

George Vellidis

University Professor

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Email: yiorgos@uga.edu URL: www.vellidis.uga.edu Twitter: [@Vellidis_Group](https://twitter.com/Vellidis_Group)**Education**

1989: Ph.D. in Agricultural and Biological Engineering with a minor area of study in Environmental Engineering, University of Florida

1985: M.S. in Agricultural Engineering, Virginia Tech

1983: B.S. in Agricultural Engineering, Virginia Tech

Professional Experience

2017 – current Director of Academic Programs, Tifton Campus and Professor, University of Georgia

2012 – 2017 Professor, Crop & Soil Sciences Department, Tifton Campus, University of Georgia

2005 – 2012 Research, Extension, and Instruction Coordinator and Professor, Biological & Agricultural Engineering Department, Tifton Campus, University of Georgia

1989 – 2012 Assistant Professor to Professor of Biological & Agricultural Engineering, University of Georgia.

Research Interests

Dr. Vellidis applies principles of engineering and the sciences to measure, model, and manage the interaction between agricultural production systems and the environment. Under this umbrella, he has developed two areas of emphasis – water resources and precision agriculture. Often these two areas blend.

Teaching

- CRSS 3030 – *Principles of Precision Agriculture* (taught annually)
- CRSS 4030/6030 – *Advanced Topics in Precision Agriculture* (taught annually)
- CRSS 3060 – *Water Quality* (taught annually)

Selected Honors and Awards

- 2020 *University Professor* – The title of University Professor is bestowed on faculty at the University of Georgia whose actions as change-agents have improved the quality with which the University serves its missions.
- 2020 *Elected to the University of Georgia's Teaching Academy* – The Teaching Academy is a forum to discuss, celebrate and promote teaching excellence.
- 2019 Keynote Speaker – *SmartIrrigation – a Pathway to Sustainable Intensification*, European Federation for Information Technology in Agriculture, Food and the Environment (EFITA) Congress, Rhodes, Greece
- 2018 Keynote Speaker – *SmartIrrigation Apps for Scheduling Irrigation*, Congresso Brasileiro De Engenharia Agrícola (CONBEA), Brasilia, Brazil
- 2018 Keynote Speaker – *SmartIrrigation – a Pathway to Sustainable Intensification*, Agritech Israel, Tel Aviv, Israel
- 2017 *Richard F. Reiff Internationalization Award*– this award is presented by the University of Georgia Office of International Education to individuals or teams who have made major contributions to the overall internationalization of the university. Dr. Vellidis led the team that established a Dual Master's Degree in Sustainable Agriculture between the University of Georgia and the University of Padova in Italy.
- 2016 *Pierre C. Robert Precision Agriculture Award* – this award is presented by the International

Society for Precision Agriculture and honors individuals who have made significant contributions to precision science and technology.

- 2015 *University of Georgia College of Agricultural & Environmental Sciences D.W. Brooks Award for Excellence in Research* – This award recognizes exceptional creativity and excellence in the discovery, application, and integration of knowledge which contributes to timely problem-solving in the agricultural and environmental sciences.
- 2014 *Educational Aids Blue Ribbon Award from the American Society of Agricultural and Biological Engineers (ASABE) for SmartIrrigation Apps for Scheduling Irrigation*
- 2012 *University of Georgia Tifton Campus Award of Excellence for Research*
- 2007 *Keynote Speaker – When Everything Connects: Is the Wireless Revolution Coming to Agriculture?*, 6th European Conference on Precision Agriculture, Skiathos, Greece
- 2004 *University of Georgia Tifton Campus Award of Excellence for Teaching*

Selected Leadership and Related Activities

- Leading the development of a Joint PhD degree in Integrative Agricultural Sciences between the University of Georgia and the University of Padova, Italy (2022-present)
- Chair of the planning committee of the conference titled “[Integrative Precision Agriculture – Local Solutions Through Global Advances](#)” scheduled for 18-19 May 2023 (2022-present)
- Led the development of a [Dual Master’s degree in Sustainable Agriculture](#) between the University of Georgia and the University of Padova, Italy. The first students enrolled during Fall Semester 2016
- Leader and developer of the TransAtlantic Precision Agriculture Consortium (TAPAC) – a group of 3 American and 3 European universities dedicated to internationalizing the teaching, research and extension programs of the member universities (2004-2017)
- University of Georgia team leader for the Southeast Climate Consortium (SECC) and member of the SECC Executive Committee (2012-2017)
- Adjunct faculty in the Odum School of Ecology and College of Engineering, University of Georgia; Department of Agronomy, Food, Natural Resources, Animals and Environment (DAFNAE), Università degli Studi di Padova (Italy); and Departamento de Engenharia Rural, Unesp – São Paulo State University (Brazil)

