California/Nevada Section Bimonthly Update March 2, 2009 Nineteenth Edition

* CA/NV Section Meeting

On the evening of February 11th, 2009, approximately 150 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. John Schaap, PE and Betsy Gerwig, PE spoke about their role helping dairymen navigate the regulatory process through design and monitoring. We were also glad to welcome first time World Ag Expo visitor and ASABE Director of Membership, Mark Crossley, to our meeting.

* 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

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

Irrigation Design and Construction
Michael Conrad, Patterson, CA

John Deere Water Tech. (Roberts Irrig)
Paul McFadden, Patterson, CA
www.johndeerewater.com

MBK Engineering
Sara Harper, Sacramento, CA
www.mbkengineers.com

Provost & Pritchard
Kevin Johansen, Fresno, CA
www.ppeng.com

Rain for Rent
Mike Grundvig, PE, Bakersfield, CA
www.rainforrent.com

TechnoFlo Systems
Steve Huth, Porterville, CA
www.technoflo.com

Valley Irrigation Service
Patrick Murray, Madera, CA

* Poster Awards

Congratulations to our Poster Competition winners!

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

Graduate Poster Prize: Unmanned Aerial Vehicle For Agriculture and Terrain mapping by Nick Simonian

*** Engineer of the Year, John Schaap, P.E.**

John Schaap, Principal at Provost & Pritchard Engineering Group, Inc. was chosen as the 2009 ASABE CA/NV Section Engineer of the Year.

John is a principal project manager at Provost & Pritchard Engineering Group, Inc., a diversified agricultural and civil engineering firm with offices in Fresno, Clovis, Visalia, Oakdale, and Bakersfield. The firm works on municipal issues and agricultural issues having to do with water, animal facilities, surveying, geographic information systems, planning, environmental compliance, and other agricultural services. John works primarily with dairy and feedlot clients, helping them plan new facilities, doing complete designs of all structures and infrastructure, helping to procure county land use permits, Regional Water Quality Control Board permits, and Air District permits; and helping with ongoing regulatory compliance.

John graduated from the UC Davis in 1997 with an MS in Biological & Agricultural Engineering. He graduated from Cal Poly in 1995 with a BS in Agricultural Engineering.

John is an active member of his community, has been a dairy industry leader, and just recently became a member of Class 39 of the California Agricultural Leadership Program. He has been involved with his community through his local church, serving as a high school youth group leader, interacting with kids from numerous Visalia area high schools. John also served as a Kings County Planning Commissioner from 1999-2003, participating in many local land use decisions. As a consultant, he has helped pave the way for many agricultural clients in dealing with new and challenging regulatory issues on several fronts.

John and his wife, Christine, live in Visalia where they raise their four children. Christine works as a homemaker, but continues to maintain her Pest Control Advisor (PCA) license, after receiving her BS degree in Soil Science from Cal Poly and working as an agronomist for the JG Boswell Company for five years.

*** ASABE Fellows-Elect, Paul Burkner, P.E.; Wes Wallender**

Paul Burkner, PE, of Lodi, CA, and Wesley W. Wallender, PE, of Davis, CA, have been chosen as two of the fifteen individuals of extraordinary accomplishment who will be inducted to our 2009 class of ASABE Fellows.

Paul F. Burkner is awarded the grade of Fellow for outstanding contributions to agricultural engineering, especially for successful designs that improve the harvesting and handling of agricultural products. He is the Vice President of Ag Industrial Manufacturing (AIM), Inc., in Lodi, CA. Paul got his B.S. in Agricultural Engineering in 1964 from Cal Poly and an M.S. in Agricultural Engineering in 1966 from the University of Hawaii. He is a registered Mechanical Engineer, Agricultural Engineer, and Certified Fluid Power Engineer in California.

Paul designs agricultural and industrial machinery and has brought to fruition equipment for specialized agricultural and industrial applications. Examples range from developing and building equipment to refurbish several hundred miles of the California Aqueduct to the production of mechanical equipment to harvest thousands of acres of high quality wine grapes. Mr. Burkner is a keen observer who can lucidly carry out that most important step in the engineering design process: stating the problem correctly. No solution can be effective if the engineer is addressing the wrong problem, and Paul is a master at defining the situation, the objectives and the constraints. He is extremely creative, as attested by his high number of successful designs.

Wes Wallender is a professor of hydrology and engineering, in the biological and agricultural engineering department, and land, air, and water resources department, UC Davis. According to the ASABE Fellows selection committee, he was chosen “for an outstanding record of accomplishments and contributions to irrigation engineering and technical literature as a researcher, educator, and leader.”

Wes has a B.S. from Oregon State University in Ag Engineering Technology and one from Utah State University in Agricultural and Irrigation Engineering. He then got an M.S. from UCD in Water Science and a Ph.D. from Utah State University in Engineering. His research includes modeling and measurement of precipitation- and irrigation-driven watersheds from submeter to kilometer scales with specific subject matter interest including water, energy and chemical transport for sustainable agroecosystems. Wes teaches undergraduate courses in fluid mechanics, GIS and spatial analysis, and irrigation system design and graduate courses in continuum mechanics as well as surface irrigation hydraulics. Additionally, Mr. Wallender has been the Director of the UC Drainage/Salinity Research Program, consulted on mine wastewater disposal in Utah, and has provided advise to the governments of France, Egypt, Oman, Mexico, Morocco, China, Brazil, and India and to the International Rice Research Institute (Philippines) and the International Water Management Institute (Sri Lanka).

