



**California/Nevada Section
Bimonthly Update
March 1, 2008
Thirteenth Edition**

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* **CA/NV Section Meeting**

On the evening of February 13th, 2008, approximately 130 members, students, and guests met for our next CA/NV Section Meeting. It was held after the World Ag Expo/Tulare Farm Show at the Edison AgTAC Center in Tulare, CA. Dr. Balaji Sethuramasamyraja informed us on the use of GIS and GPS systems for Precision Agriculture. Further information has been posted at www.asabecanv.org.

* **2008 Section Meeting Sponsors**

On behalf of the Section, we thank our generous members who directly, or through their companies, donated to our program this year. Their support has been vital in sponsoring the poster competition, assistance to ¼ Scale tractor teams, and reduced-cost student dinners.

Ag Industrial Manufacturing

Claude Brown, PE & Paul Burkner, PE, Lodi, CA
www.agindustrialmanufacturing.com

Bently Agrowdynamics

Donald E. Bently, PE & Jim Usher, PE, Minden, NV
www.bentlyagrowdynamics.com

Concepts In Controls

Doug & May Stevens, Visalia, CA
www.conceptsincontrols.com

Hydratec

Fred Hamisch, PE, Delano, CA
www.hydratec.com

Irrigation Design and Construction

Michael Conrad, Patterson, CA

Rain for Rent

Mike Grundvig, PE, Bakersfield, CA
www.rainforrent.com

John Deere Water Tech. (Roberts Irrig)

Paul McFadden, Patterson, CA
www.johndeerewater.com

Valley Irrigation Service

Patrick Murray, Madera, CA

* **Poster Awards**

Congratulations to our Poster Competition winners!

Undergraduate Poster Prize 1: Geospatial Wine Grape Quality Modeling for Optimum Sampling Sites Estimation – Preliminary Study (Harvinder Singh, Balaji Sethuramasamyraja, Sivakumar Sachidhanantham, and Robert L. Wample)

Undergraduate Poster Prize 2: Cal Poly 1/4-Scale Tractor Design Team

Graduate Poster Prize 1: Unmanned Aerial Vehicle For Precision Agriculture (Nick Simonian, Balaji Sethuramasamyraja, Darnell Austin, Nitagour P. Mahalik, and Matthew Yen)

Graduate Poster Prize 2: Feasibility of a Micro Drip SCADA System to Mitigate Crop Freeze Damage
(Diganta Adhikari, Balaji Sethuramasamyraja, and Matthew Yen)

*** Engineer of the Year, William J. Chancellor, P.E.**

William J. Chancellor, P.E., ASAE Fellow, member of the National Academy of Engineers, and Professor Emeritus of the Biological and Agricultural Engineering Department at UC Davis is the recipient of the 2008 California/Nevada Section Engineer of the Year Award for his outstanding contributions as a researcher, educator, and extender of agricultural engineering knowledge. Of particular note was Bill's recent tireless work to get the Berry Combine, the World's First Self-Propelled Combine, recognized as an ASABE's 49th Historic Landmark on October 20th, 2007 in Visalia, CA.

Among his other accomplishments, he is internationally recognized as a pioneer in the study of soil physical properties with research in the area of soil dynamics, energy use and efficiency, agricultural mechanization with particular emphasis on appropriate technology for developing countries. His research activities helped reduce the mystery associated with the phenomenon of compaction of agricultural soils. Chancellor has taught university-level classes and developed new courses involving soil mechanics, soil-machine relations in tillage and traction, stability and traction of off-road vehicles, energy relations in agricultural production, equipment technology for agriculture in developing countries, and farm machinery management. Bill has published 120 publications, of which 92 were published in refereed publications, and three were book chapters. He initiated an agricultural engineering index system for cataloguing articles in Transactions of the ASAE and other agricultural engineering publications and developed a comprehensive database with appropriate keywords, which has benefited engineers worldwide. A dedicated and loyal 50-year member of ASAE, Chancellor has provided leadership on numerous Power and Machinery and International committees.

*** 2008-2010 Section Officers**

Chair - Carolyn M. Jones, PE, USDA NRCS

Secretary/Treasurer - Dr. Stuart Styles, PE, Cal Poly BRAE & ITRC

Past Chair & Nominating Committee Chair - Victor Duraj, UC Davis BAE & WCAE

Program Chair - Traeger Cotten, PE, Southern California Edison

Awards - Dr. Richard Cavaletto, PE, Cal Poly BRAE Chair

Membership - Ginger L'Heureux, Summers Engineering, Inc.