Extramural Funding

- More than \$23,000,000 in extramural funding for research from state, national, and international funding agencies such as the USDA National Institute of Food and Agriculture, USDA Natural Resources Conservation Service, U.S. National Oceanic and Atmospheric Administration, BARD – Binational Agricultural Research and Development Program (Israel-USA), Georgia Specialty Crop Grant Program
- \$4,800,000 in facility development grants from local, state, and national funding agencies such as the Tift County Development Authority, OneGeorgia Authority, and the Georgia Research Alliance

Patents, Licensing Agreements, and Smartphone Application Releases

- **Vellidis, G.**, and V. Liakos. 2023. SmartIrrigation CropFit App, www.smartirrigationapps.org
- **Vellidis, G.**, K.L. Migliaccio, M. Dukes. 2022. SmartIrrigation Corn App, www.smartirrigationapps.org
- Liakos, V., E. Smith, and **G. Vellidis**. 2019. SmartIrrigation Blueberry App, www.smartirrigationapps.org
- Liakos, V., and **G. Vellidis**. 2019. SmartIrrigation Soybean App, www.smartirrigationapps.org
- **Vellidis, G.**, and V. Liakos. 2015. SmartIrrigation Cotton App, www.smartirrigationapps.org
- **Vellidis, G.**, M. Tucker, C. Perry, H. Henry, and R.W. Hill. 2013. *Licensing agreement* for the commercialization of the University of Georgia Smart Sensor Array (UGA SSA) for Scheduling Irrigation with Advanced Ag Systems of Dothan, AL, 20 September 2013.
- **Vellidis, G.**, C.D. Perry, J.S. Durrence, D.L. Thomas, R.W. Hill, C.K. Kvien, T.K. Hamrita. 2003. *U.S. Patent 6,525,276* issued 25 February 2003 for “[Crop Yield Monitoring System](#)”, Principal Inventor. Technology was licensed by WAG Corporation of Tupelo, MS.

Recent Publications (of 133 refereed journal articles, 11 book chapters, 147 conference proceedings)

