

**GARY L. HAWKINS**  
*Curriculum Vitae*

**NAME:** Gary L. Hawkins

**DEPARTMENT:** Biological and Agricultural Engineering

**PRESENT RANK:** Public Service Assistant

**ASSIGNMENT:** 75% Extension 25% Research

**HIGHEST DEGREE:** Doctor of Philosophy  
Biosystems Engineering  
University of Tennessee – Knoxville  
December 2000

**EDUCATION:**

2000	Ph.D. Biosystems Engineering	The University of Tennessee, Knoxville, Tennessee
1993	M.S. Agricultural Engineering	Auburn University, Auburn, Alabama
1990	B.S. Agricultural Engineering	Clemson University, Clemson, South Carolina

**CERTIFICATIONS:**

Engineer in Training – South Carolina

Georgia Adopt-A-Stream Program – Chemical, Physical and Biological Parameter Trainer

**PROFESSIONAL APPOINTMENTS:**

**April 2001 – present.** Public Service Assistant (Agricultural Pollution Prevention Specialist – Row Crops), The University of Georgia, Biological and Agricultural Engineering Department, Tifton, Georgia  
Responsibilities include working through the UGA Cooperative Extension Service to provide pollution prevention programming to the farming community, agribusinesses, extension agents, commodity groups and other related farming programs to improve water quality and water quantity in Georgia. Major activities are directed at working with Extension Agents and farmers to provide technical assistance and programming to assist in reducing pollution through reduced erosion and nutrient movement and increased water conservation.

**August 1997 – December 2000.** Graduate Research Assistant, The University of Tennessee – Knoxville, Agricultural and Biosystems Department, Knoxville, Tennessee

Responsibilities included the design of two different types of anaerobic digesters, collection and analysis of water samples from each reactor, preparing papers for publication, and writing my dissertation.

**June 1995-July 1997.** Environmental Engineer II. Alabama Department of Environmental Management - Land Division, Engineering Services Branch - Solid Waste Division, Montgomery, Alabama

Responsibilities included evaluation of solid waste permit applications, submittals, plans and reports for both new and existing solid waste landfills. Review and process closure plans, solid waste applications, and plans for both landfill renewals and

modifications. Draft renewal and modified solid waste permits for signature. Evaluate problems of existing solid waste facilities (i.e., leachate, drainage, operations, etc.). Discuss permitting requirements with government officials, consulting engineers, and the regulated community.

**July 1993 - June 1995.** Environmental Engineer I. Alabama Department of Environmental Management - Land Division, Engineering Services Branch - Solid Waste Division, Montgomery, Alabama  
Responsibilities were same as that for Environmental Engineer II above

**September 1990-August 1993.** Graduate Research Assistant. Auburn University - Agricultural Engineering Department, Auburn, Alabama  
Responsibilities included the design of overland flow and vegetative filter experiment, construction of field plots, collection and analysis of water samples, preparing papers for publication, and writing my thesis.

**Summer 1989; December 1989; Summer 1990.** Agricultural Engineer Intern. W.P. Law Inc., Columbia, South Carolina  
Responsibilities included planning and designing home and agricultural irrigation systems, assisting with installation of agricultural systems, and evaluating required materials needed for installation of home irrigation systems.

## **SIGNIFICANT EXTENSION ACTIVITIES**

### **Areas in which Extension Programming is Conducted:**

Agricultural Pollution Prevention, Conservation Tillage, Water Quality and Alternative Energy.

- I. Conservation Tillage:** Dr. Hawkins has provided leadership and programming in conservation tillage systems to help promote its expansion in Georgia and the Southeastern states. He has chaired three planning committees for the Conservation Tillage Production Systems Conference, been a member of the UGA-CAES Conservation Tillage Task Force steering committee and is developing the structure for a conservation tillage team both at the University of Georgia and the Southeastern states. Dr. Hawkins is one of the first contacts for conservation tillage information from county extension agents, conservation tillage groups and farmers.
  
- II. Water Quality and Water Conservation:** Dr. Hawkins has been instrumental in providing programming on the importance of water quality and water conservation. He has provided assistance to and education for farmers with an on-farm water monitoring program. This program assists agents in collecting water samples from streams of concern and then while sampling provides education on watersheds and how upstream activities and site specific practices can contribute to water quality issues. Dr. Hawkins has also worked extensively to develop a hands-on education program that utilizes models to increase knowledge and understanding of principles such as hydrology, erosion, pollution movement, water conservation and groundwater movement. The on-farm monitoring and models provide a non-intrusive avenue to get clientele (i.e. farmers, agents, agency personal, teachers, citizens and students) more involved in the learning process and help better explain complex principles. Dr. Hawkins also coordinates an annual summit that provides citizens and agency personnel in the Upper Suwannee River Basin with important information on water quality issues ranging from Total Maximum

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Daily Loads (TMDLs) to forestry and animal waste. All of these programs provide interactive and informative means of improving knowledge and understanding of complex principles.

**III. Alternative Energy for Agriculture:** Dr. Hawkins has developed an alternative energy program. The emphasis of the program is to provide extension agents, farmers and agency personnel with information of alternative energy sources other than ethanol produced from starch crops. Specifically he is developing programs to provide and disseminate information on solar energy, methane production and biomass availability. Even though the program is in its infancy, Dr. Hawkins has been requested to provide presentations at various venues on alternative sources of energy from such feed stocks as cotton stalks and vegetable waste. The alternative energy program is being developed to take advantage of potential feed stocks while protecting natural resources.

## **SIGNIFICANT RESEARCH ACTIVITIES**

### **Areas in which Research is Conducted:**

Conservation tillage, Water Conservation and Management, and Alternative Energy.

### **Current Research Projects:**

- I. Conservation Tillage for Cotton Sustainability:** Investigating the use of black oats as a weed suppressant in non-transgenic cotton has the potential to provide the farmer with a more sustainable operation. This research has tremendous potential of equipping the cotton farmer with a new way of suppressing weeds in a time where glyphosate is seen as being over used. Dr. Hawkins has received a grant to investigate the possibility of using non-transgenic cotton seed and cover crops to analyze an alternative management strategy for making cotton operations more sustainable.
- II. Conservation Tillage for Conservation of Water:** Investigating the use of different cover crops for the ability to conserve water in peanuts and corn. The study has been conducted for a three years. The study involves using five different cover crops and combinations to increase the water holding capacity of the soil in plots with the different covers. Results indicate that the cover helps increase the closure rate of the peanut canopy as well as increasing the soil water availability. Another aspect of the study is the different plant stress levels associated with the different cover crops.
- III. Water Conservation and Management:** Dr. Hawkins is the principal investigator or co-investigator, as it relates to soil moisture monitoring and analysis, in multiple departmental and interagency projects where supplemental water applications (i.e. irrigation) are being applied to various crops in conservation and conventional tillage operations. Soil moisture monitoring has been conducted in fields under variable rate irrigation systems to analyze if soil characteristics can be offset with variable water application rates. Soil moisture has also been analyzed in conservation tillage fields under different cover crops to determine water conservation benefits of cover crops.
- IV. Alternative Energy:** Dr. Hawkins is the principal or co-investigator on several projects studying the use and applicability of alternative fuel sources for agriculture. These projects include the use of solar and wind energy for pumping water to small agricultural operations and livestock, use of fruit and vegetable waste as the feedstock for methane production and cotton stalks as a potential for ethanol production. These projects have

tremendous potential in providing the farmer with additional income streams, reduction of waste materials and means to provide water where line electricity is not available.

- V. Another area of research and extension Dr. Hawkins is working in is the use of waste materials for energy production via methane. He is working to use anaerobic digestion to convert materials such as fruit and vegetable waste into methane for energy at local packing houses and potentially community digesters.

## CONTRIBUTIONS TO INSTRUCTION

### Courses Taught

Dr. Hawkins does not have a teaching appointment. However he has provided multiple presentations as a guest lecturer.

### University or College Level Instruction

- **Alternative energy: methane.** APTC 4010 – Principles of Sustainable Management. Tifton, GA. 27 April 2007. 50 min, 15 people.
- **Watershed 101: All you need to know about watersheds and water quality in 20 minutes.** APTC 4010 – Principles of Sustainable Management. Tifton, GA. 9 February 2007 (15 people); 26 February 2004 (12 people)
- **Environmental aspects of pollution prevention.** APTC3080 – Introduction to Environmental Science and Engineering; 7 November 2005. 16 people.
- **Pollution prevention and soil and water conservation.** Presented to Ware County Magnet School teachers. Tifton, GA. 6 January 2004. 25 teachers
- **Relationship between pollution prevention and water quality.** CRSS(FORS) 1020, Introduction to Water Resources. Athens, GA. 24 September 2004. 18 people
- **Equipment used in water quality monitoring.** APTC(EHSC)3080 – Introduction to Environmental Science and Engineering. Tifton, GA. 26 October 2004. 14 people.
- **Sustainable agriculture – Water.** Ag-In the Classroom Seminars; ABAC- Moultrie campus. Moultrie, GA. 18 June 2003. 35 people.

