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Academic rank: Associate Professor, Full-time

Degrees:	BAS	University of Delaware	Agricultural Engineering	1995
	MCE	University of Delaware	Civil and Environmental Engineering	1997
	PhD	North Carolina State University	Biological and Agricultural Engineering	2000

Years on this faculty: Eight years - 2000

Registered: P.E., Florida (License No. 60875)
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Refereed Publications: (Note that “*” indicates undergraduate student, “**” indicates graduate student, and “****” indicates post-doctoral researcher supervised by M.D. Dukes)

1. ******Romero, C., M.D. Dukes**, G.A. Baigorria, and R. Cohen. 2008 (accepted). Comparing theoretical irrigation requirement and actual irrigation for citrus in Florida. *Agricultural Water Management*.
2. ******Zotarelli, L., J.M. Scholberg, R.S. Tubbs, M.D. Dukes**, and R. Muñoz-Carpena. 2008 (accepted). Fertilizer residence time affects nitrogen uptake efficiency and growth of bell pepper. *Communications in Soil Science and Plant Analysis* XXX(XXX):XXX-XXX
3. ******Zotarelli, L., J.M. Scholberg, M.D. Dukes** and R. Muñoz-Carpena. 2008 (accepted). Tomato yield, biomass accumulation, root distribution and water use efficiency on a sandy soil, as affected by nitrogen rate and irrigation scheduling. *Agricultural Water Management* XXX(2008):XXX-XXX.
4. ******Zotarelli, L., J.M. Scholberg, M.D. Dukes** and R. Muñoz-Carpena. 2008. Fertilizer residence time affects nitrogen uptake efficiency and growth of sweet corn. *Journal of Environmental Quality* 37(3):1271-1278.
5. ******Zotarelli, L., M.D. Dukes, J.M. Scholberg, T. Hanselman, K.L. Femminella, and R. Muñoz-Carpena**. 2008. Nitrogen and water use of zucchini squash for a mulch bed system on a sandy soil. *Scientia Horticulturae* 116(2008):8-16.
6. ****Cardenas Lailhacar, B. and M.D. Dukes**, and G.L. Miller. 2008. Sensor-based automation of irrigation on Bermudagrass during wet weather conditions. *Journal of Irrigation and Drainage Engineering* 134(2):120-128.
7. **Munoz-Carpena, M.D. Dukes**, Y.C. Li, and W. Klassen. 2008. Design and field evaluation of a new controller for soil moisture-based irrigation control. *Applied Engineering in Agriculture* 24(2):183-191
8. **Hostetler, M., P. Jones, M. Dukes, H. Knowles, G. Acomb, and M. Clark**. 2008. With one stroke of the pen: How can extension professionals involve developers and policymakers in creating sustainable communities? *Journal of Extension* 46(1). Available at, <http://www.joe.org/joe/2008february/tt1.shtml>.
9. ****Cardenas Lailhacar, B. and M.D. Dukes**. 2008. Expanding disk rain sensor performance and potential irrigation savings. *Journal of Irrigation and Drainage Engineering* 134(1):67-73.
10. **Dukes, M.D., R. Muñoz-Carpena, L. Zotarelli, J. Icerman, J.M. Scholberg**. 2007. Soil moisture-based irrigation control to conserve water and nutrients under drip irrigated vegetable production. In: J.V. Giráldez Cervera and F.J. Jiménez Hornero (eds.). *Estudios de la Zona No Saturada del Suelo Vol. VIII*. pp. 229-236. Cordoba (Spain). ISBN: 84-690-7893-8
11. ******Zotarelli, L., J.M.S. Scholberg, M.D. Dukes**, R. Muñoz-Carpena. 2007. Monitoring of nitrate leaching in sandy soils: comparison of three methods. *Journal of Environmental Quality* 36(4):953-962.
12. ******Jia, X., A. Swancar, J.M. Jacobs, and M.D. Dukes, K.L. Morgan**. 2007. Comparison of evapotranspiration rates for flatwoods and ridge citrus. *Transactions ASABE* 50(1):83-94.
13. ****Haley, M.B., M.D. Dukes, G.L. Miller**. 2007. Residential irrigation water use in Central Florida. *Journal of Irrigation and Drainage Engineering* 133(5):427-434.
14. **Simonne, E.H., M.D. Dukes, R.C. Hochmuth, D.W. Studstill, G. Avezou, and D. Jarry**. 2006. Scheduling drip irrigation for bell pepper grown with plasticulture. *Journal Plant Nutrition* 29(10):1729-1739.

