

John P. Fulton

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EDUCATION

Ph.D.	Biosystems and Agricultural Engineering	University of Kentucky	2003
M.S.	Agricultural Engineering	University of Kentucky	1999
B.A.	Physics	Wittenberg University	1994

PROFESSIONAL EXPERIENCE

2004 to Present	Assistant Professor , Biosystems Engineering Department, Auburn University
1999 to 2003	Engineer Associate , Biosystems and Agricultural Engineering Department, University of Kentucky
1996 to 1999	Agricultural Engineer , Biosystems and Agricultural Engineering Department, University of Kentucky
1994 to 1996	Graduate Research Assistant , Biosystems and Agricultural Engineering Department, University of Kentucky
1993 to 1994 (Summers Only)	Assistant Test Engineer , Hartzell Fan Inc., Piqua, Ohio. Industrial Ventilation Company.
1978 to 2003	Assistant Manager , Fulton Farms, Troy, Ohio. 2000 acre irrigated fruit and vegetable farm.

ACADEMIC APPOINTMENT

Nine-Month Appointment with 65% Research and 35% Teaching Budgeted Effort
Date of Initial Appointment: January 1, 2004

PROFESSIONAL SPECIALITY

Machine systems. Precision agriculture and forestry. Harvesting, processing, and transporting agricultural and forestry biomass. On-farm bioenergy production.

INSTRUCTION

Primary Instructor

BSEN 3260 - Engineering for Precision Agriculture and Forestry (3 credit hours; Fall)
BSEN 4310 - Engineering Design for Biosystems (4 credit hours; Spring)
BSEN 4900 - Geospatial International Applications (1 credit hour; Summer 2006)
BSEN 4970 - GIS Mapping and Analysis (3 credit hours; Fall 2006)
ENGR 1100 - Engr. Orientation (0 credit hours; two 1-hour courses/semester; Spring and Fall)
ENGR 2050 - Statics (3 credits hours; team taught; Fall 2004)

Secondary Instructor

BSEN 4970 - Conservation Engineering for Biological Systems (3 credits hours; team taught; Summer 2004)

BSEN 5220/6220 - Introduction to Geospatial Technologies for Biosystems (3 credits hours; Spring)

PATENTS

- McDonald, T.P., F. Corley, **J.P. Fulton**, and S.E. Taylor. A Device to Monitor Hand Planting Activity of Pine Tree Seedlings in Real-Time. Invention Disclosure submitted in 2005.
- Wells L.G. and **J.P. Fulton**. 2000. Soil Regeneration Apparatus and Method. United States Patent and Trademark Office. Patent Number 6,056,066.

PUBLICATIONS (* Denotes Graduate Student and ** Technical Support)

Refereed and Peer-Reviewed

- Sullivan, D.G., **J.P. Fulton**, J.N. Shaw, and G. Bland. 2007. Evaluating the Sensitivity of an Unmanned Thermal Infrared Aerial System to Detect Water Stress in a Cotton Canopy. *Trans. of ASABE*. (Accepted for Publication)
- *Davis, J.N, J.E. Baier, **J.P. Fulton**, D.A. Brown, and T.P. McDonald. 2007. Use of Chemical Soil Additives to Stabilize Off-Road Vehicle Trails. *Applied Engineering in Agriculture*. 23(5): 597-602.
- **Fulton, J.P.**, S.A. Shearer, S.F. Higgins, T.P. McDonald, C. Dillon, and T.S. Stombaugh. 2007. Variable-Rate Fertilizer Application Assessment Using an As-Applied Methodology. In J.V. Stafford, ed., *Proc. of the Sixth European Conference on Precision Agriculture, Precision Agriculture '07*. pp. 681-688. Skiathos, Greece, 3-6 June.
- Dillon, C.R., S.A. Shearer, **J.P. Fulton**, and S. Pitla. 2007. Improved profitability via enhanced resolution of variable-rate application management in grain crop production. In J.V. Stafford, ed., *Proc. of the Sixth European Conference on Precision Agriculture, Precision Agriculture '07*. pp. 819-826. Skiathos, Greece, 3-6 June.
- **Kang, M.S., P. Srivastava, **J.P. Fulton**, T. Tyson, F. Owsley, and K.H. Yoo. 2006. Optimal Poultry Litter Management through GIS-based Transportation Analysis System. *Journal of the Korean Society of Agricultural Engineers (JKSAE)*. 48(7): 73-86.
- Higgins, S.F., S.A. Shearer, M.S. Coyne, and **J.P. Fulton**. 2006. Evaluating a Rapid On-Farm Nutrient Determination Model for Use in Implementing Nutrient Management Plans. *Water, Air, & Soil Pollution*. Mar. 2006: 1-26.
- **Fulton, J.P.**, S.A. Shearer, S.F. Higgins, M.J. Darr, and T.S. Stombaugh. 2005. Rate response assessment from various granular VRT applicators. *Trans. of ASAE*. 48(6): 2095-2103.

- **Fulton, J.P.**, S.A. Shearer, S.F. Higgins, D.W. Hancock, and T.S. Stombaugh. 2005. Distribution pattern variability of granular VRT applicators. *Trans. of ASAE*. 48(6): 2053-2064.
- McDonald, T.P. and **J.P. Fulton**. 2005. Automated time study of skidders using global positioning system data. *Computers and Electronics in Agriculture*. 48(2005):19-37.
- **Fulton, J.P.** and L.G. Wells. 2005. Evaluation of a mechanical system for reconstructing soil on surface mined land. *Applied Engineering in Agriculture*. 21(1): 43-51.
- **Fulton, J.P.** and L.G. Wells. 2004. A mechanism for reconstruction of surface mine soils. *In Proc. of 4th Annual Applied Research Conference*. pp 1-10. Athens, Ohio, 8-9 December.
- Higgins, S.F., S.A. Shearer, M.S. Coyne, and **J.P. Fulton**. 2004. A rapid method for determining TN and TP concentrations in swine slurry using historical data. *Trans. of ASAE*. 47(5): 1727-1737.
- **Fulton, J.P.** and L.G. Wells. 2004. Soil reconstruction on surface mined land using a prototype mechanical system. *In Proc. of American Society of Mining and Reclamation*. pp 667-705. Morgantown, West Virginia, 18-24 April.
- Higgins, S.F., S.A. Shearer, M.S. Coyne, and **J.P. Fulton**. 2004. Relationship of total nitrogen and total phosphorus concentration to solids content in animal waste slurries. *Applied Engineering in Agriculture*. 20(3): 355-364.
- Burks, T.F., S.A. Shearer, **J.P. Fulton**, and C.J. Sobolik. 2004. Effects of time-varying inflow rates on combine yield monitor accuracy. *Applied Engineering in Agriculture*. 20(3): 269-275.
- **Fulton, J.P.**, S.A. Shearer, T.S. Stombaugh, M.E. Anderson, T.F. Burks and S.F. Higgins. 2003. Simulation of Fixed and Variable-Rate Application of Granular Materials. *Trans. of ASAE*. 46(5): 1311-1321.
- Dillon, C.R., S.A. Shearer, **J.P. Fulton**, and M. Kanakasabai. 2003. Optimal Path Nutrient Application Using Variable Rate Technology. *In Proc. of the Fourth European Conference on Precision Agriculture*. pp. 171-176. Berlin, Germany, 16-19 June.
- Burks, T.F., S.A. Shearer, **J.P. Fulton**, and C.J. Sobolik. 2003. Combine Yield Monitor Tests Facility Development. *Applied Engineering in Agriculture*. 19(1): 5-12.
- **Fulton, J.P.**, L.G. Wells, and T.D. Smith. 2002. A Mechanical System for Soil Reconstruction. *Applied Engineering in Agriculture*. 18(5): 517-524.
- **Fulton, J.P.**, S.A. Shearer, G. Chabra and S.F. Higgins. 2001. Performance Assessment and Model Development of a Variable-Rate, Spinner-Disc Fertilizer Applicator. *Trans. of ASAE*. 44(5): 1071-1081.