### Non-University or College Level Instruction

- Taught GIFT teachers the importance of pollution prevention from agricultural and urban lands. Tifton, GA. 17 & 24 June 2003. 2 presentations, 15 minutes, 8 people.
- **Georgia's Water Resources.** Natural Resources Conservation Workshop. 10 and 12 June, 2002; 9-11, June 2003 and 22-24 June 2004. 32 presentation, 90 minutes, 564 people.
- Advised two student workers on pollution prevention and water programs deliverable to students and teachers in a 6-week after school program in Berrien County. 20 November 2003 and 3 December 2003.
- Advised and trained 4-H student on programs that could be used with the surface water model and the "Prestige Lake" activity to be delivered to approximately 200 other 4-Hers. 16 October 2003.

## PUBLICATIONS

### Refereed Journal Articles

- **Hawkins, G. L.,** D. R. Raman, R. T. Burns, R. E. Yoder, and T. L. Cross. 2001. Enhancing Dairy Lagoon Performance with High-Rate Anaerobic Digesters. Transactions of the ASAE. Vol 44 Num 6, pp. 1825-1831

- **Hawkins, G.L.**, D.T. Hill, E. W. Rochester, C. W. Wood. 1998. Evaluation of Vegetative Filter Strips for Swine Lagoon Effluent. Transactions of the ASAE. VOL. 41(3):639-643
- **Hawkins, G.L.**, D.T. Hill, E.W. Rochester, and C.W. Wood. 1995. Evaluation of Overland Flow Treatment for Swine Lagoon Effluent. *Transactions of ASAE*. 38(2):397-402.

### Peer Reviewed Extension Publications

- K.S.U. Jayaratne, J.W. Gaskin, R. Dewey Lee, D. Wayne Reeves, **G. Hawkins**. Educational Information Preferences of Agricultural Extension Agents in Learning about Conservation Tillage Systems. Journal of Extension, submitted for publication
- **Hawkins, G.L.**, W.T. Kelly and G. Boyhan, “Characterizing the Physical Properties of Vidalia Onions for Use in Anaerobic Digestion”, HortTech, Under Review
- **Hawkins, G.L.**, D. Sullivan and D. Lightle, “Simulating Crop Rotations in the Piedmont with RUSLE2”, Under review as an Extension Publication.
- **Hawkins, G.L.**, D. Sullivan and D. Lightle, “Simulating Crop Rotations in the Coastal Plain with RUSLE2”, Under review as an Extension Publication.
- **Hawkins, G.L.** and R. Wallace. 2008. “CEAP: Availability and Implementation of BMPs in the Upper Suwannee River Basin”, Extension Publication Number B1335, January 2008
- **Hawkins, G.L.** 2008. “Characterization of Fruit and Vegetable Wastes for Energy Production”. 2008 Georgia Vegetable Extension/Research Report.
- Lee, D, J. Gaskin, H. Schomberg, **G.L. Hawkins**, G. Harris, R. Barentine and B. Bellows. 2008. Success with Cover Crops. Electronic Bulletin 102.
- **Hawkins, G.L.** and R. Wallace. “Assessing and Implementing BMPs in the Upper Suwannee River Accessing and Implementing BMPs in The Upper Suwannee River Basin through CEAP” (Under review).
- **Hawkins, G.L.**; D.S. Sullivan; C.L. Truman. 2007. “Water Savings through Conservation Tillage”, Extension Circular number 916.
- **Hawkins, G.L.** and K. Harrison. 2005. Water Meters as a Water Management Tool on Georgia Farms, Extension Bulletin Number 1296.
- **Hawkins, G.L.** and C.L. Lacy. 2005. “Extensions Role in the Conservation Security Program”, Extension Bulletin Number 1268.
- **Hawkins, G.L.** and D. Thomas. 2002. Protecting Georgia’s Surface Water Resources. Georgia Extension Bulletin No. 1217, web-site <http://www.ces.uga.edu/pubcd/B1217.htm>.

### Reports

- Agricultural Pollution Prevention Annual Report 2008. Submitted to P2AD in fulfillment of 2007 Grant
- **Hawkins, G.L.** Hawkins and R. Barentine. 2008. “Increasing Farm Sustainability Through the use of Cover Crops for Weed Suppression in Non-Transgenic Conventional Cotton”. Final report submitted to Southern SARE for project number OS04-020. [http://www.sare.org/reporting/report\\_viewer.asp?pn=OS04-020](http://www.sare.org/reporting/report_viewer.asp?pn=OS04-020)
- Agriculture Section – Row Crops. Contribution to 2002 P2AD Annual Report.

### Proceedings

- **Hawkins, G.L.**, D.G. Sullivan, G. Bland; C. Truman, T. Strickland, B. Hubbard, D. Lee, and J. Beasley . 2007. Thermal Infrared Imagery for Better Water Conservation

in agricultural fields. Proceedings of the 2007 Georgia Water Resources Conference, held March 27-29, 2007, at the University of Georgia. The University of Georgia, Athens, Georgia.

- \***Hawkins, G.L.**, B. Boland, J. Jacobs, G. Krewer. 2006. Horizontal wells: What are they, How do they work and How would they benefit us? Proceedings of the 10<sup>th</sup> annual North American Blueberry Research and Extension Workers Conference held at the University of Georgia Conference Center, Tifton Ga, June 4-8, 2006, D. S. NeSmith, ed.
- Reeves, D.W.; M.L. Norfleet; D.A. Abrahamson; H.H. Schomberg; H. Causarano; and **G.L. Hawkins**. 2005. Conservation Tillage in Georgia: Economics and Water Resources. Proceedings of the 2005 Georgia Water Resources Conference, held April 25-27, at the University of Georgia. Kathryn J. Hatcher, editor, Institute of Ecology, The University of Georgia, Athens, Georgia.
- Gaskin, J., **G.L. Hawkins**, T.W. Pagan, and L.M. Risse. 2003. See is Believing : Hands on Tools For Non-point Source Pollution”. *Proceedings of the 2003 Georgia Water Resources Conference*, held April 23-24, 2003, at the University of Georgia. Kathryn J. Hatcher, editor, Institute of Ecology, The University of Georgia, Athens, Georgia.
- \***Hawkins, G.L.**, R.M. Seymour, J. Gaskin, T. Pagan, and L.M. Risse. 2004. “Hands-On Education Tools: The FUNdamentals of agricultural and urban non-point source pollution”. Poster presented at National Water Quality Conference: Integrating Research, Extension and Education held 11-14 January at the Belleview Biltmore Resort, Golf Club and Spa, Clearwater, Florida.
- \***Hawkins, G. L.**, R. Lindsey, L. Jones, and M. Davis. 2003. BMP Implementation within the Willacoochee River Basin in South Central Georgia. *Proceedings of American Water Resources Association 2003 Spring Specialty Conference* held at Kansas City, MO, 12-14 May 2003, J.D. Williams and D.W. Kolpin, editors.
- \***Hawkins, G.L.**, D.T. Hill, E.W. Rochester, and C.W. Wood. 1995. Modeling Removal of Ammonia and COD from Animal Lagoon Effluent Using Overland Flow. In: *Proceedings of the 7th International Symposium on Agricultural and Food Processing Waste*.

#### Convention Papers and Abstracts

- **Hawkins, G.L.** 2008. Abstracts of the 2008 National Alliums Research Conference, Savannah, GA 11-13, 2008, Chaired by George Boyhan.
- Presented Poster (paper number 084247), “Comparing Peanut Varieties for Potential Use as Feedstocks in Bio-Diesel Production” ASABE Annual Conference, Providence RI, 29 June – 3 July 2008
- **Hawkins, G.L.** and G. Rains. 2008. Assessing the Physical and Chemical Properties of Fruit and Vegetable Waste for use in Anaerobic Digestion. ASABE Paper No. 08-3990. St. Joseph, Mich.: ASABE. (25 persons) ASABE Annual Conference, Providence RI, 29 June – 3 July 2008
- Attended and presented at the 2008 Annual Meeting in Madison Wisconsin. Presentation entitled “Solar Energy as an Alternative for Irrigating a Pecan Orchard”. 2008 ANREP Conference, 15 – 18 July 2008
- \*Lee, R.D., J. Gaskin, G. Harris, **G. Hawkins** and W. Reeves. 2006. A Successful Model for Conservation Tillage Education for County Extension Agents. Paper number 1708b, In: Abstracts of American Society of Agronomy, Crop Science