**Indicates works published by graduate students or post-docs mentored by Dr. Vellidis.*

Refereed Journal Articles

- Pokhrel, A., J.L. Snider, S. Virk, H.Y. Sintim, L.C. Hand, **G. Vellidis**, V. Parkash, D.P. Chalise, J.M. Lee. 2023. Quantifying physiological contributions to nitrogen-induced yield variation in field-grown cotton. *Field Crops Research* 299, 9pp, <https://doi.org/10.1016/j.fcr.2023.108976>.
- Hatum de Almeida, S.L, J.B. Costa Souza, C. Pilon, A.H. de Castro Teixeira, A.F. dos Santos, M.N. Sysskind, **G. Vellidis**, R.P. da Silva. 2023. Performance of the SAFER model in estimating peanut maturation. *European Journal of Agronomy* 147 (10p), 126844, <https://doi.org/10.1016/j.eja.2023.126844>.
- Bondesan, L., B.V. Ortiz, F. Morlin, G. Morata, L. van Santen, B. Lena, **G. Vellidis**. 2023. A comparison of precision and conventional irrigation in corn production in Southeast Alabama. *Precision Agriculture* 24, 40–67, <https://doi.org/10.1007/s11119-022-09930-2>.
- *Lacerda, L. N., J. Bo, Y. Cohen, V. Liakos, M. Levi, **G. Vellidis**. 2022. Correlation of UAV and satellite-derived vegetation indices with cotton physiological parameters and their use as a tool for scheduling variable rate irrigation in cotton. *Precision Agriculture* 23:2089–2114, <https://doi.org/10.1007/s11119-022-09948-6>.
- Chalise, D.P., J.L. Snider, L.C. Hand, P. Roberts, **G. Vellidis**, A. Ermanis, G.D. Collins, L.N. Lacerda, Y. Cohen, A. Pokhrel, V. Parkesh, J.M. Lee. 2022. Cultivar, irrigation management, and mepiquat chloride strategy: Effects on cotton growth, maturity, yield, and fiber quality. *Field Crops Research* 286, 108633, <https://doi.org/10.1016/j.fcr.2022.108633>.
- *Santos A.F., Lacerda L.N., Rossi C., Moreno L.d.A., Oliveira M.F., Pilon C., Silva R.P., **Vellidis G**. 2022. Using UAV and multispectral images to estimate peanut maturity variability on irrigated and rainfed fields applying linear models and artificial neural networks. *Remote Sensing* 14(1):93. <https://doi.org/10.3390/rs14010093>
- *Lacerda, L. N., Snider, J. L., Cohen, Y., Liakos, V., Gobbo, S., **Vellidis, G**. 2021. Using UAV-based thermal imagery to detect crop water status variability in cotton. *Smart Agricultural Technology*, 100029. <https://doi.org/10.1016/j.atech.2021.100029>
- *Lacerda, L., Y. Cohen, J. Snider, H. Huryana, V. Liakos, **G. Vellidis**. 2021. Field scale assessment of the TsHARP technique for thermal sharpening of MODIS satellite images using VEN μ S and Sentinel-2 Derived NDVI. *Remote Sensing* 13(6), 1155-1180, <https://doi.org/10.3390/rs13061155>
- *dos Santos, A.F., L.N. Corrêa, L.N. Lacerda, D. Tedesco-Oliveira, C. Pilon, **G. Vellidis**, R.P. da Silva. 2021. High-resolution satellite image to predict peanut maturity variability in commercial fields. *Precision Agriculture* 22(5), 1464–1478, <https://doi.org/10.1007/s11119-021-09791-1>
- *Liang, X., G. Hoogenboom, S. Voulgaraki, K.J. Boote, **G. Vellidis**. 2021. Deriving genetic coefficients from variety trials to determine sorghum hybrid performance using the CSM-CERES-Sorghum model. *Agronomy Journal* 113(3):2591-2606. <https://doi.org/10.1002/agj2.20644>
- Ermanis, A., S. Gobbo, J.L. Snider, Y. Cohen, V. Liakos, L. Lacerda, C.D. Perry, M.A. Bruce, **G. Vellidis**. 2020. Defining physiological contributions to yield loss in response to irrigation in cotton. *Journal of Agronomy and Crop Science* 207(2):186-196. <https://doi.org/10.1111/jac.12453>
- *Debbie, L., M. Tertuliano, C. Harris, **G. Vellidis**, K. Levy, T. Coolong. 2019. *Salmonella* survival in soil and transfer onto produce via splash events. *Journal of Food Protection* 82(12):2023-2037. <https://doi.org/10.4315/0362-028X.JFP-19-066>
- Zurweller B, D. Rowland, M. Mulvaney, B. Tillman, K. Migliaccio, D. Wright, J. Erickson, P. Payton, **G. Vellidis**. 2019. Optimizing cotton irrigation and nitrogen management using a soil water balance model and in-season nitrogen applications. *Agricultural Water Management* 216:306-314. <https://doi.org/10.1016/j.agwat.2019.01.011>
- *Bevington, J., E. Scudiero, **G. Vellidis**, P. Teatini, F. Morari. 2018. Factorial kriging analysis leverages soil physical properties and exhaustive data to predict distinguished zones of hydraulic properties. *Computers and Electronics in Agriculture* 156:426-438. <https://doi.org/10.1016/j.compag.2018.11.034>

