

# FEDRO S. ZAZUETA

Associate CIO, Office of Information Technology  
Professor, Agricultural and Biological Engineering  
University of Florida, Gainesville FL 32611

## President CIGR

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## EDUCATION

Ph.D. 1982      *Agricultural Engineering*, Colorado State University, Ft. Collins, CO, USA.  
M.S. 1978      *Water Use and Conservation*, Instituto Tecnológico y de Estudios Superiores de Monterrey,  
Monterrey, N.L., México.  
B.S. 1974      *Civil Engineering*, Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM),  
Monterrey, N.L., México.

## POSITIONS HELD

2008-date      Office of Information Technology, University of Florida, *Associate CIO*  
2002-date      Office of Academic Technology, University of Florida, *Professor*  
1997-2001      UF/IFAS Information Technologies Office, *Director*.  
1982-date      Agricultural and Biological Engineering Department, University of Florida, *Assistant Professor*,  
*Associate Professor*, and *Professor*.  
1982-1997      Established and Served as Coordinator of the IFAS Software Support Office.  
1975-1979      Thermal, Fluids and Control Engineering Department, Instituto Tecnológico y de Estudios  
Superiores de Monterrey, *Profesor de Planta (Lecturer)*.  
1974-1975      Civil Engineering Department, Universidad de Sonora, Sonora, México, *Profesor de Planta (Lecturer)*.  
1989-date      Agricultural Engineering, Adjunct Professor, UNICAMP, Campinas, Brasil.  
1992-2006      Agricultural Engineering, Adjunct professor, Universidad de Concepción, Chillán Chile.

## ADMINISTRATIVE EXPERIENCE

Since January 2002, was a member of the UF senior IT leadership team and responsible for IT strategic planning, governance and providing direction the Office of Academic Technology (AT). AT provides information technology services in support of the academic mission of the University, including teaching, research, extension and outreach ([www.at.ufl.edu](http://www.at.ufl.edu)). AT supports 51,000 students, 3,600 faculty and 9,600 staff. AT includes 82 staff members and 217 temporary employees. Currently, is directly responsible for supervision of 8 Directors and a yearly budget ranging from \$9,500,000 to \$12,500,000.

In 2002 led the Information Technology Strategic Planning Committee for the University of Florida as has participated/led in all UF-IT strategic planning efforts since (2004, 2006, 2009, 2011), followed by their implementation. This included improvements to the organization by collapsing several IT related units into a single coherent unit, and establishing clear goals and assessment procedures for the units under AT. Some highlights are the successful deployment are of one of the nations largest enterprise level course management systems, a state-wide video transport infrastructure, grid-based high performance computing resources, and instituting a faculty training program focused on technology based pedagogy.

From 1997 through 2001 was responsible for providing leadership and management to the Office of Information Technology of the Institute of Food and Agricultural Sciences. This included a state wide network, business and administrative computing services, customer support services, information delivery system and a software engineering team. Some highlights are the growth of the state wide network from 15 nodes to over 100 nodes in a period of a year, development of an extension digital information resource, development of a statewide weather network, development of a distance pest and animal identification system, and creation of a help desk.

Starting in 1982 led the creation of the IFAS Software Support Office and managed the office for several years until it was incorporated into the IFAS Office of Information Technology in 1997. This office was created as a center to develop and distribute software to agricultural audiences. The office was self-funded and generated sufficient funds to support one faculty two programmers and two administrative assistants. This office was instrumental in accelerating the adoption of information technology by agricultural audiences in Florida and led to national recognition in this area. Some highlights are the distribution of over 100 software titles worldwide, a yearly Florida State Computers in Agriculture Meeting and Trade show held from 1982 through 1994, the organization of the first World Conference on Computers in Agriculture, still held to date in collaboration with partners from Europe and Asia.

## TEACHING EXPERIENCE

Have taught and developed courses at the undergraduate, and graduate level including web-based courses and distance education courses using video, satellite, WWW-based and desktop videoconferencing technologies. In addition, numerous presentations in state, national and international professional meetings, workshops and training courses to industry and government agencies on topics related to Water Management and Information Technologies. In particular, provided leadership to the creation of an Agricultural Information Technology Minor in the College of Agriculture and Life Sciences at the University of Florida.

### Courses Taught/Developed

#### Undergraduate Courses

Fluid Mechanics I and II, Mathematics I, Hydraulics, Hydromechanical Installations, Thermodynamics, Thermal Engineering Lab., Heat and Mass transfer for Biochemical Engineers (Transport Phenomena), Soil and Water Engineering, Irrigation in Florida, Drainage and Hydraulic Structures, Introduction to Engineering, Computers in Agriculture and Natural Resources, Networking, Instrumentation and Control in Ag. Systems, Agricultural Software Applications Development, Agricultural Decision Support Systems Development.

