Monday, February 10

8:00AM-11:00AM  CPD #1  Android Mobile App Development
Instructor: Dharmendra Saraswat
Level of Difficulty: Entry Level

Latest industry estimate show that 61% of mobile phone subscribers in the USA own a smartphone. Survey conducted among county extension agents and farm producers by farm magazines also indicate widespread adoption of smartphones by them. A focus group poll conducted for members of Iowa Soybean Association, with farmers of a median age of 45, showed that 70% of producers would use information delivered via a smartphone. Therefore, it is timely to incorporate mobile computing electives to the curriculum and develop appropriate applications to reach out to our stakeholders viz. producers, extension agents, consultants, students, policy makers etc.

This three hour workshop will introduce participants to developing mobile apps consisting of essential using freely available Google’s Android OS. Some simple Android apps will be developed with Eclipse and then run on an emulator. Potential participants familiarity with Java programing would be a plus. Hand-on-tutorial slides with the code used for exercises shall be provided to participants. It is required of the participants to bring their own laptop preloaded with necessary softwares (instructions shall be provided to registered participants). A demo for remote data collection using an Android app shall be conducted.

This workshop is geared towards beginners in Android app programming.

COST: $50.00

11:00AM-12:00PM  Suppliers and Consultants Display:

11:00AM-12:00PM  Student Design Presentations / Electronic Poster Session

12:00PM-1:30PM  Luncheon w/Keynote Speaker

1:30PM-3:15PM  Tech Session 1: “Bioenergy Resources and Sustainability”
1:30PM  Introduction

1:35PM  Sustainability Metrics
Dr. Virginia Dale (ORNL)

The objective of this project is to identify ways to characterize and monitor sustainability of bioenergy systems from cradle to grave. The work is designed to (1) advance common definitions of environmental and socioeconomic costs and benefits of bioenergy systems, and (2) quantify opportunities and risks associated with all aspects of sustainable bioenergy in specific contexts. This work supports to develop the resources, technologies and systems needed to grow a biofuels industry in a way that protects the environment as well as to promote economic development and providing conditions that support human and societal health. The work is being accomplished by using a combination of model projections and empirical data to test scientific approaches for assessing and monitoring bioenergy production processes at various stages of the supply chain. The end result of this project will be the development of Best Management Practices (BMPs) for sustainable bioenergy production.

2:05PM  International Standards on Sustainability
Dr. Keith Kline (ORNL)

A strategic goal towards meeting the RFS2 targets is to deepen the understanding of the environmental, economic, social and energy security benefits of biofuels, biopower, and bioproducts. This project supports research to improve the DOE capacity to assess the environmental and socioeconomic impacts of biofuels, and the crucial role of global interactions on the viability of the domestic biofuel industry. The global market for biofuels and other commodities affect the domestic biofuel industry through competitive forces that may spur or slow its development. In addition, there is a need to understand and document the indirect national/global socio-economic costs and benefits of biofuels. Developing this understanding requires methods and capabilities to analyze biofuels in the global context, and to evaluate alternative scenarios of technologies, policies and market conditions for a sustainable national biofuel industry.

2:35PM  Feedstock Resource Availability and Knowledge Discovery Framework (KDF)
TBD

Biomass feedstock price projections are needed to enable biofuels commercialization efforts. This project employs an economic modeling framework (POLYSYS) to report county-level feedstock supplies (e.g., agricultural residues, dedicated biomass feedstocks, and forest resources) as a function of price, scenario, and year. Farmgate prices of about $62.00 dry ton⁻¹ are likely required to provide 325 million dry tons year⁻¹ in 2022 to meet EISA and biopower demands. Assuming a yield of 85 gallons dry ton⁻¹, this farmgate price alone would comprise almost 25% of a $3.00 minimum ethanol selling price. Thus, changing economic conditions and evolving feedstock production strategies warrant maintenance of revised feedstock price projections.

