CURRICULUM VITAE

Jonathan Jesus Ojeda Agr Eng - PhD Agricultural Sciences - Agricultural Systems Modeller
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♦ KEY WORDS

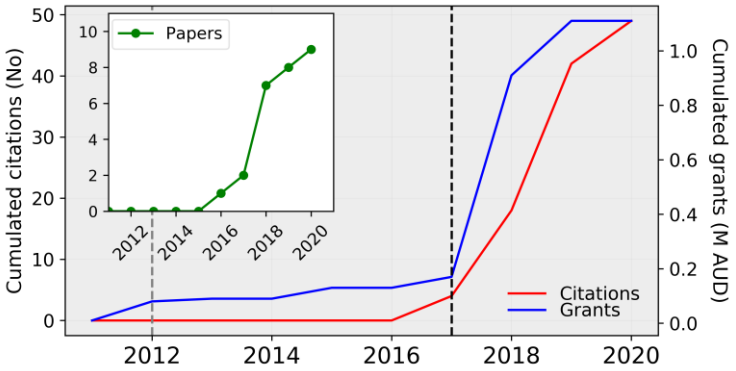
Crops: Annuals (annual ryegrass, oats, wheat, barley, soybean, maize, sorghum, sunflower, potato). Perennials (lucerne, tall fescue, switchgrass, miscanthus).

Levels of organisation: plant, canopy, farm , agro-ecosystem, region, country.

Countries: Argentina, Australia, New Zealand, United States, Germany.

Research areas: crop model development, model scaling, data aggregation, crop model uncertainty, scripting, crop ecophysiology, farming systems, Agricultural Production Systems Simulator (APSIM), crop sequences, multi-environmental analysis, water relations, water-use efficiency, phenological development, regional data analysis.

♦ KEY METRICS



Notes: Period considered from Jan-2011 to Feb-2020. Only first-author papers published in high-impact journals (IF=3.5-5.6) were included in the inset panel. Grey and black dashed lines in the main panel indicate start and end of PhD program, respectively.

♦ EDUCATION

#Apr-2012 to Mar-2017
National University of Mar del Plata, Argentina
PhD - Agricultural Sciences GPA: 8.8 (out of 10) No. failed: 0 (none) 422 credit hours
Dissertation: Precipitation use efficiency in annual forage crop sequences and perennial pastures

#Apr-2004 to Mar-2011
National University of Entre Ríos, Argentina
Agricultural Engineer/Bachelor of Agricultural Sciences
GPA: 8.8 (out of 10) No. failed: 0 (none) Historical GPA: 6.8 (out of 10)
Dissertation: Response to plant population density in different sunflower hybrids

Language skills
English (IELTS Overall Band Score 7 [L8, R6.5, W6.5, S7; 23-2-2019]), Spanish (native)

Software and programming skills

-Data analysis and mapping: C#, Python (pandas, numpy, matplotlib, seaborn, scipy, pyproj, re, nltk, shapefile, statsmodels, sqlite3, netCDF4, etc.), R Studio, GitHub repositories, Jupyter Nootebook, ArcGIS, QGis, NetCDF file format and relational databases. Git operations

-Crop models: APSIM Next Generation, APSIM Classic, DSSAT, SIMPLACE, CropWat.

♦ GRANTS AND FUNDING (~1,109,212 AUD)

#2019

-Visualising agricultural uncertainties under climate change scenarios, CoSE Grant Incentive Scheme, College of Sciences and Engineering, UTAS ($3,500).
-Crop-livestock adaptation to climate change based on modelling and remote-sensing, Council on Australia Latin America Relations (COALAR) Department of Foreing Affairs and Trade, Australian Government. *Partners:* USQ, UBA, UNER, INIA, CREA ($54,952)
-CoSE Research Enhancement Program Grant, College of Sciences and Engineering, UTAS ($15,000)

-CSIRO Contract Research, PhD project: The benefits and limits of diversity in agricultural systems (4 yr). *Partner:* CSIRO ($41,394)
-2 Australian Sustainable Agriculture Elite Scholarships (PhD funds, 3 yr), *Partner:* CSIRO ($99,996)

#2018
-Australia-Germany Joint Research Co-operation Scheme (2 yr). *Partners:* University of Göttingen and the Leibniz Centre for Agricultural Landscape Research (ZALF) ($40,360)
-Soil CRC High Performance Soils, Improving the representation of soil productivity/constraints in existing decision support systems and modelling platforms (2.5 yr). *Partners:* USQ, Federation University, NSW DPI ($693,731)
-Research Travel Funding Ag Systems Centre ($3,000)
-Research Travel Funding Water for Profit Program ($6,000)