15. Chase, C.A., W.M. Stall, E.H. Simonne, R.C. Hochmuth, **M.D. Dukes**, and A.W. Weiss. 2006. Nutsedge control with drip-applied 1,3-dichloropropene plus chloropicrin in a sandy soil. *HortTechnology* 16(4):641-648.
16. **Dukes, M.D.** and C.D. Perry. 2006. Uniformity testing of variable rate center pivot irrigation control systems. *Precision Agriculture* 7(3):205-218.
17. **Dukes, M.D.** 2006. Effect of wind speed and pressure on linear move irrigation system uniformity. *Applied Engineering in Agriculture* 22(4):541-548.
18. **Jia, X., M.D. Dukes, J.M. Jacobs**, and S. Irmak. 2006. Large scale weighing lysimeters for evapotranspiration research in a humid environment. *Transactions ASAE*, 49(2):401-412.
19. **Gregory, J.H., M.D. Dukes**, P.H. Jones, and G.L. Miller. 2006. Effect of urban soil compaction on infiltration rate for low impact development. *Journal of Soil and Water Conservation*, 61(3):117-124.
20. **Dukes, M.D.** and R.O. Evans. 2006. Land use and water quality in the North Carolina Middle Coastal Plain. *Journal of Irrigation and Drainage Engineering*, 132(3):250-262.
21. **Gregory, J.H., M.D. Dukes, G.L. Miller**, and P.H. Jones. 2005. Analysis of double ring infiltration techniques and development of a simple automatic water delivery system. *Applied Turfgrass Science*. Available at, <http://www.plantmanagementnetwork.org/pub/ats/guide/2005/ring/>
22. Glancey, J.L., W.E. Kee, M.D. Dukes, and T.L. Wooten. 2005. A mechanical harvesting index for rating the architectural characteristics of bush-type horticultural crops. *Applied Engineering in Agriculture*, 21(4):555-558.
23. Muñoz-Carpena, M.D. Dukes, Y.C. Li, and W. Klassen. 2005. Field comparison of tensiometer and granular matrix sensor automatic drip irrigation on tomato. *HortTechnology*, 15(3):584-590.
24. **Baum, M.C., M.D. Dukes**, and G.L. Miller. 2005. Analysis of residential irrigation distribution uniformity. *Journal of Irrigation and Drainage Engineering*, 131(4):336-341.
25. **Dukes, M.D.**, and J.M. Scholberg. 2005. High frequency subsurface drip irrigation on sandy soils. *Applied Engineering in Agriculture*, 21(1):89-101.
26. **Irmak, S., M.D. Dukes**, and J.M. Jacobs. 2005. Using modified Bellani plate evapotranspiration gages to estimate short canopy reference evapotranspiration. *Journal of Irrigation and Drainage Engineering*, 131(2):164-175.
27. **Nogueira, L.C., M.D. Dukes**, D.Z. Haman, J.M. Scholberg, and C. Cornejo. 2003. Data acquisition system and irrigation controller based on CR-10 datalogger and TDR sensor. *Soil and Crop Science Society of Florida Proceedings*, 62(2003):38-46.
28. Studstill, D.W., E.H. Simonne, C.M. Hutchinson, R.C. Hochmuth, **M.D. Dukes**, W.E. Davis. 2003. Procedures for monitoring pumpkin nutritional status with sap testing. *Communications in Soil Science and Plant Analysis* 34(15&16):2355-2362.
29. **Dukes, M.D.** and R.O. Evans. 2003. Riparian Ecosystem Management Model: Hydrology and sensitivity under a narrow single vegetation riparian buffer in the Middle Coastal Plain. *Transactions ASAE*, 46(6):1567-1579.
30. **Dukes, M.D., R.O. Evans**, J.W. Gilliam, and S.H. Kunickis. 2003. Interactive effects of controlled drainage and riparian buffers on shallow groundwater quality. *Journal of Irrigation and Drainage Engineering*, 129(2) 1-11.
31. **Dukes, M.D., R.O. Evans**, J.W. Gilliam, and S.H. Kunickis. 2002. Effect of riparian buffer width and vegetation type on shallow groundwater quality in the Middle Coastal Plain of North Carolina. *Transactions of the ASAE* 45(2) 327-336.
32. **Dukes, M.D.** and W.F. Ritter. 2000. Validation of gleams nutrient component for wastewater application in the Mid-Atlantic region. *Bioresource Technology* 74(2000) 89-102.
33. **Dukes, M.D.** and W.F. Ritter. 1998. Modeling BMPs to optimize a municipal wastewater land treatment system. *Journal of Environmental Engineering* 124(12):1178-1187.
34. Glancey, J.L., W.E. Kee, T.L. Wooten, M.D. Dukes, B.C. Postles. 1996. Field losses for mechanically harvested green peas. *Journal of Vegetable Crop Production* 2(1):61-81.

Non-refereed Publications (last 5 years):