Both will be inducted at a ceremony on June 23, 2009, during the ASABE Annual International Meeting, being held in Reno, Nevada.

*** UCD’s Zhongli Pan Receives Presidential Award**

Zhongli Pan of the University of California, Davis, has been presented with a Presidential Early Career Award for Scientists and Engineers, the nation's highest honor for professionals in the early stage of their independent scientific research careers. Pan, an associate adjunct professor in the Department of Biological and Agricultural Engineering, along with 65 other researchers from throughout the US, received the award December 19 during special ceremonies in Washington, D.C.

The Presidential Early Career Awards were established in 1996 to honor the most promising researchers in the United States within their individual fields. Each year, nine federal agencies nominate scientists and engineers, "whose work shows exceptional promise for leadership at the frontiers of scientific knowledge." The participating federal agencies provide the award recipients with up to five years of funding to help finance their research in support of "critical government missions."

Pan, 47, has been a member of the UC Davis faculty since 1995. He also serves as a research engineer at the USDA ARS Western Regional Research Center. His research focuses on enhancing the value of agricultural products - as well as better ensuring food quality and safety - by improving postharvest processing technologies. One of his current research projects is directed at developing infrared radiation heating technology for drying, blanching, disinfecting, and removing pests from fruits, vegetables, grains and nuts. He also studies rice milling and new uses for the byproducts of rice processing.

*** ¼ Scale Tractor Teams’ Websites**

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

*** UC Davis E-Week Presentation**

On January 27, 2009, Past Chair Victor Duraj made a short presentation about 2009's E-week to a group of 45 elementary and middle school teachers attending a half-day Master Teachers seminar at UC Davis' Western Center for Ag Equipment. The master teachers mentor/supervise new teachers

still going through credential programs. This particular seminar included a variety of presentations, including one on agricultural education. The E-week presentation included distribution of grade level-appropriate science and engineering activities downloaded from the E-week web site. Feedback from the master teachers and also from the UC Davis-based seminar leaders was very positive. Post-event comments included lively mention of ways of incorporating math and ag & bio in fun and effective activities. It appears that there is ample opportunity to reach out to teachers across the board about engineering.

*** Black History Month (February) – Charles Davis, P.E., NRCS State Conservation Engineer**

In honor of Black History Month, we honor Charles K. Davis, PE, State Conservation Engineer for USDA's Natural Resources Conservation Service (NRCS) in Davis, California. Charles has been a great resource in conservation and is a mentor to all of the engineers that have worked with and for him.

Charles grew up in New Mexico where he got a BS in Civil Engineering. He began working with NRCS (then SCS) in 1969 in Roswell and then moved to Santa Fe in 1970 where projects included irrigation diversion dams, inlet works, and water control and conveyance structures on the Rio Grande, Rio Chama, and other rivers in northern New Mexico. Plans required input from people in predominantly Spanish speaking communities and Indian Pueblos. In 1974, SCS brought him up to Davis where he joined the State Design Unit and performed complex hydraulic and structural design work on various flood prevention projects (PL-566) in California. Channel design discharges varied from 2,000 to 10,000 CFS. Work involved bridges, detours, and environmentally sensitive areas. The duties included meeting with various county flood control district engineers, professional consultants and environmental agencies. In 1976, he was promoted to State Design Engineer where he supervised the State Design Unit Staff of 6-15 engineers/techs, coordinated design work for all PL-566 watershed projects, participated in public meetings to review alternatives, and negotiated A & E design contracts with consulting firms.

Charles has been the NRCS State Conservation Engineer since 1988. He directs the NRCS Engineering Program in California, manages and supervises State Engineering Staff, formulates State technical policies and procedures, approves engineering work and delegates authority, reviews work plans and EIS/EIR documents, supervises the development of practice standards, handbooks, guidesheets, software and other technical material, and provides engineering design and construction assistance to Nevada, Hawaii, and the Pacific Basin.

Over the years, Charles has earned a number of awards including an NEA Presidential Design Achievement Award (1984), USDA Group Superior Service Awards (1986, 1995), a few SCS Certificates of Merit (1990, 1992), and a National Performance Review "Hammer Award" from VP Al Gore for California's Emergency Watershed Protection Program.

Charles has been married for 28 years with two sons, coordinates (with wife, Vicki) and presents marriage preparation course to engaged couples, is a member of the Association of State Dam Safety Officials and National Association of Conservation Districts, Toastmasters International, and Blacks for Effective Community Action (BECA), and has earned his black belt from U.S. Soo Bahk Do, Karate.

