has an audit scheduled this summer with NELAC for accreditation purposes.

The ARL has been working on an extraction procedure for Boron in order to add to the list of analyses that we offer. The work has been challenging and has had a few learning curves for all involved, but progress has been made and results are pending.

Other improvements for 2018 will include cost savings measures to reduce supply costs, changes to ICP methods to lower reporting limits, reduce the number of dilutions and reanalyzes, etc.

GEORGIA (Jason Lessl University of Georgia)

UGA State Report - 2018

Sample #'s

Soil: 64,000 Manure: 1,400 Water: 8,700 Plant: 4,500 Feed: 7,300 Micro: 2,800

Proficiency Programs and Certifications

International Organization for Standardization ISO-17025

Assoc. of American Feed Control Officials (AAFCO)

American Oil Chemists' Society Laboratory Proficiency Program

Env. Resource Associates (ERA): Coliform and E. coli

MN Dept. of Agriculture Manure Analysis Proficiency

National Forage Testing Association (NFTA)

Agricultural Laboratory Proficiency Program (ALP)

NSI Solutions, Inc.

State of Georgia EPD (EPD): Drinking water microbiology

United States Geological Survey (USGS)

New Calculator's to help growers

Food Safety Modernization Act (FSMA) Calculator

Nitrogen Availability Calculator

New Extension Publications

Household Water Treatment: Disinfection Methods and Devices

Ensuring Safe Private Well Water for household use after a flood

KENTUCKY (Amanda Martin - University of Kentucky)

Kentucky Lab Report for 2018 SERA6

1. Sample numbers from 2017 (includes both Lexington and Princeton labs)

28,963: Agriculture samples

9,893: Home lawn and garden

1,067: Commercial horticulture

115: Greenhouse media

289: Animal waste

30: PSNT

6,483: Research samples

47,068: Total

- 2. Began analyzing ag lime samples fall 2016 for the state ag lime law administered by the Kentucky Department of Agriculture. About 140 samples are collected from our inspectors and analyzed per year. Results are posted on the soils web site and presented in soil test reports for quarry specific lime recommendations.
- 3. Princeton soils lab experienced a transition with a new manager in Fall 2016. Amanda Martin replaced Paula Howe who retired.
- 4. Princeton lab at Princeton Experimental Research Station is experiencing infrastructure changes as the entire station is undergoing renovation with new office and lab space to support a Grain and Forage Center of Excellence. Construction began spring of 2018 and is anticipated to be complete mid 2019.
- 5. Plans are being developed to add soil organic matter test via loss on ignition at the Lexington and Princeton labs. Also, plans are developing for adding plant tissue testing at the Princeton lab.

LOUISIANA (Jim Wang – University of Louisiana)

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MISSISSIPPI (Keri Jones – Mississippi State University)

The MSU-ES Soil Testing lab analyzed 18,000 soil samples and 504 tissue samples. The price for routine soils has increased to \$8.00 per sample.

NORTH CAROLINA (David Hardy and Kristin Hicks – North Carolina Department of Agriculture)

The Soil Testing Section analyzed 303,800 soil samples in FY2018. Reports issued with fertilizer/lime recommendations totaled 38,005.

The lab began measuring pH using 1:1 (V/V) 001 m CaCl2 in September 2017. Water pH is reported to clients by adding 0.6 pH units to the salt pH reading. Study showed the buffer pH to be unchanged by the new method.

A 2nd pH robot was added to the lab and a custom-designed dispenser for salt pH and Mehlich buffer was placed into operation in September 2017.

Research continues with K validation study in soybeans and corn. These studies will be completed at the end of the summer, 2018. Research is being conducted in conjunction with faculty from NCSU- the Crop Science and Soil Science department.

Plant/Waste/Solutions/Media Section

New Services. Molydenum was added as an available test for waste (to support composters), and solution and media (to support nursery/greenhouse industry). It is already available for plants.

New Equipment. We purchased a Fritsch Universal Cutting Mill PULVERISETTE 19 for

 $100-120 \text{ V/1}^{\sim}$, 50/60 Hz, 1700 Watt, 2800/3400 rpm for grinding Miscanthus, corn and other difficult to grind samples.

Research. 1) Nitrogen Management in Winter Barley to Obtain Malting Quality. We have finished year one of this study. 2) Development of plant sufficiency ranges for N, K and S in Industrial Hemp for field production of hemp seed. We are starting year 1 at 3 sites. 3) Pilot study to examine the effect of fertility on CBD and THC levels in industrial hemp. Beginning of year 1. 4) Greenhouse study to develop nutrient disorder identification in greenhouse hemp production. Beginning of year 1. 5) Blackberry study to evaluate fertility recommendations for double-cropped and single-cropped primocane-fruiting blackberries. Year 1.

Sample numbers. This year was a record year for plant tissue samples at >17,000 samples and also a record year for total samples at > 35,000 plant, waste, solutions and media samples.

OKLAHOMA (Hailin Zhang – Oklahoma State University)

- 1. The total number of samples analyzed was 68,403 in 2017, which is a historical high. We tested 43,760 soil, 4,549 water, 7,267 forage, 1,149 waste, 32 greenhouse growth media, and 11,529 various research samples during the year. Sample volumes have been gradually increased from about 32,000 in 1997 to the current volume.
- 2. A GC-head space CO2 evolution determination was developed as one of the soil health parameters (https://dl.sciencesocieties.org/publications/ael/articles/3/1/180008).

SOUTH CAROLINA (Shannon Alford – Clemson University)

Soil samples ~54,000 and 7,500 research samples and some drinking water samples

TENNESSEE (Robert Florence – University of Tennessee)

Services: The University of Tennessee Soil, Plant, & Pest Center currently offers soil, plant disease, insect ID, plant tissue nutrients, and forage quality analysis. Soil analysis is split about even between farmers and homeowners. In calendar year 2017 we analyzed about 17,000 soil samples, 500 plant disease and insect ID's, 150 plant tissue, and 900 forage samples.

Personnel: The lab is currently staffed by a director, two office administrators, one plant diagnostician, and one soil & plant analyst. Hugh Savoy has retired and we are in the process of filling the extension soil scientist position.

Equipment upgrades: We had no equipment upgrades this past year.

Software upgrades: We had no software upgrades this past year.

TEXAS (Jake Mowrer – Texas A & M University)

About 46,000 soil samples
Fertilizer calculator developed; Master Gardeners outreach
NPS Research and deep soil profile sampling (up to 2 feet)

Compiled by Gobi Huluka

Some SERA-IEG 6 2018 Pictures (no captions necessary)





















Thank you Leticia for the memories!!! (Late addition)