

## CURRICULUM VITA

### DOUGLAS D. ARCHBOLD

Professor

Department of Horticulture

#### EDUCATION

Ph.D., Horticulture, Michigan State University 1982

M.S., Horticulture, Michigan State University 1979

B.S., Biology, Purdue University at Fort Wayne 1976

#### PROFESSIONAL EXPERIENCE

Professor Since 2002

Associate Professor 1988 - 2002

Assistant Professor 1982 -1988

#### DIVISION OF EFFORT

My appointment has varied over the years due to variable teaching responsibilities but has been ~80% research and ~20% teaching.

#### RESEARCH PROGRAM

The goal of my research program has been to increase our knowledge of fruit crop physiology and production to provide a basis upon which fruit growers in Kentucky and elsewhere can improve efficiency, profitability, and sustainability. I have worked with apples, strawberries, blackberries, winegrapes, and pawpaws, and have focused my efforts in two areas: 1) carbohydrate metabolism of fruit crops as utilization of carbohydrates determines yield and harvest quality of fruit, and 2) postharvest quality and phytochemical content because the rapid changes following harvest may be the single largest cause of economic loss to fruit growers and reduced nutritional value to consumers.

#### PUBLICATIONS (\* indicates graduate student)

##### Refereed Research Publications

Nosarzewski, M., A.B. Downie, B. Wu, and **D.D. Archbold**. 2012. The role of SORBITOL DEHYDROGENASE in *Arabidopsis thaliana*. *Functional Plant Biology* 39: 462-470.

O'Daniel, S.B., **D.D. Archbold**, and S.K. Kurtural. 2012. Effects of balanced pruning severity on Traminette (*Vitis spp.*) in a warm climate. *American Journal of Enology and Viticulture* 63:284-290.

Thavong, P.\*, **D.D. Archbold**, T. Pankasemsuk, and R. Koslanund. 2011. Hexanal vapours suppress spore germination, mycelial growth, and fungal-derived cell wall degrading enzymes of postharvest pathogens of longan fruit. *Chiang Mai J. Sci.* 38(1): 139-150.

Eskelson, M.J.\*, E.G. Chapman, **D.D. Archbold**, J.J. Obrycki, and J.D. Harwood. 2011. Molecular identification of predation by carabid beetles on exotic and native slugs in a strawberry agroecosystem. *Biological Control*. 56 245–253.

Thavong, P.\*, **D.D. Archbold**, T. Pankasemsuk, and R. Koslanund. 2010. Effect of hexanal vapour on longan fruit decay, quality and phenolic metabolism during cold storage. *International Journal of Food Science and Technology* 45: 2313-2320.

Thavong, P.\*, **D.D. Archbold**, T. Pankasemsuk, and R. Koslanund. 2010. Postharvest use of hexanal vapor and heat treatment on longan fruit decay and consumer acceptance. *Thammasat Int. J. Sci. Tech.* 15: 54-63.

