

Personal record

Last name: Antonio-Ordóñez

First name: Raziél

Current working address: 716 Farm House Ln, Agronomy Hall, 50011 Ames, Iowa, US

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Current position: Postdoctoral Research Associate at Department of Agronomy, ISU.

1. Education

PhD degree, Oct. 2014. Crop systems and physiology. Department of Crop and Forest Sciences, ETSEA – UdL, Lleida, Spain. (*Professor Gustavo Slafer Lab*)

Ph.D. Dissertation title: “Response of yield and physiological attributes to nitrogen availability and heat in maize” <https://repositori.udl.cat/handle/10803/3141>

MSc degree, Dec. 2011. Agro-food Systems. Department of Crop and Forest Sciences, ETSEA – UdL, Lleida, Spain. (*Professor Gustavo Slafer Lab*)

Master thesis title: “Comparative analysis of maize hybrids with different length cycle grown under contrasting condition of altitude and nitrogen availabilities”

BSc degree, Feb. 2008. Agronomy and plant breeding. Department of plant breeding, Antonio Narro Agricultural University. Mexico.

Bachelor thesis title: The use of testers from different heterotic groups to select inbred lines of maize (*Zea mays* L.) S1 generation.
<http://www.sidalc.net/cgi-bin/wxis.exe/?IsisScript=tesisan.xis&method=post&formato=2&cantidad=1&expresion=mfn=008616>

Research of interest: Crop eco-physiology, plant breeding and genetics, cropping systems modeling, agronomy, climatic change, plant biology and bioenergy.

2. Previous employment

2016.04- *present* Postdoctoral Research Associate, Iowa State University, Ames, Iowa. I am currently involved in the following projects:

1. Maize and soybean root system phenotyping in Iowa cropping areas.
2. In-season yield forecasting.
3. Quantifying temporal and spatial variability of water table and nitrate leaching across Iowa.

2014.08 - 2015.09 *Research Assistant:* Plant physiology laboratory (ETSEA- University of Lleida). Alcalde Rovira Roure, 191, Lleida, Spain.

2008.01 - 2010.01 *Research Assistant:* Maize Physiology Program (Global Maize Program at CIMMYT-Mexico). El Batán, Texcoco, CP 56237, State of Mexico, Mexico.

3. Awards

1. Research assistant fellowship: University of Lleida, Spain (2014-2015)
2. Fellowship from the Crop ecophysiology lab, ETSEA University of Lleida (to support PhD studies). Spain (2012-2014).
3. Fellowship from the Crop ecophysiology lab, ETSEA University of Lleida (to support Msc. studies). Spain (2010-2011).
4. Bachelors scholarship. Antonio Narro University, Mexico. (2004-2008).

4. Research Grants (as co-PI or collaborator)

1. 2017 to 2019. High yielding soybean trials and real-time forecasting at regional scale. Sotirios Archontoulis, Michael Castellano, Andy Van Loocke, **Raziél A. Ordóñez**, (*data collection and publication*), Javed Iqbal.
2. 2016-present. Forecast and Assessment of Cropping SysTemS (FACTS). <http://crops.extension.iastate.edu/facts/>. Sotirios Archontoulis, Michael Castellano, Ranae Dietzel, Matthew Helmers, Mark Licht, Andy Van Loocke, **Raziél A. Ordóñez**, (*data collection and publication*), Javed Iqbal.
3. 2010 to 2014. Proyecto 8031-FONTAGRO. Mitigar el Efecto de las altas temperatura en la productividad del Maíz. (Mitigation of high temperature effects on maize productivity) <http://www.fontagro.org/proyectos/altas-temperaturas-en-ma%C3%ADz>. Gustavo Slafer, José Luis Araus, Roxana Savin, Maria Otegui, Jill Cairn, **Raziél A. Ordóñez** (*data collection and publication*).

5. Professional Memberships

1. American Society of Agronomy
2. Crop Science Society of America
3. Soil Science of America
4. International Society of Root Research
5. National Postdoc Association

6. Professional services (Journal Reviewer)

Nature Scientific Reports
Field Crop Research
Agronomy Journal
Computers and Electronics in Agriculture

7. Publications

1. Martinez-Feria, R., Licht, M.A., **Ordóñez, R.A.**, Hatfield, J.L., Archontoulis, S.V. (2018). An improved algorithm to predict in-field dry-down of maize and soybean grains with genotype-by-environment analysis. *Submitted in Nature Scientific Reports*. (Impact factor 4.3).
2. **Ordóñez, R.A.**, Savin, R., Cossani, C.M., Slafer, G.A., (2018). Maize grain weight sensitivity to source-sink manipulations in a wide range of background environmental conditions. *Accepted in Crop Sci*. (impact factor, 1.63)
3. **Ordóñez, R.A.**, Castellano, M.J., Hatfield, J.L., Licht, M.A., Wright, E.E., Archontoulis, S.V., (2018). A solution for sampling errors in maize and soybean root mass and length estimates. *European Journal of Agronomy*, 96:156-162 (Impact factor, 3.76).

