

GEORGE E. MEYER

Biological Systems Engineering Department
University of Nebraska, Lincoln, NE 68583-0726

Education:

B.S.	Cornell University, Ithaca, NY	1967
M.S.	University of Massachusetts, Amherst, MA	1971
Ph.D.	University of Massachusetts, Amherst, MA	1972

Professional Experience:

Professor Emeritus, University of Nebraska Lincoln, October 1, 2018-present.

Professor, University of Nebraska Lincoln, 1995-2018, *Plant Growth Modeling and Instrumentation. Agronomy and Horticulture (Courtesy).*

Associate Professor, University of Nebraska Lincoln, 1984-1995, *Plant Growth Modeling.*

Assistant Professor, University of Nebraska Lincoln, 1978-1984, *Plant Growth Modeling.*

Post Doctorate, Ohio Agricultural Research and Development Center, 1974-1978, *SOYMOD Soybean Model.*

Officer and Scientist, United States Air Force, Systems Command, Active; 1972-1974; Reserve: 1974-1978). *On-site surveys and contractual research for ecological and environmental impact for tactical Air Force training activities included space shuttle planning (at Vandenberg AFB) and prevention of aircraft bird-strikes.*

National Science Foundation Trainee, University of Massachusetts, 1967-1972, *Plant Growth Modeling.*

Past Research Activities:

Research included: electronic instrumentation, sensors, controls, thermal and spectral image analysis for plant growth response, water use and stress; crop, weeds, machine vision identification and enumeration of plant species; measurement of plant physiological properties for field and greenhouse production systems; mathematical modeling of plant growth processes; statistical methods; soft computing (fuzzy logic) methods; data driven, approximate reasoning modeling; neural-network learning techniques; and Virtual Reality Modeling (VRML) for plant taxonomy and canopy energy relationships. Greenhouse sensors and monitoring systems; alternative heating systems; bio-mass fuels; and winter-time greenhouse strawberry and basil crop production.

Past Teaching Activities (*ABET accredited AGEN and BSEN degree programs):

AGEN/BSEN 460/860*	<i>Instrumentation and Controls</i> (3 cr. core course, 1988-2017).
BSEN 244*	<i>Thermodynamics for Living Systems</i> (3 cr. core course, 2001-2018).

AGEN/BSEN 951	<i>Advanced Modeling in Biological and Environmental Systems</i> (3 cr. graduate only course, 2013-2018. Cotaught with W. Woldt and D. Jones from 2002-2012).
AGEN 951	<i>Bioengineering Relationships of Plant Systems</i> (3 cr. graduate only course, 1978-2001).
AGEN 344*	<i>Environmental Factors Affecting Biological Systems</i> (3 cr. core course, 1978-2000).

Publications Selected - Last 10 Years (Citations not noted):

1. Adams. S.A., E.T. Paparozzi, R. Pekarek, D.P. Lambe, **G.E. Meyer**, M. E. Conley, and P. E. Read, 2021. *University Research on Winter Growing of Container-Grown Strawberries Translates to Grower's Farm Trial*, International Journal of Fruit Science (Taylor and Francis), 21:1, 1104-1113.
2. O. P. Abimbola, **G. E. Meyer**, A.R. Mittelstet, D.R. Rudnik, and T.E. Franz, 2021. *Knowledge-guided machine learning for improving daily soil temperature prediction across the United States*. Valdose Zone Journal, 20(5), Wiley Online Library.
3. **Meyer, G.E.**, E.T. Paparozzi, and E. Stevens. 2020. *Classification of Plant Moisture Conditions Using Canopy and Leaf Temperature Responses to Step Changes of Incident Radiation*. Paper number 2001085. American Society of Agricultural and Biological Engineers, St. Joseph, MI.
4. Amaranto, A., F. Munoz –Arriola, G. Corzo, D.P. Solomatine, and **G.E. Meyer**, 2018. *Semi-seasonal groundwater forecast using multiple data-driven models in an irrigated cropland*. Journal of Hydroinformatics. DOI10.2166/hydro.2018.002.
5. Woldt, W., C. Neale, D. Heeren, D., E. Frew, E., and **G.E. Meyer**, 2018. *Improving agricultural water efficiency with unmanned aircraft*. Paper presented at AUVSI XPONENTIAL 2018, Denver, CO.
6. Khan, M., F. Munoz-Arriola, J. Clarke, **G.E. Meyer**, R. Shaik, and A. Herrera-Leon, 2018. *Geospatial attribution of extreme rainfall and urban expansion in India using fuzzy clustering*. Geophysical Research Abstracts. Vol. 20, EGU2018-18337m, EGU General Assembly.
7. Paparozzi, E.T., **G. E. Meyer**, V. Schlegel, E. E. Blankenship, S. A. Adams, M. E. Conley, B. Loseke and P. E. Read. 2018. *Strawberry cultivars vary in productivity, sugars and phytonutrient content when grown in a greenhouse during the winter*. Scientia Horticulturae (Elsevier) 227:1-9.
8. Sharma V., S. Irmak, A. Kilic, V. Sharma, J.E. Gilley, **G.E. Meyer**, S.Z. Knezevic, and D. Marx, 2016. *Quantification and Mapping of Surface Residue Cover for Maize and Soybean Fields in South Central Nebraska*. Transactions of the ASABE. 59(3): 925-939.
9. Tai, C., D.S. Voltan, D.R. Keshwani, **G.E. Meyer**, and P.S. Kuhar, 2016. *Fuzzy logic feedback control for fed-batch enzymatic hydrolysis of lignocellulosic biomass*. Bioprocess Biosystems Engr. (Springer) 39:937–944.
10. Rudnick, D. R., V. Sharma, **G.E. Meyer**, and S. Irmak, 2015. *Using Fuzzy Logic to Predict and Evaluate the Magnitude and Distribution of Precipitation on Rainfed Maize and Soybean Yields in Nebraska*. Transactions of the ASABE, 58(5):1215-1229.
11. Naganathan. G.K., K. Cluff, A. Samal, C.R. Calkins, D.D. Jones, **G.E. Meyer**, and J. Subbiah, 2015. *Three dimensional chemometric analyses of hyperspectral images for beef tenderness forecasting*. Journal of Food Engineering 169: 309–320.
12. Woldt, W., E.W. Frew, and **G.E. Meyer**, 2014. *Feeding a Hungry World: The Potential for Unmanned Aircraft Systems*. XRDS Crossroads: the ACM for Students, 40(3), 24-27.