#2004-2017
-Postdoctoral Research Fellowship (2 yr) 2017, CONICET (~$35,568)
-Fulbright Fellowship (9 mo) 2015, Fulbright Commission USA ($37,000)
-Fund INNOVA-T Grant (CONICET) **and travel grant** INTA-USYD-TIA/UTAS (~$15,000)
-Graduate Research Scholarship (5 yr) 2012, CONICET (~$69,240)
-National Undergraduate Scholarship (6 yr) 2004, Argentinian Ministry of Education (~$9,471)

♦ CODING AND MODEL DEVELOPMENT

-APSIM Classic Miscanthus (C#)
-APSIM Classic Switchgrass (C#)
-APSIM Next Generation Potato (C#)
-Data visualisation tool for testing crop model configuration (Python)
-Climate automation to download gridded climate data in an APSIM format (Python)

♦ EVALUATION AS REVIEWER

#Jul-2019. UTAS scholarship assessment committee.
#Jun-2019. Crop model development. Red Clover APSIM Next Generation.
#Apr-2019. PhD thesis. Dynamic modeling of potato crop growth incorporating response functions to climate. Faculty of Agricultural Sciences. National University of Colombia
#Oct-2018. Honours thesis. Impact of acidity and salinity on barley (*Hordeum vulgare*). Tasmanian Institute of Agriculture. UTAS.
#Aug-2018. Crop model development. Oats APSIM Next Generation.
#2017-to date. Manuscript review in high-impact scientific journals. Publons profile

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♦ COMMUNICATION

- **Publications (Scopus profile)**

PEER REVIEWED JOURNALS

11. Chapagain R, **Ojeda JJ**, Eyshi Rezaei E, Wallach D, Remenyi T, Brown J, Harris R, Mohammed C (*In Prep*) Decomposition of crop model uncertainty – A review.

10. Ojeda JJ, Brown HE, Huth N, Holzworth D, Raymundo R, Zyskowski RF, Sinton S, Michel A (*2020)* A methodology for assessing errors during simulation configuration in crop models. *In silico* Plants (Accepted with major revisions, status 14 Feb 2020).

9. Ojeda JJ, Quinodoz JE, Lezana, LC (*In Press*) Estimation of forage availability in alfalfa-based perennial pastures and forage winter crops in the southwest of Entre Ríos, Argentina. *Revista de Investigaciones Agropecuarias*.

8. Ojeda JJ, Eyshi Rezaei E, Remeny TA, Webb MA, Webber HA, Kamali B, Harris RMB, Brown JN, Kidd DB, Mohammed CL, Siebert S, Ewert F, Meinke H (2019) Effects of soil- and climate data aggregation on simulated potato yield and irrigation water demand. *Science of the Total Environment. 710, 135589*. doi:10.1016/j.scitotenv.2019.135589

7. Ojeda JJ, Caviglia OP, Agnusdei MG, Irisarri JG (2018). Modelling inter-annual variation in dry matter yield and precipitation use efficiency of perennial pastures and annual forage crops sequences. *Agricultural & Forest Meteorology*. 259, 1-10. *Publication derived from my PhD thesis*.
doi:10.1016/j.agrformet.2018.04.014

6. Ojeda JJ, Caviglia OP, Agnusdei MG, Errecart PM (2018) Forage yield, water- and solar radiation-productivities of perennial pastures and annual crops sequences in the south-eastern Pampas of Argentina.*Field Crops Research. 221, 19-31. Publication derived from PhD thesis*.
doi:10.1016/j.fcr.2018.02.010

5. Ojeda JJ, Pembleton KG, Islam MR, Caviglia OP, Agnusdei MG, Garcia SC (2018) Modelling forage yield and water productivity of continuous crop sequences in the Argentinian Pampas. *European Journal of Agronomy. 92, 84-96. Publication derived from PhD thesis*.
doi: 10.1016/j.eja.2017.10.004

4. Ojeda JJ, Volenec JJ, Brouder SM, Caviglia OP, Agnusdei MG (2018) Modelling stover and grain yields, and subsurface artificial drainage from long-term corn rotations using APSIM. *Agricultural Water Management. 195, 154-171*.
doi:10.1016/j.agwat.2017.10.010

3. Ojeda JJ, Caviglia OP, Agnusdei MG (2017) Vertical distribution of root biomass and soil carbon stocks in forage cropping systems. *Plant and Soil. 423, 175-191. Publication derived from PhD thesis*.
doi:10.1007/s11104-017-3502-8

2. Ojeda JJ, Volenec JJ, Brouder SM, Caviglia OP, Agnusdei MG (2017) Evaluation of Agricultural Production Systems Simulator (APSIM) as yield predictor of *Panicum virgatum* and *Miscanthus* x *giganteus* in several US environments. *Global Change Biology Bioenergy*. 9, 796-816. doi:10.1111/gcbb.12384

1. Ojeda JJ, Pembleton KG, Islam MR, Agnusdei MG, Garcia SC (2016) Evaluation of the agricultural production systems simulator simulating Lucerne and annual ryegrass dry matter yield in the Argentine Pampas and south-eastern Australia. *Agricultural Systems*. 143, 61-75. doi:10.1016/j.agsy.2015.12.005. *Publication derived from my PhD thesis*.