*** Women's History Month (March) – Mary Leigh Wolfe, ASABE Fellow, Virginia Tech**

For Women's History Month, we honor Mary Leigh Wolfe, professor and assistant department head for teaching in the biological systems engineering department at Virginia Tech. For outstanding contributions to agricultural and biological engineering education and research and for her dedicated service to ASABE and ABET, ASABE was pleased to welcome Mary Leigh Wolfe as the first woman to be elected Fellow.

Wolfe teaches undergraduate and graduate courses in non-point source (NPS) pollution modeling and control, watershed management and nutrient management. She is currently serving as co-principal investigator for a National Science Foundation funded project to reformulate the curriculum for the

undergraduate bioprocess engineering option in the Biological Systems Engineering Department at Virginia Tech, which is expected to serve as a model for other programs in the College of Engineering.

Wolfe is widely recognized for her expertise in the area of NPS pollution control and modeling. She led the development of two NPS pollution management tools: A Best Management Practice (BMP) Handbook for Plasticulture, and The Virginia Phosphorus Index (P-Index) used by extension and state agency personnel and the USDA NRCS practice standard for nutrient management, respectively.

Wolfe has made significant contributions to engineering education through years of service on the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET). As past program evaluator, team chair, executive committee officer, and currently serving as Vice Chair for Operations of the EAC, she is involved in the evaluation of engineering programs across the country. She provided leadership in offering annual ABET evaluator training at ASABE meetings, and led an ASABE task group in developing a white paper on accreditation of biological engineering programs.

A 21-year member of ASABE, Wolfe has served on the Board of Directors as trustee and professional development director, and contributed to Vision 2007 ASAE Leadership conference held in 1993. She served for five years as ASABE representative to the Engineering Accreditation Commission of ABET, and has contributed to various Soil and Water committees and Virginia section. She is currently serving on the Nominating committee, Hydrology Group, Engineering & Technology Accreditation, and Robert Stewart Engineering-Humanities Award committees.

Her past awards and honors include two Soil and Water Conservation Society Merit awards; Virginia Tech's VCE Natural Resources and Environmental Management Flagship team award; USDA Secretary's honor award; Organization for Economic Cooperation and Development: Biological Resource Management for Sustainable Agricultural Systems Fellowship honor; and ASABE Soil and Water Division Outstanding Reviewer award. Other professional memberships include the American Society for Engineering Education and Soil and Water Conservation Society. She is a member of three honorary societies.

For information on Mary Leigh Wolfe, visit http://www.bse.vt.edu/08/dept/bio.php?person=mlwolfe and for information on other notable women in history, visit the National Women's History Project at http://www.nwhp.org/aboutnwhp/history.php.

*** 1-2-3-4-5 Member Highlight – Frank Pierce**

Frank Pierce is a Registered Agricultural Engineer and Environmental Assessor I, the founder of Lee and Pierce Inc who, at 75, is still working in Agriculture. He began working in 1947, while in High School for a Civil Engineer specializing in Agriculture and received his BA degree in 1958 from Mexico City College (now University of the Americas). Because of his experience in agriculture, he was Registered as an Agricultural Engineer by the State of California in 1976. He is a holder of several US and international patents relating to Agriculture and Food Processing.

One - piece of advice I'd give new graduates:
"Agriculture is the foundation of a healthy society. Food and agricultural products are a basic need of every person. You will, by working in the engineering and biological profession, have the opportunity to provide a positive impact on the world's future and the health of people. Join the ASABE, persue your goals and become a Registered Professional Engineer."

Two - things I learned on the job that I didn't learn in college:
1 – "The importance of learning communication skills that include speaking and writing with a clear vision of each goal."
2 – "The importance of involvement in both Professional and Governmental affairs that include Local, State and National Boards or Committees. Engineering insight can often be the catalyst to positive social long range change, keeping our world healthy."

Three - concepts I learned in college that I use regularly:
“History, Political Science, and Communication – As my degree is in History and Political Science, I have used their concepts in how design and technical implementation is transmitted to people without engineering knowledge. This is important because of the resistance by many people to technical concepts and the potential of misunderstanding impacts of technology to their lives.”

Four - favorite technical aspects of my job:
“My job now is primarily working with environmental issues with and on numerous boards and committees that are addressing our rapidly changing world. As I drive around the western States, I see many places that have been touched and have provided input that has been positive part of a project.”

Five - places I've been or things I've seen in my career:
“I have had the good fortune to be on the ground floor for the development of both field and process packaging of fresh produce. I’ve worked in several Latin countries helping to improve production for environmental sustainability, such as banana production and packaging in Guatemala, Honduras, Ecuador and The Dominican Republic. I lead the design of processing equipment and facilities used in Korea, Chile, and the US. I have also been on several Archeological expeditions in Mexico where knowledge of engineering and agriculture helped understand how the ancient people built their world.

Six - the hidden advantage of the Engineering education:
“The technical knowledge gained with the broad scope of your education will provide a foundation for many avenues to success through business, politics, teaching, inventing, and design. Add to this the fact we all need to eat and enjoy the fruits of Agriculture, you have a WIN-WIN future.

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- For previous editions of the Update, please visit www.asabecanv.org.
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- If you have ideas for Update items or would like to get involved in the leadership group, let us know.