- *Lee, D., M. Tertuliano, **G. Vellidis**, C. Harris, M.K. Grossman, S. Rajeev, K. Levy. 2018. Evaluation of grower-friendly, science-based sampling approaches for the detection of *Salmonella* in ponds used for irrigation of fresh produce. *Foodborne Pathogens and Disease*, Published Online: 01 Oct 2018, <https://doi.org/10.1089/fpd.2018.2441>
- *Miller, L., **G. Vellidis**, Mohawesh, O, Coolong, T. 2018. Comparing a smartphone irrigation scheduling application with water balance and soil moisture-based irrigation methods: Part I—Plasticulture-grown tomato. *HortTechnology* 28(3):354-361. <https://doi.org/10.21273/HORTTECH04010-18>
- *Miller, L., **G. Vellidis**, Coolong, T. 2018. Comparing a smartphone irrigation scheduling application with water balance and soil moisture-based irrigation methods: Part II—Plasticulture-grown watermelon. *HortTechnology* 28(3):362-369. <https://doi.org/10.21273/HORTTECH04014-18>
- *Harris, C., Tertuliano, M., Rajeev, S., **Vellidis, G.** and Levy, K. 2018. Impact of storm runoff on *Salmonella* and *Escherichia coli* prevalence in irrigation ponds of fresh produce farms in southern Georgia. *J Appl Microbiol*, 124: 910-921. <https://doi.org/10.1111/jam.13689>.
- **Vellidis G**, Morari F, Battisti A, Berti A, Borin M, Broder J, Cabrera M, Cattarinussi R, Franklin D, McMaken V et al. 2017. From a precision agriculture consortium to a dual master's degree in sustainable agriculture. *Advances in Animal Biosciences* 8(02):738-742. <http://dx.doi.org/10.1017/S2040470017000346>.
- *Liakos V, Porter W, Liang X, Tucker MA, McLendon A, **Vellidis G.** 2017. Dynamic variable rate irrigation – a tool for greatly improving water use efficiency. *Advances in Animal Biosciences* 8(02):557-563. <http://dx.doi.org/10.1017/S2040470017000711>.
- Porter E, **Vellidis G**, Liakos V, Porter W, Branch B. 2017. An optical yield monitor for peanuts – Proof of concept and evaluation. *Advances in Animal Biosciences* 8(02):199-203. <http://dx.doi.org/10.1017/S2040470017000061>.
- *Bao, Y., G. Hoogenboom, R.W. McClendon, **G. Vellidis**. 2017. A comparison of the performance of the CSM-CERES-MAIZE and EPIC models using maize variety trial data. *Agricultural Systems* 150:109–119, <http://dx.doi.org/10.1016/j.agsy.2016.10.006>.
- **Vellidis, G.**, V. Liakos, J.H. Andreis, C.D. Perry, W.M. Porter, E.M. Barnes, K.T. Morgan, C. Fraisse, K.W. Migliaccio. 2016. Development and assessment of a smartphone application for irrigation scheduling in cotton. *Computers and Electronics in Agriculture* 127:249–259, <http://dx.doi.org/10.1016/j.compag.2016.06.021>.
- *Liang, X., V. Liakos, O. Wendroth, and **G. Vellidis**. 2016. Using the van Genuchten model for irrigation scheduling. *Agricultural Water Management* 176:170–179, doi:10.1016/j.agwat.2016.05.030.

Published Conference Proceedings

- Thapa Magar, S. **G. Vellidis**, W. Porter, V. Liakos, J. H. Andreis, and D. J. Chavez. 2022. Development and evaluation of a SmartIrrigation Peach App in a young peach orchard in Georgia, USA. *Acta Horticulturae* 1352.78, https://www.actahort.org/books/1352/1352_78.htm.
- *Dos Santos, A., R. Da Silva, S. Gobbo, L. Lacerda, A. Toffanin, **G. Vellidis**. 2019. Using remote sensing to map in-field variability of peanut maturity. In: J.V. Stafford (Ed.), Precision Agriculture '19 - Papers Presented the 12th European Conference on Precision Agriculture (12ECPA), Montpellier, France, Wageningen Academic Publishers, p605-611, https://doi.org/10.3920/978-90-8686-888-9_75 (*Peer Reviewed*).
- *Liakos, V., W. Porter, J. Kilcher, A. Sawyer, A. D. Pavlou, Orfanou, **G. Vellidis**. 2019. A model for precision irrigation scheduling of soybeans for the southeastern U.S. In: J.V. Stafford (Ed.), Precision Agriculture '19 - Papers Presented the 12th European Conference on Precision Agriculture (12ECPA), Montpellier, France, Wageningen Academic Publishers, p943-950, doi:10.3920/978-90-8686-888-9. (*Peer Reviewed*)