Extension

- **Fulton, J.P.**, R. Raper, T.P. McDonald, and T. Tyson. 2006. ANR-1303: Fuel Conservation Strategies for the Farm. Circular. Alabama Cooperative Extension System, Auburn University. 5pp, 2500 copies.

- **Fulton, J.P.**, R. Raper, T.P. McDonald, and T. Tyson, 2006, “Fuel Conservation Strategies for the Farm”, BSEN06-02, Web publication, www.aces.edu/timelyinfo/BioSysEng/2006/April/BSEN-06-02.pdf, Alabama Cooperative Extension System, 5pp.
- Stombaugh T.S., S.A. Shearer, and **J.P. Fulton**. 2002. PA-5: Elements of Precision Agriculture: GPS Simplified. Cooperative Extension Service, University of Kentucky.
- Shearer S.A., **J.P. Fulton**, S.G. McNeill, S.F. Higgins, and T.G. Mueller. 1999. PA-1: Elements of Precision Agriculture: Basics of Yield Monitor Installation and Operation. Cooperative Extension Service, University of Kentucky.

Proceedings

- **Fulton, J.P.**, D.G. Sullivan, J.N. Shaw, M. Dougherty, and G. Bland. 2007. Site-Specific Management of Cotton Production using Remote Sensed Thermal Imagery within a Conservation Tillage System. 2007 Southern Conservation Agricultural Systems Conference, Quincy, FL. June 25-27.
- *Kichler, C.M., **J.P. Fulton**, R.L. Raper, W.C. Zech, T.P. McDonald, C.J. Brodbeck. 2007. Assessment of Equipment Performance and Energy Requirements for the Development of Tillage Management Strategies. 2007 Southern Conservation Agricultural Systems Conference, Quincy, FL. June 25-27.
- **Brodbeck, C.J., **J.P. Fulton**, J.N. Shaw, T.P. McDonald, and D. Rodekohr. 2007. Timber Mapping for Site-Specific Forest Management. ASABE Paper No. 071093. ASABE Annual International Conference, Minneapolis, MN, 17 - 20 June 2007.
- *Bernhart, M., O. Fasina and **J.P. Fulton**. 2007. Characterization of Poultry Litter for Storage and Process Design. ASABE Paper No. 076050. ASABE Annual International Conference, Minneapolis, MN, 17 - 20 June 2007.
- Dougherty, M., **Fulton, J.P.**, Burmester, C., Curtis, L., Monks, D. 2007. Precision fertilization using sub-surface drip irrigation (SDI) for site-specific management of cotton. Paper No. 072194. ASABE Annual International Conference, Minneapolis, MN, 17 - 20 June 2007.
- **Kang, M.S., P. Srivastava, **J.P. Fulton**, T. Tyson, F. Owsley, and K. Yoo. 2007. GIS-Based Decision Support System for Poultry Broiler Litter Management. ASABE Paper No. 74065. ASABE Annual International Conference, Minneapolis, MN, 17-20 June 2007.
- *Kichler, C.M., **J.P. Fulton**, R.L. Raper, W.C. Zech, T.P. McDonald, C.J. Brodbeck. 2007. Spatially Monitoring Tractor Performance to Evaluate Energy Requirements of Variable-Depth Tillage and Implement Selection. ASABE Paper No. 071028. ASABE Annual International Conference, Minneapolis, MN, 17 - 20 June 2007.
- Sullivan, D.G., **J.P. Fulton**, J.N. Shaw, and G. Bland. 2007. Use of an Unmanned Aerial System for Site-Specific Management of Cotton. Sixth European Conference on Precision Agriculture. Skiathos, Greece, 3-6 June.
- Mask, P.L., S.H. Norwood, A.T. Winstead, **J.P. Fulton**, C. Brodbeck, and C. Dillard. 2007. Extension education: training agents to assist farmers in adoption of precision

- agriculture technologies. Sixth European Conference on Precision Agriculture. Skiathos, Greece, 3-6 June.
- Mask, P.L., A.T. Winstead, S.H. Norwood, J.N. Shaw, **J.P. Fulton**, and C. Dillard. 2007. Precision Agriculture Adoption at Glenn Acres Farm: A Ten Year Case Study. Sixth European Conference on Precision Agriculture. Skiathos, Greece, 3-6 June.
 - Dougherty, M., J. He, E. Ducote, W. Harper, J. Shaw, W. Wood and **J.P. Fulton**. 2006. Innovative subsurface drip alternatives (SDI) for on-site Wastewater disposal in the Alabama Black Belt. Paper presented at 27th Annual International Irrigation Show, San Antonio, TX, Nov. 5-7, 2006.
 - McDonald, T.P., **Fulton, J.P.**, Taylor, S.E. and Darr, M., 2006. Mobile data acquisition systems for documenting motor-manual silvicultural operations. In: W. Chung and H.-S. Han (Eds.), 29th Council on Forest Engineering Conference, Coeur d'Alene, Idaho, 383-392.
 - *Harbuck, T.L. **J.P. Fulton**, T.P. McDonald, and C.J. Brodbeck. 2006. Evaluation of GPS Autoguidance Systems over Varying Time Periods. ASABE Paper No. 061042. ASABE Annual International Conference, Portland, Oregon, 9 - 12 July 2006.
 - Fasina, O., **J.P. Fulton**, P. Srivastava, C.W. Wood, and F. Owsley. 2006. Volume Reduction Technologies for Transporting Poultry Litter. ASABE Paper No. 066173. ASABE Annual International Conference, Portland, Oregon, 9 - 12 July.
 - Carter, E.A., **J.P. Fulton**, and J.M. Grace III. 2006. Erosion Response of Two Select Soils in Alabama to Clear-cut Harvesting. ASABE No. 068027. ASABE Annual International Conference, Portland, Oregon, 9 - 12 July 2006 (presentation only).
 - Dougherty, M., **J.P. Fulton**, L.M. Curtis, H.D. Harkins, B.E. Norris. 2006. Off-Stream storage efficiency for cotton production in Northern Alabama. ASABE No. 0682123. ASABE Annual International Conference, Portland, Oregon, 9 - 12 July 2006 (presentation only).
 - McDonald, T.P., **J.P. Fulton**, M.J. Darr, S.E. Taylor, S.E., F.W. Corley, and C.J. Brodbeck. 2006. GPS-based documentation of manual silvicultural operations. Edited by: P.A. Ackerman, D.W. L'Angin and M.C. Antonides. Precision Forestry in plantations, semi-natural and natural forests. Forest Engineering, Department of Forest and Wood Science, Stellenbosch University: 5-10 March, 2006, Stellenbosch University, Stellenbosch, South Africa. 489-501.
 - Taylor, S.E., T. P. McDonald, **J.P. Fulton**, J.N. Shaw, F.W. Corley, and C.J. Brodbeck. 2006. Precision Forestry in the Southeast U.S. Edited by: P.A. Ackerman, D.W. L'Angin and M.C. Antonides. Precision Forestry in plantations, semi-natural and natural forests. Forest Engineering, Department of Forest and Wood Science, Stellenbosch University: 5-10 March, 2006, Stellenbosch University, Stellenbosch, South Africa.
 - Dougherty, M., L.M. Curtis, **J.P. Fulton**, H.D. Harkins, B.E. Norris. 2005. Surface irrigation management in Alabama cotton. The Irrigation Association 26th Annual International Irrigation Show, Phoenix Civic Plaza Convention Center, Phoenix, Arizona, November 6-8.