#### Graduate Courses

Agricultural Software Engineering, Trickle Irrigation Design, Advances in Microirrigation.

### Selected International Courses Taught

2010	Technology in agriculture. Precision Agriculture Workshop. Texas A&M U, USA.
2010	Open Source 101 for Managers, ASABE International Meeting, Pittsburg, USA. 1 day.
2005	Information Technology in Agriculture. Universidad de Concepción. Chillán, Chile. 4 days.
2004	Irrigation of Fruit Trees. Universidad de Concepción. Chillán, Chile. 4 days.
2003	VIII International Course on Irrigation Systems, Universida Autónoma Chapingo, México. 1 day.
2002	VII International Course on Irrigation Systems, Universida Autónoma Chapingo, México. 1 day.
2001	National Course in Irrigation: Microirrigation control and automation. Chapingo, México. 1 day.
1998	Microirrigation design and management. International Irrigation Course. Córdoba, Spain. 5 days.

### Selected Honors

2012	Conference Recognition (American Society of Agricultural and Biological Enginners).
2011	President, CIGR 2011-2012(International Commision of Agricultural Engineering).
2010	President's Citation (American Society of Agricultural and Biological Enginners).
2009	Outstanding Leadership Award (American Society of Agricultural and Biological Enginners).
2009	LEED Award for new construction (US Green Building Council)
2008	Lifetime Honorary Vice President, CIGR (International Commision of Agricultural Engineering).
2008	Kishida International Award, ASABE (American Society of Agricultural and Biological Enginners).

- 2007 Outstanding paper award, ASABE (American Society of Agricultural and Biological Engineers).
- 2006 Distinguished Service to Agriculture, ΓΣΔ (Gamma Sigma Delta).
- 2005 Elected ASAE Fellow (American Society of Agricultural and Biological Engineers).
- 2002 Outstanding Leadership, ASAE (The Society for Engineering in Agriculture).
- 2001 Outstanding Specialist Award. National Association of Extension Professionals.
- 1999 Distinguished Service Award, United States Department of Agriculture.
- 1998 Davis Productivity Award, Florida Tax Watch).
- 1998 Outstanding Program Award, Epsilon Sigma Phi, National Honorary Extension Fraternity.

## PROFESSIONAL SOCIETIES

- EDUCAUSE (UF Representative, 2001-date)
- CIGR International Commission of Agricultural Engineering (The World Society of Ag. and Bio. Eng.)
  - President (2011-2012).
  - Incoming President (2008-2010).
  - Information Systems Section Chair (2006-2008).
- ASABE, American Society of Agricultural and Biological Engineering.
  - Meetings Council Chair (2009-2010).
  - Education Division, Founding member and past Chair (2008-2009).
  - International Commission, Chair (2005-2008).
- INFITA, International Federation of IT in Agriculture. Founding Member and past Chair (2008-2010).
- ALIA Asociación Latinoamericana y del Caribe de Ingeniería Agrícola. Founding Member,
- Sigma Xi.
- Gamma Sigma Delta.

## RESEARCH EXPERIENCE

Research program in education focuses on eLearning technologies and IT services at the enterprise level, including latent semantic analysis, learning objects and instructional design process improvement.

Research program focused on the use of computer technologies for the improvement of design and management of water resource systems. Recent work includes techniques such as grid computing, deterministic and stochastic simulation, GIS, DBMS, conventional and real-time expert systems, neural networks, and data acquisition and control.

## Selected Publications

*Author of numerous research, extension and other publications, including books and software in use by industry. For a complete list see <http://jsz.ifas.ufl.edu>*

Williams, R.J., J.C. Harman, F.S. Zazueta and J.S. Smith. 2011. Development for Student Success: An undergraduate online course in Engineering. Learning Technology Consortium. Teaching with Technology, Vol. 2 pp. 17-1/17-7. <http://ltcessays.wordpress.com>

Zazueta, Fedro S., Jiannong Xin, Luis Santos Pereira, and André Musy. 2006. Section 6.4 Information Technologies in Water Management, pp. 401-414 of Chapter 6 Management and Decision Support Systems, in CIGR Handbook of Agricultural Engineering Volume VI Information Technology. Edited by CIGR--The International Commission of Agricultural Engineering; Volume Editor, Axel Munack. St. Joseph, Michigan, USA: ASABE.

E. S. Sepúlveda Bustos, F. S. Zazueta, R. Bucklin, E. Holzapfel Hoces. Rapid Prototyping of Learning Objects for Agricultural and Biological Engineering Education. 2006 Applied Engineering in Agriculture. Vol. 22(3): 461-475.