CONFERENCE PROCEEDINGS

19. Chapagain R, **Ojeda JJ**, Mohammed C, Brown J, Remenyi T, Harris R (*2020*) Decomposition of crop model uncertainty using APSIM. *APSIM Symposium. Cutting Edge Software and Tools Session, Brisbane, Australia*.

18. Ojeda JJ, Perez D, Eyshi Rezaei E (*2020*) The *BestiaPop* - A Python package to automatically generate gridded climate data for crop models. *APSIM Symposium, Brisbane, Australia*.

17. Ojeda JJ, Eyshi Rezaei E, Remenyi T, Webb M, Webber H, Kamali B, Harris R, Brown J, Kidd D, Mohammed C, Siebert S, Ewert F, Meinke H (*2020*) Quantifying data aggregation effects of model inputs on simulate yield and irrigation water demand at regional scales. *APSIM Symposium. Whole Farm, Crop and Livestock Modelling Session, Brisbane, Australia. **SELECTED FOR ORAL PRESENTATION.***

16. Ojeda JJ, Brown HE, Huth N, Holzworth D, Raymundo R, Zyskowski RF, Sinton S, Michel A (*2020*) The importance of simulation configuration to crop model development. *APSIM Symposium, Brisbane, Australia*.

15. Ojeda JJ, Eyshi Rezaei E, Remenyi T, Webb M, Webber H, Kamali B, Harris R, Brown J, Kidd D, Mohammed C, Siebert S, Ewert F, Meinke H (*2020*) Multi-resolution analysis of aggregated spatial data to simulate yield and irrigation water demand at regional scales. *Session V: Crop modelling for risk and impact assessment, Second International*

Crop Modelling Symposium iCROPM2020, Montpellier, France. pp 195-196. ***SELECTED FOR ORAL PRESENTATION.***

14. Chapagain R, **Ojeda JJ**, Mohammed C, Brown J, Remenyi T, Harris R (*2020*) Historical and current approaches to decompose uncertainty in crop model predictions. Session VI: Methods and software to support modelling activities, *Second International Crop Modelling Symposium iCROPM2020 Symposium, Montpellier, France. pp 555-556.*

13. Jáuregui JM, **Ojeda JJ** (2018) Yield gap analysis of lucerne (*Medicago sativa* L.) in the Argentinian Pampas. *Proceedings of the Second World Alfalfa Congress, Cordoba, Argentina. 193-193.*

12. Ojeda JJ, Caviglia OP, Agnusdei MG, Errecart PM (2017) Water- and solar radiation-productivity in no-till forage cropping systems in the south-east Pampas of Argentina. *Proceedings 7th World Congress on Conservation Agriculture. Rosario, Argentina. 192*

11. Ojeda JJ, Pembleton KG, Caviglia OP, Islam MR, Agnusdei MG, Garcia SC (2017) Sustainable intensification of forage crop sequences in the Argentinean Pampas: dry matter production and water productivity. *Proceedings 7th World Congress on Conservation Agriculture. Rosario, Argentina. pp. 183*

10. Ojeda JJ, Mistrorigo D, Nievas LA (2017) Dry matter yield of annual ryegrass (*Lolium multiflorum* Lam.) in natural overseeding with soybean under different nitrogen rates. Proceedings 10th Scientific Communication Meeting. Oro Verde, Argentina. pp. 29

9. Girard R, Eclesia RP, **Ojeda JJ** (2017) Association between new soil carbon and root production in forage cover crops. *Proceedings 10th Scientific Communication Meeting. Oro Verde, Argentina. pp. 11*

8. Ojeda JJ, Pembleton KG, Islam MR, Garcia SC, Caviglia OP, Agnusdei MG, Bertín OD, Castaño JA, Maekawa M, Romero LA, Villar J (2015) Evaluation of the Agricultural Production Systems Simulator simulating dry matter yield of Alfalfa (*Medicago sativa* L.). *Proceedings 38th Argentinian Animal Production Conference. Santa Rosa, Argentina. pp. 156*

7. Ojeda JJ, Aello M, Caviglia OP, Agnusdei MG (2015) Productivity and nutritional evaluation of silage maize-soybean intercropping. *Proceedings 38th Argentinian Animal Production Conference. Santa Rosa, Argentina. pp. 157*