- **Fulton, J.P.**, J.N. Shaw, M. Dougherty, and R.L. Raper. 2005. An Overview: Merging of Subsurface Drip Irrigation (SDI) and Auto-Guidance for Cotton Production in Alabama. 2005 Southern Conservation Tillage Conference, Florence, SC. June 27-29.
- **Fulton, J.P.**, M. Dougherty, L.M. Curtis, H.D. Harkins, C.H. Burmester. 2005. Subsurface Drip Irrigation (SDI) Scheduling and Tape Placement for Cotton Production in Alabama. ASAE Paper No. 052244. Annual International Meeting, Tampa Convention Center, Tampa, Florida, July 17-20.
- Carter E.A., **J.P. Fulton**, and B.J. Burton. 2005. Site Impacts Associated with Biomass Removals in Lower Alabama. ASAE Paper No. 058022. Annual International Meeting, Tampa Convention Center, Tampa, Florida, July 17-20.
- Carter E.A., B.J. Burton, and **J.P. Fulton**. 2005. Soil Loss Prediction by the Water Erosion Prediction Project (WEPP) in a Harvested Slash Pine Stand in Lower Alabama. ASAE Paper No. 052018. Annual International Meeting, Tampa Convention Center, Tampa, Florida, July 17-20.
- **Fulton, J.P.**, M.J. Darr, T.P. McDonald, S.E. Taylor, and F. Corley. 2005. Customized Backpack Sprayers for Site-Specific Herbicide Application in Forestry Operations. ASAE Paper No. 051043. Annual International Meeting, Tampa Convention Center, Tampa, Florida, July 17-20.
- Taylor, S.E., T.P. McDonald, **J.P. Fulton**, and F. Corley. 2004. Precision Forestry: Strategic and Tactical Implications for Site-Specific Forestry. CORMA Meeting. Concepcion, Chile. November 17.
- **Fulton, J.P.**, S.A. Shearer, S.F. Higgins, T.S. Stombaugh, M.J. Darr, D.W. Hancock, and E.L. Hutchins. 2004. Comparison of VRT Granular Applicators. ASAE Paper No. 041113. Annual International Meeting, Fairmont Chateau Laurier, The Westin, Government Centre, Ottawa, Ontario, Canada, August 1-4.
- **Fulton, J.P.**, S.A. Shearer, S.F. Higgins, T.S. Stombaugh, T.C. Dowdy, and T.P. McDonald. 2004. As-Applied Spatial Data Model for Evaluating Variable-Rate Fertilizer Application Accuracy. ASAE Paper No. 041115. Annual International Meeting, Fairmont Chateau Laurier, The Westin, Government Centre, Ottawa, Ontario, Canada, August 1-4.
- M.J. Darr, T.S. Stombaugh, S.A. Shearer, and **J.P. Fulton**. 2004. CAN-based Distributed Control for Autonomous Vehicle. ASAE Paper No. 041155. Annual International Meeting, Fairmont Chateau Laurier, The Westin, Government Centre, Ottawa, Ontario, Canada, August 1-4.
- M.W. Veal, S.A. Shearer, and **J.P. Fulton**. 2004. Improved Mass Flow Sensing for Yield Monitoring in Grain Combines. ASAE Paper No. 041101. Annual International Meeting, Fairmont Chateau Laurier, The Westin, Government Centre, Ottawa, Ontario, Canada, August 1-4.
- Shearer, S.A., M. Veal, and **J.P. Fulton**. 2004. Post-Processing Correction to Improve the Accuracy of Yield Monitor Data in Grain Crops. Proceedings of the Seventh Annual Conference on Precision Agriculture. July 25-28, 2004. Minneapolis, Minnesota.

- **Fulton, J.P.**, S.A. Shearer, T.S. Stombaugh, and S.F. Higgins. 2003. Comparison of Variable-Rate Granular Application Equipment. ASAE Paper No. 031125. Annual International Meeting, Riviera Hotel and Convention Center, Las Vegas, Nevada, July 27-30.
- Shearer, S.A., **J.P. Fulton**, T.S. Stombaugh, and D.W. Hancock. 2003. Extraction of Machine Performance Data from GPS and Yield Monitor Data. ASAE Paper No. 031085. Annual International Meeting, Riviera Hotel and Convention Center, Las Vegas, Nevada, July 27-30.
- Shearer, S.A., M.D. Montross, T.S. Stombaugh, R. Prewitt, **J.P. Fulton**, and S. Sokhansanj. 2003. Use of Spatial Technologies for Tracking the Efficiency of Biomass Harvesting. ASAE Paper No. 036087. Annual International Meeting, Riviera Hotel and Convention Center, Las Vegas, Nevada, July 27-30.
- **Fulton, J.P.**, S.A. Shearer, T.S. Stombaugh, S.F. Higgins and C.R. Dillon. 2002. 'As-Applied' Model Validations for Variable-Rate Application of Granular Materials. In. P.C. Robert et al. (ed.) Proc. 6th International Conference on Precision Agriculture. ASA Misc. Publ., ASA, CSSA, and SSSA, Madison, WI.
- **Fulton, J.P.**, S.A. Shearer, T.S. Stombaugh, and S.F. Higgins. 2002. Simulation of Variable-Rate Application of Granular Materials. ASAE Paper No. 021168. Annual International Meeting, Hyatt Regency Chicago, Chicago, Illinois, July 28-31.
- Burks, T.F., S.A. Shearer, **J.P. Fulton**, and T.S. Stombaugh. 2002. Assessment of yield monitor accuracy using the ASAE X-587 Draft Test. In. P.C. Robert et al. (ed.) Proc. 6th International Conference on Precision Agriculture. ASA Misc. Publ., ASA, CSSA, and SSSA, Madison, WI.
- Shearer, S.A., T.S. Stombaugh, **J.P. Fulton**, and T.G. Mueller. 2002. Considerations for development of a variable-rate controller test standard. ASAE Paper No. 021191. Annual International Meeting, Hyatt Regency Chicago, Chicago, Illinois, July 28-31.
- T.S. Stombaugh, S.A. Shearer, and **J.P. Fulton**. 2002. Elements of a Dynamic GPS Test Standard. ASAE Paper No. 021150. Annual International Meeting, Hyatt Regency Chicago, Chicago, Illinois, July 28-31.
- T.S. Stombaugh, S.A. Shearer, and **J.P. Fulton**. 2002. Standards for Comparison of GPS Receiver Performance. In. P.C. Robert et al. (ed.) Proc. 6th International Conference on Precision Agriculture. ASA Misc. Publ., ASA, CSSA, and SSSA, Madison, WI.
- **Fulton, J.P.**, S.A. Shearer, T.S. Stombaugh, and S.F. Higgins. 2001. Pattern Assessment of a Spinner Disc Variable-Rate Fertilizer Applicator. ASAE Paper No. 011116. Annual International Meeting, Sacramento Convention Center, Sacramento, California, July 29 through August 1.
- Burks, T.F., S.A. Shearer, **J.P. Fulton** and C. J. Sobolik. 2001. Influence of Dynamically Varying Inflow Rates on Clean Grain Elevator Yield Monitor Accuracy. ASAE Paper No. 011182. Annual International Meeting, Sacramento Convention Center, Sacramento, California, July 29 through August 1.
- Thomasson, J.A., S.A. Shearer, S.A., R.L. Hoskinson, R.K. Fink, J.R. Wooten, T.G. Mueller, **J.P. Fulton**, and S.F. Higgins. 2001. Decision support system for agriculture