- Wu, B-H., S-H. Li, M. Nosarzewski, and **D.D. Archbold**. 2010. Sorbitol dehydrogenase gene expression and enzyme activity in apple: Tissue specificity during bud development and response to rootstock vigor and growth manipulation. *Journal of the American Society for Horticultural Science* 135: 379-387.
- Sigal Escalada, V.\* and **D.D. Archbold**. 2009. Preharvest aminoethoxyvinylglycine plus postharvest heat treatments influence apple fruit ripening after cold storage. *HortScience* 44: 1637-1640.
- Sigal Escalada, V.\* and **D.D. Archbold**. 2009. Effects of aminoethoxyvinylglycine plus 1-methylcyclopropene on 'Royal Gala' apple volatile production after cold storage. *HortScience* 44:1390-1394.
- Galli, F.\*, **D.D. Archbold** and K.W. Pomper. 2009. Pawpaw fruit chilling injury and antioxidant protection. *Journal of the American Society for Horticultural Science* 134: 466-471.
- Galli, F.\*, **D.D. Archbold** and K.W. Pomper. 2008. Loss of ripening capacity of pawpaw fruit with extended cold storage. *Journal of Agricultural and Food Chemistry* 56: 10683-10688.
- Nosarzewski, M.\* and **D.D. Archbold**. 2007. Tissue-specific expression of SORBITOL DEHYDROGENASE in apple fruit during early development. *Journal of Experimental Botany* 58:1863-1872.
- Myung, K.\*, T.R. Hamilton-Kemp, and **D.D. Archbold**. 2007. Interaction with and effects on the profile of proteins of *Botrytis cinerea* by C6 aldehydes. *Journal of Agricultural and Food Chemistry* 55:2182-2188.
- Wang, L., S. Chen, W. Kong, S. Li, and **D.D. Archbold**. 2006. Salicylic acid pretreatment alleviates chilling injury and affects the antioxidant system and heat shock proteins of peaches during cold storage. *Postharvest Biology and Technology* 41:244-251.
- Myung, K.\*, T.R. Hamilton-Kemp, and **D.D. Archbold**. 2006. Biosynthesis of trans-2-hexenal in response to wounding in strawberry fruit. *Journal of Agricultural and Food Chemistry* 54:1442-1448.
- Koslanund, R.\*, **D.D. Archbold**, and K.W. Pomper. 2005. Pawpaw (*Asimina triloba* (L.) Dunal) fruit ripening. I. Ethylene biosynthesis and production. *Journal of the American Society for Horticultural Science* 130: 638-642.
- Koslanund, R.\*, **D.D. Archbold**, and K.W. Pomper. 2005. Pawpaw (*Asimina triloba* (L.) Dunal) fruit ripening. II. Activity of selected cell-wall degrading enzymes. *Journal of the American Society for Horticultural Science* 130: 643-648.
- Hamilton-Kemp, T., M. Newman, R. Collins, H. Elgaali\*, K. Yu\*, and **D.D. Archbold**. 2005. Production of the long-chain alcohols octanol, decanol, and dodecanol by *Escherichia coli*. *Current Microbiology* 51: 82-86.
- Nosarzewski, M.\*, A.M. Clements, A.B. Downie, and **D.D. Archbold**. 2004. Sorbitol dehydrogenase expression and activity during apple fruit set and early development. *Physiologia Plantarum* 121:391-398.
- Archbold, D.D.** and K. W. Pomper. 2003. Ripening pawpaw fruit exhibit respiratory and ethylene climacterics. *Postharvest Biology and Technology*. 30:99-103.
- Archbold, D.D.**, R. Koslanund\*, and K. W. Pomper. 2003. Ripening and postharvest storage of pawpaw. *HortTechnology* 13:439-441.
- Hamilton-Kemp, T.R., **D.D. Archbold**, Yu, K.\*, and R.W. Collins. 2003. Emission patterns of wound volatile compounds following injury of ripe strawberry fruit. *Journal of the Science of Food and Agriculture*. 83:283-288.

- Elgaali, H.\*, T. R. Hamilton-Kemp, M. C. Newman, R. W. Collins, K. Yu, and **D.D. Archbold**. 2002. Comparison of long-chain alcohols and other volatile compounds emitted from food-borne and related Gram positive and Gram negative bacteria. *Journal of Basic Microbiology* 42:373-480.
- Archbold, D.D.** and T.R. Hamilton-Kemp. 2002. Unique, functional roles of strawberry fruit volatiles. *Advances in Strawberry Research* 19:1-7.
- Yu, K.\*, M.C. Newman, **D.D. Archbold**, and T.R. Hamilton-Kemp. 2001. Survival of *Escherichia coli* O157:H7 on strawberry fruit and reduction of the pathogen population by chemical agents. *Journal of Food Protection* 64:1334-1340.
- Hamilton-Kemp, T.R., **D.D. Archbold**, J.H. Loughrin\*, R.A. Andersen, C.T. McCracken, R.W. Collins, and E. Fallik. 2000. Stimulation and inhibition of fungal pathogens of plants by natural volatile phytochemicals and their analogs. *Current Topics in Phytochemistry* 4:95-102.
- Yu, K.\*, T.R. Hamilton-Kemp, **D.D. Archbold**, R.W. Collins, and M.C. Newman. 2000. Volatile compounds from *Escherichia coli* O157:H7 and their absorption by strawberry fruit. *Journal of Agricultural and Food Chemistry* 48:413-417.
- Archbold, D.D.** 1999. Carbohydrate availability modifies sorbitol dehydrogenase activity of apple fruit. *Physiologia Plantarum* 105:391-395.
- Archbold, D.D.**, T.R. Hamilton-Kemp, A.M. Clements, and R.W. Collins. 1999. Fumigating Crimson Seedless table grapes with (*E*)-2-hexenal reduces mold during long term postharvest storage. *HortScience* 34:705-707.
- McDonald, S.S.\* and **D.D. Archbold**. 1998. Membrane stability among and within *Fragaria* species varies in response to dehydration stress. *Journal of the American Society for Horticultural Science* 123:808-813.
- Fallik, E., **D.D. Archbold**, T.R. Hamilton-Kemp, A.M. Clements, R.W. Collins, and M.M. Barth. 1998. (*E*)-2-Hexenal both stimulates and inhibits *Botrytis cinerea* growth *in vitro* and on strawberry fruit *in vivo*. *Journal of the American Society for Horticultural Science* 123:875-881.
- Ntirampemba, G.\*, B.E. Langlois, **D.D. Archbold**, T.R. Kemp, and M.M. Barth. 1998. Effects of exposure to selected volatile compounds on the microflora of strawberry fruits. *Journal of Food Protection* 61:1352-1357.
- Archbold, D.D.**, T.R. Hamilton-Kemp, M.M. Barth, and B.E. Langlois. 1997. Identifying natural volatile compounds which control gray mold (*Botrytis cinerea*) during postharvest storage of strawberry, blackberry, and grape. *Journal of Agricultural and Food Chemistry* 45:4032-4037.
- Fallik, E., **D.D. Archbold**, T.R. Hamilton-Kemp, J.H. Loughrin and R.W. Collins. 1997. Heat treatment temporarily inhibits aroma volatile compound emission from Golden Delicious apples. *Journal of Agricultural and Food Chemistry* 45:4038-4041.
- Archbold, D.D.** and C. T. MacKown. 1997. Nitrogen availability and fruiting influence nitrogen cycling in strawberry. *Journal of the American Society for Horticultural Science* 121: 134-139.
- Archbold, D.D.** 1996. Evidence of annual variation in nitrogen assimilation by strawberry roots. *Advances in Strawberry Research*. 15:21-24.
- Hamilton-Kemp, T.R., **D.D. Archbold**, J.H. Loughrin, R.W. Collins, and M.E. Byers. 1996. Metabolism of natural volatile compounds by strawberry fruit. *Journal of Agricultural and Food Chemistry* 44:2802-2805.