6. Ojeda JJ, Caviglia OP, Agnusdei MG, Eriksen GE, Marino MA (2015) Comparative analysis of water productivity between oats (*Avena sativa* L.) and tall fescue (*Festuca arundinacea* Schreb.). *Proceedings 38th Argentinian Animal Production Conference. Santa Rosa, Argentina. pp. 158*

5. Jáuregui JM, **Ojeda JJ**, Baudracco J, Maiztegui J, Dimundo C, Ibarlucea J, Caporgno J, Gagliardi R, Romero LA, Bodrero JP, Rosset A (2015) APSIM calibration to evaluate the alfalfa potential yield in the Northeastern Santa Fe. *Proceedings 38th Argentinian Animal Production Conference. Santa Rosa, Argentina. pp. 126*

4. Jáuregui JM, **Ojeda JJ**, Baudracco J, Maiztegui J, Dimundo C, Ibarlucea J, Caporgno J, Gagliardi R, Rosset A (2015) APSIM as predictor of the potential yield of maize in the Northeastern Santa Fe: early vs. late sowing date. *Proceedings 38th Argentinian Animal Production Conference. Santa Rosa, Argentina. pp. 127*

3. Jáuregui JM, **Ojeda JJ**, Baudracco J, Maiztegui J, Dimundo C, Ibarlucea J, Caporgno J, Gagliardi R, Rausch AF, Martoglio M, Rosset A (2015) Evaluating APSIM to predict sorghum yield in the Northeastern Santa Fe: early vs. late sowing date. Proceedings 38th Argentinian Animal Production Conference. Santa Rosa, Argentina. pp. 128

2. Bertín OD, Castaño JA, Maekawa M, **Ojeda JJ**, Sardiña MC, Romero LA, Villar J, [exaequo] Agnusdei MG (2013) Rainfall use efficiency of forage crop sequences under different rainfall conditions in the Argentinian Pampas. *Proceedings 36th Argentinian Animal Production Conference. Corrientes, Argentina. pp. 228*

1. Valentinuz O, Coll L, **Ojeda JJ** (2012) Hybrid maturity and plant population density to improve sunflower performance in Entre Ríos, Argentina. *18th International Sunflower Conference. Mar del Plata, Argentina. pp. 203*

CONTRACT REPORT, CONSULTANT'S REPORT AND INDUSTRY PUBLICATIONS

3. Hinton S, Harrison MT, Pengilley G, Phelan DC, Hardie MA and **Ojeda JJ** and Mohammed, CL (2018) Water for Profit, *Department of Primary Industries, Parks, Water and Environment, Tasmania, Australia, Final project report.* http://ecite.utas.edu.au/127157

2. Aello M, **Ojeda JJ,** Galleano A (2014) Is it advisable to make maize-soybean intercropping? *Visión Rural. 105, pp. 9-11*

1. Ojeda JJ, Valentinuz O, Coll L (2010) Response to plant population density in different sunflower hybrids cycle. *Maize, Sunflower and Sorghum Conference. INTA Paraná, Argentina. 2, pp. 75-78.*

THESIS

2. *PhD - Agricultural Sciences, National University of Mar del Plata (2017)* Precipitation use efficiency in annual forage crop sequences and perennial pastures *(in Spanish) 322 pp.*

1. *Agricultural Engineer (Bachelor of Agricultural Sciences), National University of Entre Ríos (2011).* Response to plant population density in different sunflower hybrids *(in Spanish) 13 pp.*

♦ PhD SUPERVISION

3. Quantifying the economic and ecosystem services of irrigated agriculture: a spatial-statistical approach based on regional water flux predictions (2020-2023). *Student:* Demlie Zelelew. *Supervisors:* **Ojeda JJ** (primary supervisor), Aryal J (Spatial Sciences-UTAS), Mohammed C (TIA-UTAS).

2. The benefits and limits of diversity in agricultural systems (2019-2022) *Student:* Francesco Tacconi. *Supervisors:* **Ojeda JJ** (primary supervisor), Waha K (CSIRO), Leith P (TIA-UTAS).

1. Estimating Uncertainty in Agricultural Model Scaling (2019-2022). *Student:* Ranju Chapagain. *Supervisors:* **Ojeda JJ** (primary supervisor), Harris R and Remenyi T (Geography and Spatial Sciences-UTAS), Huth N and Brown J (CSIRO), Mohammed C (TIA-UTAS).

♦ CAREER HISTORY

From Dec-2017

Junior Research Fellow (3.5-year contract), Agricultural System Modelling, Tasmanian Institute of Agriculture, UTAS.

