

## **Biographical Sketch: Dr. Fernando Ezequiel Miguez**

### (a) Education and Training

- Ph.D. in Crop Sciences, 2007. University of Illinois, Urbana Urbana, IL
- M.S. in Applied Statistics, 2007. University of Illinois, Urbana Urbana, IL
- M.S. in Crop Sciences, Aug, 2004. University of Illinois, Urbana Urbana, IL
- Ing. Agr. (Ag. Eng.), University of Buenos Aires. August, 2001.

### (b) Research and Professional Experience

Associate Professor, 07/2016 – present.  
Department of Agronomy, Iowa State University

Assistant Professor, 01/2010 – 06/2016.  
Department of Agronomy, Iowa State University

Post Doctoral Research Associate 01/2008 – 12/2009  
Energy Biosciences Institute, Insitute for Genomic Biology, UIUC.  
Model development to predict feedstock production of Miscanthus and Switchgrass as affected by climate, soils, and nitrogen management.

Research Assistant 08/2004 -- 12/2007  
Department of Crop Sciences, UIUC.  
Statistical and Mathematical Models for Miscanthus x giganteus biomass potential in Illinois under the direction of Dr. Bollero.

Research Assistant 08/2001 -- 05/2004  
Department of Crop Sciences, UIUC.  
Winter Cover Crops: Meta-Analysis and Field Study under the direction of Prof. Bollero.

Teaching Assistant 08/2004 -- 05/2007  
Department of Crop Sciences, UIUC.  
Led lab sections, held office hours, and graded exams for CPSC 440 Applied Statistical Methods I, CPSC 540 Applied Statistical Methods II and CPSC 499 Applied Multivariate Statistics.

### (c) Selected Publications

10. “Evaluating APSIM Maize, Soil Water, Soil Nitrogen, Manure, and Soil Temperature Modules in the Midwestern United States”. Sotirios V Archontoulis, Fernando E Miguez, Kenneth J Moore.

9. “A methodology and an optimization tool to calibrate phenology of short-day species included in the APSIM PLANT model: Application to soybean”. Environmental Modelling & Software. 2014.

8. “A Spatial Modeling Framework to Evaluate Domestic Biofuel-Induced Potential Land Use Changes and Emissions”. Joshua Elliott, Bhavna Sharma, Neil Best, Michael Glotter, Jennifer B Dunn, Ian Foster, Fernando Miguez, Steffen Mueller, Michael Wang. Environmental science & technology. 2014. 48, 2488-2496.

7. “Modeling spatial and dynamic variation in growth, yield, and yield stability of the bioenergy crops Miscanthus x giganteus and Panicum virgatum across the conterminous United States”. FE Miguez, M Maughan, GA Bollero, SP Long. Global Change Biology Bioenergy. 2012. 4 (5), 509-520.

6. “Modeling Miscanthus in SWAT to Simulate its Water Quality Effects as a Bioenergy Crop”. Ng, Tze Ling;

Eheart, J. Wayland; Cai, Ximing; Miguez, Fernando. *Environmental Science & Technology*. 2010. 44:7138-7144.

5. A semimechanistic model predicting the growth and production of bioenergy crop *Miscanthus x giganteus*: description, parameterization and validation. Fernando E. Miguez, Xin-Guang Zhu, Stephen Humphries, German A Bollero and Stephen P. Long. *Global Change Biology Bioenergy*. 1:4, 282–296.

4. Multivariate Analysis and Visualization of Soil Quality Data for No-till Systems. Maria Bonita Villamil, Fernando E. Miguez and German A. Bollero. 2008. *Journal of Environmental Quality*. Vol. 37: 2063-2069.

3. Meta-Analysis of the Effects of Management Practices on *Miscanthus x giganteus* growth and biomass production. Fernando E.Miguez, Maria Bonita Villamil, Stephen P. Long and German A. Bollero. 2008. *Agriculture Forest Meteorology*. Vol. 148. Issue 8-9. 4 July 2008. pg 1280-1292.  
doi:10.1016/j.agrformet.2008.03.010.

2. Winter Cover Crops in Illinois: Evaluation of Ecophysiological Characteristics of Corn. *Crop Sciences*. Miguez, F.E. and Bollero GA. 2006. 46:1536-1545.

1. Miguez FE and Bollero GA. 2005. Review of Corn Yield Response under Winter Cover Cropping Systems Using Meta-Analytic Methods. *Crop Sciences*. 45:2318-2329.

(d) Selected synergistic activities and current funding

- Collaboration with Dr. Sotirios Archontoulis (ISU) on APSIM modeling

“In-Situ, Wireless, Energy-Harvesting Soil Moisture/Nutrient Sensors for Managing Agricultural Resources”. PIs: Ratnesh Kumar, Liang Dong, Michael Castellano, Robert Weber and Fernando Miguez. Funding: 1M.

“The Pyrolysis-Bioenergy-Biochar Pathway to Carbon-Negative Energy”. PIs: David Laird, Fernando Miguez and others. Funding: 1.9M. 2015-2018.

(e) Conflict of Interest

**ISU:** Anderson, Chris; Moore, Ken; Knapp, Allen; Loynachan, Tom; Liebman, Matt; Thompson, Michael Sauer, Tom; Hofmockel, Kirsten; Horton, Robert; Cruse, Rick; Laird, David; Heaton, Emily; Westgate, Mark Sawyer, John; Helmers, Matt; Arritt, Ray; Colletti, Joe; Gassman, Philip; Gassmann, Aaron; Kling, Catherine; O’Neal, Matt; Tyndall, John; Arbuckle, Gordon J.; Wright Morton, Lois; Basche, Andrea; Archontoulis, Sotirios; Bhavna Sharma; Virginia Nichols; Tom Kaspar; Jianming Yu; Amy Toth. **University of Illinois (UC):** Nafziger, Emerson; Villamil, Maria Bonita; Bollero, German; Long, Stephen P ; Davis, Adam. **Purdue:** Frankenberger, Jane; Kladviko, Eillen. **Ohio State University:** Dick, Warren; **Michigan State University:** Bruno Basso, Kravchenko, Alexandra. **University of Wisconsin:** Rob Anex, Lauer, Joseph. **Lincoln University:** Nkongolo, Nsalambi. **University of Missouri:** Scharf, Peter. **University of Minnesota:** Strock, Jeff; Hill, Jason; Twine, Tracy. **University of Chicago:** Joshua Elliott