1:30PM-3:15PM  Tech Session 2 : Turfgrass Session
Moderator: Garrett Pommeranz

This technical session will feature the top companies discussing their latest innovations in equipment for the turf grass industry. Topics will include precision agriculture's role in reducing water usage in turf environments and technological innovations of equipment to improve efficiency and reduce inputs in
managing turf grass. The Outdoor Power Equipment Institute will present the latest standards and regulatory developments that impact the manufacturers and users of turf grass equipment.

1:30PM Introduction
1:35PM Using Precision Agriculture Principals to Improve Water Use Efficiency
Dana Lonn, Managing Director, Center for Advanced Turf Technologies (CATT)
The Toro Company
1:55PM Hybrid Technology in the Turf Grass Industry
Lynn Westbrook, Principal Engineer, Jacobsen
2:15PM Outdoor Power Equipment (OPE) and Small Engines: Overview of Standards Development, Regulation, and Legislation
Dan Mustico, Director, Industry Affairs
Outdoor Power Equipment Institute (OPEI)
2:35PM TBD

3:30PM-5:30PM Tech Session 3: ASABE Tractor Seatbelt and ROPS Usage
Moderator: John Fisher
Agriculture ranks fourth among U.S. industries for work-related fatalities. Tractors are common to all farm operations. Fatalities associated with agricultural machinery commonly involve farm tractors and rollover incidents (i.e., the tractor tips sideways or backward and overturns, crushing the operator) account for 46% (Minnesota) to 76% (Georgia) of all farm tractor-related fatalities. ASABE and Agricultural Engineers have played a significant role in reducing tractor related fatalities. Much of this decline can be directly attributed to improved safety design by agricultural engineers, including rollover protection structures (ROPS).

3:30PM-5:30PM Tech Session 4: Telematics
Moderator: Joe Luck
Incorporating telematics into agricultural operations is quickly becoming a popular option on field equipment, especially for large operations looking to improve fleet management and field efficiency. The goal of this session is to highlight several telematics systems currently offered by manufacturers. Discussions will focus on system functionality, current trends in utilization, and future opportunities and challenges for these technologies.
3:30PM Introduction
3:35PM AGCommand/Fuse Technology
Marlin Melander, AGCO
3:55PM Precision Land Management System
Chris Carrier, CNH
4:15PM Machine Sync
Bob Dyar, John Deere
4:35PM Autonomous Guidance
Rhett Schildroth, Kinze
4:55PM Slingshot
Josh Skanderup, Raven

5:30PM-6:45PM “Getting on Track for Your Career” –
Panel Discussion for Preprofessionals
Moderator: Joe Luck/Garrett Pommeranz
Panelists: Tony Kajewski, John Deere
Jana Buchholz, CNH
Maynard Herron, AGCO

In today’s job market, it’s never too early to start planning your first steps into what will hopefully be a long and successful career. Panelists will share thoughts on strategies for students to secure the internships they want and how to make the most of those internships. Additional remarks will focus on how to acquire additional skills beyond the classroom to improve your chances of getting the job you want and how to utilize skills from human resource personnel to get your application noticed.

7:00PM-9:00PM  Student-Industry Dinner and Bowling
Located at the Sports and Social Club, 427 S. 4th Street, Louisville
Ticket includes dinner and bowling.
COST: $40.00 professional; $25.00 Student

Tuesday, February 11
8:00AM-10:00AM CPD #2 FEA Best Practices
Instructor: Mark Swenson, Application Engineer, ANSYS Inc.
Level of Difficulty: Entry Level
Finite Element Analysis (FEA) is a powerful tool in product development by allowing for multiple design iterations to be tested virtually saving time and money. However, accurate FE results are only a product of the data that goes into the analysis. Often incorrect assumptions are made and though the software produces a solution, the results are meaningless. Furthermore, there are competing needs that a Computer Aided Design (CAD) model needs to fulfill. The model needs to be useful for design, manufacturing, and analysis. Poor modeling for one of these needs adds increased time and cost to the design phase.