Responsibilities

Basic research and methods

- -Quantification of crop model uncertainties (input, structure and parameter uncertainty) using sensitivity analysis tools. Lead a cooperative project with German and Spanish partners.
- -Examine alternative existing model-scaling techniques and assess the drivers of yield variability at regional scale (gridded based crop simulations) for the potential agricultural areas under several environments.
- -Point based crop model calibrations and validations under the Water for Profit project funded by DPIPWE.

-Develop a new potato module in APSIM Next Gen. Evaluating how accurately APSIM Next Gen simulates potato productivity across several agricultural systems worldwide.

Applied research and industry engagement

-Developing a virtual tool to analyse future scenarios to decision support for dual-purpose crops (canola and wheat) in Tasmania in collaboration with Grains Research and Developmen Corporation and CSIRO.

-Collecting and organize several potato agricultural datasets (climate, soil and crop management) from industry partners across Tasmania (Simplot and McCain) with modelling purposes.

-Conduct workshops with Australian farming groups under a CRC Soil project focus on the development of model to evaluate the effect of soil coinstraints on crop productivity.

Couching, supervision and leadership activities

-Supervise PhD students in collaboration with external co-supervisors (CSIRO, IMAS).

-UTAS Data Network Co-director (**Mar-2019 to Nov-2019**). Lead discussion and meeting for a group of people interested in data magement across the University.

Achievements

Publications

-One research paper published and other accepted with revisions (see details in “Publications“, research papers No 8 and 10), one industry report (No 3) and seven conference papers (No 13-19).

Proposals

#Nov-2019. Argentinian Agency for Scientific and Technological Promotion. Estimation of radiation use efficiency of grassland and its use for characterize syndromes of ecosystem changes. ***Under review***

#Nov-2019. Visualising agricultural uncertainties under climate change scenarios, CoSE Grant Incentive Scheme, College of Sciences and Engineering, UTAS. ***GRANTED (Project leader)***

#Jul-2019. Cooperative Research Centre (CRC) for High Performance Soils PhD Project: Visualising soil productivity, water use and soil health based on remote-sensing and crop models. ***Not funded***

#Jun-2019. National Commission for Scientific and Technological Research, Chilean Government. Comparative assessment of the crop simulation models APSIM and DSSAT to simulate nitrogen use efficiency of different potato production systems. ***Not funded***

#Mar-2019. Australian Government, Department of Foreign Affairs and Trade, Council on Australia Latin America Relations Grant. Crop-livestock adaptation to climate change based on modelling and remote-sensing. ***GRANTED (Project leader)***

#Oct-2018. Australian Sustainable Agriculture Elite Scholarship (PhD funds) The benefits and limits of diversity in agricultural systems. Collaboration with CSIRO. ***GRANTED (Project leader)***

#Aug-2018. Australian Sustainable Agriculture Elite Scholarship (PhD funds) Estimating Uncertainty in Agricultural Model Scaling (EUAgMS). Collaboration with CSIRO and Institute for Marine and Antarctic Studies (IMAS). ***GRANTED (Project leader)***

#May-2018. Cooperative Research Centre (CRC) for High Performance Soils Project: Improving the representation of soil productivity /constraints in existing decision support systems and modelling platforms. ***GRANTED (Partner)***

#Jun-2018. Australia Germany Joint Research Cooperation Scheme proposal. ***GRANTED (Project leader)***

#Mar-2018. Australian Research Council. Australian Discovery Early Career Researcher Award. Towards high water productivity in irrigated agriculture based on scenario modelling. ***Not funded***

Teaching

#Jul-2018. Guest Lecture, TIA-UTAS seminars: Can we trust in field-scale model predictions to assess the agricultural systems complexity at regional levels?
#Jun-2018. Guest Lecture, KLA312/KLA535: Farming Systems and Business Management, TIA-UTAS