1. Morgan, K.L., M.D. Dukes, and L. Zotarelli. 2008. Use of Irrigation Technologies for Production of Horticultural Crops in Florida. IFAS BMP workshop proceedings. May.
2. Dukes, M.D. 2008. Taking control with smart controllers. Resource Magazine May 2008 15(3):12-15, 26.
3. **Haley, M.B., M.D. Dukes, S. Davis, M. Shedd, B. Cardenas-Lailhacar. 2008. Energy efficient homes: The irrigation system. FCS3274. Institute of Food and Agricultural Sciences, Cooperative Extension Service, University of Florida, Gainesville, FL (available at, <http://edis.ifas.ufl.edu/FY1043>)
4. **Davis, S.L., M.D. Dukes, and G.L. Miller. 2008. Irrigation Scheduling Using Evapotranspiration-based Irrigation Controllers In Florida. Proceedings Florida State Horticultural Society VOL(2008):xxx-xxx.
5. **Shedd, M.L., Dukes, M.D. and G.L. Miller. 2008. Evaluation of irrigation control on turfgrass quality and root growth. Proceedings Florida State Horticultural Society VOL(2008):xxx-xxx.
6. Dukes, M.D. 2007. Technologies to take control of irrigation water use. Florida Turf Digest Nov/Dec 24(6):10-15.
7. ***Zotarelli, L., J.M. Scholberg, M.D. Dukes, and R. Muñoz-Carpena. 2007. Methods for monitoring nitrate leaching in sandy soils. CSA News, July, Vol. 52:5-6.
8. Dukes, M.D., B. Cardenas-Lailhacar, M. Shedd, and G.L. Miller. 2007. Soil moisture sensor control for conservation of landscape irrigation. Proceedings of Georgia Water Resources Conference, March 27-29 CD-ROM, Athens, GA.
9. Dukes, M.D. 2007. Turfgrass irrigation requirements simulation in Florida. Proceedings of Irrigation Association Annual Show, Dec 9-11 CD-ROM. Irrigation Association, Falls Church, VA.
10. ***Cardenas-Lailhacar., B., and Dukes, M.D. 2007. Turfgrass Irrigation Controlled by Soil Moisture Sensor Systems. Proceedings of Irrigation Association Annual Show, Dec 9-11 CD-ROM. Irrigation Association, Falls Church, VA.
11. ***Haley, M.B., and Dukes, M.D. 2007. Residential irrigation water application influenced by socio-economic parameters. Proceedings of Irrigation Association Annual Show, Dec 9-11 CD-ROM. Irrigation Association, Falls Church, VA.
12. Dukes, M.D., B. Cardenas-Lailhacar, and M.B. Haley. 2007. Feedback based control of turfgrass irrigation in the humid region. Proceedings of the Fourth International Conference on Irrigation and Drainage, 3-6 Oct, CD-ROM, Sacramento, CA.
13. ***Jia, X., M.D. Dukes, and J.M. Jacobs. 2007. Development of bahiagrass crop coefficient in a humid climate. ASABE Paper No. 07-2151. American Society of Agricultural and Biological Engineers, St. Joseph, MI.
14. **Haley, M.B and M.D. Dukes. 2007. Evaluation of sensor based residential irrigation water application. ASABE Paper No. 07-2251. American Society of Agricultural and Biological Engineers, St. Joseph, MI.
15. Dukes, M.D., Cardenas-Lailhacar, B., S. Davis, M.B. Haley, M.A. Shedd. 2007. Summary of smart water application technology research in Florida. ASABE Paper No. 07-2250. American Society of Agricultural and Biological Engineers, St. Joseph, MI.
16. **Davis, N.H., M.D. Dukes, S. Vyapari, and G.L. Miller. 2007. Evaluation and demonstration of evapotranspiration-based Irrigation controllers. Proceedings of ASCE-EWRI World Water and Environmental Resource Congress, May 15-19 CD-ROM, Tampa, FL.
17. **Shedd, M.A. M.D. Dukes, and G.L. Miller. 2007. Evaluation of evapotranspiration and soil moisture-based irrigation control on turfgrass. Proceedings of ASCE-EWRI World Water and Environmental Resource Congress, May 15-19 CD-ROM, Tampa, FL.
18. ***Jia, X. M.D. Dukes, J.M. Jacobs, and M.B. Haley. 2007. Impact of weather station fetch distance on reference evapotranspiration calculation. Proceedings of ASCE-EWRI World Water and Environmental Resource Congress, May 15-19 CD-ROM, Tampa, FL.
19. ***Jia, X., M.D. Dukes, and G.L. Miller. 2007. Temperature increase on synthetic turfgrass. Proceedings of ASCE-EWRI World Water and Environmental Resource Congress, May 15-19 CD-ROM, Tampa, FL.
20. Dukes, M.D., G. Miller, J. Gregory. 2006. Measuring infiltration rates. *Sportsturf* 22(10):22, 24, 26, 28-29.
21. Dukes, M.D., M.B. Haley, and S.A. Hanks. 2006. Sprinkler irrigation and soil moisture uniformity. Irrigation Association Annual Show, Nov. 5-7 CD-ROM. Irrigation Association, Falls Church, VA.
22. ***Haley, M.B., M.D. Dukes, and G.L. Miller. 2006. Evaluation of sensor based residential irrigation water application. Irrigation Association Annual Show, Nov. 5-7 CD-ROM. Irrigation Association, Falls Church, VA.