- (DSS4Ag) applied to fertilization of corn and cotton. ASAE Paper No. 011018. Annual International Meeting, Sacramento Convention Center, Sacramento, California, July 29 through August 1.
- **Fulton, J.P.**, S.A. Shearer, M.E. Anderson, T.F. Burks and S.F. Higgins. 2000. Simulated Application Errors for Granular Materials for Fixed and Variable-Rate Application. ASAE Paper No. 001153. Annual International Meeting, Midwest Express Center, Milwaukee, Wisconsin, July 9-12.
 - Burks, T.F., S.A. Shearer, and **J.P. Fulton**. 2000. Assessment of Fertilizer Application Accuracy with the Use of Navigational Aids. ASAE Paper No. 001154. Annual International Meeting, Midwest Express Center, Milwaukee, Wisconsin, July 9-12.
 - Burks, T.F., S.A. Shearer, C. J. Sobolik, and **J.P. Fulton**. 2000. Combine Yield Monitor Test Facility Development. ASAE Paper No. 001084. Annual International Meeting, Midwest Express Center, Milwaukee, Wisconsin, July 9-12.
 - Wells, L.G., S.A. Shearer, **J.P. Fulton** and L.W. Murdock. 2000. Assessment of Remote Sensing for Implementation of Precision Tillage. ASAE Paper No. 001097. Annual International Meeting, Midwest Express Center, Milwaukee, Wisconsin, July 9-12.
 - Shearer, S.A., T.G. Mueller, C.R. Dillon, **J.P. Fulton**, N.J. Hartsock, and J. Stull. 2000. A GIS-based simulation model for estimating the potential benefits of variable-rate fertilizer application. ASAE Paper No. 001105. Annual International Meeting, Midwest Express Center, Milwaukee, Wisconsin, July 9-12.
 - Shearer, S.A., R.L. Hoskinson, R.K. Fink, T.G. Mueller, J.A. Thomasson, **J.P. Fulton**, and M. Ellis. 2000. Use of the decision support system for agriculture (DSS4Ag) for corn fertilization in Kentucky. In. P.C. Robert et al. (ed.) Proc. 5th International Conference on Precision Agriculture. ASA Misc. Publ., ASA, CSSA, and SSSA, Madison, WI.
 - **Fulton, J.P.**, S.A. Shearer, G. Chabra and S.F. Higgins. 1999. Field Evaluation of a Spinner Disc Variable-Rate Fertilizer Applicator. ASAE Paper No. 991101. Annual International Meeting, Sheraton Centre, Toronto, Canada, July 18-21.
 - Shearer, S.A., T.F. Burks, J.A. Thomasson, T.G. Mueller, **J.P. Fulton**, S.F. Higgins, and S. Samson. 1999. Yield prediction using a neural network classifier trained using soil landscape features and soil fertility data. ASAE Paper No. 993041. Annual International Meeting, Sheraton Centre, Toronto, Canada, July 18-21.
 - **Fulton, J.P.** and L.G. Wells. 1998. Evaluation of a Prototype Mechanism for Soil Reconstruction. ASAE Paper No. 981033. International Meeting, Orlando, Florida, July 12-16.
 - **Fulton, J.P.** and L.G. Wells. 1997. A Mechanical System for Soil Reconstruction. ASAE Paper No. 971095. International Meeting, Minneapolis, Minnesota. August 10-14.
 - Shearer, S.A., S.F. Higgins, S.G. McNeill, G.A. Watkins, R.I. Barnhisel, J.C. Doyle, J.H. Leach, and **J.P. Fulton**. 1997. Data Filtering and Correction Techniques for Generating Yield Maps from Multiple Combine Systems. ASAE Paper No. 971034. Annual International Meeting, Minneapolis Minnesota, August 10-14.

- **Fulton, J.P.**, L.G. Wells, S.A. Shearer and R.I. Barnhisel. 1996. Spatial Variation of Soil Physical Properties: A Precursor to Precision Tillage. ASAE Paper No. 961002. Annual International Meeting, Phoenix, Arizona. July 14-18.

Abstracts

- He, J., Dougherty, M., Harper, W., Shaw, J., Wood, W., and **J. Fulton**. 2007. Alternative decentralized wastewater disposal in the Alabama Black Belt using soil-moisture-based SDI. 28th Annual Irrigation Show and Technical Conference, December 9-11, 2007, San Diego, CA.
- Dougherty, M., **Fulton, J.**, Curtis, L., Tyson, T. 2007. Off-stream water storage - a decade of quality and supply experience in northern Alabama. Alabama Water Resources Conference, Sept. 6-7, 2007, Perdido Beach, AL.
- Srivastava, P., M.S. Kang, **J.P. Fulton**, Ted Tyson, Frank Owsley, and K. H. Yoo. 2007. Optimal Transportation Analysis for Animal Waste Management through GIS-based PLDSS. USDA-CSREES National Water Conference. January 28 – February 1, 2007. Savannah, GA.
- Carter E.A., **J.P. Fulton**, B.J. Burton, and C. Brodbeck. 2006. Runoff prediction in harvested pine stands in central and lower Alabama. ASA-CSSA-SSSA International Meetings, Indianapolis, IN, November 12-16.
- **Kang, M.S., P. Srivastava, **J.P. Fulton**, T. Tyson, F. Owsley, and K. Yoo. 2006. Optimal Poultry Litter Management through GIS-Based Decision Support System. 3rd Annual GIS Symposium and Workshops. November 1, 2006. Auburn, AL.
- **Brodbeck, C., **J.P. Fulton**, J. Shaw, and T.P. McDonald. 2006. The Use of GIS in Site-Specific Forest Management. 3rd Annual GIS Symposium and Workshops. November 1, 2006. Auburn, AL.
- **Fulton, J.P.** 2006. Precision Guidance-How Do I Choose? 2006 Cotton Incorporated Crop Management Seminar, Memphis, TN. November 1-2.
- **Fulton, J.P.** and T.M. McDonald. 2005. In-Field Implementation of Precision Agriculture Technologies. Proceedings of the 2005 Southern Plant Nutrient Management Conference and Southern CREES Water Quality/Nutrient Management Workshop, Olive Branch, TN. October 3-5.
- Taylor, S.E., T.P. McDonald, and **J.P. Fulton**. 2005. Tactical precision forestry: site-specific silvicultural operations in the southeast USA. XXII IUFRO World Congress, Brisbane, Australia. August 8-13.