Courses, research collaboration and research stays

#Feb-2020. Montpellier, France. Attendance to (i) the Second International Crop Modelling Symposium iCROPM2020 (3 days) and AgMIP-Calibration and AgMIP-Ozone side events (2 days). Presentation of an oral session and a poster.
#Jan-2020. Muncheberg, Germany. Research stay at ZALF (3 weeks). Work with Dr Webber and Kamali under UA-DAAD Project.
#Dec-2019. Toowoomba, Australia. Research stay at USQ (1 week) working with Dr Pembleton and CRC team. Visit to partners (Dr Huth and Holzworth) at CSIRO.
#Nov-2019. Ross, Tasmania, Australia. CoSE REP Workshop (2 days). Participation as organiser.
#Sep-2019. Lincoln, New Zealand. Research stay at Plan & Food Research Institute (1 week) to conduct collaborative work with Dr Brown on potato modelling and write a paper on crop modelling configuration procedures. Also attendance to Lucerne ecophisilogy and modelling workshop (2 weeks) at Lincoln University organised by Dr Derrick Moot.
#Jul-2019. Oro Verde, Argentina. APSIM Posgraduate Course at UNER (3 days). Organiser and exhibitor.
#Apr-2019. Gottingen, Germany. Research stay at University of Gottingen (3 weeks). Travel's aims: (i) consolidate international collaboration with partners and (ii) conduct collaborative workbased on the Australia-Germany Joint Research Co-Operation Scheme (UA-DAAD).
#Mar-2019. Newcastle, Australia. Conference assistance and meeting with project collaborators (3 days). Exhibitor in a CRC Soil Conference.
#Nov-2018. Hobart, Tasmania, Australia. Coordinator of Dr Lattanzi' visit to Tasmania (3 days).(Director of the Research Program on Pastures and Forages at INIA Uruguay).
#Aug-2018. Lincoln, New Zealand. (i) Consolidate international collaboration with partners in Plan & Food Research Institute, (ii) conduct collaborative work with Dr Brown on potato modelling development and (iii) training in programming and coding behind the APSIM Next Gen user interface (1 week).
#Jun-2018. Wageningen, The Netherlands. Gottingen and Muncheberg, Germany. (i) Course and workshop assistance "Fundamentals of Crop Physiology in a Changing World", Wageningen University (1 week) and (ii) visit to collaborators at University of Gottingen (Dr Siebert and Rezaei) and ZALF (Dr Ewert, Webber and Kamali) (4 days).

Industry engagement

#Aug-2019. Devonport, Tasmania, Australia. Meetings with Simplot and McCain representatives, farming groups and advisors. Presentation of APSIM results and setup of experiments (3 days).
#Jul-2019. Smithon and Ulverstone, Tasmania, Australia. Meetings with Simplot and McCain representatives to discuss about minimum data requirements for modelling purposes and setup new potato experiments in selected potato farms (1 day).

Scientific Review

See "Evaluation" section below.

Apr-2017 to Nov-2017

Postdoctoral Research Fellow, Research Council of Argentina, CONICET (Workplace: Experimental Station Paraná, National Institute of Agriculture, Argentina)
Graduate Teaching Assistant, Ecophysiology and Forage Production, National University of Entre Ríos, Argentina

Responsibilities

-Participate actively in the preparation for national and international proposals and research grants.
-Participate in dissemination activities related with my research line.
-Collect, analyze and interpret results, prepare seminars, workshop presentations, and present oral and written scientific reports papers in high quality journals.
-Post-graduate (~15 students) and undergraduate (~50 students) courses on crop ecophysiology and agricultural systems.
-Advised one Honours thesis (Bachelor degree in Agronomy) at National University of Entre Ríos.Honours thesis description: Impact of cover crops with different defoliation levels on soil carbon.

Achievements

-One research paper (No 9) and 5 conference proceedings published (No 9-13).
-Dissertation of the Crop Ecophysilogy post-graduate course at National University of Entre Ríos.

Postgraduate Research Fellow, Research Council of Argentina, CONICET (Workplace: Experimental Station Balcarce, National Institute of Agriculture, Argentina)
Graduate Teaching Assistant, Ecophysiology and Forage Production, National University of Entre Ríos, Argentina (**from Apr-2015**)

Responsibilities

-Apply ecophysiology concepts to the management of annual/perennial cropping systems for forage and grain production through field experimentation and biophysical simulation models, with emphasis on improving resource use efficiency with minimal environmental impact.
-Use simulation models to analyze and predict the long-term productivity and stability of different cropping systems, encouraging the sustainable intensification of farm crop/forage production systems and improving environmental resources management strategies (solar radiation, soil water, and nutrients [mainly N]) while reducing environmental risks and climatic uncertainty.
-Analyze and organize data for climate, soil, crop production, and management from five locations across Argentinian Pampas.
-Calibrate and validate APSIM to predict biomass production at the crop and sequence level.
-Design and conduct a 3-year field experiment in Balcarce, Argentina (May 2012 to May 2015).
-Conduct probe calibration for Argiudoll soil in Balcarce, Argentina.
-Data analysis and dissertation manuscript writing.