23. Harmsen, E.W., V.H. Ramirez Builes, J.E. Gonzalez, M.D. Dukes, and X. Jia. 2006. Estimation of short-term actual crop evapotranspiration. Proceedings Caribbean Food Crops Society, July.
24. **Icerman, J., M.D. Dukes, and R. Muñoz-Carpena. 2006. 2-D water distributions under drip irrigation: measurement and modeling applications. ASABE Paper. American Society of Agricultural Engineers, St. Joseph, MI.
25. **Femminella, K.L. M.D. Dukes. 2006. Effects of soil moisture based irrigation controllers on bell pepper yield and nitrogen leaching. ASABE Paper. American Society of Agricultural Engineers, St. Joseph, MI.
26. ***Haley, M.B., M.D. Dukes, and G.L. Miller. 2006. Evaluation of sensor based residential irrigation water application. ASABE paper no. FL06-021. American Society of Agricultural Engineers, St. Joseph, MI.
27. **He, J., and M.D. Dukes. 2006. BMP development with the CERES-Maize model for sweet corn production in North Florida. ASABE paper no. FL06-011. American Society of Agricultural Engineers, St. Joseph, MI.
28. **Cardenas-Lailhacar, B., M.D. Dukes. 2006. Expanding disk rain sensor performance and potential irrigation water savings. ASABE paper no. FL06-022. American Society of Agricultural Engineers, St. Joseph, MI.
29. ***Jia, X., M.D. Dukes, and J.M. Jacobs. 2006. Estimating evapotranspiration and crop coefficient for mature citrus in Central Florida. ASABE paper no. 06-2083. American Society of Agricultural Engineers, St. Joseph, MI.
30. **He, J., W.D. Graham, M.D. Dukes, and J.W. Jones. 2006. Uncertainty analysis of the CERES-Maize model with the Monte Carlo method. ASABE paper no. 06-3027. American Society of Agricultural Engineers, St. Joseph, MI.
31. Simonne, E., M. Dukes, G. Hochmuth, B. Hochmuth, D. Studstill, and A. Gazula. 2006. Monitoring nitrate concentration in shallow wells below a vegetable field. *Proceedings Florida State Horticultural Society.*
32. Simonne, E., D. Studstill, M. Dukes, G. Hochmuth, R. Hochmuth, F. Roka, J. O'Hallorans, and A. Gazula. 2006. Field estimation of nitrate load from vegetable fields in the Caribbean basin. *HortScience* 41(3):506-507.
33. Gazula, A., E. Simonne, M. Dukes, G. Hochmuth, B. Hochmuth, and D. Studstill. 2006. Optimization of drainage lysimeter design for field determination of nutrient loads. *HortScience* 41(3):508-508.
34. Kenworthy, K., L. Trenholm, M. Dukes, G. Miller, F. Altpeter, E. Buss, and J. Sartain. 2006. New turfgrass research underway at Pine Acres... See it all at our July 19 field day. *Florida Turf Digest* 23(4):10-14.
35. Dukes, M.D., L. Zotarelli, J.M.S. Scholberg, and R. Muñoz-Carpena. 2006. Irrigation and nitrogen best management practices under drip irrigated vegetable production. Proceedings of the 2006 ASCE/EWRI World Water and Environmental Resources Congress CD-ROM, May 21-25, Omaha, NE.
36. ***Jia, X., M.D. Dukes, J.M. Jacobs. 2006. Development of bahiagrass crop coefficients using weighing lysimeters and eddy correlation methods. Proceedings of the 2006 ASCE/EWRI World Water and Environmental Resources Congress CD-ROM, May 21-25, Omaha, NE.
37. Muñoz-Carpena, R., J. Schroder, M.D. Dukes, W. Klassen. 2006. Low cost injection system combined with soil moisture-based irrigation for precision fertigation of vegetable crops. AE389, Institute of Food and Agricultural Sciences, Cooperative Extension Service, University of Florida, Gainesville, FL.
38. Muñoz-Carpena, R., J. Schroder, M.D. Dukes, W. Klassen. 2006. Selecting and calibrating and venturi injectors for fertigation of vegetable crops. AE389, Institute of Food and Agricultural Sciences, Cooperative Extension Service, University of Florida, Gainesville, FL.
39. Muñoz-Carpena, R., J. Schroder, M.D. Dukes, W. Klassen. 2006. Fertigation methods for soil moisture-based irrigation of field-grown tomatoes on coarse soils in Florida. AE390, Institute of Food and Agricultural Sciences, Cooperative Extension Service, University of Florida, Gainesville, FL.
40. Simonne, E.H., M.D. Dukes, and D.Z. Haman. 2005. Irrigation management. *Citrus and Vegetable Magazine*, October, 70(2):14-16.
41. **Haley, M.B., M.D. Dukes, G.L. Miller, and D.Z. Haman. 2005. Home irrigation and landscape combinations for water conservation in Florida. ABE 355, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.
42. Muñoz-Carpena, R. and M.D. Dukes. 2005. Automatic irrigation based on soil moisture for vegetable crops. Fact sheet ABE356, University of Florida, Institute of Food and Agricultural Sciences, Cooperative Extension Service, Gainesville, FL.