Zazueta, F.S. 2006. Curriculum Development Using Ontologies and Learning Objects. Proceedings of the XVI CIGR World Congress. Bonn, Germany. <http://www.2006cigr.org/proceedings.html>

Sepúlveda, E.S. and F.S. Zazueta. Wetted bulb dimensions from a trickle source. ABE351. Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. 2004

Vergot,P., F.S. Zazueta and H.W. Beck. 2004. Use of personal digital assistants for extension program record keeping. Journal of extension. Vol. 42 Number 4. <http://www.joe.org/joe/2004august/tt6.shtml>

Zazueta, F.S., and P. Vergot III. Use of Handheld Computers in Agriculture. Proceedings of the 5<sup>th</sup> Congress of the European Federation of Information Technology in Agriculture. July 2003,. Debrecen, Hungary. pp: 12-16.

Zazueta, F.S., J. Xin, T.A. Wheaton and K.T. Morgan. Citrus Microirrigation Decision Support System. World Congress on Computers in Agriculture and Natural Resources. Proc., ASAE. Pp. 803-808. 2001.

Zazueta, F.S., A.J. Wilkening, H.W. Beck, L.A. Halsey and T. Hintz. A centralized/distributed model for information technology resources. Computers in Agriculture. 7<sup>th</sup> International Conference Proc., ASAE. Pp. 292-299. 1998.

Albrigo, L.G., J.I. Valiente and F.S. Zazueta. Use of Internet video-conferencing technology for distance education in agriculture. Computers in Agriculture. 7<sup>th</sup> International Conference Proc., ASAE. Pp. 402-412. 1998.

## Selected Grants

F.S. Zazueta, W. Cooke. CLAST Web Implementation. Florida Department of Education. 2007-2008. \$1'500,000.

F.S. Zazueta, W. Cooke.. College level Academic Skills Test Support. Florida Department of Education. 2006-2009. \$1'257,563 per year.

F.S. Zazueta, W. Cooke. College level Academic Skills Test Administration. Florida Department of Education. 2002-2006. \$1'541,492 per year.

## INTERNATIONAL WORK

Conducted international work that includes university exchange programs, teaching, consulting, organizing international conferences and hosting graduate and undergraduate visitors such as:

- International short term consulting in México, Panamá, Ecuador, El Salvador, Costa Rica, Honduras, Uruguay, Jamaica, Pakistan, Chile, Argentina and Spain since 1976, in the areas of water management, photogrammetry, GIS, expert systems, data acquisition and control, and computer systems integration.
- Chairman of the International Conference on Computers in Agriculture. ASAE (American Society of Agricultural Engineers), 2009, 2006, 1998, 1997,1996, 1995, 1992, 1990, 1988, 1986, 1984.
- Initiated exchange programs between University of Florida and universities in México, Spain, Brasil, Chile, and The Netherlands.
- Adjunct faculty to the Agricultural Engineering Department, UNICAMP, Campinas Brazil, and the the Agricultural Engineering Department, Universidad de Concepción Chillán, Chile.

## Selected Consulting

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| 2008 | IT in Education, On-line Course Development Strategies, University of Connecticut, CT, US. (2 days)  |
| 2008 | Use of Information Technology in Poverty Alleviation. Ministry of Commerce. Beihai, China. (5 days)  |
| 1996 | Object oriented redevelopment of a GIS production system. GESA. Guadalajara, México. (2 days)  |
| 1995 | Assessment of DBMS and GIS requirements for cadastral applications. DICARTU. México D.F. (5 days)  |
| 1993 | Development of integrated software for management of a canal network (módulo 3, Distrito de Riego Delicias Chihuahua) serving 17,000 users, that includes database management, GIS, biological simulation, hydraulic canal network simulation and expert systems, Instituto Mexicano de Tecnología del Agua. IMTA, Cuernavaca, México. (2 years) |
| 1992 | Troubleshooting oil-well drilling rigs control software PEMEX/ROTENCO. Chiapas, México. (4 days).  |

## Selected International Professional Service

- President, International Commission of Agricultural and Biological Engineering (CIGR).
- Chairman, Sustainable Agricultural Production Systems: United Nations Commission on Sustainable Development. WFEO-COMTECH (World Federation of Engineering Organizations Committee on Technology), 2000.
- Chairman, World Congress on Computers in Agriculture, ASAE, SBI-Agro (Brazilian Society of Informatics in Agriculture), EFITA (European Federation of Information Technologies in Agriculture), AFITA (Asian Federation of Information Technologies in Agriculture), CIGR (International Commission of Agricultural Engineering), WFEO. 1999-date.
- Member of the Food and Agriculture Committee for WFEO (World Federation of Engineering Organizations), 1996-date.
- Chairman of the Food and Agriculture Committee for UPADI (Unión Panamericana de Asociaciones de Ingeniería), 1993.
- Chair or Co-chair of the International Conference on Computers in Agriculture, ASAE (The Society for Food and Agriculture in Engineering), 1982-date.

