

SOTIRIOS V. ARCHONTOULIS

Department of Agronomy, Iowa State University, Email: sarchont@iastate.edu

PROFESSIONAL PREPARATION

B.S. (2004), University of Thessaly, Greece, Agronomy

M.S. (2006), Wageningen University, the Netherlands, Crop Science

Ph.D (2011), Wageningen University, the Netherlands, Crop Physiology & Modeling

Postdoc (2012-2014), Iowa State University, Iowa, USA, Cropping Systems Modeling

PROFESSIONAL EXPERIENCE

2019 May–present Associate Professor, Department of Agronomy, ISU

2014 July–2019 Assistant Professor, Department of Agronomy, ISU

(70% research; 30% extension appointment)

RESEARCH EMPHASIS

Dr. Archontoulis research seeks to understand and model Genotype by Management by Environment and interactions and identify practices that can improve the efficiency of the agronomic system. His approach combines field experimentation with process-based modeling.

EXTENSION RESPONSIBILITIES

Dr. Archontoulis provides leadership in the area of integrated cropping systems that supports producers, agribusiness, and governmental agency programs. His focus area is on agronomic issues of crops and development of decision support tools for agriculture.

HONORS AND AWARDS

2021 Pioneer Hi-Bred Agronomy Professor

2018 Faculty Scholar, Plant Science Institute, Iowa State University

2018 Early Achievement in Research Award, College of Ag, ISU

2017 FFAR New Innovator

2016 Outstanding Associate Editor for Agronomy Journal

PRODUCTS AND WEB-TOOLS

2020 [Weather assessment tool](#)

2019 [Corn dry-down calculator](#)

2018 [Regional scale soil water and nitrogen benchmarking tool](#)

2016 [Field scale crop yield, phenology, soil water and nitrogen tool](#)

2016 [Biochar simulation model within APSIM](#)

2015 [Soybean planting decision tool](#)

PROFESSIONAL SERVICE AND SYNERGISTIC ACTIVITIES

- Archontoulis leads the Forecast and Assessment of Cropping syTemS ([FACTS project](#)), an interdisciplinary effort to predict crop yields, soil water/nitrogen in the US Corn Belt
- Associate Editor for Agronomy Journal, Editorial Board of European Journal of Agronomy, and reviewer for more than 35 journals
- Member of the APSIM Initiative Reference Panel that oversees the science behind the APSIM cropping system model
- Archontoulis is actively involved with the maize and soybean modeling teams of the Agricultural Model Inter-comparison and Improvement Project (AgMIP)

REFEREED JOURNAL PUBLICATIONS

- [93] Mandrini German, Pittelkow CM, Archontoulis SV, Mieno T, Martin NF, 2021. [Understanding differences between static and dynamic nitrogen fertilizer tools using simulation modeling](#). **Agricultural Systems** 194, 103275.
- [92] Liu K, Harrison MT, Archontoulis SV, Huth N, Yang R, Li Liu D, Yan H, Meinke H, Huber I, Feng P, Ibrahim A, Zhang Y, Tian X, Zhou M, 2021. [Climate change shifts forward flowering and reduces crop waterlogging stress](#). **Environmental Research Letters** 16, 094017.
- [91] Ansarifar J, Wang L, Archontoulis SV, 2021. [An interaction regression model for crop yield prediction](#). **Nature Scientific Reports** 11, 17754.
- [90] Ciampitti IA, de Borja Reis AF, Córdova SC, Castellano MJ, Archontoulis SV, Correndo AA, Antunes De Almeida LF, Moro Rosso LH, 2021. [Revisiting Biological Nitrogen Fixation Dynamics in Soybeans](#). **Frontiers in Plant Science** 12, 727021. doi: 10.3389/fpls.2021.72702
- [89] Shahhosseini M, Hu G, Khaki S, Archontoulis SV, 2021. [Corn yield prediction with ensemble CNN-DNN](#). **Frontiers Plant Science** 12, 709008. doi: 10.3389/fpls.2021.709008
- [88] Couëdel A, Edreira JIR, Lollato RP, Archontoulis SV, Sadras V, Grassini P, 2021. [Assessing environment types for maize, soybean, and wheat in the United States as determined by spatio-temporal variation in drought and heat stress](#). **Agric For Meteorol**, 307: 108513
- [87] de Borja Reis AF, Rosso LHM, Purcell LC, Naeve S, Casteel SN, Kovács P, Archontoulis SV, Davidson D, Ciampitti IA, 2021. [Environmental factors associated with nitrogen fixation prediction in soybean](#). **Front Plant Sci**. doi:10.3389/fpls.2021.675410
- [86] Akhavizadegan F, Wang L, Huber I, Archontoulis S, 2021. [A Time-Dependent Parameter Estimation Framework for Crop Modeling](#). **Nature Scientific Reports** 11:11437
- [85] De Borja Reis AF, Moro Rosso LH, Davidson D, Kovacs P, Purcell LC, Below FE, Casteel SN, Knott C, Kandel H, Naeve SL, Carciochi W, Ross WJ, Favoretto VR, Archontoulis SV, Ciampitti IA, 2021. [Sulfur fertilization in soybean: A meta-analysis on yield and seed composition](#). **European J of Agronomy**, 126285.
- [84] Ordonez R, Castellano M, Danalatos GN, Wright E, Hatfield J, Burras L, Archontoulis S, 2021. [Insufficient and excessive N fertilizer input reduces maize root mass across soil types](#). **Field Crops Research**, 108142.
- [83] Pasley H, Nichols V, Castellano M, Helmers M, Baum M, Kladviko E, Archontoulis S, 2021. [Rotating Maize Reduces the Risk and Rate of Nitrate Leaching](#). **Environmental Research Letters**, (accepted).
- [82] Li X, Guo T, Wang J, Bekele W, Sukumaran S, Vanous A, McNellie J, Cortes LT, Lopes M, Lamkey KR, Westgate ME, McKay J, Archontoulis SV, Reynolds MP, Tinker N, Schnable PS, Yu J, 2021. [An integrated framework reinstating the environmental dimension of GWAS and genomic selection in crops](#). **Molecular Plant** 14, 1–14.
- [81] Kusmec A, Zheng Z, Archontoulis S, Ganapathysubramanian B, Hu G, Wang L, Yu J, Schnable P, 2021. [Interdisciplinary strategies to enable data-driven plant breeding in a changing climate](#). **One Earth** 4: 372–383.
- [80] Zhu Y, Chen Y, Ali Md A, Dong L, Wang X, Archontoulis S, Schnable J, Castellano M, 2021. [Continuous in situ soil nitrate sensors: a comparison with conventional measurements and the value of high temporal resolution measurements](#). **Soil Science Society of America Journal**, (accepted).
- [79] Shahhosseini M, Hu G, Huber I, Archontoulis S, 2021. [Coupling Machine Learning and Crop Modeling Improves Crop Yield Prediction in the US Corn Belt](#). **Nature Scientific Reports**, 11:1606.

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- [75] Cordova SC, Archontoulis SV, Licht MA, 2020. [Soybean profitability and yield component response to nitrogen fertilizer in Iowa](#). **Agroecosystems, Geoscience & Environment**, 3:e20092.
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