

George Vellidis
University Professor

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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.
- 2019 Keynote Speaker – *SmartIrrigation – a Pathway to Sustainable Intensification*, European Federation for Information Technology in Agriculture, Food and the Environment (EFITA) Congress, Rhodes, Greece, <https://efita2019.com/>
- 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*

Leadership and Related Activities

- 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 (www.vellidis.org/tapac).
- 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.
- One of five creators and now vice-chair of NESPAL – the National Environmentally Sound Production Agriculture Laboratory at the University of Georgia (www.nespal.org).
- Leader of a USDA-NIFA Conservation Effects Assessment Program (CEAP) project and team member of the USDA-NIFA National CEAP Synthesis project.
- University of Georgia team leader for the Southeast Climate Consortium (SECC) and member of the SECC Executive Committee
- Adjunct faculty in the Odum School of Ecology at the University of Georgia; Plant, Soil and Agricultural Systems Department, Southern Illinois University; and the Dimitris Perrotis College, Thessaloniki, Greece

Mentees

- Thesis Advisor in Last Five Years (of 6 Ph.D. students and 18 M.S. students)
Anna Orfanou (Ph.D., current), Dimitris Pavlou (Ph.D., current), Lorena Lacerda (Ph.D., current), Arianna Toffanin (M.S., current), Aaron Bruce (M.S. 2019, Ph.D. student, University of Georgia), Logan Moore (M.S. 2018, Ph.D. student, University of Georgia), Shannon Parrish (M.S. 2017, Supply Chain Sustainability Coordinator, Premium Peanut), Yawen Bao (Ph.D. 2016, Post-doc, University of Tennessee), James Bevington (M.S. 2014, Commander, NASA Mars Habitat), Casey Harris (M.S. 2014, St. Johns Water Management District), Camden Lowrance (M.S. 2014, Sharpe Solutions), Andrew Mehring (Ph.D. 2013, Assistant Professor, University of Louisville)
- Postgraduate-Scholar Sponsor
Jaepil Cho (Research Scientist, APEC Climate Center, Korea), Taeil Jang (Assistant Professor, Chonbuk National University, Korea), Xi Liang (Assistant Professor, University of Idaho), Moukaram Tertuliano (current), Vasilios Liakos (now Assistant Research Scientist, University of Georgia)

Patents, Licensing Agreements, and Smartphone Application Releases

- 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 116 refereed journal articles, 11 book chapters, 146 conference proceedings)

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

Refereed Journal Articles

- **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, K. Migliaccio, 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, 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.
- **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.
- Clevenger, J. K. Marasigan, V. Liakos, V. Sobolev, **G. Vellidis**, C. Holbrook, P. Ozias-Akins. 2016. RNA sequencing of contaminated seeds reveals the state of the seed permissive for pre-harvest aflatoxin contamination and points to a potential susceptibility factor. *Toxins* 8, 317; <http://dx.doi.org/10.3390/toxins8110317>.
- Antaki, E., **G. Vellidis**, C. Harris, P. Aminabadi, K. Levy, M.T. Jay-Russell. 2016. Low concentration of Salmonella in farm ponds and irrigation distribution systems used for mixed produce production in southern Georgia. *Foodborne Pathogens and Disease*, 13(10):551-558, <http://dx.doi.org/10.1089/fpd.2016.2117>.

Published Conference Proceedings

- *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, doi:10.3920/978-90-8686-888-9 (*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.
- *Parrish, S. **G. Vellidis**, W. Porter, and A. Smith. 2016. Field to Market Fieldprints for Cotton Production in Georgia. 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 16780, p.32-41.