- Society of America, and Soil Science Society of America International Annual Meeting. Nov. 12-16, 2006. Indianapolis, In.
- **\*Hawkins, G.L.**, J. Gaskin, A. Page, K. Iversen, D. Franklin, and R. Odom. 2006. Team Conservation Tillage: Promoting CT Through Partnerships. ASABE Paper No. 068044. St. Joseph, Mich.: ASABE.
  - **\*Hawkins, G.L.**, R.D. Lee, J. Gaskin, D.W. Reeves, K.S.U. Jayaratne, G. Harris, R. Barentine. 2006. Conservation Tillage Training for Georgia's County Agents. ASABE Paper No. 068045. St. Joseph, Mich.: ASABE.
  - **\*Hawkins, G.L.** 2005. Affect of Urban Land Use on Water Quality in a Larger Watershed. Proceedings abstract. 2005 International SWCS Conference. 3 August 2005.
  - **\*Hawkins, G.L.** 2005. Affect of Agricultural Land Use on Water Quality in a Larger Watershed. ASABE Paper No. 052224. St. Joseph, Mich.: ASABE (20 July 2005)
  - **\*Hawkins, G.L.**; D. Lee; J. Gaskin; W. Reeves; K.S.U. Jayaratne. Georgia's Conservation Tillage Educational Task Force: Improving County Extension Agents' Understanding of Conservation Tillage Systems. Poster presented at the 2005 Southern Conservation Tillage Conference, Florence, SC. (27-29 June 2005) and 2005 Annual GACAA meeting
  - **\*Hawkins, G.L.**; R.M. Seymour, J. Gaskin, L.M. Risse, T. Pagan, and T. Bass. Agricultural Pollution Prevention in Georgia. Convention Abstract. 2004 Annual ANREP Conference. Wheeling, WV. 16 May 2004.
  - **\*Hawkins, G.L.** 2004. Nutrient movement: Does it occur in sandy soil with tile drains and conservation tillage? 2004 Annual Meeting Soil and Water Conservation Society. Proceedings abstract. 26 July 2004.
  - **\*Hawkins, G.L.**, R.M. Seymour, S. Chandler, and J. Ruter. 2004. Renovating Nursery Runoff Water to Remove Nutrients Prior to Discharge into Adjacent Waters. ASAE Paper 04-2122. St. Joseph, MI:ASAE.
  - **\*Hawkins, G.L.** D. Sierra; R. Hubbard. 2003. Phosphorus and Nitrogen Leachability on Agricultural Fields Used for Land Application of Poultry Litter. ASAE Paper 03-2252. St. Joseph, MI:ASAE.
  - **\*Hawkins, G.L.** and D.R. Raman 1999. Kinetic Study of Anaerobic Filter and Anaerobic Sequencing Batch Reactor for Design of a Pretreatment System for Dairy and Swine Wastewater. ASAE Paper 99-4061. St. Joseph, MI:ASAE.
  - **\*Hawkins, G.L.**, D.T. Hill, E.W. Rochester, and C.W. Wood. 1994. Renovation of Swine Lagoon Wastewater by Overland Flow Treatment. ASAE Paper 94-4069. St. Joseph, MI:ASAE.

## Other Publications

### Miscellaneous Publications

- "Converting Fruit and Vegetable Waste into Energy", *Proceedings of the 2008 Southeast Regional Vegetable Conference*, Savannah, Ga., 11-13 January 2008, Ed. William Terry Kelly
- "Solar Power and the Pecan Industry", *The Pecan Grower*, Dec 2007, Jan-Feb 2008 issue, p. 13
- **Hawkins, G.L.**, M. Risse and J. Gaskin. 2008. "It's the System for Saving Water!", *RESOURCE Magazine*, ASABE, St. Joseph, MI, May 2008 Issue
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- **Hawkins, G.L.** 2004. Protecting Georgia's Surface Water Resources, Reference materials passed out as part of Advanced Master Gardner Training, Griffin GA, edited by Rose Mary Seymour (24 April 2004)
- Dangler, J. 2006. "Cover Crops : Small-Scale Solutions for your Farm in <blank> county", NRCS publication to be distributed to County offices (photo credit)
- Contributing author to "Best Management Practices for Nutrient Management: Your Guide to 21 Conservation and Environmental Practices for the 21<sup>st</sup> Century" publication developed as part of grant project by South Georgia RDC, Valdosta, GA.

### Newsletters Edited

Dr. Hawkins is the primary editor of the "Water Drop" newsletter. This newsletter was developed to provide Extension Faculty, Agency personnel and citizens with information on the water related activities of the Biological and Agricultural Department, the AgP2 group and other Extension Faculty in the State of Georgia. The newsletter has been published in October 2001, February 2002, May 2002, October 2002, August 2003, February 2004, March 2004, August 2004, August 2005, February 2006, May 2006, January 2007

### Newsletter Contributions

- **Hawkins, G.L.** 2006 "USDA-ARS/UGA Conservation Tillage Workshop a Success". Upper Suwannee River Partnership Newsletter, December 2006 issue
- W. Reeves and **Hawkins, G.L.** 2006. Water on the Farm. Dragonfly Gazette, Newsletter of the Georgia Project Wet; Winter 2006.
- **Hawkins, G.L.** 2006. "Fruit and Vegetable Waste for Alternative Energy Production", Fall 2006 Issue of Georgia Extension Vegetable News
- Dangler, J.M. and **G. Hawkins.** 2006. Team conservation tillage field day in Moultrie. NRCS Connection, Summer Edition. USDA-NRCS, Athens, Ga.
- **Hawkins, G.L.** 2005 "Conservation Tillage in Vegetable Production", Fall 2005 Issue of Georgia Extension Vegetable News
- **Hawkins, G.L.** 2005. Cover Crops prevent pollution year round for Georgia farms. Printed in Winter 2005 issue of P2AD's *From the Source* (vol 14, No.1)
- **Hawkins, G.L.** 2005. Using Soil Moisture Probes to Show the Effectiveness of Conservation Tillage and Variable Rate Irrigation. Printed in July 2005 issue of *The VRI Pipeline*
- **Hawkins, G.L.** 2003. "Georgia's Farmers Work to Conserve Water Despite Rainy Summer". From *The Source*, a Publication of the Georgia Pollution Prevention Assistance Division, Fall 2003, Vol. 12, No. 4.
- Hill, D.T., **G.L. Hawkins**, E.W. Rochester, and C.W. Wood. 1993. Filter Strips Help Manage Waste Lagoon Effluent. *Highlights of Agricultural Research, Alabama Agricultural Experiment Station* 41(3):12.

### Citations in Popular Press

- "Can fruit growers profit from rising energy prices?", *The Fruit Growers News*", published by Great American Publishing, Sparta, MI. Article by Dick Lehnert, Quoted in article, May 2008 Issue
- "Can fruit growers profit from rising energy prices?", *The Vegetable Growers News*", published by Great American Publishing, Sparta, MI. Article by Dick Lehnert, Quoted in article, May 2008 Issue
- Research on fruit to energy and cotton stalks for biomass was mentioned in the UGA

Columns article UGA shows off bioenergy work at national alternative fuel demonstration. 14 July 2008 “Use of Cover Crops for Weed Suppression in Non-Transgenic Conventional Cotton”. Proceedings of the 2008 SCASC Conference, Tifton, GA, July 29-31, 2008.

- Congressman Jack Kingston Tours Farm Using Solar Power, story by Mittie Vaughan, Pierce County Press, Quoted in the story, 29 October 2008
- Congressman Kingston visits solar-powered irrigation farm in Pierce Co., write-up in The Blackshear Times, 29 October 2008
- **Hawkins, G.L.** 2008. Finding Energy in a Typically not Thought of Location – Fruit and Vegetable Waste, Abstracts of the 2008 GACAA Annual Meeting, 17-19 November 2008 (120 persons)
- Geller, D., B. Buchanan and **G.L. Hawkins.** On-Farm Energy Production. The Peanut Grower, Technology for Profits, Now and in the Future Insert. November 2008 issue
- **Hawkins, G.L.** 2008. Utilizing the Sun for the Farmstead. Solar in Peanut Farmer. Cotton Farming Magazine, Technology for Profits, Now and in the Future Insert. November 2008 issue
- Geller, D., B. Buchanan and **G.L. Hawkins.** On-Farm Energy Production. Cotton Farming Magazine, Technology for Profits, Now and in the Future Insert. November 2008 issue
- Article in The Blackshear Times, The New Wave in Agriculture (article discussing solar powered irrigation system). 23 May 2007
- Article in the Tifton Gazette concerning the 2006 Conservation Tillage Production Systems Training Conference, Feb 7-8, 2006.
- Lori Glenn 2006. Policing the Ochlockonee, Moultrie Observer, Friday Nov 24, 2006. Article in the Moultrie Gazette concerning an Adopt-A-Stream training in Moultrie

#### GRANTS AND GIFTS – FUNDED

Title	Granting Agency	Dates/ Duration	Amount	Investigator Status (others)	Percent Attributed to Dr. Hawkins
Extracting energy from poultry waste and fruit and vegetable waste through anaerobic digestion technology	USDA-NRCS Conservation Innovation Grant Program	09/01/2007 – 08/30/2010	\$137,695	PI	90%
Demonstration and Evaluation of Precision Pivot Irrigation controls to Optimize dairy Waste Application	USDA-NRCS Conservation Innovation Grant Program	09/01/2007 – 08/30/2010	\$407,166	Co-PI	10%
Comparing Soil Moisture Sensors for Peanut Irrigation Scheduling	Southeastern Peanut Research Initiative	10/01/2006 – 09/30/2007 (1 yr)	\$11,500	Co-PI	20%
Using EMS to Enhance Farmer Environmental Awareness and Implementation of Innovative Resource	NRCS Conservation Innovation Grant Program	10/01/2006 – 09/30/2009 (3 yrs)	\$104,606	Co-PI	10%