Industry/Student Liaison - Dr. Balaji Sethuramasamyraja, CSU Fresno Ind. Tech.

Public Relations - Betsy Gerwig, PE, JM Lord, Inc.

If you are interested in becoming an officer (vice chair, career development), contact Victor Duraj at vduraj@ucdavis.edu.

*** Sponsor Highlight - Valley Irrigation Services, Inc.**

Excerpted with permission from <http://www.vish20.com/>.

Mechanical irrigation is a major focus at Valley Irrigation Services, Inc. Valmont Industries is our Center Pivot and Linear Irrigation system supplier because they are the most dependable and they have consistently sought the best ways to apply advancing technology to products and processes alike. Their performance is the direct result of the skills, dedication, and hard work of each member of the Valmont team.

We're announcing the widest range of irrigation equipment in the industry. The new Valley 7000 series is joining the 8000 series to offer customers choices from the leader in irrigation technology. The Valley 8000 series has been recognized as the industry standard for meeting producer demands on all types of fields all over the world. With the addition of the new Valley 7000 series for less

demanding fields, Valley now offers a choice of irrigation machines delivering consistent and superior performance. Notable features include:

- Unmatched durability and reliability
- Valley provides the most control options in the industry with the best warranty
- Multiple-function equipment allows you to germinate, fertigate, chemigate and manage salinity through leaching
- Pivots to fit all field applications - 6 5/8" (168 mm), 8 5/8" (219 mm) and 10" (254 mm) diameter pipe for all field sizes; Ultra-High Profile, High-Profile, and Low-Profile and multiple floatation drive unit options to meet your crop and management needs
- Optional pivot flex enables pivots to adapt to slopes, rough terrain, and weather conditions
- Unique span-connection joint allows the greatest slope/torsion absorption in the industry, without compromising flow rates
- 109' to 205' (33 m-62 m) spans-built to last
- Pipeline and truss arches maintain even distribution of weight and loads
- Polyether gaskets for longer leak-free life

To learn more, contact Valley Irrigation Services today and ask about the Valley 7000 and 8000 series.

Valley Irrigation Services, Inc. Main Office
25221 Avenue 20 1/2
Madera, CA 93637
559-673-8900 Phone
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sales@vish2o.com

*** UCD's Singh Inducted to NAE**

On February 11th, UCD announced that R. Paul Singh, distinguished professor of food engineering at the University of California, Davis, whose research has applications in areas ranging from food processing to space exploration, has been elected to the National Academy of Engineering (NAE).

Singh, who holds a joint appointment in the departments of Biological and Agricultural Engineering and Food Science and Technology, is one of 65 new members and nine foreign associates elected to the academy this year. Singh is the 9th faculty member from UCD to be elected to the NAE.

"Professor Singh's research has profound importance to a fundamental human concern -- the safety of our food," said Enrique Lavernia, dean of the College of Engineering. "His contributions to our understanding of technology's interaction with food chemistry has implications for sustenance in daily life as well as extended space travel. The College of Engineering is extremely proud that Professor Singh's achievements are being recognized in this way."

Charles Bamforth, chair of the Department of Food Science and Technology said: "We are so proud of Paul; this is supreme recognition of his brilliance as a researcher. He is also a remarkable teacher, so innovative and productive. He is an inspiration to us all."

Singh, a UCD faculty member since 1975, has a distinguished portfolio of research discoveries in areas such as energy conservation, post-harvest technology, freezing preservation, and mass transfer in food processing. His laboratory is currently working on the design and development of food processing equipment for NASA's manned mission to Mars. The research team also is conducting studies related to fluid flow and heat transfer during thawing and freezing and is designing packaging systems for more efficient cooling of strawberries.

He has mentored over 100 graduate students and postdoctoral scholars while at UCD, and now teaches under- and post-graduate courses on unit operations in food processing and on heat and mass transfer in food engineering.

Singh earned his Ph.D. in engineering from Michigan State University in 1974. He also holds an M.S. from the University of Wisconsin-Madison, and a B.S. from Punjab Agricultural University, India, both in agricultural engineering.