43. **Dukes, M.D., Cardenas-Lailhacar, B., and G.L. Miller.** 2005. Soil moisture based residential irrigation. Resource Magazine, June/July 12(5):4-6.
44. **Dukes, M.D., J.M. Scholberg,** and T.A. Hanselman. 2005. Methods to measure leaching of nitrogen in drip irrigated vegetable production. ASAE Paper No. 05-2240. American Society of Agricultural Engineers, St. Joseph, MI.
45. ****Schroder, J.H., R. Muñoz-Carpena, M. Dukes,** Y. Li and W. Klassen. 2005. Development and Testing of an Automated Soil Moisture Sensing Drip Fertigation System for Sustainable Agriculture. ASAE Paper No. 052239. St. Joseph, Mich.: ASAE.
46. ****Cardenas-Lailhacar, B., M.D. Dukes,** and G.L. Miller. 2005. Sensor based control of irrigation in Bermudagrass. ASAE Paper No. 05-2180. American Society of Agricultural Engineers, St. Joseph, MI.
47. ****Nogueira, L.C., D.Z. Haman, R.H. Stamps and M.D. Dukes.** 2005. Water harvesting and recycling ebb and flow system in a container nursery. ASAE Paper No. 05-4060. American Society of Agricultural Engineers, St. Joseph, MI.
48. ****Nogueira, L.C., D.Z. Haman, R.H. Stamps and M.D. Dukes.** 2005. Effects of three irrigation systems on runoff water quality in containerized plant production. ASAE Paper No. 05-4059. American Society of Agricultural Engineers, St. Joseph, MI.
49. *****Jia, X., A. Swancar, J.J. Jacobs, and M.D. Dukes.** 2005. Comparison of evapotranspiration from citrus groves in flatwoods and ridge soils. ASAE Paper No. 05-2251. American Society of Agricultural Engineers, St. Joseph, MI.
50. **Haman, D.Z., L.C. Nogueira, R.H. Stamps, and M.D. Dukes.** 2005. Outdoor ebb and flow irrigation system for containerized ornamental plants in humid climate. Proceedings of the 19th International Congress on Irrigation and Drainage CD-ROM, September 11-18, Beijing China.
51. **Dukes, M.D., R. Munoz-Carpena, J.M. Scholberg, and E.H. Simonne.** 2005. Soil moisture-based control systems for vegetable production. Proceedings of the 19th International Congress on Irrigation and Drainage CD-ROM, September 11-18, Beijing China.
52. **Jacobs, J.M., X. Jia, and M.D. Dukes.** 2005. Enhancing evapotranspiration prediction to improve regional and local estimates of agricultural consumptive water use in Florida. Proceedings of the 2005 ASCE/EWRI World Water and Environmental Resource Congress CD-ROM, May 14-19, Anchorage, AK.
53. *****Jia, X., M.D. Dukes, and J.M. Jacobs.** 2005. Impact of net radiation estimation in accurate determination of reference evapotranspiration in Florida. Proceedings of the 2005 ASCE/EWRI World Water and Environmental Resource Congress CD-ROM, May 14-19, Anchorage, AK.
54. **Grabow, G.L., K.A. Harrison, M.D. Dukes, E. Vories, W.B. Smith, H. Zhu, and A. Khalilian.** 2005. Considerations for the design and installation of SDI systems in humid areas. Proceedings of the 2005 ASCE/EWRI World Water and Environmental Resource Congress CD-ROM, May 14-19, Anchorage, AK.
55. **Dukes, M.D., D.Z. Haman, F. Lamm, J.R. Buchanan, C.R. Camp** 2005. Site selection for subsurface drip irrigation systems in the humid region. Proceedings of the 2005 ASCE/EWRI World Water and Environmental Resource Congress CD-ROM, May 14-19, Anchorage, AK.
56. **Thomas, D.L., K.A. Harrison, M.D. Dukes,** and J.W. Branch. 2005. Landscape and turf irrigation auditing for small communities. Proceedings of the 2005 ASCE/EWRI World Water and Environmental Resource Congress CD-ROM, May 14-19, Anchorage, AK.
57. ****Gregory, J.G., M.D. Dukes,** P.H. Jones, and G.L. Miller. 2005. Urban soil compaction and its effect on stormwater runoff. Proceedings 8th Biennial Conference on Stormwater Research and Management. Southwest Florida Water Management District and Florida Department of Environmental Protection, April 27-29.
58. Simonne, E., **M. Dukes,** R. Hochmuth, G. Hochmuth, D. Studstill, and W. Davis. 2004. International Fertigation. Long term effects of fertilization and irrigation. Recommendations on watermelon yield and soil-water nitrate levels in Florida's sandy soils. International Water and Irrigation, 24(1):22-24, 26.
59. **Tichenor, J., M.D. Dukes, and L.E. Trenholm.** 2004. Using the irrigation controller for a better lawn on less water. Fact Sheet ENH-978. Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.
60. **Munoz-Carpena, R., M.D. Dukes.** 2004. Water conservation through soil moisture sensing – field evaluation. Vegetarian Newsletter, 04-10. Department of Horticultural Sciences. University of Florida, Gainesville, FL.
61. **Dukes, M.D., M.B. Haley,** and G.L. Miller. 2004. Reducing residential irrigation water use in Florida. Irrigation Association Annual Show, Nov. 14-16 CD-ROM. Irrigation Association, Falls Church, VA.

