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## **EDUCATION**

Ph.D. (2004) Biological and Agricultural Engineering Dept. University of California Davis, USA.

M.S. (1997) International Agricultural Development Program. University of California Davis, USA.

B.S. (1987) Agronomy Engineer. Autonomous University of Chihuahua, México.

## **RESEARCH INTERESTS**

Natural resource conservation, Coupled natural-human systems, Precision farming, Sensor development, Sensor networks, Instrumentation, Soil dynamics in tillage, Spatio-temporal variability and mapping of information.

## **APPOINTMENTS**

- February 2007 - date. Assistant Research Professor. Center for Precision Agricultural Systems. Washington State University. Prosser, WA., USA.
- April 2006 - January 2007. Research Associate. Center for Precision Agricultural Systems. Washington State University. Prosser, WA., USA.
- December 2003 - April 2006. Full time Researcher. National Institute of Agricultural Research (INIFAP). Torreón, Coahuila, México.
- September 2005 - December 2005. Adjoint Professor, Chapingo University. Department of Arid Lands (URUZA). Bermejillo, Durango, México.
- April 2000 - June 2003. Teaching Assistant, Biological and Agricultural Engineering Department. University of California Davis, USA.
- July 1999 - Oct. 2002. Research Assistant, Biological and Agricultural Engineering Department. University of California Davis, USA.
- September 1987 – July 1993. Farm Manager for production of fresh vegetables, Global Produce S.A. Colonia Nuevo León. Baja California, México.

## **PATENTS**

Soil profile force measurement using an instrumented tine. United States Patent No. US 6,834,550 B2. Dec. 04.

## **HONORS AND AWARDS**

- Graduate Student Research Award, 3<sup>rd</sup> place in Ph.D. category. American Society of Agricultural and Biological Engineers (ASABE). July 2005.
- Jastro Shields Research Award. University of California Davis (1996 and 2000).

## **SYNERGISTIC ACTIVITIES**

- Participant in monthly radio broadcasts of WSU Small Farms Extension Program on topics about advanced technologies available to small farmers in the State of Washington. Radio KDNA 91.9 FM, Yakima, WA.

- Chairperson of Soil Dynamics Research Committee (PM 45). American Society of Agricultural and Biological Engineers (ASABE). 2005-2006.
- Reviewer of soil-dynamics manuscripts submitted to journals: Transactions of the ASABE, Biosystems Engineering, and Soil & Tillage Research.
- President of Mexican Graduate Students Association (MGSA) at UC Davis. 1996-1997.

## **LANGUAGE AND COMPUTER SKILLS**

- Excellent spoken and written bilingual (Spanish/English) language skills.
- Proficient in word processors, spreadsheets, statistical analysis (SAS, SPSS, Statview), and GIS (Vision, SSTools, and ArcGIS) software packages. Visual Basic programming for engineering applications.

## **RESEARCH FUNDING AS PRINCIPAL INVESTIGATOR**

1. Optimization of mechanical energy utilized during seed-bed preparation as a basis for the development of conservation tillage technologies in various regions of Mexico. 2004 CONACYT-SAGARPA 2004-C01-135/A-1. Mexico.
2. Study of soil compaction and hydraulic conductivity to improve tillage and irrigation energy utilization in the Sacramento valley, USA and La Laguna, Mexico. 2004 UC MEXUS-CONACYT Collaborative Research Grant. Riverside CA.

## **PUBLICATIONS**

### **Peer-reviewed Articles:**

1. Andrade-Sanchez P., Upadhyaya S., Jenkins B. 2006. Development, construction and field evaluation of a soil compaction profile sensor. Transactions of the ASABE. (Accepted, article in press).
2. Sudduth K., Chung S., Andrade-Sanchez P., Upadhyaya S. 2006. Field comparison of two prototype soil strength sensors. Computers and Electronics in Agriculture. (Accepted, article in press).
3. Sakai K., Andrade-Sanchez P., Upadhyaya S. 2004. Periodicity and stochastic hierarchical orders of soil cutting force data detected by a developed "Autoregressive Error Distribution Function" (AREF). Transactions of the ASAE. 48(6): 2039-2046.
4. Andrade-Sanchez P., Upadhyaya S., Jenkins B., Agüera J. 2004. Evaluation of a capacitance based soil moisture sensor for real-time applications. Transactions of the ASAE. 47(4): 1281-1287.
5. Andrade P. and Jenkins B. 2003. Identification of patterns of farm equipment utilization in two agricultural regions of central and northern México. Agricultural Engineering International: The CIGR Journal of Scientific Research and Development. Vol V. 1-12 (invited overview paper).

### **Book Chapters:**

1. Andrade-Sanchez P. and Upadhyaya S. 2007. Book Chapter: *Using GIS and on-the-go soil strength sensing technology for variable-depth tillage assessment*. GIS Applications for Agriculture, Volume 1, by Francis J. Pierce and David Clay. CRC Press-Taylor and Francis Group, Boca Raton, Florida

### Conference Papers:

1. Andrade, P. and G. Martínez. 2005. *Construcción de un bastidor porta-sensores para medir el estado físico-mecánico del suelo*. XV Congreso Nacional de Ingeniería Agrícola. Asociación Mexicana de Ingenieros Agrícolas (AMIA). Cotaxtla, Veracruz, México.
2. Andrade P., Upadhyaya S., Jenkins B., Plouffe C, and Poutre B. 2004. *Field Evaluation of the Improved Version of the UC Davis Compaction Profile Sensor (UCD-SCPS)*. Paper No. 041037. ASAE/CSAE Annual Int. Meetng.
3. Pedro Andrade Sánchez. 2004. *Gasto Energético en las Operaciones de Labranza: Nuevas Alternativas*. XXXII Congreso Nacional de la Ciencia del Suelo. León, Guanajuato, México.
4. Andrade P., Upadhyaya S., and Sakai K. 2003. *Variability in Draft Data Observed During Tillage*. Paper No. 031121. ASAE Annual Int. Meetng.
5. Andrade P., Upadhyaya S., and Jenkins B. 2002. *Evaluation of the UC Davis Compaction Profile Sensor*. Paper No. 021185. ASAE/CIGR Annual Int. Meetng.
6. Andrade P. and Jenkins B. 2002. *Identification of Patterns of Farm Equipment Utilization in Two Agricultural Regions of Central and Northern México*. Paper No. 021203. ASAE/CIGR Annual Int. Meetng.
7. Andrade P., Rosa U., Upadhyaya S., Jenkins B., Agüera J. and Josiah M. 2001. *Evaluation of a Dielectric-based Moisture and Salinity Sensor for In-situ Applications*. Paper No. 11010. ASAE Annual Int. Meetng.
8. Andrade P., Rosa U., Upadhyaya S., Jenkins B., Agüera J. and Josiah M. 2001. *Soil Profile Measurements Using an Instrumented Tine*. Paper No. 11060. ASAE Annual Int. Meetng.
9. Andrade P., Mitchell J., Updhyaya S., and Jenkins B. 2000. *Principal Components Approach for the Linearization of Yield Prediction and Tilth Index Equations*. Paper No. 02155. ASAE Annual Int. Meeting.
10. Andrade P., Mitchell J., Updhyaya S., and Jenkins B. 2000. *Soil Strength Dynamics under Different Management Systems*. Paper No. 02156. ASAE Annual Int. Meetng.