Achievements

-Seven research papers (No 1-7), 7 conference proceedings published (No 2-8) and one industry publication (No 2).
-Dissertation of the Crop Ecophysilogy post-graduate course at National University of Entre Ríos.
-Research instrument/sensors expertise:

<u>Soil water</u>

Neutron probe TROXLER 4300 (Troxler Electronic Lab., NC, USA). Portable capacitance probe DIVINER 2000 (Sentek Pty. Ltd., Kent Town, Australia)

<u>Solar radiation</u>

Linear ceptometers (Cavadevices, Buenos Aires, Argentina and ACCUPAR Decagon, Pullman, WA, USA). Plant Canopy Analyzer LI-COR LAI-2000 (LI-COR Inc., Lincoln, NE, USA). Roots and soil samples. Washer roots Delta-T Devices RWC-UM-2 (Delta-T Devices Ltd., Cambridge, England). Giddings Soil Exploration Equipment #35-SCT (Giddings Machine Company, Windsor, CO, USA). Chlorophyll

Meter SPAD-502 (Spectrum Technologies, Plainfield, IL, USA). Portable Photosynthesis System LICOR 6400 (LI-COR Inc., Lincoln, NE, USA). Leaf Area Meter LI-3100C (LI-COR Inc., Lincoln, NE, USA)

-Gained knowledge of field experimentation, agricultural sensors, forage crop production, and environmental resource use.
-Developed experimental design skills for hypotheses testing using field experiments and simulation modelling.
-Improved communication skills: scientific presentations, scientific publications, lectures.
-I obtained my PhD on 27 March 2017.

- INTERNATIONAL SCHOLARSHIPS

Visiting Researcher (**May-2015 to Mar-2016**)
Department of Agronomy, Purdue University, United States
Funded by Fulbright Fellowship (see details in "Grants and Funding" below)

Activities

1- I modified the APSIM model so that it could accurately predict growth and yield of switchgrass and *Miscanthus*; two plant species that are not yet represented in this large, multi-species model. I altered two existing APSIM sub-models (lucerne, sugarcane) using knowledge of species-specific differences in growth, development and agronomic practices. I assembled large databases for soils and weather that I could subsequently associate with site-specific yield data of both species and successfully calibrated and validated both of these new sub-models. These new APSIM sub-models predict yield of both species across broad geographies from the East Coast to the Great Plains of the US.

2- I altered the APSIM maize model routine in substantive ways to predict corn yield in continuous corn and soybean-corn rotations. First, I successfully calibrated and validated the model using
data from the Eastern cornbelt of the US. I then used water flow and agronomic data from Purdue's Water Quality Field Station (WQFS) to calibrate the water use/drainage sub-routine of water balance data can be obtained. This enabled to make improvement in the APSIM maize model not otherwise possible.

Achievements

-Two research collaborative papers published in high impact scientific journals (see details in "Publications" below).

Visiting Researcher (**Oct-2013 to Dec-2013**)
Faculty of Veterinary Science, The University of Sydney. Camden. NSW. Australia
UTAS, Burnie, TAS, Australia
Funded by INNOVA-T Grant (see details in "Grants and Funding" below) and funding from INTA, The University of Sydney and UTAS.

Activities

I used experimental field data collected in several locations of Argentina to evaluate the ability of APSIM to simulate the growth patterns of lucerne and annual ryegrass, and to predict dry matter yields in this region. Also, I simulated dry matter yields of both crops at several Australian locations
to ensure that possible changes into the model not ruin the well APSIM performance that was already shown in these environments.

Achievements

-Two research collaborative papers published in high impact scientific journals (see details in "Publications").

- TEACHING AND ADVISORY ROLES

Responsibilities
-Research and teaching “Ecophysiology and Forage Production”.
-Undergraduate course (~50 students).
-Supervision of Honours theses.

Achievements (Academic)
-Develop leadership skills and team coordination.
-Advised two Honours theses (Bachelor degree in Agronomy) at National University of Mar Del Plata. Honours theses description: 1. Comparative analysis of water productivity between oats (*Avena sativa*) and tall fescue (*Festuca arundinacea* Schreb.) (*Finished*). 2. Nutritional evaluation of silage maize-soybean intercropping (*Finished*).

Industry activities
-Invited talks for growers (see details in “Invited talks” below).

Apr-2012 to Apr-2015

Graduate Teaching Assistant, Crop Physiology and Ecology, National University of Entre Ríos, Argentina

Responsibilities
-Research and teaching “Crop Physiology and Ecology”.
-Undergraduate course (~50 students).
-Supervision of staff (international students).
-Supervision of Honours theses.

Achievements (Academic)
-One international student supervisory position. Designing and conducting agronomy trials in INTA Balcarce, Argentina.
-Advised two Honours theses (Bachelor degree in Agronomy) at National University of Mar Del Plata, and one Honours dissertation at National University of Entre Ríos. 1- Comparative analysis of root production and distribution in oats (*Avena sativa*) and tall fescue (*Festuca arundinacea* Schreb.) (*Finished*). 2- Effects of previous crop, additives and pre-wilted in nutritional quality of silage of oat (*Avena sativa*) (*Finished*).

-Developed leadership skills and team coordination.