62. Thomas, D.L., K.A. Harrison, M.D. Dukes, R.M. Seymour, and F.N. Reed. 2004. Landscape and turf irrigation auditing: A mobile laboratory approach for small communities. Bulletin 1253, Cooperative Extension Service, University of Georgia College of Agricultural and Environmental Sciences.
63. Perry, C.D., M.Dukes, S. Pocknee, and K. Harrison. 2004. Effects of variable-rate sprinkler cycling on irrigation uniformity. ASAE Paper No. 04-1117. American Society of Agricultural Engineers, St. Joseph, MI.
64. Dukes, M.D. and J.M. Scholberg. 2004. Automated subsurface drip irrigation based on soil moisture. ASAE Paper No. 04-2188. American Society of Agricultural Engineers, St. Joseph, MI.
65. Dukes, M.D., S. Irmak, and J.M. Jacobs. 2004. An automatic system for recording evaporation for ET gages. ASAE Paper No. 04-2191. American Society of Agricultural Engineers, St. Joseph, MI.
66. Munoz-Carpena, R., M.D. Dukes, and L.W. Miller. 2004. Design and field evaluation of a new controller for soil moisture based irrigation. ASAE Paper No. 04-2244. American Society of Agricultural Engineers, St. Joseph, MI.
67. Dukes, M.D., M.C. Baum, and G.L. Miller. 2004. Determination of residential irrigation water use in Florida. Proceedings of the 2004 ASCE/EWRI World Water and Environmental Resource Congress CD-ROM, June 27-July 1, Salt Lake City, UT.
68. Simonne, E., D. Studstill, M. Dukes, J. Duval, R. Hochmuth, G. McAvoy, T. Olczyk, and E. Lamb. 2004. How to conduct an on-farm dye test and use the results to improve drip irrigation management in vegetable production. HS980, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.
69. **Triebel, G.W., M.D. Dukes, and J.M. Jacobs. 2004. Estimation of crop water use of bahia grass using lysimeters. ASAE paper no. FL04-1003. American Society of Agricultural Engineers, St. Joseph, MI.
70. **Baum, M.C., M.D. Dukes, and G. L. Miller. 2004. Comparison of irrigation uniformity by soil moisture to catch-can test. ASAE paper no. FL04-1011. American Society of Agricultural Engineers, St. Joseph, MI.
71. Simonne, E.H., D.W. Studstill, R.C. Hochmuth, G. McAvoy, M.D. Dukes, S. Olsen. 2003. Visualization of water movement in mulched beds with injections of dye with drip irrigation. *Proceedings Florida State Horticultural Society*, 116(2003):88-91.
72. Dukes, M.D., M.C. Baum, and G.L. Miller. 2003. Residential irrigation water use reduction based on deficit irrigation. *North Carolina Turfgrass*, Oct/Nov, 21(6):16,18-20.
73. *Williams, J. and M.D. Dukes. 2003. Use of Time Domain Reflectometry for irrigation system uniformity testing. *Journal of Undergraduate Research* v. 5 issue 2, University Scholars Program, University of Florida.
74. Miller, G., N. Pressler, and M. Dukes. 2003. How uniform is coverage from your irrigation system? *Golf Course Management*, August 2003, pp. 100-102.
75. Munoz-Carpena, R., H. Bryan, W. Klassen, T.T. Dispenza, and M.D. Dukes. 2003. Evaluation of an automatic soil moisture-based drip irrigation system for row tomatoes. ASAE Paper No. 03-2093. American Society of Agricultural Engineers, St. Joseph, MI.
76. **Baum, M.C., M.D. Dukes, and G.L. Miller. 2003. Uniformity comparison of common residential irrigation sprinkler heads. ASAE Paper No. 03-2024. American Society of Agricultural Engineers, St. Joseph, MI.
77. **Baum, M.C., M.D. Dukes, and G.L. Miller. 2003. Residential irrigation uniformity and efficiency in Florida. ASAE paper no. FL03-100. American Society of Agricultural Engineers, St. Joseph, MI.
78. **Gregory, J.H., M.D. Dukes, P.H. Jones, and G.L. Miller. 2003. Methodology effects on double ring infiltrometer measurements. ASAE paper no. FL03-106. American Society of Agricultural Engineers, St. Joseph, MI.
79. *Williams, J., M.D. Dukes, and K.M. Portier. 2003. Measurement of uniformity in microirrigation using Time Domain Reflectometry. ASAE Paper No. FL03-127, American Society of Agricultural Engineers, St. Joseph, MI.
80. Munoz-Carpena, R., H. Bryan, W. Klassen, and M.D. Dukes. 2003. Automatic soil moisture-based drip irrigation for improving competitiveness of tomato production in today's demanding market. *Proceedings Florida State Horticultural Society*, 116:80-85.
81. Dukes, M.D., E.H. Simonne, W.E. Davis, D.W. Studstill, and R. Hochmuth. 2003. Effect of sensor-based high frequency irrigation on bell pepper yield and water use. Proceedings of 2nd International Conference on Irrigation and Drainage, May 12-15, Phoenix, AZ. pp. 665-674.
82. **Baum, M.C., M.D. Dukes, and D.Z. Haman. 2003. Selection and use of water meters for irrigation water measurement. ABE 18, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.
83. Simonne, E.H., C.M. Hutchinson, M.D. Dukes, G.J. Hochmuth, and R.C. Hochmuth. 2003. Update and outlook for 2003 BMP program for vegetable crops, EDIS HS916, <http://edis.ifas.ufl.edu/HS170>.

84. Simonne, E., D. Studstill, B. Hochmuth, T. Olczyk, M. Dukes, R. Munoz-Carpena. 2003. Drip irrigation: The BMP era - An integrated approach to water and fertilizer management for vegetables grown with plasticulture. EDIS HS 172, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.
85. Simonne, E.H., M.D. Dukes, and D.Z. Haman. 2003. Principles and practices for irrigation management, pp. 33-40 In: S.M. Olson and E. Simonne (Eds.) 2003-2004 Vegetable Production Guide for Florida, Vance Pub., Lenexa, KS.
86. Simonne, E., M. Dukes, R. Hochmuth, D. Studstill and S. Kerr. 2003. Are you dyeing to see where the irrigation water goes? Proc. Fla. Agric. Conf. Trade Show (FACTS X). April 29-30. Lakeland, Fla., pp.21-23.
87. Dukes, M.D. and R. Munoz-Carpena. 2003. Soil moisture sensors and automatic irrigation. Proc. Fla. Agric. Conf. Trade Show (FACTS X). April 29-30. Lakeland, Fla., pp.24-25.
88. Simonne, E., C. Hutchinson, M. Dukes, and G. Hochmuth. 2003. Update and outlook of Florida's BMP program for vegetable crops. Proc. Amer. Water. Res. Assoc. Available on the conference CD, John D. Williams and Dana W. Kolpin (eds.)
89. Simonne, E., M. Dukes, B. Hochmuth, G. Hochmuth, D. Studstill, and W. Davis. 2003. Integrated water and nutrient management for bell pepper grown with plasticulture. *Acta Horticulturae.* 627:181-186 (http://www.actahort.org/books/627/627_23.htm).
90. **Worthington, C.M., E. Simonne, M. Dukes, D. Studstill, W. Stall, C. Hutchinson, and J. Duvall. 2003. High frequency irrigation effects on water use efficiency of bell pepper and nutrient leaching on sandy soils. North Florida Research and Education Center – Suwannee Valley Twilight Field Day, May 29. Live Oak, FL. pp. 11-12.