Conservation Practices					
Conservation Workshops and Field Days for Promoting Better Use of Natural Resources	GA – NRCS	9/25/2006 – 9/24/2007 (1 yr)	\$15,000	PI	100%
Agricultural Pollution Prevention Program – 2006 Scope of Services	Georgia DNR Pollution Prevention Assistance Division	07/01/06 – 6/30/07 (1 yr)	\$434,720	Co-PI	15%
A Systems-Based Approach to Evaluate the Benefits of Conservation Tillage in the Southern Coastal Plain	Georgia Agricultural Commission for Corn	07/01/2006 – 6/30/2007 (1 yr)	\$15,635	Co-PI	5%
A Systems-Based Approach to Evaluate the Benefits of Conservation Tillage in the Southern Coastal Plain	Georgia Agricultural Commission for Peanuts	07/01/2006 – 6/30/2007 (1 yr)	\$15,635	Co-PI	5%
Utilizing Wind and Solar Power for Alternative Water Supply for Cattle in Coastal Georgia	NRCS Conservation Innovation Grant Program	08/08/2006 – 08/07/2009 (3 yrs)	\$213,440	PI	80%
Horizontal Wells for Irrigation Supply for Blueberries	Southern Region Small Fruit Consortium	04/01/2006 – 03/31/2007 (1 yr)	\$5,000	PI	50%
Gifts for Agricultural Water Conservation Workshop	Irrigation Companies	Calendar year 2005	Total awards: \$2,400	PI	100%
Agricultural Pollution Prevention Program – 2005 Scope of Services	Georgia DNR Pollution Prevention Assistance Division	07/01/05 – 6/30/06 (1 yr)	\$434,720	Co-PI	15%
Maintaining Optimal Soil Moisture in Peanuts with Variable Rate Irrigation	Southern Peanut Research	07/01/2005 – 06/31/2007 (1 yr)	\$23,000	Co-PI	10%
Utilizing Solar Power as a Supplement Power Source for Small Irrigation Needs”	USDA-NRCS-CIG	06/01/2005 – 06/01/2008 (3 yrs)	\$94,915	PI	100%
Long-Term Water Quality Responses to Conservation Practices in Nested Coastal Plain Watersheds	USDA-CSREES	09/15/2005 – 9/14/2008 (3 yrs)	\$650,000;	Co-PI	1%
Demonstration of Variable-Rate Irrigation for Water Conservation and Application Optimization	USDA-NRCS-CIG	10/01/2004 – 09/30/2007 (3 yrs)	\$501,850,	Co-PI	2%
Increasing Farm Sustainability Through the Incorporation of Cover Crops for Weed Suppression in Non-	Southern SARE	10/01/2004 – 9/30/2006 (2 yrs)	\$15,000	PI	100%

Transgenic Cotton					
Understanding and Explaining the Relationships Between Dissolved Oxygen, Water Quality, and Natural Stream Ecosystems in the Coastal Plain of Georgia	USDA-CSREES	09/15/2004 – 09/14/2007 (3 yrs)	\$580,000,	Co-PI	8%
Monitoring the Soil Moisture Profile of Pecan Drip Irrigation System in a Coastal Plain Soil	Georgia Commodity Commission for Pecans	07/01/2007 – 06/30/2008 (1 yr)	\$10,000	PI	80%
Densification of Cotton Stalk into High Quality Pellets for Energy Production	Georgia Cotton Commission	07/01/2008 – 6/30/2009	\$22,000	Co-PI	33%
Agricultural Pollution Prevention Program – 2008 Scope of Services	Georgia DNR Pollution Prevention Assistance Division	07/01/08 – 6/30/09 (1 yr)	\$434,720	CO-PI	15%

**GRANTS AND GIFTS – PENDING:**

Title	Granting Agency	Dates/ Duration	Amount	Investigator Status (others)	Percent Attributed to Dr. Hawkins
Educating County Extension Agents and K-12 Teachers on Solar powered Systems Through Hands-On Education	EPA	7/2009 – 6/2010	\$32,518	PI	35%
Developing Definitions, demonstrations and Trainings for recycling Organic Waste through Composting and Anaerobic Digestion	USDA-Solid Waste	10/2009 – 10/2012	\$185,816	Co-PI	50%

**GRANTS AND GIFTS – NOT-FUNDED – 20 Proposals****Competitive Grants: \$3,217,502 Non-Competitive/Gifts: \$0**

Dr. Hawkins submitted 16 grant proposals in the areas of water quality education, conservation tillage, water conservation, water recycling, and alternative energy as a principal investigator or co-investigator. The total requested amount was \$1,199,752. The organizations and agencies receiving the grant proposals were Environmental Protection Agency (EPA) – various divisions, USDA – CSREES; Southeastern Peanut Research Initiative, Southern Sustainable Agriculture Research and Education (SARE), USDA and Department of Energy, and South Region Water Quality Coordinators. Some of these 20 grant proposals have been rewritten and submitted to other granting agencies.

**RECOGNITIONS AND AWARDS (12) (\*denotes regional or national award)**

- \*ASABE Blue Ribbon Award for Extension Bulletin – “Extension’s Role in the Conservation Security Program” (2006)
- \*National SWCS Merit Award as part of Team Conservation Tillage (2006)
- \*2006 Young Professional Award - Regional from GACAA (2006)
- Recognition for mentoring a CAES Young Scholar (2006)
- Certificate of Appreciation for work related to the Alapaha-Willacoochee River 319 Project from the Seven Rivers RC&D Council (2005)
- Recognition for mentoring a CAES Young Scholar (2005)
- First Place Poster from GACAA Annual Meeting (2005)
- Part of team awarded the 2004 Excellence in Teamwork Award - Presented by Joint Council of Extension Professionals (JCEP) (2004)
- Recognition for mentoring a CAES Young Scholar (2003)
- Recognized by the Seven Rivers RC&D Council for work in promoting water quality in the Suwannee River Basin (2002)
- Recognition for work done on the Aquaculture programming at the 2002 NACAA Annual Meeting (2002)
- Scholarship to Attend the 2002 NACAA Annual Meeting (2002)
- Earned Eagle Scout Award and 3 palms – Boy Scouts highest honor earned by boy (Prior to 2001)
- Earned Wood Badge – Award for completing highest Adult Scout training (Prior to 2001)
- Invited to be on Wood Badge Staff (Prior to 2001)
- Received Agricultural Engineering Scholarship from Clemson University (Prior to 2001)
- Inducted into Alpha Epsilon (Prior to 2001)
- Inducted into Gamma Sigma Delta (Prior to 2001)

## **CONTINUING EDUCATION AND SELF IMPROVEMENT**

### **National**

- Soil and Water Conservation (SWCS) International Meeting, Wesley Chapel, FL. 21 – 25 July 2007.
- Georgia Chapter Association Natural Resource Extension Professionals (ANREP) Meeting, Skidaway Island, GA. 16-17 August 2005.
- Soil and Water Conservation (SWCS) International Meeting, Rochester, NY. 30 July - 3 August 2005.
- Leadership Development Workshop, SWCS Annual Conference, Rochester, NY. 30 July 2005.
- Annual International American Society of Agricultural Engineers (ASAE) Meeting, Tampa, Florida. 17-20 July 2005.
- Joint State (GA, SC, NC) American Society of Agricultural Engineers (ASAE) Annual Meeting, Charleston, SC. 1-3 June 2005.
- National JCEP Meeting (Public Issues Leadership Development Conference), Washington DC. 16-20 April 2005.
- Soil and Water Conservation (SWCS) International Meeting - St. Paul, MN. 24-28 July 2004.
- Annual National Association Natural Resource Extension Professionals (ANREP) Meeting, Wheeling, WV. 16-19 May 2004.
- National JCEP Meeting (Public Issues Leadership Development Conference), Washington DC. 1-5 May, 2004.

- National Water Quality Coordinators Conference; Clearwater, Florida. 11-14 January 2004.
- ASAE sponsored TMDL Conference, Albuquerque, NM. 8-12 November 2003
- Southern Region Extension Water Quality Conference, Ruidoso, New Mexico. 19-22 October 2003.
- JCEP sponsored Conference (Galaxy II), Salt Lake City. 20-26 September 2003.
- Toured Imperial Irrigation District. Imperial CA. 31 July 2003.
- Annual International American Society of Agricultural Engineers (ASAE) Meeting. Las Vegas. 24-30 July 2003.
- American Water Resources Association (AWRA) Conference. Kansas City, MI. 11-15 May 2003.
- National JCEP Meeting (Public Issues Leadership Development Conference). Washington DC. 2-7 May, 2003
- National Water Quality Coordinators Conference. Tucson, AZ. 11-15 Jan 2003.
- U.S. Committee on Irrigation and Drainage (TMDLs and Irrigated Agriculture) meeting. Sacramento, CA. 22-27 October 2002.
- National Association of Agricultural County Agents 87<sup>th</sup> Annual Meeting and Professional Improvement Conference. Savannah, GA. 28 July – 1 August 2002.
- Pre-Conference tour for the National Agricultural County Agent Association Annual Meeting and Professional Improvement Conference (NACAA AM/PIC). Savannah, GA. 27 July 2002.
- NACAA AM/PIC improvement workshop and Aquaculture Committee Meeting. 30 July 2002.