Industry activities
-Invited talks for growers (see details in “Invited talks” below).

Apr-2011 to Apr-2012

Industry Assistant and Agricultural Consultant
DASER AGRO S.A, Dow AgroSciences, Entre Ríos, Argentina

Responsibilities
-Responsible for field experiments.
-Assistant for the seed marketing project.
-Private consultant in agricultural systems.
-Invited talks for growers.

Achievements
-Developed leadership skills and team coordination.
-Independently solved complex problems.
-Improved innovation and creativity to incorporate novel ideas and approaches to solve real farmer’s problems.

Apr-2007 to Apr-2011

Undergraduate Teaching Assistant, Mathematics, National University of Entre Ríos, Argentina
Research Scholarship (September 2009 to May 2010), INTA Paraná, Argentina

Responsibilities
-Research and teaching "Mathematics".
-Undergraduate course (>100 students).
-Design and conduct a field experiment in Paraná (Argentina) for one summer season.
-Data analysis and dissertation manuscript writing.

Achievements
-Developed leadership skills and team coordination.
-Mastered mathematical functions linked with crop growth.
-Gained knowledge of field experimentation and crop production.
-Developed experimental design skills to conduct on-farm experiments.
-Improved communication skills: scientific presentations, scientific publications, lectures.
-Completed my degree career (Agricultural Engineer) and wrote Honour dissertation.

♦ INVITED TALKS

#Mar-2020. Quantifying data aggregation effects of model inputs on simulate yield and irrigation water demand at regional scales. APSIM Symposium 2020, Brisbane, Australia.

#Feb-2020. Multi-resolution analysis of aggregated spatial data to simulate yield and irrigation water demand at regional scales. iCROPM2020 International Symposium, Montpellier, France.

#Sep-2019. Can we trust in model predictions to assess questions at farm/regional levels? Workshop Lucerne, Lincoln, New Zealand.

#Aug-2019. Minimum datra requirements for modelling purposes. Simplot/McCain workshop, Devonport, Australia.

#Jul-2019. APSIM Course UNER, Oro Verde, Argentina.

#Jun-2019. Collaborations and data sharing to improve research outcomes: modelling across scales as a case of study. Data Network Hobart Teas and Workshop, UTAS, Australia.

#Apr-2019. Model up-scaling workshop, Gottingen, Germany.

#Apr-2019. Improving the representation of soil productivity/constraints in existing decision support systems and modelling platforms. CRC Conference, Newcastle, Australia.

#Jul-2018. Can we trust in field-scale model predictions to assess the agricultural systems complexity at regional levels?. Guest Lecture, TIA seminars, UTAS, Australia.

#May-2018. A modeller's life. Guest Lecture, KLA312/KLA535: Farming Systems and Business Management, TIA-UTAS, Australia.

#Mar-2017. Precipitation use efficiency in annual forage crop sequences and perennial pastures. PhD Dissertation defense. National University of Mar del Plata, Argentina.

#Jul-2016. Water productivity of annual cropping sequences and perennial pastures in Balcarce, Argentina. Crop Sequences Workshop. INTA General Villegas, Argentina.

#May-2015. Biomass production and environmental resources use in annual forage crops sequences and perennial pastures in the Argentinian Pampas. University Seminar 2015. National University of Entre Ríos, Argentina.

#Mar-2015. Biomass production and environmental resources use in annual forage crops sequences and perennial pastures in the Argentinian Pampas. Oral and public defense of PhD Dissertation Project 2015. National University of Mar del Plata, Argentina (Exhibitor, in Spanish)

#Oct-2013. Evaluation of the Agricultural Production Systems Simulator simulating dry matter yield of forage crops sequences in the Argentinean Pampas. Postgraduate Seminar 2013. Faculty of Veterinary Science. The University of Sydney, Australia.

#Dec-2012. Sustainable intensification of forage production. Research Seminar 2012. INTA Paraná, Argentina.

#Nov-2012. Sustainable intensification of forage production. Forage Workshop 2012. National Northwest University of Buenos Aires, Argentina.

#Aug-2012. Eco-physiological assessment and analysis of different crops and pasture sequences Animal Production Conference 2012. INTA Balcarce, Argentina.

#Jun-2012. Production, quality and sustainable management of temperate and mega-thermal grasslands. Forage Workshop 2012. INTA Rafaela, Argentina.

♦ REFEREES

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♦ PERSONAL DETAILS

-Date of birth: 12 Apr 1986
-Citizenship: Argentine. Permanent Australian Resident Regional Sponsored Migration Scheme (*subclass 187*)
-Australian driver licence

-Marital Status: Married
-Children: One (3 years-old)

CV Jonathan J. Ojeda - version **15-Feb-2020**