In 2007, Singh received the Kishida International Award from the ASABE. He was elected to the Food Engineering Hall of Fame in 2003, and in 2000 was selected as a fellow in both the Institute of Food Technologists and the ASAE. He currently is editor-in-chief of the Journal of Food Engineering published by Elsevier Ltd.

*** ¼ Scale Tractor Teams' Websites**

Please visit our ¼ Scale Tractor Teams' websites below.

Cal Poly's Poly Built - <http://www.quarterscale.calpoly.edu/>

Modesto J.C.'s Pullin' Pirates - <http://virtual.yosemite.cc.ca.us/agens/clubs/AgMech/scale.htm>

*** Black History Month (February) – Elijah McCoy Oiler**

Excerpted from http://www.africawithin.com/bios/elijah_mccoy.htm and Wikipedia.

Elijah McCoy (~1843-1929) was a black American Engineer/Inventor who made important contributions to the design of railroad locomotives after the Civil War, most notably, the McCoy Oiler.

Locomotives were heavy, and subjected their moving parts to considerable wear. Lubrication was essential for these parts--many of which were applied to railroad axles that carried the full weight of locomotives and railroad cars. Engineers had arranged for them to rotate within oil-filled chambers. The rotation of the axle carried oil into its bearing, and the oiled bearing allowed the axle to turn freely while reducing wear. However, the direct use of oil-filled chambers did not apply to a locomotive's steam engine, which provided its power. Many parts of this engine operated under the pressure of steam, which pushed oil away from the moving parts making it necessary to stop the engine when oiling it. McCoy saw that he could keep the engine running by using steam pressure to pump the oil where it was needed.

Working in a home-built machine shop in Ypsilanti, McCoy devised an invention that became known as the lubricating cup that relied on a piston set within an oil-filled container. Steam pressure pushed on the piston and thereby drove the oil into channels that carried it to the engine's operating parts. McCoy received a United States patent for this device in 1872. First installed on operating locomotives of the Michigan Central Railroad, it provided lubrication that was more regular and even than could be achieved by the old method of using an oilcan during intermittent stops. This proved to be quite useful to locomotive life and maintenance. Versions of this cup became standard components on many types of heavy machinery.

According to some sources, the saying the "real McCoy", meaning the real thing, derives from Elijah's invention, however this is disputed.

McCoy's patent application - http://www.africawithin.com/bios/mccoy_patentdwg.gif

*** Women's History Month (March) – Awatif Hassan, ASABE Fellow**

Awatif Hassan holds the unique position of being the first woman in the United States and Canada to graduate with a Ph.D. degree in agricultural engineering. She has been a tremendous role model for all engineers, especially women. Hassan was inducted as ASABE's second female Fellow in 2007. Professor emeritus of the forestry, biological and agricultural engineering departments at North Carolina State University, Hassan was honored and recognized as an ASABE Fellow for outstanding contributions to forest, biological and agricultural engineering education, research, and dedicated service to ASABE and other national and international organizations.

In addition to having taught basic engineering and agricultural, biological and forest engineering courses, Hassan has established an innovative research program in the field of forest engineering. Her appointment as director of the Industry-NCSU Forest Equipment Cooperative recognized her expertise in the area of machine design and soil-machine interactions. She established a comprehensive research program in forest machine systems involving sensitive soils, with critical emphasis on reconfiguration of machine parameters to minimize soil damage.

A 33-year member of ASABE, Hassan has provided leadership on numerous Structures and Environment, Power and Machinery, Forest Engineering, and Publication Council committees. She has participated as a reviewer of the Forest Engineering section, held the position of associate editor for the P&M division, and contributed to other technical journals and editorial boards. Hassan was one of 238 engineering women across the nation recently recognized in the American Society of Civil Engineers book entitled, Changing the World: True Stories of Women Engineers.

- Bimonthly Update contributors: Carolyn M. Jones, Victor Duraj, Traeger Cotten, Dr. Balaji Sethuramasamyraja, Bruce Hartsough, Dolores Landeck
- For previous editions of the Update, please visit www.asabecanv.org.
- If you have questions or comments, feel free to contact Carolyn at carolyn.jones@ca.usda.gov.
- If you have ideas for Update items or would like to get involved in the leadership group, let us know.
- Sent to 346 Members.