### **Regional/State/Local**

- USDA-ARS Field Day and Peanut Biodiesel Refinery Tour. Dawson, GA. 7 August 2007.
- Southeast Bioenergy Conference 2007. Tifton, GA. 31 July – 2 August 2007.
- USDA-ARS/UGA Conservation Workshop and Field Day. 5 December 2006.
- 2007 Southwest Georgia Water Resources Task Force, Inc. Water Leadership Summit XII, Albany GA. 27 April 2006.
- Spring Conservation Tillage training for all ANR agents. Tifton, GA. 13-18 Apr 2006.
- Conservation Tillage Production Systems Training Conference, UGA-Tifton Campus RDC, Tifton, Georgia. 7-8 February 2006.
- Attended and presented poster at the 2005 GACAA annual meeting. 14-16 Nov 2005.
- P2AD Natural Leaders Conference, Atlanta, Georgia. 18-19 September 2005.
- 2005 Southern Conservation Tillage Conference, Florence, SC. 27-29 June 2005.
- Soil and Water Conservation Society Georgia Chapter Annual Meeting, Fort Gains, GA. 15-17 June 2005.
- United Methodist Church Lay Leader Training. 15 May 2005.
- Georgia Water Resources Conference, Athens, GA. 25-27 April 2005.
- Flint River Water Conservation/VRI meeting with NWF. 2 March 2005.
- Sustainable Agriculture and Conservation Tillage School, Perry, Georgia. 15-17 February 2005.
- 2005 Southeast Regional Fruit and Vegetable Conference. 8 January 2005.
- South Georgia Conference United Methodist Church Lay Leadership Academy. St. Simon Island. 27-29 August 2004.
- Soil and Water Conservation Society Georgia Chapter Annual Meeting, Savannah, GA. 24-26 August 2004.

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- Georgia Session American Society of Agricultural Engineers Annual Meeting, Macon, GA. 2-5 June 2004.
  - Examining Extension's Role in Local Citizen Watershed Action Groups. CSREES Southern Regional WQ Conference. Clemson, SC. 2-3 June 2004.
  - South Carolina session American Society of Agricultural Engineers Annual meeting, Columbia, SC. 26-27 May 2004.
  - Georgia Conservation Tillage Alliance Annual Meeting. Metter, GA. 24-25 February 2004.
  - Sustainable Agriculture and Conservation Tillage School, South Georgia College. Douglas, GA. 9-11 February 2004.
  - Southern Region Joint Council of Extension Professionals meeting. Atlanta GA. 1-2 February 2004.
  - Regional Water Quality Coordinators Meetings, Clearwater, Florida. 12 January 2004.
  - Attended P2AD and GWWC Water Summit. Atlanta, GA. 3 November 2003.
  - 2003 Georgia Water Resources Conference. Athens, GA. 23-24 April 2003.
  - Georgia Conservation tillage Alliance Annual Meeting. Metter, GA. 25-26 February 2003.
  - Feed the Soil, Save the Farm. Sustainable Agriculture and Conservation Tillage: A System Approach Training. Douglas, Ga. 12-14 February 2003.
  - Annual Meeting of the Soil and Water Conservation Society - Georgia Section. 27-29 May 2003.
  - Stream Restoration Workshop sponsored by CSREES. Auburn University, AL. 28 April - 1 May 2003.
  - Crisp County Water Quality Field Day. Cordele, GA. 28 August 2002.
  - Southern Conservation Tillage Conference for Sustainable Agriculture. Auburn University, AL. 24-27 July 2002.
  - Annual Meeting of the Soil and Water Conservation Society - Georgia Section. 27-29 June 2002
  - Southwest Georgia Water Resources Task Force Water Summit VII, Albany, GA. 20 June 2002.
  - Annual Meeting of the Georgia Section of ASAE. 15-17 May 2002
  - Attended Coffee County Sustainable Agriculture Conference. Douglas, GA. 12 February 2002.
  - Public Service and Outreach Conference. Athens, GA. 30 January 2002.
  - Attended Georgia Peanut Conference. Albany, GA. 17 January 2002.
  - Attended Lower Flint Research Conference. Albany, GA. 15-16 Jan, 2002.
  - Southwest Georgia Water Summit VII. Albany, GA. 7 November 2001.
  - Ag Unity Tour, university of Georgia College of Agriculture and Environmental Sciences, Tour of State. 24-28 September 2001.
  - 3<sup>rd</sup> Symposium for the Future of American Agriculture. Athens, GA. 16 August 2001.
  - Attended Crisp County Water Quality, Precision Field Day. Cordele, GA. 30 August 2001.
  - CSRA Conservation Tillage Field Day. Waynesboro, GA. 19 July 2001.
  - Visited Lamar Black and Jimmy Dean (NRCS) to see effects of years of conservation tillage. 18 July 2001.
  - Met with Kelly Manufacturing Company (KMC) and other Coffee County row-crop farmers to discuss the trails and manufacturing of a row cleaner for strip-tillage. Douglas, GA. 25 June 2001.
  - Biological and Agricultural Engineering Compost Open House. Athens, GA. 4 May

2001.

### International

- Annual International American Society of Agricultural Engineers (ASAE) Meeting, Ottawa, Canada. 1-4 August 2004

## MEETINGS AND PRESENTATIONS

### Workshops Organized

- **Upper Suwannee River Watershed Initiative Annual Summit (USRWI).** Tifton, GA. Organized and moderated. Themes, date, attendance, speakers:
  - Animal Presence and the Cross-Border Water Issues. 1 March 2007. 57 people, 10 speakers.
  - Protecting the Upper Suwannee through Forest Management”. 25 January 2006. 75 people, 12 speakers..
  - Protecting the Upper Suwannee from 319 to New Partnerships. 18 January 2005. 85 people, 10 speakers.
  - Stormwater Management: How will it affect the Suwannee River Basin?. 29 January 2004. 110 people, 8 speakers.
  - Comprehensive Water Management Planning: Issues Facing the Suwannee Basin. 2 December 2002. 100 people, 12 speakers.
  - TMDLs: Upper Suwannee River Basin Perspectives. 10 December 2001. 120 people, 10 speakers.
- **The NRCS Conservation Security Program**, organized and moderated. Bulloch Co. (5 February 2007); Worth Co. (13 February 2007); Hart Co. (6 March 2007); Mitchell Co. (20 March 2007); Gordon Co. (3 April 2007); Brantley Co. (17 April 2007)
- **Colquitt County Conservation Tillage Workshop**, organized and moderated, Moultrie, GA. 26 January 2007 and 30 January 2006.
- Display for Use of Cover Crops in Conservation Tillage for the Suppression of Pigweed. Irrigation Management Field Day 15 July 2008 (20 persons)
- Presentation of Water Management Through Conservation Tillage in Peanuts for Bio-energy Usage. Irrigation Management Field Day 15 July 2008 (110 persons)
- Field tour of solar irrigation system in Pierce County, 19 June 2008 (25 persons)
- UGA/USDA Conservation Tillage Workshop. Held in Tifton, NESPAL Building. 31 March 2008 (75 persons)
- **Georgia Conservation Tillage Alliance Annual Meeting**, Hawkinsville, GA 26-27 Feb 2008
- Organized and Moderated **Joint Annual Meeting of the GA ASABE, SWCS and IECA**. Held at the GA State Botanical Gardens. 4-6 June 2008. (75 persons)
- Presentation entitled “Converting Solid Waste from Fruit and Vegetables to Energy”. Presented the Joint Georgia Chapters of ASABE, SWCS and IECA Annual Meeting. 4-6 June 2008. (25 persons)
- **8<sup>th</sup> Annual Conservation Tillage Conference and 30<sup>th</sup> Annual Southern Conservation Agriculture Conference**, 29-31 July 2008, Tifton, GA. 140 farmers, agents, agency personnel, researchers and citizens attended
- **USDA-ARS/UGA Conservation Tillage Workshop and Field Day**, Tifton, GA. 5 December 2006. 80 people. Co-organizer.

- **Conservation Methods and Conservation Security Program for Economic Gain on Georgia Farms**, Newton, Co. 23 March 2006. 20 min, 35 people. Organized and presented.
- **Conservation Security Program workshop** part of National Association of Conservation Districts - Southern Region meeting. Savannah, GA. 24 August 2004. 25 people, 3 speakers. Organized.
- **Conservation Tillage Production Systems Training Conference.**
  - Statesboro, GA. 6-7 Feb 2007. 125 people. Co-chair of planning committee.
  - Tifton, GA. 7-8 February 2006. 290 people. Served as chair of planning committee.
- **Agricultural Water Conservation: A Look at Water Metering, Pollution Prevention, Irrigation and Water Saving Methods.** 208 people. Mitchell Co. (28 January 2004); Dawson, Ga. (5 February 2004); Ashburn, Ga. (16 February 2004); Lowndes Co. (3 March 2004); Dublin, GA. (31 March 2004); Bulloch Co. (22 June 2004).
- **Agricultural Water Conservation, Agricultural Water Metering and Environmental Stewardship**, Willacoochee Field Day, Ocilla, GA. 30 March 2004.
- **Water conservation and metering field day.** Irwinville, GA. 31 March 2003. 16 people. Coordinated
- **Upper Suwannee River Watershed Initiative Annual Summit (USRWI)** Regional meeting. Theme, date, location, attendance, speakers
  - Governor's Joint Comprehensive Water Study Committee Report. Nashville, GA. 24 April 2002. 40 people, 5 speakers.
  - Suwannee River Damns in the Okeefeenokee Swamp. Stephen Foster State Park, Folsom, GA. 3 September 2002. 20 people, 4 speakers.