- Marinello, F., B. Stenberg, D.S. Paraforos, S. Fountas, B. Tisseyre, C.G. Sorensen, J.A. Martinez-Cassanovas, S.G. Vougioukas, Y. Cohen, K. Sudduth, L. Sartori, M. Karkee, **G. Vellidis**. 2019. Agriculture and digital sustainability: A digitization footprint. In: J.V. Stafford (Ed.), Precision Agriculture '19 - Papers Presented the 12th European Conference on Precision Agriculture (12ECPA), Montpellier, France, Wageningen Academic Publishers, p83-89, doi:10.3920/978-90-8686-888-9. (*Peer Reviewed*)
- Bondesan, L., F. Morari, G.T. Morata, **G. Vellidis**, B.V. Ortiz, A.F. Jimenez. 2019. Evaluating and improving soil sensor-based variable rate irrigation scheduling on farmers' fields in Alabama. In: J.V. Stafford (Ed.), Precision Agriculture '19 - Papers Presented the 12th European Conference on Precision Agriculture (12ECPA), Montpellier, France, Wageningen Academic Publishers, p649-656, doi:10.3920/978-90-8686-888-9. (*Peer Reviewed*)
- Aru, F. **G. Vellidis**, A. Gertsis, F. Morari. 2019. Investigation of spraying efficiency of an aerial spraying system in a super-high density olive grove in Greece. In: J.V. Stafford (Ed.), Precision Agriculture '19 - Papers Presented the 12th European Conference on Precision Agriculture (12ECPA), Montpellier, France, Wageningen Academic Publishers, p357-363, doi:10.3920/978-90-8686-888-9. (*Peer Reviewed*)
- Zancanaro, E., **G. Vellidis**, F. Morari, A. Gertsis, F. Marinello. 2019. Developing crop canopy model for irrigation of high density olive groves by using UAV imagery. In: J.V. Stafford (Ed.), Precision Agriculture '19 - Papers Presented the 12th European Conference on Precision Agriculture (12ECPA), Montpellier, France, Wageningen Academic Publishers, p421-427, doi:10.3920/978-90-8686-888-9. (*Peer Reviewed*)
- *Liakos, V., **G. Vellidis**, M. Tucker, and C. Cox. 2018. The First Application of Dynamic Variable Rate Irrigation to Cotton in Georgia: A Case Study. In S. Boyd, M. Huffman and B. Robertson (eds) Proceedings of the 2018 Beltwide Cotton Conferences, San Antonio, January 3-5, 2018, National Cotton Council, Memphis, TN, paper 16778, p.395-403.
- *Perry, C., V. Liakos, W. Porter, M. Tucker, X. Liang, **G. Vellidis**. 2016. A Dynamic Variable Rate Irrigation Control System. Proceedings of the 2016 Irrigation Association Educational Conference, December 05-09, 2016, Las Vegas, Nevada, USA, Irrigation Association, Fairfax, Va., 12p.
- Porter, W., V. Liakos, C.D. Perry, J. Andreis, E. Barnes, K. Morgan, C. Fraisse, K. Migliaccio, **G. Vellidis**. 2016. A Smartphone Application for Scheduling Irrigation in Cotton. Proceedings of the 2016 Irrigation Association Educational Conference, December 05-09, 2016, Las Vegas, Nevada, USA, Irrigation Association, Fairfax, Va., 11p.
- **Vellidis, G.**, V. Liakos, W. Porter, M. Tucker, X. Liang. 2016. A Dynamic Variable Rate Irrigation System. In Proceedings of the 13th International Conference on Precision Agriculture July 31 – August 3, 2016, St. Louis, Missouri, USA. International Society of Precision Agriculture, Monticello, IL.
- *Lowrance, C., S. Fountas, V. Liakos, and **G. Vellidis**. 2016. EZZone - An Online Tool for Delineating Management Zones . In Proceedings of the 13th International Conference on Precision Agriculture July 31 – August 3, 2016, St. Louis, Missouri, USA., International Society of Precision Agriculture, Monticello, IL.
- *Liakos, V., W. Porter, M. Tucker, X. Liang, and **G. Vellidis**. 2016. Dynamic Variable Rate Irrigation Scheduling with the University of Georgia Smart Sensor Array (UGA SSA). In S. Boyd, M. Huffman and B. Robertson (eds) Proceedings of the 2016 Beltwide Cotton Conferences, New Orleans, LA, January 5-7, 2016, National Cotton Council, Memphis, TN, paper 16778, p.349-358.
- *Liakos, V., **G. Vellidis**, W. Porter, A. Torre Neto, D. Pavlou, and A. Orfanou. 2016. A New Simpler Method to Calculate Evapotranspiration. In S. Boyd, M. Huffman and B. Robertson (eds) Proceedings of the 2016 Beltwide Cotton Conferences, New Orleans, LA, January 5-7, 2016, National Cotton Council, Memphis, TN, paper 16832, p.764-771.
- **Vellidis, G.**, Liakos, V., C. Perry, W. Porter, and M. Tucker. 2016. Irrigation Scheduling for Cotton Using Soil Moisture Sensors, Smartphone Apps, and Traditional Methods. In S. Boyd, M. Huffman and B. Robertson (eds) Proceedings of the 2016 Beltwide Cotton Conferences, New Orleans, LA, January 5-7, 2016, National Cotton Council, Memphis, TN, paper 16779, p.772-780.