Funded grants and contracts (last 5 years):

(Total = \$7,597,858, PI = \$1,656,491, Co-PI = \$5,794,980, Collaborator = \$146,387)

1. Grant: Research Study Related to Specification Development for Weather- or Sensor-Based Irrigation Control Technologies
 Date: 2008-2009
 Value: \$52,432 (includes 46.5% indirect)
 Funding Agency: Eastern Research Group
 Proposed Role: PI (100%)
2. Grant: Evaluation of Soil Moisture Based On-demand Irrigation Controllers Using Reclaimed Wastewater Irrigation (Phase III)
 Date: 2007-2010
 Value: \$450,000 (includes 25% indirect)
 Funding Agency: Southwest Florida Water Management District
 Proposed Role: PI (100%)
3. Grant: Evaluation of Soil Moisture Based On-demand Irrigation Controllers Phase II Extension
 Date: 2008
 Value: \$50,000 (includes 25% indirect)
 Funding Agency: Southwest Florida Water Management District
 Proposed Role: PI (100%)
4. Grant: Sensor based irrigation control and environmental fate testing of nutrient BMPs on tomato and bell pepper
 Date: 2007-08
 Value: \$2,000,000 (includes 5% indirect)
 Funding Agency: Florida Department of Agriculture and Consumer Services
 Proposed Role: PI (7%, \$141,582)
5. Grant: Investigation of soil and hydrologic properties of infiltration basins
 Date: 2007
 Value: \$52,007 (includes 10% indirect)
 Funding Agency: Florida Department of Environmental Protection
 Proposed Role: PI (100%)

6. Grant: Development of programming recommendations for smart irrigation controllers
 Date: 2007
 Value: \$5,000 over 1 year (includes direct only)
 Funding Agency: FNGLA Endowed Research Fund
 Proposed Role: PI (100%)
7. Grant: Investigation of soil amendments for water quality improvement
 Date: 2007
 Value: \$207,997 (includes 10% indirect)
 Funding Agency: Florida Department of Environmental Protection
 Proposed Role: PI (100%)
8. Grant: Investigation and development of methods to determine urban landscape irrigation for planning and permitting in Central Florida
 (Funded 2007-10)
 Date: 2007
 Value: \$450,000 (includes 25% indirect)
 Funding Agency: Southwest Florida Water Management District
 Proposed Role: Co-PI (100%)
9. Grant: Evaluation of soil moisture and evapotranspiration irrigation control to reduce turfgrass irrigation water use
 Date: 2006
 Value: \$11,500 (includes 15% indirect)
 Funding Agency: Florida Turfgrass Association
 Proposed Role: PI (100%)
10. Grant: Evaluation and demonstration of soil moisture based on-demand irrigation controllers for vegetable production
 Date: 2006
 Value: \$142,900 (includes 25% indirect)
 Funding Agency: Southwest Florida Water Management District
 Proposed Role: PI (100%)
11. Grant: Evaluation of Evapotranspiration-Based Irrigation Controllers
 Date: 2005
 Value: \$500,000 (includes 5% indirect)
 Funding Agency: Florida Department of Agriculture and Consumer Services and Hillsborough County Water Department
 Proposed Role: Co-PI (50%)
12. Grant: Investigation and development of methods to determine urban landscape irrigation for planning and permitting in Central Florida
 Date: 2005
 Value: \$20,000 (includes 25% indirect)
 Funding Agency: Southwest Florida Water Management District
 Proposed Role: PI (100%)
13. Grant: Determine reasonableness of district permit amounts for micro irrigated ridge citrus in Highlands County
 Date: 2005
 Value: \$30,000 (includes 25% indirect)
 Funding Agency: Southwest Florida Water Management District
 Proposed Role: PI (100%)
14. Grant: Evaluating effectiveness of Best Management Practices (BMPs) for animal waste and fertilizer management to reduce nutrient inputs to groundwater in the Suwannee River Basin (Phase 3)
 Date: 2005
 Value: \$804,174 (direct only)
 Funding Agency: FLDEP
 Proposed Role: Co-PI (10%)
15. Grant: Travel proposal to the ICID conference in Beijing China, Sept. 2005
 Date: 2005

- Value: \$1,000 (direct only)
 Funding Agency: IFAS International Programs
 Proposed Role: PI (100%)
16. Grant: Residential irrigation monitoring
 Date: 2005
 Value: \$24,840 (includes 25% indirect)
 Funding Agency: St. Johns River Water Management District
 Proposed Role: PI (100%)
17. Grant: Evaluation of soil moisture based on-demand irrigation controllers Phase II
 Date: 2005
 Value: \$298,148 (includes 25% indirect)
 Funding Agency: Southwest Florida Water Management District
 Proposed Role: PI (100%)
18. Grant: Calibration and testing of on-demand irrigation control systems
 Date: 2004
 Value: \$5,000 over 1 year (includes direct only)
 Funding Agency: FNGLA Endowed Research Fund
 Proposed Role: PI (100%)
19. Grant: Integration and verification of water quality and crop yield models for BMP planning
 Date: 2004
 Value: \$1,600,523 over 4 years (includes 5% indirect)
 Funding Agency: FLDACS
 Proposed Role: Co-PI (15%)
20. Grant: Developing production practices for efficient fertilizer and irrigation use in vegetables
 Date: 2004
 Value: \$166,619 over 1 year (includes 5% indirect)
 Funding Agency: FLDACS
 Proposed Role: Co-PI (30%)
21. Grant: Evaluation of factors related to drought tolerance in common bean
 Date: 2004
 Value: \$146,387 over 3 years (direct only)
 Funding Agency: USDA STAR
 Proposed Role: Collaborator
22. Grant: Evaluation of soil moisture based on-demand irrigation controllers
 Date: 2004
 Value: \$220,862 (includes 25% indirect)
 Funding Agency: Southwest Florida Water Management District
 Proposed Role: PI (100%)
23. Grant: SJRWMD irrigation consulting/evaluation
 Dates: 2004
 Value: \$3,469 (includes 25% indirect)
 Funding Agency: St. Johns River Water Management District
 Role: PI (100%)
24. Grant: Study in residential irrigation efficiencies year 3
 Dates: 2004
 Value: \$31,875 (includes 25% indirect)
 Funding Agency: St. Johns River Water Management District
 Role: PI (100%)
25. Grant: Update on the AFSIRS crop water use simulation model
 Dates: 2003
 Value: \$200,000 (includes 25% indirect)
 Funding Agency: St. Johns River Water Management District
 Role: PI (75%)