#### **Invited or Keynote Presentations (4 Presentations, 88 contact hours)**

- **Bio-Energy Opportunities in Cotton. Presentation.** Presentation. 2007 Georgia Cotton Producers Conference, Tifton, GA. 20 February 2007. 20 min, 150 people.
- **Conservation Tillage and Bio-energy Resources; Remote Sensing and Conservation Tillage Workshop.** New Orleans, LA. 19 Sept 2006. 30 min, 25 people.
- **Tour of Activities and Projects.** Seminar for Faculty and Staff of the Coastal Plain Soil and Water Research Center, Florence, SC. 29 June 2005. 30 minutes. 20 people
- **Impacts of Row Crop Agriculture and Urbanization on Aquatic Life.** National Association County Agricultural Agents, Savannah, GA. 27 July 2002. 30 min, 30 people.

#### **Regional and National Presentations (10 presentations, 159 contact hours)**

- **Utilizing Solar Power as a Supplemental Power Source for Small Irrigation Needs.** Presentation. Soil and Water Conservation Society Annual Conference, Tampa, FL 21 – 25 July 2007. 30 min, 45 people.
- **Agricultural Water Conservation via Conservation Tillage and Thermal Infrared Imagery.** Presentation. Soil and Water Conservation Society Annual Conference, Tampa, FL. 21-25 July 2007. 30 min, 40 persons.
- **Georgia Conservation Tillage Progress.** Presentation. Soil and Water Conservation Society Tri-State Meeting, Quincy, FL. 18 May 2007. 30 min, 20 people.
- **Team Conservation Tillage Booth.** Sunbelt Expo, Moultrie, GA. Discussed water conservation issues as it relates to conservation tillage.

- 17-19 October 2006. Estimated 1700 people visited tent. Personal contact with 60 people, average 10 minutes each contact.
- 17-20 October 2005. Estimated 1700 people visited tent. Personal contact with 45 people, average 10 minutes each contact.
- 18-21 October 2004. 1500 visitors visited tent. Personal contact with 40 people, average 10 minutes each contact.
- **Protecting Georgia's Surface Water Resources.** Presentation. Multi-State Master Gardner Educator Training: Landscape Water Quality Workshop. UGA-Griffin Campus, Griffin, GA. 24 April 2004. 30 min, 42 people.
- **Monitoring Equipment that can be used by Volunteer Monitoring Groups.** Presentation. Southern Region Extension Water Quality Conference, Ruidoso, New Mexico. 20 October 2003. 20 min, 8 people.
- **Hands-On Educational Tools: The FUNdamentals of Agricultural and Urban Non-Point Source Pollution.** Presentation. South Carolina Session American Society of Agricultural Engineers Annual meeting, Columbia, SC. 27 May 2004. 25 min, 65 people.
- **Use of Cover Crops as a Weed Control in Non-Transgenic Conventional Cotton.** Presentation. SC Section American Society of Agricultural Engineers, Columbia, SC. 27 May 2004. 20 min, 65 people.

**Extension Presentation (140 presentations, 729 contact hours):**

- 2008 Sunbelt Expo Display. Lead efforts to get Team Conservation Tillage display organized at the 2008 Sunbelt Expo in Moultrie GA, 14-16 Oct 2008. (Approx 1250 persons came to display)
- 2008 Sunbelt Expo Display. A display on using Conservation Tillage to Conserve Water was displayed in the UGA Tent. An estimated 1500 persons specifically stopped to discuss display. Moultrie GA, 14-16 Oct 2008.
- Solar Power for Irrigation. Radio spot for the UGA CAES Audio Net. 29 January 2008.
- Attended and presented at the 2008 GACAA Annual Meeting. "Finding Energy in a Typically not Thought of Location – Fruit and Vegetable Waste" Gainesville, GA 20 Nov 2008 (100 persons)
- Presented at Foundation Training for new Extension Agents, "Sprayers and Calibration", 17 November 2008 (16 persons)
- Presented for the BAE FRES 1010 class "Methane – Bio-Energy from Anaerobic Digestion" 27 October 2008 (15 persons)
- Presented at the UGA Tifton Campus Sigma Xi Monthly meeting, "Producing Bio-Energy from a Typically Not Thought of Source" 11 September 2008 (20 persons)
- Poster presentation at the 2008 NACAA Annual Conference, "Measuring Rye Biomass Removal to Protect Soil Quality and Provide Feedstock" (Co-author on paper, presented by Wade Parker), July 2008, Greensboro, NC (100 persons)
- Presented at the Georgia Plant Food Educational Society Annual Meeting, Amelia Island, FL, 23 July 2008. (30 persons)
- Presented at the Seven Rivers RC&D Quarterly Meeting, "Demonstration of Solar Energy to Power Pecan Irrigation System", 19 June 2008 (45 persons).
- Water Awareness with Help of Enviroscape. Presentation at the Ben Hill County Agricultural Awareness Day. 28 March 2008 (140 persons)
- Presented at the 2008 SE Fruit and Vegetable Conference, Savannah GA. "Solar Powered Irrigation for Pecans", 12 January 2008 (50 persons)
- Presented at the 2008 SE Fruit and Vegetable Conference, Savannah GA. "Converting

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- Waste Fruit and Vegetables to Energy”, 12 January 2008 (30 persons)
- Presented at the 2008 SE Fruit and Vegetable Conference, “Demonstration of Solar Energy to Power Pecan Irrigation System”, 12 January 2008 (55 persons)
  - **Water Quality Tool Assessment for CSP.** Presentation. The NRCS Conservation Security Program. Calhoun, GA. 3 April 2007. 25 minutes, 29 people.
  - **Wildlife Previsions Under CSP.** Presentation. The NRCS Conservation Security Program. Calhoun, GA. 20 March 2007. 30 minutes, 16 people.
  - **Characteristics of a Healthy Grassland.** Presentation. The NRCS Conservation Security Program. Calhoun, GA. 20 March 2007. 30 minutes, 16 people.
  - **Water and Energy Conservation in Row Crop Operations.** Presentation. GA Soil and Water Conservation Commission Irrigation Workshops. Waynesboro and Alma, GA. 8-9 March 2007. 2 presentations, 20 min, 60 people.
  - **Research Plot design and Layout.** Presentation. USDA-ARS/UGA Conservation Tillage Workshop and Field Day, Tifton, GA. 5 December 2006. 10 minutes, 80 people.
  - **Impact on Water Availability and Use.** Presentation. Fall Conservation Tillage Task Force training for all ANR agents. Tifton, GA. 8-16 December 2005. 3 presentations, 20 minutes, 90 people.
  - **Conservation Tillage and Bio-Energy Resources.** Presentation. Sigma Xi Seminar, Tifton, GA. 16 November 2006. 40 min, 15 people.
  - **Water Cycle- what it is and how it is a circle.** Presentation.
    - Tifton Campus Ag Awareness Day for 4<sup>th</sup> graders, teachers and parents. Tifton, GA. Nov 3, 2006. 13 presentations, 15 minutes, 290 people.
    - Taught at the local school system. Tifton, GA. 1 September 2005. 50 minutes. 20 people.
    - Tifton Campus Ag Awareness Day, 4<sup>th</sup> graders. 5 November 2004. 14 presentations, 15 min, 300 kids and adults.
  - **Biomass to Ethanol Conversion in Conservation Tillage Systems.** Presentation. GA Chapter Soil and Water Conservation Society, Chatsworth, GA. 9 June 2006. 20 min, 25 people.
  - **Introduction to Hydrology.** Presentation. General Water Quality Training, Tifton, GA. 10 May 2006. 20 min, 15 people.
  - **Physical and Chemical Aspects of Water Quality.** Presentation. General Water Quality Training, Tifton, GA. 10 May 2006. 20 min, 15 people.
  - **Watershed Functions.** Presentation. General Water Quality Training, Tifton, Ga. 10 May 2006. 20 min, 15 people.
  - **Affects of Agriculture on Water Quality.** Presentation. General Water Quality Training, Tifton, Ga. 10 May 2006. 20 min, 15 people.
  - **Impacts on Water Availability and Use.** Presentation. Conservation Tillage Task Force Training, Tifton, GA. 12 April 2006. 2 presentation, 20 min, 90 people
  - **Hydrology and Water Management.** Presentation. Colquitt County Conservation Tillage Workshop, Moultrie, GA. 30 January 2006. 20 min, 43 people.
  - **Preliminary Results from Cover Crops for Weed Suppression Research Project.** Presentation. Conservation tillage field day - Pulaski County. 25 October 2005. 20 minutes, 15 people.
  - **Variable Rate Irrigation for Water Conservation: Soil Moisture Monitoring Results.** Presentation. Variable Rate Irrigation Field Day - Sumter Co. 23 August 2005. 20 minutes, 25 people.
  - **Conservation Tillage for Water Conservation.** July Sunbelt Expo Field Day. Moultrie, GA. 15 July 2005. 10 min., 300 people.