## SELECTED INVITED LECTURES OR SPEECHES (Keynote or Plenary Speaker only)

- 2012 Nanotechnology, Biotechnology and IT in Precision Agriculture. Foro Técnico sobre Convergencia de Tecnología e Innovación. San Jose, Costa Rica. PROCISUR/IICA, **Keynote Speaker.**
- 2012 A future for agricultural and biosystems engineering. CIGR International Meeting. Valencia, Spain. **Presidential address.**
- 2011 IT in higher education. CIGR International Symposium. Sustainable Bioproduction - Water, Energy and Food (WEF 2011) Tokyo, Japan. **Keynote Speaker.**
- 2011 TIC en agricultura. PROCISUR. Montevideo Uruguay. **Plenary Session (online).**
- 2010 Tecnología de información en extensión agrícola. CONBEA. Vitoria, Brasil.
- 2010 A Learning Odyssey: Use of CMS at UF. SloanC, Orlando, USA. **Plenary Session.**
- 2010 The future of Agricultural and Biological Engineering. CAMS. Shanghai, China. **Presidential address.**
- 2010 An enterprise approach to creating learning environments.
2010. ALIA, Foz do Iguazu, Brazil. **Plenary Session.**
- 2010 Tecnologías de información en agricultura. Congreso de Agroinformática, Buenos Aires Argentina. **Plenary Session.**
- 2009 Challenges for Agricultural RDI: Perspectives for the future. PROCISUR. Montevideo, Uruguay. **Keynote Speaker.**
- 2009 Improving the quality of academic programs with IT. Asociación Latinoamericana de Ingenieros Agrícolas, San Jose, Costa Rica. **Keynote Speaker.**
- 2009 Education in the XXIst Century. V Congreso Nacional y II Congreso Ibérico "AgroIngeniería 2009". **Keynote Speaker.**
- 2008 Developing high quality on-line learning environments: An enterprise level approach  
CIGR International Conference of Agricultural Engineering, Iguazu Falls, Brasil. **Keynote Speaker.**
- 2008 Technologies for on-line education: A focus on developing countries. World Conference on Computers in Agriculture, International Association of Agricultural Information Specialists Meeting. Tokyo, Japan. **Keynote Speaker.**
- 2008 International Experience on ICT Services for Agricultural Technology Extension in Rural Areas. **Invited Speaker.**  
Workshop on ICT for Science and Technology Innovation and Poverty Alleviation and Sustainable Development in Rural China. Ministry of Commerce, Beihai, China.
- 2007 Knowledge Management. **Keynote Speaker.** 4º Ciclo de Conferencias. Políticas de Estado. IICA, El País, SEAGRO. Montevideo, Uruguay.
- 2006 Curriculum Development Using Ontologies and Learning Objects. **Invited Speaker.** CIGR World Congress. Bonn, Germany.
- 2005 Towards the Collaborative University. **Plenary Session.** EFITA-WCCA. Portugal.
- 2004 Information Technology in Agriculture. **Invited Speaker.** Latin American Association of Agricultural Engineers Congress. San Jose Costa Rica

- 2003 Use of PDAs in Agricultural Extension. **Keynote Speaker.** European Federation of IT in Agriculture Congress. Debrecen, Hungary.
- 2001 Information Technologies Applied to Agriculture. Symposium on New Technologies Applied to Agriculture. **Keynote Speaker.** ITAP. Albacete, Spain.
- 2000 Change in Information Technologies: Its application to Agriculture, InfoAgro2000: Computers in Agriculture Congress. **Plenary Session.** Ponta Grossa, Brasil.
- 2000 Bioengineered Foods. American Association of Engineering Societies. **Invited Speaker.** Academy of Engineering. Washington D.C.
- 2000 Information Technologies in Agricultural Extension. 2<sup>nd</sup> Asia Federation of Information Technologies in Agriculture (AFITA) Congress. **Keynote Speaker.** Suwon, Korea.
- 2000 The Role of Engineering in Sustainable Food Production. **Invited Speaker.** United Nations Sustainability Committee. UN General Session. New York.
- 1999 A Centralized Distributed Model for Information Technologies. 2<sup>nd</sup> European Federation of Information technologies in agriculture (EFITA) Congress. **Plenary Session.** Bonn. Germany.
- 1999 Information Technologies for the XXI Century. World Federation of Engineering Associations. Symposium on Food, Agriculture and Energy. **Plenary Session.** Madrid, Spain.
- 1998 Sustainability and Water Resources: Fantasy or Achievable Goal? Seminario internacional del uso integral del agua. **Keynote speaker** Universidad Autónoma Chapingo, México.