13. Kumar, A., D.D. Jones, **G.E. Meyer, G. E.**, and M.A. Hanna, 2014. *A Fuzzy Inference System (FIS) and Dimensional Analysis for Predicting Energy Consumption and Mean Residence Time in a Twin-Screw Extruder*. Journal of Food Process Engineering (doi: 10.1111/jfpe.12137).
14. Kabenge, I., S. Irmak, **G.E. Meyer**, J. Gilley, S. Knezevic, T. Arkebauer, M. Moravek, and D. Woodward, 2013. *Evapotranspiration and surface energy balance of a common reed-dominated riparian system in the Platte River Basin, Central Nebraska, USA*. Transactions of the ASABE 56(1):135-153.
- 15 **Meyer, G.E.**, E.T. Paparozzi, E.A. Walter-Shea, E.E. Blankenship, and S.A. Adams, 2012. *An Investigation of Reflective Mulches for Use over Capillary Mat Systems for Winter-time Greenhouse Strawberry Production*. Engineering in Agriculture 28(2):271-279.

(Career publication totals: 63 refereed journal articles, 30 invited/refereed conference papers, 6 book chapters (some invited), 49 contributed, 4 popular, 8 abstracts, 3 Air Force). Citations and reads reported by Research Gate (*researchgate.net*): **4438 and 15,896**, respectively. Full vita indicates number of citations). Publications may be available from publishers, from Research Gate, UNL Digital Commons, or by special request. Five publications most cited worldwide are:

1. **Meyer, G.E.** and J. Camargo Neto, 2008. Verification of Color Vegetation Indices for Automated Crop Imaging Applications, Computers and Electronics in Agriculture (Elsevier), 63:282-293. (*Google Scholar: 889 Citations. Research Gate: 687 Citations*).
2. Camargo Neto, J., **G.E. Meyer**, D.D. Jones, A.K. Samal. 2006. Plant Species Identification using Elliptic Fourier Analysis. Computers and Electronics in Agriculture (Elsevier), 50:121-134. (*Google Scholar: 403 Citations, Research gate: 320 Citations*).
3. **Meyer, G. E.**, J. Camargo Neto, D.D. Jones, T. W. Hindman. 2004. Intensified fuzzy clusters for determining plant, soil, and residue regions of interest from color images. Computers and Electronics in Agriculture (Elsevier), 42(3):161-180. (*Google Scholar: 214 Citations. Research Gate: 150 Citations*).
4. Woebbecke, D.M., **G.E. Meyer**, K. Von Bargen, and D.A. Mortensen. 1995. Color Indices for Weed Identification under Various Soil Residue and Lighting Conditions. TRANSACTIONS of the ASAE. 38(1):259-269. (*Google Scholar: 1384 Citations. Research Gate: 1043 Citations*).
5. Woebbecke, D.M., **G.E. Meyer**, K. Von Bargen, and D.A. Mortensen. 1995. Shape Features for Identifying Young Weeds Using Image Analysis. TRANSACTIONS of the ASAE. 38(1):271-281. (*Google Scholar: 368 Citations, Research Gate: 239 Citations*).

Current Professional Societies:

American Society for Agricultural and Biological Engineers (ASABE), Emeritus Member.

Past Honors and Awards:

- “Award for Excellence in Multistate Research”. Presented to the Technical Committee of NE1335 “Resource Management in Commercial Greenhouse Production”, by the Northeastern Regional Association of State Agricultural Experiment Station Directors, June 5, 2018.
- Other career honors and awards reported on full vita.

Past Notable Institutional and Professional Service:

- University of Nebraska Committee on Committees (member and past chair,), 2010-2018 •
University of Nebraska Marshals Corps, (member and associate head marshal), 2006-2018.
- Editorial Staff: *Computers and Electronics in Agriculture* (Elsevier), 2005-2018.
- ASABE Associate Editor- (SE and PAFS) Divisions. 2001-2018.