This two hour workshop will discuss best practices with regard to using CAD models for FEA. Emphasis is placed on how to prepare good modeling geometry for analysis, simplifying geometry to reduce analysis run time, determination of loading and how to apply loads to the model, and determining the accuracy of analysis results. There will also be a discussion on how to use the FEA results to modify the conceptual model to improve accuracy. A workflow demonstration will be performed illustrating the process from CAD model to analysis solution.

This workshop is geared towards design engineers that interact with CAD models

COST: $50.00

10:00AM-12:00PM  Tech Session 5: Turn Data into Irrigation Decisions
Moderator: Nowell Moore
Remote sensing, connectivity, cloud computing and increased land value have combined to enable a sometimes overwhelming catalog of data from the farm field. Leveraging this information to improve
productivity is the exception, not the norm. The irrigation industry is actively developing tools and accompanying standards to streamline and improve the practical use of this information by ag producers. Attend this session to learn more about the specific technologies, standards efforts and challenges ahead for the irrigation sector.

10:00AM-12:00PM  Tech Session 6: The World of Ever Evolving Equipment Standards and Regulations
Moderator: Scott Cedarquist, ASABE
This session will overview key standards development activities and regulations impacting agricultural equipment. This year’s session will once again include international perspectives as well as provide detailed updates on key North American initiatives.

10:00AM  Introduction
10:05AM  Evolving European Standards & Regs: The Tractor Mother Regulation
Antoon Vermueleen, CNH
10:25AM  An Overview of Earth-Moving Equipment Standards Initiatives
Dan Roley, CAT
10:45AM  The ISO 4254 Portfolio: It’s All About Safety, Safety, Safety
Chris Schneider, Deere
11:05AM  2014 Regulatory Snapshot
TBA

12:00PM-1:30PM  AE50 Recognition Luncheon

1:30PM-3:30PM  Tech Session 7: AE50 Showcase 1
Moderator: Brian Huenink

1:30PM-3:30PM  Tech Session 8: Supplier Showcase
Moderator: Neal Stoffel
AETC 2014 will again feature some of the world’s finest agricultural equipment component/systems manufacturers and distributors. These companies will be presenting the newest innovations and most up-to-date information on a variety of agricultural machinery systems of interest to attendees. The supplier companies presenting will also have tabletop displays of their products, literature and contact information. Don’t miss out on this opportunity to learn about the latest developments, from the world’s best agricultural OEM suppliers.

1:30PM  Introduction
1:35PM  Electronic Liquid Blockage Monitor
Jason StewartCDS-John Blue Co.
2:00PM  Moisture Tracker™
Robin Starkenburg, DigiStar LLC
Keith Johnson, Kondex Corporation
2:50PM  OmniRow®, SmarTrax™, and Viper 4 Guidance Technologies
Ryan Molitor, Raven Industries

3:30PM-5:30PM  Tech Session 9: AE50 Showcase 2
Moderator: Brian Huenink

3:30PM-5:30PM  Tech Session 10: Supplier Technology – Plastics in Agricultural Equipment Design
Moderator: Andy Theisen

With the increased industry demand for faster travel speeds, reduced compaction, and lower energy costs, equipment designers are challenged to find new material selections for components. In many cases, designers select plastic or composite materials. The use of these materials in component design requires design considerations that are different from traditional metals. This session will present these design considerations, provide process comparisons, and discuss alternatives for recycling the material at the end of life.

This session will consist of 4 suppliers of plastics to the agricultural equipment market. They will present information on their respective company’s products and capabilities. There will also be a presentation on the topic of recycling agricultural plastics.

3:30PM  Introduction
3:35PM  Plastics Solutions: Options Rather Than Ultimatums
Tim Kleiber, Business Solutions, Charloma, Inc.
3:55PM  Plastics for Longer Life
Tim Stellmacher, Midwest Regional Manager, Igus
4:15PM  40 Years of Rotational Molding in Agricultural Equipment
Dan Grimes, Sr. R&D Engineer, Centro Inc.
4:35PM  Reclaiming Energy from Non-Recyclable Agricultural Plastics
Matthew J. Lawrence, Assistant Professor, Alfred State

Wednesday, February 12
7:00AM-9:00AM  AETC Planning Meeting