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4. **Ordóñez, R.A.**, Castellano, M.J., Hatfield, J.L., Helmers, M.J., Licht, M.A., Liebman, M., Dietzel, R., Martinez-Feria, R., Iqbal, J., Puntel, L.A., Córdova, S.C., Togliatti, K., Wright, E., Archontoulis, S.V., (2017). Maize and soybean root front velocity and maximum depth in the Midwest USA. *Field Crop Research*, 215:122–131. (Impact Factor, 3.048).
5. Gabaldón-Leal, C., Webber, H., Otegui, M.E., Slafer, G.A., **Ordóñez, R.A.**, Gaiser, T., Lorite, I.J., Ruiz-Ramos, M., Ewert, F., (2016). Modelling the impact of heat stress on maize yield formation. *Field Crop Research*, 198:226–237. (Impact Factor, 3.048)
6. Elazab, A., **Ordóñez, R.A.**, Savin, R., Slafer, G.A., Araus, J.L., (2016). Detecting terminal heat stress effects on maize biomass and grain yield by remote sensing techniques. *European Journal of Agronomy* 73:11–24. (Impact Factor, 3.757)
7. **Ordóñez, R.A.**, Savin, R., Cossani, C.M., Slafer, G.A., (2015b). Yield response to heat stress as affected by nitrogen availability in maize. *Field Crop Research* 183: 184-203. (Impact Factor, 3.048)
8. **Ordóñez, R.A.**, Savin, R., Slafer, G.A., (2015a) Variation in the critical specific leaf nitrogen maximising yield among modern maize hybrids. *Field Crop Research* 172: 99–105. (Impact Factor, 3.048)
9. Cairns, J.E., Sanchez, C., Vargas, M., **Ordóñez, R.A.**, Araus, J.L., (2012) Dissecting Maize Productivity. Idotypes Associated with Grain Yield under Drought Stress and Well-Watered Conditions. *The International Journal of Integrative Plant Biology* 54 (12): 1007–1020. (Impact Factor, 3.962)

7.1 Manuscripts in preparation

1. **Ordóñez, R.A.**, Castellano, M.J., Hatfield, J.L., Licht, M.A., Wright, E.E., Archontoulis, S.V., (2018). Maize and soybean Root:shoot across various ambient in Iowa. To be submitted in *Field Crop Research* (Impact Factor, 3.048)

7.2 Extension publications

1. Sotirios Archontoulis, Mark Litch, **Raziél A. Ordóñez**. 2017. How fast and deep do corn roots grow in Iowa? Integrative Crop Management. Iowa State University, Extension and outreach.
2. Sotirios Archontoulis, Mark Litch, Mike Castellano, Renae Dietzel, Andy Van Loocke, **Raziél A. Ordóñez**, Javed Iqbal, Laila Puntel, Carolina Cordova, Kati Togliatti, Rafael Martinez-Feria, Huber Isaiah, Matt Helmers. 2016. Understanding the 2016 yields and interactions between soil, crops, climate and management. Proceedings of the 28th annual Integral Crop Management Conference.

8. Conferences (total 6 poster presentations)

1. **Ordóñez, R.A.**, Castellano M.J., Archontoulis SV, (2017). Maize and soybean root traits measured under tile-drained soils in Iowa. ASA meeting October 21–25, Tampa Florida, US.
2. Archontoulis S.V., Dietzel R., Licht M., Castellano M., Van Loocke A., **Ordóñez R.**, Iqbal J., Puntel P., Cordova S., Martinez-Feria R., Togliatti K., Huber I., Herzmann H., Helmers M., (2016). Forecasting and Assessing Cropping Systems (FACTS). ASA meeting November 6–9 Phoenix, AZ.

3. **Ordóñez, R.A.**, Savin, R., Slafer, G.A., (2013). Responsiveness of senescence traits and yield components to nitrogen fertilization in long and short cycle maize hybrids grown under a warm and a cool location. XX Reunión Nacional de la Sociedad Española Fisiología Vegetal y XIII Congreso Hispano-Luso de Fisiología Vegetal, Lisbon, *Portugal*.
 4. **Ordóñez, R.A.**, Savin, R., Slafer, G.A. (2012). Grain weight determination in contrasting hybrids of maize. 12th Congress of the European Society for Agronomy. 20-24 August 2012. Helsinki, *Finland*.
 5. Mayer, L.I., **Ordóñez, R.A.**, Savin, R., Cirilo, A.G., Maddonni, G.A. (2012). Kernel growth and quality traits of maize hybrids with different end-use at contrasting post-flowering thermal environments VI International Crop Science Congress. 6-10 August 2012. Bento Gonçalves, RS, *Brasil*.
 6. **Ordóñez, R.A.**, Savin, R., Slafer, G.A., (2011). Grain weight determination in contrasting hybrids of maize growing under different levels of nitrogen fertilization and altitude. XIX Reunión Nacional de la Sociedad Española Fisiología Vegetal y XII Congreso Hispano-Luso de Fisiología Vegetal, Castelló de la Plana, *Spain*.
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8. Conferences (total 7 oral presentations)