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- **Conservation Tillage in Georgia: Water Resources and Economics.** Presentation. GA Chapter Soil and Water Conservation Society annual Meeting, Ft. Gains, GA.. 16 June 2005. 20 min, 35 people.
  - Agriculture Pollution Prevention information booth at 2005 annual GAE4-HA meeting. Augusta, GA. 10 May 2005. 10 discussions, 5 minute discussion each.
  - **Water Quality in Georgia.** Presentation. Camilla Rotary Club. 17 March 2005. 30 min, 65 people.
  - **Water Conservation in Conservation Tillage.** Presentation. Crisp County Conservation Tillage Workshop, Cordele, Ga. 1 March 2005. 20 min, 60 people.
  - **Water Conservation and Runoff Reduction in Row Crop Operations.** Presentation. CCA/CEU Agronomic Seminar, Perry, GA. 21 January 2005. 20 min, 30 people.
  - **Reducing Waste by Composting Vegetables.** Presentation. 2005 Southeast Regional Fruit and Vegetable Conference, Savannah, GA. 8 Jan 2005. 20 min, 20 people.
  - Crop Production activities to P2AD staff. Atlanta, GA. 2 November 2004. 20 minutes, 10 people.
  - **Water Conservation in Georgia Agriculture.** Presentation. Georgia Water Wise Council General Membership Meeting, Decatur, GA. 18 December 2003. 30 min, 14 people.
  - Georgia Report presentation to Regional S-1004 Project (USDA-CSREES Water Quality/TMDL project) Meeting. Albuquerque, NM. 12 November 2003. 10 minutes, 20 people.
  - **Nutrient Management.** Presentation. Learn-At-Lunch, Jasper and Monroe County Cooperative Extension Service, Monticello, GA. 28 October 2003, 18 September 2002, and 4 December 2001. 3 presentations, 20 minutes, 50 people.
  - **Water Conservation in Georgia.** Presentation. South District ANR Agents training, Camilla GA. 21 August 2003. 20 min, 35 people.
  - Field methods of using chemical and biological measures for pollution prevention. Natural Resources Conservation Workshop, Tifton, GA. 12 June 2003. 3 presentations, 10 min, 30 people.
  - **The University of Georgia Agricultural Pollution Prevention Program (Water Quality in Row Crops).** Presentation. UGA-Tifton Campus Meet and Eat, Tifton, GA. 25 February 2003. 20 min, 6 people.
  - **Understanding and Protecting Water Quality.** Presentation. Fertilizer Advisory Council Tour, UGA Marine Extension Service Office, Brunswick, GA. 19 February 2003. 30 min, 20 people.
  - Assisted 9<sup>th</sup> grade science club assemble groundwater model. Presentation. 17 December 2002. 15 minutes, 11 people.
  - **Water Quality 101: All you need to know about watersheds and water quality in 20 minutes.** Presentation. Willacoochee Watershed Field, Ocilla, GA. 22 November 2002. 20 min, 30 people.
  - **Watersheds and Water Quality in the Suwannee River Basin.** Presentation. Irwin County High School science class. 22 November 2002. 45 minutes, 20 people.
  - Presented conservation tillage work in Coffee County to group with Journalist “Fellows”. Douglas, GA. 14 November 2002. 15 minutes, 12 people.
  - **Importance of water quality through chemical monitoring.** Presentation. Youth from local Magnet school. 6 November 2002. 20 min, 46 people.
  - **Chemical Characteristics of a Stream.** Presentation. Coastal RESA In-Service Training, Tifton and Valdosta, GA. 20 October 2002. 2 presentation, 30 min, 70 people.

- Taught Water Quality class at local Boy Scout camp. 11 and 18 June 2002. 2 presentations, 60 min, 20 people.
- **Importance of water quality through chemical and biological monitoring.** Presentation for local Science teachers. Tifton, GA. 5 June 2002. 60 min, 4 people.
- **Water Quality/BMPs.** Presentation. Sustainable Agriculture and Conservation Tillage: A System Approach Training, Douglas, GA. 12 February 2002. 20 min, 10 people.
- **Hands-on presentation of water quality monitoring.** Presentation to 7<sup>th</sup> and 9<sup>th</sup> grade science students. Tifton, GA. 2 and 8 November 2001. 2 presentation, 40 minutes, 45 people.
- **Agricultural Pollution Prevention.** Presentation. Georgia Agricultural Teacher In-Service Training, Callaway Garden, GA. 24 July 2001. 30 min, 35 people.
- **Water Quality monitoring.** Presentation for Gear-Up program from Irwin County. 6 and 20 June 2001. 2 presentations, 15 min, 32 persons.
- Assisted in presentation of precision agriculture for 7<sup>th</sup> graders. 23 April 2001. 20 people.

### Exhibits/Demonstrations.

Dr. Hawkins, has had exhibits displayed where he has not directly been involved as a presenter. These are listed below.

- **Groundwater Flow Model: Movement of Pollutants in the Subsurface.** Educational presentation/Exhibit developed to illustrate the movement of pollutants in the subsurface. Has been used at multiple locations since being developed in 2002.
- **Agricultural and Urban Pollution Prevention.** Exhibit of Rainfall Simulator and Poster. Georgia National Fair. October 2005 and 2006.

Dr. Hawkins also has displayed and presented using models and other activities. These are listed below.

- **Seeing is Believing – tabletop rainfall simulator.** Exhibit.
  - Team Conservation Tillage Tent, 2004 Sunbelt Exposition, Moultrie, GA. 19-21 October 2004
  - ARS - Watkinsville 50<sup>th</sup> Anniversary event. 10 June 2004. 20 min, 25 people.
  - Georgia Conservation Tillage Alliance Annual Conference. Metter, GA. 26 February 2003. Demonstrated 1 time, average 15 minutes, 40 people.
  - Conservation Tillage School, Douglas, GA. 12 February 2003. 15 minutes, 125 people.
  - Willacoochee watershed 319 project Field Day. Waterloo, GA. 22 November 2002. 15 minutes, 25 people.
  - Sustainable Agriculture and Conservation Tillage: A System Approach Training, Douglas, GA. 12 February 2002. 15 min, 50 people.
- **Variable Rate Irrigation and Conservation Tillage.** Exhibit. Team Conservation Tillage Tent, 2004 Sunbelt Exposition, Moultrie, GA. 2 presentations. 18-20 October 2005 and 17-19 October 2006. Demonstrated 40 times, average 5 minutes, 100 people.
- **Edible Aquifers: Knowing what we are standing on.** Demonstration.
  - Tifton First United Methodist Preschool Class. Tifton, GA. 12 January 2007. 30 min, 12 people.
  - Multi-State Master Gardner Educator Training: Landscape Water Quality Workshop. UGA-Griffin Campus, Griffin, GA. 24 April 2004. 15 min, 42 people.
  - Watershed Awareness: Field Monitoring to TMDL Implementation. Tifton, GA. 29-31 October 2002. 10 min, 60 people.

- **Irrigation Station: Did You Know Your Food Needs Water Too?** Presentation and Demonstration. ACF Children's Water Festival. Columbus, GA. 23 March 2004. 4 presentation, 15 min, 150 people combined.
- **Hands-On FUNdamentals.** Exhibit of rainfall simulator and surface model. Team Conservation Tillage tent at 2003 Sunbelt Expo, Moultrie, GA. 14-16 October 2003. approx 2000 visitors to tent. Demonstrated 20 times, average 10 minutes, 100 people.
- **Agricultural Pollution Prevention Program.** Exhibit. Displayed Groundwater model. 2003 Georgia Water Resources Conference, Athens, GA. 23-24 April 2003.
- **Groundwater Flow Model. Exhibit.** Coastal Plain RESA. 22 October 2001. average 7 min, 200 people.
- Biological and Agricultural Engineering Booth at Sunbelt Expo. Exhibit. 15 & 17 October 2002 and 15 October 2001. Discussed with 40 people, average 5 minutes.

### Posters

- **Horizontal Wells: What are they, How do they work and How would they benefit us?.** Poster. 2007 Southeast Regional Fruit and Vegetable Conference, Savannah, GA. 6 January 2007
- **Horizontal Wells: What are they, How do they work and How would they benefit us?.** Poster. 2006 GACAA Annual Meeting, Albany GA. 14-16 November 2006.
- **Horizontal Wells: What are they, How do they work and How would they benefit us?.** Poster. 2006 North American Blueberry Research and Extension Workers Conference, Tifton GA, 6 June 2006.
- **Georgia's Conservation Tillage Educational Task Force: Improving County Extension's Agents' Understanding of Conservation Tillage Systems.** Poster. 2005 Southern Conservation Tillage Conference, Florence, SC. 27-29 June 2005.
- **Agricultural Pollution Prevention in Georgia.** Poster. 2004 Annual Association of Natural Resource Extension Agents Meeting. Wheeling, WV. 16 May 2004. Discussed program goals with 12 people, average 7 min each.

### In-Service Training for Extension Agents

- **Alternative Energy 101: Solar, Wind, Methane, Hydrogen.** Winter School – 1.5 hrs in collaboration with J. Worley, G. Rains, D. Stooksbury. Rock Eagle 4-H Center, Eatonton, GA. 16 January 2007. 30 min, 25 people
- **Alternative Energy 101: Bio-Diesel and Ethanol.** Winter School – 1.5 hrs in collaboration with D. Geller and R. Adolphson. Rock Eagle 4-H Center, Eatonton, GA. 16 January 2007. 40 people. Organized only.
- **Electronic Volumetric Soil Moisture Monitoring.** Winter School – 1.5 hrs in collaboration with K. Harrison. Rock Eagle 4-H Center, Eatonton, GA. 17 January 2007. 20 min, 30 people
- **General Water Quality Training** for County Extension Agents in association with Dissolved Oxygen research project. Bartow County and Tifton, GA. 3-4 March and 9-10 May 2006. 32 people combined. Organized with 6 speakers.
- **Agricultural Stormwater Management.** Winter School – 1.5 hrs in collaboration with L.M. Risse and R. Seymour. Rock Eagle 4-H Center, Eatonton, GA. 20-22 January 2004. 30 min, 15 people
- **Introduction to Hydrology and Watersheds.** Winter School – 1.5 hrs. Rock Eagle 4-H Center, Eatonton, GA. 20-22 January 2004. 30 min, 10 people.