Posters

- Dougherty, M., **Fulton, J.P.**, Burmester, C., Curtis. 2006. Sub-surface drip fertigation for site-specific, precision management of cotton. 2007 Water Resource Conference, Dixon Conference Center, Auburn, AL 14-15, June.
- *Harbuck, T.L., **J.P. Fulton**, M. Dougherty, and L. Curtis. 2007. Precision Irrigation Strategies for the Alabama Farmers. 2007 Water Resource Conference, Dixon Conference Center, Auburn, AL 14-15, June.

- *Harbuck, T.L., **J.P. Fulton**, M. Dougherty, and L. Curtis. 2007. Subsurface Drip Irrigation Research at Tennessee Valley Research and Extension Center, Belle Mina, Alabama – Past and Present. 2007 Water Resource Conference, Dixon Conference Center, Auburn, AL 14-15, June.
- *Bernhart, M., **J.P. Fulton**, O. Fasina, P. Srivastava, C.W. Wood, and F. Owsley. 2006. Densification of Poultry Litter for On-Farm Value Added Utilization. Alternative Energy Solutions for Alabama’s Natural Resources Conference. October 23-24, 2006. Auburn, AL.
- Srivastava, P., M.S. Kang, **J.P. Fulton**, T. Tyson, F. Owsley, and K. Yoo. 2006. Optimal Transportation of Renewable Biomass Using GIS-Based Decision Support System. Alternative Energy Solutions for Alabama’s Natural Resources Conference. October 23-24, 2006. Auburn, AL.

Popular Press

- Shearer, S.A. and **J.P. Fulton**. 2007. Save with Variable-Rate. Summer 2007 Farm Journal.
- **Fulton, J.P.** 2007. Field Accuracy A Factor. January 2007 Issue of Cotton Grower.
- **Fulton, J.P.**, M.W. Veal, and S.A. Shearer. 2006. Performance assessment of variable-rate fertilizer technology. April 2006 publication of Site-Specific Management Center Newsletter, Purdue University, West LaFayette, IN.
- **Fulton, J.P.**, J.N. Shaw, P.L. Mask, and R. Raper. 2005. Merging sub-surface drip irrigation (SDI) and auto-guidance. Winter 2004 publication of John Deere’s Ag Management Solutions Growing Innovations. AMS: Urbandale, Iowa.
- **Fulton, J.P.** Management Strategies Increase Water Efficiency: Pressure-Compensated SDI. July 2005 Issue of Cotton Farming. One Grower Publishing: Memphis, TN.

GRANTSMANSHIP (Underline denotes Principle Investigator(s))

Current

- Evaluation of Greenseeker for Variable-Rate N Application. S. Norwood, A. Winstead, C. Burmester, D. Monks, **John Fulton**, and J.N. Shaw. 2007. Alabama Cotton Commission. \$4,000. 3/1/07 to 2/28/08.
- Evaluation of Variable-Rate Seeding for Cotton. 2007. John Fulton, S. Norwood, J.N. Shaw, C. Burmester, C. Brodbeck, A. Winstead, M. Hall, P. Mask. Alabama Cotton Commission. \$5,500. 3/1/07 to 2/28/08
- An integrated dosing and treatment system to mitigate the environmental and health threat from conventional onsite septic systems in the Alabama Black Belt area. Mark Dougherty, Charles W. Wood, **John Fulton**, and Jimmie Holliman. USGS – Alabama Water Resources Research Institute. \$69,096. 03/07–03/08.
- Addressing Poultry Litter Management Challenges through Improved Understanding of Fundamental Hydrological and Nutrient Transport Processes. 2007. Puneet Srivastava,

- John Fulton**, K. Yoo, T. Way, W. F. Owsley, W. Wood, and J. Shaw. Alabama Natural and Human Resource Initiative. \$93,185. 01/07-08/07.
- Order 1: Soil Survey, Landscape, Attributes, and Simulation Modeling to Predict Seasonal Saturation of Plinthic Soils in the Coastal Plain of Alabama and Georgia. 2006. Joey Shaw and **John Fulton**. USDA-NCRS. \$73,040. 2006-2009.
 - A Systems Approach to Sustain and Stimulate the Agricultural Economy of Alabama: Optimal On- and Off-farm Management of Poultry Litter. 2006. **John Fulton**, Puneet Srivastava, Frank Owsley, C. Wesley Wood, Russell Muntiferer, Oladiran Fasina, Yucheng Feng, Henry Fadamiro, Joey Shaw, Edzard van Santen, and Mike Davis. Alabama Poultry Initiative. \$312,740. 10/06 – 09/07.
 - Use of Precision Agriculture Technologies for Natural Resource Management. 2006. **John Fulton**, Paul Mask, Timothy McDonald, Joey Shaw, Mark Dougherty, Puneet Srivastava, and Steve Taylor. USDA/CSREES \$555,057. 2006-2008.
 - Development of an Irrigation Research Infrastructure in the Black Belt. 2006. Mark Dougherty, Teferi Tsegaye, Barrett Vaughan, Donn Rodekohr, Jeff Sibley, **John Fulton**. Alabama Agricultural Land Grant Alliance (AALGA) Seed Grant. \$90,000. 2006-2008.
 - Youth Literacy in Science, Engineering, and Technology, a Community of Practice. 2006. John Cook, Trudy Dunham, et al. including **John Fulton**. eXtension Initiative. \$67,500. 2006-2008.
 - Evaluation of Variable-Rate Seeding for Cotton. 2006. **John Fulton**, Shannon Norwood, Joey Shaw, Mark Hall, Charlie Burmester, Paul Mask, Christian Brodbeck, and Chris Dillard. Alabama Cotton Commission. \$5,500. 2006-2009.
 - Corn Disease Control: Will Fungicide Application Increase Profitability? 2006. Mark Hall, Shannon Norwood, Bob Goodman, **John Fulton**, and Paul Mask. Alabama Wheat and Feed Grain Commodity Group. \$5,500. 2006-2009.
 - Evaluation of Variable-Rate Seeding for Corn. 2006. **John Fulton**, Shannon Norwood, Joey Shaw, Mark Hall, Charlie Burmester, Paul Mask, Christian Brodbeck, and Chris Dillard. Alabama Wheat and Feed Grain Commodity Group. \$5,500. 2006-2009.
 - Evaluation of Seed-Specific Fungicide Applications for Reducing Early Season Cost Associated with Seedling Disease Management. 2006. Kathy Lawrence, **John Fulton**, Dale Monks, W. Goodman, Charlie Burmester, and Chet Norris. Alabama Cotton Commission. \$3,000. 2006-2009.
 - Effect of Irrigation Scheduling and Tillage Systems on Cotton Production. 2006. E. Arriaga, **J.P. Fulton**, M. Dougherty, L. Curtis, K. Balkcom, J. Bergtold. Alabama Cotton Commission. \$8,000. 2006-2009.
 - Sub-surface Drip Irrigation and Sprinkler Irrigation for Site-Specific, Precision Management of Cotton. 2006. Mark Dougherty, Charlie Burmester, **J.P. Fulton**, Chet Norris, David Harkins, and Larry Curtis. Alabama Cotton Commission. \$10,000. 2006-2009.