26. Grant: Relationship Between Soil Compaction and Measured Infiltration Rates and the Development of a Small Scale Physically Based Hydrological Model to Investigate Methods of Improving Lot Level Infiltration
Date: 2003
Value: \$12,000 (includes direct only)
Funding Agency: School of Natural Resources and Environment
Proposed Role: PI (100%)
27. Grant: Testing of on-demand irrigation control systems
Date: 2003
Value: \$5,000 (includes direct only)
Funding Agency: Florida Nurserymen and Growers Association
Proposed Role: PI (100%)
28. Grant: Evaluation of subsurface drip irrigation depth and scheduling method for peanut irrigation in the Southeast
Date: 2003
Value: \$5,000 (includes direct only)
Funding Agency: IFAS peanut check-off funding
Proposed Role: Co-PI (100%)
29. Grant: Demonstration of Soil Water Movement in Vegetables Grown with Plasticulture
Date: 2003
Value: \$14,125
Funding Agency: USDA-SARE on-farm research
Proposed Role: Co-PI (5%)
30. Grant: Residential Irrigation Efficiency Assessment Supplement
Date: 2003
Value: \$27,461
Funding Agency: St. Johns River Water Management District
Role: PI (100%)
31. Grant: Revision and Update of the AFSIRS Crop Water Use Simulation Model
Date: 2003
Value: \$59,539 (includes 25% indirect)
Funding Agency: St. Johns River Water Management District
Proposed Role: PI (25%)

Scientific and professional societies:

Irrigation Association (IA)

- a. Member, Program Technical Committee, 2006-present
- b. Vice-chair Program Technical Committee, 2007-present

American Society of Agricultural and Biological Engineers (ASABE)

- a. Member, SW-232, Water table management in humid regions, 2000-03
- b. Member, SW-244, Irrigation management committee, 2000-03
- c. Member, SW-245, Microirrigation, 2000-03
 - i. Vice-chair, 2002-04
 - ii. Chair, 2004-06
 - iii. Past-chair, 2006-08
- d. Member, SW-246, Turf and landscape irrigation, 2002-present
 - i. Chair, 2006-present
- e. Proceedings Chair, 2010 ASABE-IA Decennial Irrigation Symposium

American Society of Civil Engineers, Environmental and Water Resources Institute (ASCE-EWRI)

- a. Subsurface Drip Irrigation (SDI) Task Committee 2001-present
 - i. Vice-chair, 2002-present
- b. ET in Irrigation and Hydrology Committee 2002-present
 - ii. Secretary, 2003-2005
 - iii. Vice-chair, 2005-2007
 - iv. Chair, 2007-2009
- c. Member Task Committee on Transfer of Crop Coefficients 2003-present
- d. Vice-Chair Irrigation and Drainage Council 2008-2010
- e. Irrigation and Drainage Council Publications Committee, 2008-present

Florida section ASABE

- a. Past Chair 2009-2010
- b. Chair 2008-09
- c. Program Vice-Chair 2007-08
- d. Vice-Chair publicity 2006-07
- e. Secretary 2005-06
- f. Vice-Chair Awards 2004-05
- g. Vice-Chair Continuing Education 2003-04
- h. Moderator for a technical session at the Florida Section ASABE annual meeting 2003, Clearwater, FL.

National Society of Professional Engineers (NSPE)

Florida Irrigation Society (FIS)

Honors and awards:

- Florida Section American Society of Agricultural Engineers Young Extension Worker Award, 2008.
- Florida Section American Society of Agricultural Engineers Outstanding Service Award, 2007.
- ASABE Outstanding Reviewer Award, 2007.
- Florida Section American Society of Agricultural Engineers Young Researcher Award, 2005.
- Nominated for College of Agriculture and Life Sciences Undergraduate Teacher of the Year, 2004.
- Nominated ASAE Young Researcher Award, 2004.
- Nominated Florida Section ASAE Young Researcher Award, 2004.
- Member, Gamma Sigma Delta Agricultural Honor Society.
- Member, Phi Kappa Phi Honor Society.
- Member, Alpha Epsilon Honor Society.
- Nominated, The Governor and Mrs. Dan K. Moore Fellowship, North Carolina State University, March 1999.
- Laird Fellowship Finalist, University of Delaware, May 1996.

- Recipient of the Davis Fellowship, University of Delaware, September 1995.

Institutional and professional service:

- Organizing Committee Second International Symposium on Soil Water Measurement using Capacitance, Impedance and Time Domain Transmission
- Invited Reviewer, United States Department of Agriculture, National Research Initiative (USDA-NRI)
- Member S1018 Irrigation in the Humid and Sub-humid Region, Regional Project
- IA Task Team Member for the development of field protocols for testing climate based controllers

Professional development activities:

- Participation at Annual Meetings of ASABE, ASCE-EWRI, IA, FL-ASABE
- UF-IFAS LEAD IFAS leadership program
- LEAD-21 national leadership program