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- **Safely Handling and Storing Chemicals and Fuel on the Farm.** Winter School – 1.5 hrs in collaboration with P. Sumner. Rock Eagle 4-H Center, Eatonton, GA. 20-22 January 2004. 60 min, 6 people
  - **Pollution Prevention in Vegetable Production.** Winter School – 1.5 hrs in collaboration with D. Langston, A. Sparks, G. Fonsah, T. Kelly. Rock Eagle 4-H Center, Eatonton, GA. 20-22 January 2004. 20 min, 30 people
  - **Volunteer Monitoring Program for County Extension Agents and Specialist** at the Southern Region Water Quality Coordinators Conference held in Ruidoso, New Mexico. 19 October 2003. 40 min, 10 people.
  - **Handling and Transporting Pesticides for the Farm.** Winter School – 1.5 hrs in collaboration with P. Sumner. Rock Eagle 4-H Center, Eatonton, GA. January 2003. 20 min, 20 people
  - **Georgia's Water Quality Regulations.** Winter School – 1.5 hrs in collaboration with L.M. Risse. Rock Eagle 4-H Center, Eatonton, GA. 23 January 2003. 30 min, 26 people
  - **Physical and Chemical aspects of water quality.** Watershed Awareness: Field Monitoring to TMDL Implementation. Tifton, GA. 29-31 October 2002. 20 min, 60 people.
  - **Monitoring equipment and how they are used.** Watershed Awareness: Field Monitoring to TMDL Implementation. Tifton, GA. 29-31 October 2002. 20 min, 60 people.
  - **Field monitoring equipment and how it works (a hands-on exercise).** Watershed Awareness: Field Monitoring to TMDL Implementation. Tifton, GA. 29-31 October 2002. 20 min, 60 people.
  - **Total Daily Maximum Loads, The Extension Agents Role.** Winter School – 1.5 hrs in collaboration with L.M. Risse. Rock Eagle 4-H Center, Eatonton, GA. January 2002. 30 min, 25 people.

#### **Radio, TV and Electronic Media**

- Technical representative and advisor for the video entitled “Decommissioning of An Animal Waste Lagoon” produced as part of a 319 Project in the Upper Suwannee River Basin (Over 150 copies have been distributed to County Extension Agents, NRCS personnel)
- Guest on the Valdosta Environmental Television show, “Point and Non-Point source pollution related to NPDES Phase II requirements”. Demonstrated surface water model. 20 June 2004.
- Radio spot on Georgia Audio Net in response to Hands-On tools Impact statement from 2002.
- Demonstrated surface water model and pollution sources as part of Rick Reed’s (Coffee County Agent) weekly “Agricultural minute”, Douglas, GA. 12 February 2002.

#### **Educational Presentations for Professional Groups**

- **Conservation Tillage Training for Georgia's County Agents.** Presentation. ASABE International Meeting. Portland, OR. 9-12 July 2006. 20 min, 15 people.
- **Team Conservation Tillage: Promoting CT Through Partnerships.** Presentation. ASABE International Meeting. Portland, OR. 9-12 July 2006. 20 min, 10 people.
- **Affect of Urban Land Use on Water Quality in a Larger Watershed.** Presentation. 2005 International SWCS Conference. 3 August 2005. 20 min, 12 people.

- **Affect of Agricultural Land Use on Water Quality in a Larger Watershed.** Presentation. ASABE Annual International Meeting. Tampa, FL. 20 July 2005. 20 min, 30 people.
- **Nursery Runoff Management and Nutrient Treatment, Part 2.** Presentation. GA-FL Green Industry Update. Cairo, Ga. 14 October 2004. 20 min, 80 people.
- **Renovating Nursery Runoff Water to Remove Nutrients Prior to Discharge into Adjacent Waters.** Presentation. ASAE Annual International Meeting. Ottawa, Canada. 1 August 2004. 20 min, 20 people.
- **Nutrient Movement: Does it occur in sandy soils with drain tiles and conservation tillage?** Presentation. Soil and Water Conservation Society Annual Meeting, St. Paul, MN. 26 July 2004. 20 min, 27 people.
- **Renovating Nursery Runoff Water to Remove Nutrients Prior to Discharge into Adjacent Streams.** GA Section American Society of Agricultural Engineers, Macon, GA. 3 June 2004. 20 min, 53 people.
- **Phosphorus and Nitrogen Leachability.** Presentation. ASAE Annual International Meeting. Las Vegas, NV. 27-30 July 2003. 20 minutes, 25 people.
- **Efficient Use of Nutrients to Protect Water Quality.** Prepared Presentation. Georgia Plant Food Educational Society, Inc. Annual Conference, Amelia Island, Ga. 29 July 2003. 20 min, 60 people.
- **Water Quality in the Suwannee River Basin.** Presentation. Georgia Section American Society of Agricultural Engineers, Tybee Island, GA. 16 May 2002. 20 min, 53 people.

#### Local and County Educational Meetings

- **Our Irreplaceable Resource – Water.** Presentation. Daughters of American Revolution, Tifton, GA. 19 December 2006. 20 min, 10 people.
- **Water Conservation in South Georgia Urban and Agricultural Landscapes.** Presentation. Tifton Garden Club, Tifton, GA. 5 October 2005. 20 min, 12 people.
- **Watershed aspects of pollution prevention,** 8<sup>th</sup> grader Water Day in Union County. 13 May 2005. 5 presentations, 15 minutes. Combined 160 people.
- **Water Conservation in Conservation Tillage”,** Crisp County Conservation Tillage Workshop. Cordele, GA. 1 March 2005. 20 min, 70 people.
- **The Water Cycle.** Water Day for Randolph County 4-Hers. 8 June 2004. 5 presentations, 15 min, 210 people.
- **Nutrient Management.** Presentation. Jasper County “Learn at Lunch” program. 18 September 2002. 30 min, 12 people.

#### **PROFESSIONAL SERVICE**

##### **Membership and Involvement with National Professional Societies**

###### American Society of Agricultural Biological Engineers (ASABE)

- Membership VP, Georgia Section 2006-2007
- Secretary, Georgia Section, 2003-2004
- Member P-208 (Extension) Committee, National ASABE, 2004-present
- Member ASAE, National, 1993-Present
- Student Member, 1987-1993; 1997-2000
- President Clemson Student Branch, 1989-1990
- Vice-President Southeast Region Student Branch, 1989-1990

###### Soil and Water Conservation Society

- President, Georgia Chapter, 2004-2005; 2008-2009
- President Elect, Georgia Chapter, 2003-2004; 2007-2008
- Regional Vice-President, 2002-2003

- Member, National, 2001-Present
- Student Member, 1987-1990
- Association of Natural Resources Extension Professionals (ANREP)
  - President, Georgia Chapter, 2004-2006
  - President Elect, Georgia Chapter, 2003-2004
  - Member, Georgia and National, 2001-Present
- Joint Council of Extension Professionals (JCEP)
  - Member, Georgia, 2004-2006
  - Chairman, Georgia, 2005-2006
- Georgia Association of County Agriculture Agents Association
  - Teaching and Educational Technology Committee Chair, 2005-present
  - Member, 2001-Present
- National Association of County Agriculture Agents Association
  - Member, 2001-Present
- Alpha Epsilon (Agricultural Engineering Honorary Society)
  - Member, 1991-Present
  - President, 1992
- Gamma Sigma Delta (Agriculture Honorary Society)

### **Proposal or Journal Review**

- American Society of Agricultural and Biological Engineers Reviews - 8
- Extension Bulletin Reviews – 3
- Book Chapters Review – 1
- Soil Science Society of America Journal - 1

### **National Level Assignment**

- ASABE ED-208 (Extension) Committee
  - Member, 2005-present
  - Committee chair, 2006-2007
- Association of Natural Resource Extension Professionals (ANREP)
  - Association representative on Galaxy III (national joint extension professional conference) steering committee

### **Regional Level Assignments**

- Designated as “Master Farmer” program leader for Georgia
- Editorial Board Member for Southeastern Conservation Tillage Production Systems Publication

### **State Level Assignments**

- Team Conservation Tillage Expo Planning Committee
  - Member, June 2003 – present
  - Coordinator, February 2007 – present
- Georgia Conservation Agriculture Team Leader, April 2006 – present
- Georgia Water Wise Council, member, April 2004 – present
- Conservation Tillage Production Systems Conference
  - Planning committee member, 2003 – present
  - Chair, planning committee, 2006 - present

### **College Level Committees**

- Conservation Tillage Task Force, member 2004 – 2006

- 4-H DPA Judge
- CAES Banner selection Committee, 2006-present

**Department/Campus Level Committees**

- Social Committee, Tifton Campus
- Diversity Committee, Tifton Campus
- Departments Social Committee, Tifton Campus
- Tifton Campus Young Scholar Selection Committee