- Development of an Irrigation Research Infrastructure in the Black Belt. 2005. Mark Dougherty, Teferi Tsegaye, Barrett Vaughan, Donn Rodekohr, Jeff Sibley, **J.P. Fulton**. Alabama Agricultural Land Grant Alliance (AALGA) Seed Grant. \$75,000. 2005-2007.
- Precision Agriculture and Precision Forestry – Alabama. 2005. **J.P. Fulton**, Paul Mask, Timothy McDonald, Joey Shaw, Puneet Srivastava, Mathew Smidt, Mark Dougherty, and Steve Taylor. USDA/CSREES. \$561,821. 2005-2007.
- Evaluation of Variable-Rate Seeding for Corn. 2005. **J.P. Fulton**, Shannon Norwood, Charlie Burmester, Mark Hall, Paul Mask, Joey Shaw, and Chris Dillard. Alabama Wheat and Feed Grain Commodity Group. \$7,500. 2005-2008.
- Proper Scheduling of Subsurface Drip Irrigation (SDI) for Corn Production. 2005. **J.P. Fulton**, Mark Dougherty, Charlie Burmester, Larry Curtis, David Harkins, Chet Norris. Alabama Wheat and Feed Grain Commodity Group. \$8,200. 2005-2008.
- Calibration of Granular Variable-Rate Application Equipment: Volume versus Mass Measurement for Pattern Assessment. 2005. **J.P. Fulton**, Charlie Burmester, Timothy McDonald, Shannon Norwood, and Joey Shaw. Alabama Wheat and Feed Grain Commodity Group. \$4,200. 2005-2008.
- Evaluation of Population and Economic Damage of Southwestern Corn Boer through GPS. 2005. Mark Hall, Shannon Norwood, Barry Freeman, Paul Mask, Chris Dillard, **J.P. Fulton**, Heath Potter, Richard Petcher. Alabama Wheat and Feed Grain Commodity Group. \$5,000. 2005-2008.
- Evaluation of Seed Specific Fungicide Applications for Reducing Early Season Cost Associated with Seedling Disease Management. 2005. Kathy Lawrence, **J.P. Fulton**, Dale Monks, W. Goodman, Charlie Burmester. Alabama Cotton Commission. \$3,000. 2005-2008.
- Evaluation of Variable-Rate Seeding for Cotton. 2005. **J.P. Fulton**, Shannon Norwood, Charlie Burmester, Mark Hall, Paul Mask, Joey Shaw, and Chris Dillard. Alabama Cotton Commission. \$7,500. 2005-2008.
- Precision Fertilization Using Sub-surface Drip Irrigation for Site-specific Management of Cotton. 2005. Mark Dougherty, Charlie Burmester, **J.P. Fulton**, Chet Norris, David Harkins, Larry Curtis, and Dale Monks. Alabama Cotton Commission. \$10,000. 2005-2008.
- Precision Agriculture and Precision Forestry – Alabama. 2004. Timothy McDonald, Paul Mask, **J.P. Fulton**, Joey Shaw, and Steve Taylor. USDA/CSREES \$544,330. 2004-2006.
- Precision Agriculture Conference. Shannon Norwood, Paul Mask, Chris Dillard, Eric Hall, **J.P. Fulton**. Alabama Wheat and Feed Grain Commodity Group. \$4,000. 2004-2007.
- Environmental and Economic Impacts of Biomass Reduction **J.P. Fulton**. USDA Forest Service. \$64,109. 2003-2007

Completed

- Variable-Rate Nitrogen Management for Tennessee Valley Corn, **J.P. Fulton**, Paul Mask, Charlie Burmester, Joey Shaw, Steve Taylor, Shannon Norwood, Chet Norris. 2004. Alabama Wheat and Feed Grain Commodity Group. \$7,000. 02/04-02/07.
- Student Studio for the Tom Corley BLDG. 2006. **J.P. Fulton**, M. Dougherty, S. Sanders. Auburn University Concessions Board. \$12,000. 2006.
- A Systems Approach to Sustain and Stimulate the Agricultural Economy of Alabama: Optimal On- and Off-farm Management of Poultry Litter. **J.P. Fulton**, Puneet Srivastava, Frank Owsley, C. Wesley Wood, Russell Muntifering, Oladiran Fasina, Yucheng Feng, Henry Fadamiro, Joey Shaw, Edzard van Santen, and Mike Davis. Alabama Poultry Initiative. \$290,000. 10/05-09/06.
- Evaluation of Integrated Technologies including Pressure Compensating Subsurface Drip Irrigation (SDI), Precision Vehicle Guidance, Field Mapping and Yield Monitor for Minimum Till Row Crop Production on Rolling Irregular Terrain. **J.P. Fulton**, Joey Shaw, Randy Raper, Paul Mask, Charles Burmester, Larry Curtis, Steve Taylor, Chet Norris, and David Harkins. Alabama Agricultural Experiment Station Foundation Grant Program for Agriculture and Related Research. \$118,430. 06/03-05/06.
- Post-Processing of Yield Monitor Data to Improve Yield Map Quality. S.A. Shearer, T.G. Mueller, C.R. Dillon, T.S. Stombaugh, **J.P. Fulton**, D.W. Hancock, and S.F. Higgins. 2003 Precision Agriculture Special Grant from USDA/CSREES. \$56,999. 09/03-08/06.
- Variable-Rate Technology Risk Management. C.R. Dillon, R.A. Fleming, **J.P. Fulton**, T.G. Mueller, S.A. Shearer, and T.S. Stombaugh. 2003 Precision Agriculture Special Grant from USDA/CSREES. \$79,499. 09/03-08/06.
- Voice Recognition for Concurrent Field Scouting and Machine Operation. **J.P. Fulton**, S.A. Shearer, T.G. Mueller, and S.G. McNeil, 2002 Precision Agriculture Special Grant from USDA/CSREES. \$63,820. 09/02-08/05.
- Equipment Enhancement to Support Variable-Rate Response Surface Development. S.A. Shearer, S.F. Higgins, T.G. Mueller, T.S. Stombaugh, C.R. Dillon, and **J.P. Fulton**. 2002 Precision Agriculture Special Grant from USDA/CSREES. \$63,662. 09/02-08/05.
- Tracking Field Operations for Economic Analysis and Identity Preservation. C.R. Dillon, R. Morgan **J.P. Fulton**, S.G. Isaacs, S.A. McNeill, and T.S. Stombaugh. 2002 Precision Agriculture Special Grant from USDA/CSREES. \$112,494. 09/02-08/05.
- Standardized Accuracy Tests for GPS Receivers. T.S. Stombaugh, S.A. Shearer, and **J.P. Fulton**. 2002 Precision Agriculture Special Grant from USDA/CSREES. Funding. \$73,762. 09/02-08/05.
- Dynamic Testing of Force-Impetus Yield Monitors under Rough Terrain Conditions. T.F. Burks, S.A. Shearer, L. G. Wells, S.G. McNeill, **J.P. Fulton** and S.F. Higgins. 2001 Precision Agriculture Special Grant from USDA/CSREES. \$35,349. 09/01-08/03.

- Outreach Education for Precision Agriculture. T. S. Stombaugh, S.A. Shearer, **J.P. Fulton**, T.G. Mueller and C.R. Dillon. 2001 Precision Agriculture Special Grant from USDA/CSREES. \$63,446. 09/01-08/04.