1. **Ordóñez, R.A.**, Castellano M.J., Wright E.E, Archontoulis S.V., (2017). Ecophysiological roots traits asses of maize and soybean under contrasting field conditions in Iowa. ASA meeting October 21–25, Tampa Florida, *United State of America*.
 2. **Ordóñez, R.A.**, Castellano M.J., Archontoulis S.V., (2016). Shallow ground water-tables influence corn and soybean root growth in Iowa. ASA meeting November 6–9 Phoenix, AZ. *United State of America*.
 3. **Ordóñez, R.A.**, (2015). Challenges of the new era in science, Climatic change and GMO's. 3th of November 2015. Chiapas, *Mexico*.
 4. **Ordóñez, R.A.**, (2014). Variation in yield generation and in critical specific leaf nitrogen within modern maize hybrids of different maturity type under contrasting growing conditions. 17th of June 2014. University of Lleida, *Spain*.
 5. **Ordóñez, R.A.**, (2014). Can specific leaf nitrogen be used to phenotype maize maximizing yield and nitrogen use efficiency? 29th of May 2014. Beijing, *China*.
 6. **Ordóñez, R.A.**, (2013). Does nitrogen management affect the magnitude of yield penalty imposed by high-temperature in maize? 27th of June 2013. University of Lleida, *Spain*.
 7. **Ordóñez, R.A.**, (2009). Oxygen isotope enrichment as indicator of yield potential of maize inbred lines under water limitation. Campeche, *Mexico*.
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9. Training courses and workshops attended.

- Workshop APSIM (Programing and application to the agricultural systems in Iowa)
 - Workshop APSIM (Programing and application to the agricultural systems in Iowa)
 - *Maize crop breeding by double haploid method*
 - *Institute: Maize physiology, Global Maize Program (CIMMYT), El Batán, Texcoco. CP 56237. State of Mexico, Mexico.*
 - *New Tools for plant breeding and seed production systems*
 - *Institute: International Maize and Wheat Improvement Centre (CIMMYT).*
 - *Modern genetic and workshop by QPM breeder's consortium in Latin-America*
 - *Institute: International Maize and Wheat Improvement Centre (CIMMYT), El Batán, Texcoco. CP 56237, State of Mexico. Mexico.*
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10. Current and previous collaboration and research projects

1. 2017 to 2018. High yielding soybean trials and real-time forecasting at regional scale.
2. 2016-present. Forecast and Assessment of Cropping SysTemS (FACTS).
<http://crops.extension.iastate.edu/facts/>
3. 2010 to 2014. *Proyecto 8031-FONTAGRO*. Mitigar el Efecto de las altas temperatura en la productividad del Maíz. (Mitigation of high temperature effects on maize productivity) <http://www.fontagro.org/proyectos/altas-temperaturas-en-ma%C3%ADz>.
4. 2008 to 2010. *BMZ Project*. Institute: Precision phenotyping for improving drought tolerance in maize in southern Asia and Eastern Africa (German Federal Ministry for Economic Cooperation and Development) <http://maizephenotyping.cimmyt.org>

11. Additional skills

1. *Use of the simulation process-base model APSIM*
2. *Statistical Software*: Large data set analysis, statistics model using SAS, JPM-PRO, R-studio, Sigma plot, Graph Pad Prism, Table Curve.
3. Design and implementation of field and high-throughput technology experiments.
4. *Phenotyping equipment management*: Green-Seeker, Porometer, ceptometer, spectroradiometers, SPAD, Infrared camera, LAI meter, Photosynthesis measurement. Micro-Kjeldahl, WinRhizo, Giddings hydraulic probe etc.
5. *Computer packages*: Microsoft Office: Word, Excel, Internet, Access and Power Point (ECDL).

12. Languages

1. **Spanish** (Native)
 2. **English** professional level in speaking, writing and listening
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References: Please contact these people for personal references

Iowa state University (USA)

Dr. Sotirios Archontoulis, Assistant Professor, Department of Agronomy, Iowa State University, Ames Iowa +1 515 294 7413, email: sarchont@iastate.edu

University of Lleida (Spain)

Dr. Gustavo A. Slafer, Research Professor, Department of Crops and Forestry Science at the University of Lleida, Spain. Phone: +34 973 00 3659, email: slafer@pvcf.udl.cat

Iowa state University (USA)

Dr. Michael J. Castellano, Associate Professor, Department of Agronomy, Iowa State University, Ames Iowa, +1 515-294-3963, email: castelmj@iastate.edu

University of Barcelona (Spain)

Dr. Jose Luis Araus, Research Professor, Department of Biology, University of Barcelona, Spain. Phone: +34 934 02 1469, email: jaraus@ub.edu