EXTENSION ACTIVITIES

Invited Presentations

- **Fulton, J.P.** 2007. Precision Agriculture Technologies for Conservation Tillage Strategies. High Residue Cover Crop Conservation Tillage Field Day. Uria, AL. April 4.
- **Fulton, J.P.** 2007. Comparing Guidance Systems. InfoAg Mid-South. Starkville, MS. February 7-8.
- **Fulton, J.P.** 2006. Precision Guidance-How Do I Choose? 2006 Cotton Incorporated Crop Management Seminar, Memphis, TN. November 1-2.
- **Fulton, J.P.** 2006. Current and Future Advancement in GPS Equipment and Technology. Southeastern Society of American Foresters Annual Meeting. Auburn, AL. September 25-26.
- **Fulton J.P.** 2006. New Technologies in Waste Management. ALFA Commodity Conference, Huntsville, AL. August 5.
- **Fulton, J.P.** 2006. Precision Drainage: Use of Real-Time Kinematic GPS for surface grade control. 3rd Annual Precision Agriculture Field Day, Dee River Ranch, Aliceville, AL. July 19.
- Taylor, S. McDonald T.P., **J.P. Fulton**, and F. Corley. 2006. Advances in precision application equipment. Forestry Herbicide Update, Lower Coastal Plain Agriculture Research Substation, Camden, AL. July 14.
- **Fulton, J.P.** 2006. Geospatial Technologies: Use in Natural Resource Management. Alabama State 4-H Congress. Auburn, AL. June 27.
- **Fulton, J.P.** and P. Srivastava. 2006. GPS Fundamentals and Practical Uses: Current and Future Geospatial Technologies. Alabama Section ASABE Spring Meeting. Auburn, AL. April 28.
- **Fulton, J.P.** 2006. Variable-rate technology. Alabama Precision Agriculture Producer Workshop; Implementing Precision Agriculture: Guidance Systems and Variable-Rate Technologies. Tennessee Valley Research and Extension Center, Belle Mina, AL. January 31 – February 1.
- **Fulton, J.P.** and J. Shaw. 2006. Management Zones and Cotton Production. Alabama Precision Agriculture Producer Workshop; Implementing Precision Agriculture: Guidance Systems and Variable-Rate Technologies. Tennessee Valley Research and Extension Center, Belle Mina, AL. January 31 – February 1.
- **Fulton, J.P.** and T.M. McDonald. 2005. In-Field Implementation of Precision Agriculture Technologies. 2005 Southern Plant Nutrient Management Conference, Olive Branch, TN. October 4.

- **Fulton, J.P.** 2005. Precision Agriculture Research at Auburn University. Northern Alabama Crops Tour, Limestone and Madison County, AL. August 18.
- **Fulton, J.P.** 2005. Implementation of Precision Agriculture in Alabama. Southwest Alabama Crops Tour, Baldwin County, AL. August 9.
- **Fulton, J.P.** 2005. Variable-Rate Nitrogen Management for Cotton and Corn. Alabama Cotton Field Day. Tennessee Valley Research and Extension Center, Belle Mina, AL. August 4.
- Taylor, S.E., **J.P. Fulton**, and T.P. McDonald. 2005. Precision Forestry: New Developments in Site-Specific Forest Management. Meeting of the War Eagle Chapter of the Society of American Foresters (SAF), Cottonton, AL. June 16.
- Taylor, S.E., **J.P. Fulton**, and T.P. McDonald. 2005. Precision Forestry: New Developments in Site-Specific Forest Management. Alabama Farmers Federation, Forestry Division Meeting, Birmingham, AL. February 1.
- **Fulton, J.P.** 2004. Variable-Rate Application of Fertilizer and Lime. Kentucky Precision Agricultural Conference, Louisville, KY. February 12.
- **Fulton, J.P.** 2004. Site-Specific Nitrogen Management and Variable-Rate Technology. North Alabama Precision Agricultural and Field Crops Day, Servico Gin, Lawrence County, AL. July 20.
- **Fulton, J.P.** 2004. Site-Specific Nitrogen Management and Variable-Rate Technology. South Alabama Precision Agricultural and Field Crops Day, Wiregrass Regional Research and Extension Center, Dothan, AL. August 17.
- **Fulton, J.P.** 2004. CAN Bus: A System for Mobile Equipment. Alabama Section ASAE Spring Meeting. Auburn, AL. March 19.
- **Fulton, J.P.** 2003. Variable-rate application of fertilizer and lime. 1st Annual Kentucky Precision Agriculture Conference, Louisville, KY. February 13.
- **Fulton, J.P.** 2003. Variable-rate application of fertilizer and lime. Conservation Tillage and Technology Conference, Ada, OH. February 5.
- **Fulton, J.P.** and S.A. Shearer. 2000. Spatial Data Management Using GIS. Kentucky Extension Precision Agriculture In-Service Training, Elizabethtown, KY. November 4.

Demonstrations

- **Fulton, J.P.** and W. Zech. 2006. Coordinated and lead a demonstration of variable-rate and geospatial technologies along with forestry machinery. Southeastern Society of American Foresters Annual Meeting, Auburn, AL. September 25.
- **Fulton, J.P.** 2006. Coordinated and lead a demonstration of Trimble's Land Level System at the 3rd Annual Precision Agriculture Field Day, Dee River Ranch, Aliceville, AL. July 19.
- **Fulton, J.P.**, S. Norwood, and Christian Brodbeck. 2006. Coordinated and lead a demonstration of guidance systems and variable-rate technology at the Alabama

- Precision Agriculture Producer Workshop; Implementing Precision Agriculture: Guidance Systems and Variable-Rate Technologies. Tennessee Valley Research and Extension Center, Belle Mina, AL. January 31
- **Fulton, J.P.** and S. Norwood. 2005. Coordinated and lead a demonstration of variable-rate applicators at the IPM and Precision Agriculture Workshop. Tennessee Valley Research and Extension Center, Belle Mina, AL. May 3.
 - Workman, S., S.F. Higgins, T.G. Mueller, C. Dillon, **J.P. Fulton**, and S.A. Shearer. 2002. Subsurface Drip Irrigation (SDI) for Kentucky. 2002 Princeton Crop Field Day. Princeton, KY. July 12.

Workshops and Tours

- **Tour** - Precision Agriculture Tour. Organized and participated in this tour for extension personnel which highlighted the implementation of precision agriculture management across Mississippi. July 19-21, 2006.
- **Workshop** – Coordinated and participated in the Alabama Precision Agriculture Producer Workshop. Implementing Precision Agriculture: Guidance Systems and Variable-Rate Technologies. Tennessee Valley Research and Extension Center, Belle Mina, AL. January 31 and February 1, 2006.

Presentations

- Dougherty, M., T. Tyson, **J.P. Fulton**, and L.M. Curtis. 2006. Alabama Update. S1018 Regional Meeting, Gainesville, FL. April 10-11.
- **Fulton, J.P.**, M.J. Darr, T.P. McDonald, S.E. Taylor, J.N. Shaw, C.J. Brodbeck, M. Schmidt, and F. Corley. 2006. Site-specific forestry in the Southeast US. Presented at the 2006 Agricultural Equipment Technology Conference, Seelbach Hilton, Louisville, Kentucky. February 12-14.
- **Fulton, J.P.** and T.P. McDonald. 2006. Precision Agriculture and Precision Forestry. Biosystems Engineering Department Seminar Series. Tom E Corley Building, Auburn, AL. January 23.

Personal Contact / Consultation (Jan 2004 – Dec. 2006)

- **Farm Technical Consultations** - 9
- **Phone Technical Consultations** - 19
- **E-mail Technical Consultations** - 14

Additional Activities

- Developed and maintain Auburn University's Precision Forestry webpage; www.auprecisionforestry.org or www.precisionforestry.net. Effort initiated Fall 2006.
- Assist with maintaining Auburn University's Precision Agriculture Portal; www.aces.edu/precisionag.

- Provided assistance with the organization and participated in numerous precision agriculture, crop, and forage field days across Alabama from 2004 - 2006.
- **Hurricane Ivan Damage Assessment.** September 20, 2004. Assisted the Alabama Department of Agriculture and Industries in post-hurricane damage assessment using geospatial technologies to map and capture remote sensed images of agricultural and related damage.

PROFESSIONAL DEVELOPMENT

Biomass for Gearheads. ASABE Continuing Professional Development presented at the Agricultural Equipment Technology Conference, Louisville, KY. February 11, 2007. ASABE: St. Joseph, MI.

Introduction to LIDAR. Workshop presented at the 3rd Annual Alabama GIS Symposium, Auburn, AL. October 31, 2006.

Participated in the inaugural 2004-2005 New Faculty Scholars (NSF) Program at Auburn University directed by the Biggio Center for the Enhancement of Teaching and Learning. Included monthly group meetings and participation in 2 workshops.

Tips for Effective Grant Writing. Professional Development Series. Auburn University Biggio Center for the Enhancement of Teaching & Learning. April 13, 2005.

A Model for Understanding College Teaching. Professional Development Series. Auburn University Biggio Center for the Enhancement of Teaching & Learning. September 2, 2004.

Traction and Tractor Performance Basics. ASAE Continuing Education Program. Agricultural Equipment Technology Conference, Kansas City, MO. Feb. 21, 2002. ASAE: St. Joseph, MI.

Introduction to Avenue. ESRI training course conducted by the Kentucky Geological Survey, Lexington, KY. January 12, 2000.

Introduction to ArcView GIS. ESRI training course conducted by the Kentucky Geological Survey, Lexington, KY. September 16, 1998.

Fluid Power for Practicing Engineers. ASAE Continuing Professional Development. 1998 ASAE Annual International Meeting, Orlando, FL. July 13, 1998.

STUDENT ADVISING

Current Graduate Co-Advisor

Clayton Campbell, M.S. Engineering, Expected December 2008. *Development and Assessment of Spinner-Disc Control for Improved Distribution of Granular Materials.*

Tyrel Harbuck, PhD Horticulture, Expected May 2008. *Spatial and Temporal Evaluation of Guidance Systems and Their Integration with Conservation Management Practices.*

Corey Kichler, M.S. Engineering, Expected August 2007. *Improved Spatial Performance of In-Field Machine Operations.*

Ajay Sharda, PhD Engineering, Expected August 2009. *Real-Time Feedback Control for Improved Distribution of Liquid and Dry Products.*

Current Graduate Committee Service

Matt Bernahard. M.S. Engineering, Expected August 2007. *Physical properties and the impact of moisture content for densification of poultry litter.*

Gary Butler. M.S. Engineering, Expected May 2007. *Evaluation of environmental impact of Best Management Practices (BMP's) in agriculture and forestry.*

Jiajie He. PhD Engineering. Expected May 2008. *Pretreated sewage disposal by subsurface drip irrigation in Black Belt soil area.*

Pradeepbarimar Rao. M.S. Engineering, Graduating June 2007. *Utilization of geospatial technologies for optimizing haul routes for the delivery of ready-mix concrete in urban areas.*

Laura Sturgeon. M.S. Agronomy and Soils, Expected May 2008. *Assessment of chemical temporal changes of densified broiler litter and its value as a fertilizer and soil amendment.*

Completed Graduate Committee Service

Earl Ducote. Master of Civil Engineering. Graduated Spring 2006. *Integrated control of Subsurface Wastewater Dosing via Soil Moisture.*

Angel Colon. M.S. Engineering. Graduated Fall 2005. *Modeling ALDOT Asphalt Friction Data Related to Aggregate Sources for the Alabama Highway System Using GIS Generated Maps.*

Christian Brodbeck. M.S. Engineering. Graduated Summer 2005. *Modeling Water Quality Impacts of Off-Road Vehicles in Forested Watersheds.*

Jonathan Davis. M.S. Engineering. Graduated Fall 2004. *Assessment of chemical soil amendments for erosion control of off-road vehicle trails.*

H. Gu. PhD. Engineering. Graduated Fall 2004. *The Study of Mimosa (Albizia jublibrissin) as a Materials Substitute for Hardwood Fibers in Paper Manufacturing (Served as Outside Reviewer).*

Undergraduate Advising

Advise approximately 10 undergraduate Biosystems Engineering students per semester.

HONORS AND AWARDS

2006 Biosystems Engineering Outstanding Faculty, College of Engineering

2006 Faculty Research Award, College of Agriculture

Graduated with honors from Wittenberg University- *cum laude*

SERVICE

Member, College of Agriculture Distance Learning Committee (2004-2006)

Member, Biosystems Engineering Laboratory Equipment Committee (2004-present)

Member, Biosystems Engineering Laboratory Shop Committee (2004-present)
Chair, Biosystems Engineering Marketing Committee (2004-present)
Chair, Biosystems Engineering Information Technology Committee (2004-present)
Chair, It Begins at Auburn fund raising campaign – served as the Biosystems Engineering coordinator for the College Agriculture efforts (2006)

ACTIVITIES

- **American Society of Agricultural and Biological Engineers (ASABE)**
 - **Member since 1995**
 - **Reviewer** for (2004 to present):
 - Power Machinery Division of ASABE Transactions
 - Food & Process Engineering Division of ASABE Transactions
 - Power Machinery Division of Applied Engineering in Agriculture
 - **ASABE Committee Member:**
 - 2000 to Present: PM54 – Precision Agriculture Committee
 - Session organizer for the 2005 and 2007 International Meeting
 - Sub-committee member developing a standard for testing of variable-rate application technology.
 - Sub-committee member which developed a new ASABE standard, X578 Yield Monitor Performance Test Standard. Accepted for publication in 2006.
 - Sub-committee member developing a new ASABE standard, X579 Yield Monitor Field Test Engineering Procedure. Currently being revised for ballot in 2007.
 - 2004 to Present: T-12 Forest Engineering Committee
 - 2005 to Present: PM-23/4/5 Tractor Implement Interface
 - 2005 to Present: PM-58 Agricultural Equipment Automation
- **Alabama State Section of the American Society of Agricultural and Biological Engineers**
 - **Member since 2004**
 - 2005-Present : Vice-Chair Awards
- **Auburn University ASABE Student Branch**
 - Faculty advisor: 2005/2006 and 2006/2007
 - Jr. Faculty advisor: 2004/2005
- Reviewer for **Computers and Electronics and Agriculture** (2005-present)
- Reviewer for **International Journal of Systems Science** (2007)
- Reviewer for **Kentucky Science & Engineering Foundation** (2006)
- **Alpha Epsilon** – Agricultural Engineering Honorary
- **Gamma Sigma Delta** - Agricultural Honorary Society
- **Society of Physic Students (SPS)**, Wittenberg University
 - 1990 to 1994
 - Vice-President 1993/1994
- Wittenberg Dean’s List (Fall 1991, Spring 1992, Fall 1993, Winter 1994)
- Community Service: Masonic Home for the Elderly, Springfield, Ohio (1994; 30 hours).
- Varsity Men’s Basketball
- FFA and 4-H member.
- Intramural Basketball, Softball, and Volleyball.