- Archbold, D.D.** and C.T. MacKown. 1995. Seasonal and cropping effects on total and fertilizer nitrogen use in June-bearing and day neutral strawberries. *Journal of the American Society for Horticultural Science* 120:403-408.
- Galletta, G.J., J.L. Maas, J.M. Enns, A.D. Draper, J.A. Fiola, J.C. Scheerens, **D.D. Archbold**, and J.R. Ballington, Jr. 1995. 'Delmarvel' strawberry. *HortScience* 30:1099-1103.
- Galletta, G.J., J.L. Maas, J.M. Enns, D.H. Scott, A.D. Draper, J.A. Fiola, J.C. Scheerens, and **D.D. Archbold**. 1995. 'Northeast' strawberry. *Advances in Strawberry Research*. 14:73-78.
- Patterson, C.G., **D.D. Archbold**, J.G. Rodriguez, and T.R. Hamilton-Kemp. 1994. Daylength and resistance of strawberry foliage to the twospotted spider mite. *HortScience* 29:1329-1331.
- Zhang, B.\* and **D.D. Archbold**. 1993. Solute accumulation in leaves of a *Fragaria chiloensis* and a *F. virginiana* selection responds to water deficit stress. *Journal of the American Society for Horticultural Science* 118:280-285.
- Zhang, B.\* and **D.D. Archbold**. 1993. Water relations of a *Fragaria chiloensis* and a *F. virginiana* selection during and after water deficit stress. *Journal of the American Society for Horticultural Science* 118:274-279.
- Archbold, D.D.** 1992. Cultivar-specific apple fruit growth rates *in vivo* and *in vitro* sink activities. *Journal of the American Society for Horticultural Science* 117:459-462.
- Archbold, D.D.**, T.R. Hamilton-Kemp, and J.H. Loughrin. 1992. Plant volatiles inhibit pollen germination of apple and other species. *HortScience* 27:267.
- Archbold, D.D.** and C.T. MacKown. 1992. Controlled-release of fertilizer nitrogen by gel polymers in matted row strawberry production. *Advances in Strawberry Research* 11:32-35.
- Malik, H.\* and **D.D. Archbold**. 1992. Manipulating primocane architecture in thornless blackberry with uniconazole, GA<sub>3</sub>, and BA. *HortScience* 27:116-118.
- Hamilton-Kemp, T.R., J.H. Loughrin, **D.D. Archbold**, R.A. Andersen, and D.F. Hildebrand. 1991. Inhibition of pollen germination by volatile compounds including 2-hexenal and 3-hexenal. *Journal of Agricultural and Food Chemistry* 39:952-956.
- Malik, H.\* and **D.D. Archbold**. 1991. Nitrogen partitioning by 'Chester Thornless' blackberry in pot culture. *HortScience* 26:1492-1494.
- Hamilton, T.R., J.G. Rodriguez, **D.D. Archbold**, R.A. Andersen, J.H. Loughrin, C.G. Patterson, and S.R. Lowry. 1989. Strawberry resistance to *Tetranychus urticae* Koch: Effects of flower, fruit, and foliage removal-comparison of air- vs. nitrogen-entrained volatile compounds. *Journal of Chemical Ecology*. 15:1465-1473.
- Cornelius, P.L. and **D.D. Archbold**. 1989. Analysis of a split-split plot experiment with missing data using mixed model equations. Chapter 5, p. 57-79. *Applications of Mixed Models in Agriculture and Related Disciplines*. Southern Cooperative Series Bulletin 343. Louisiana Agricultural Experiment Station. Baton Rouge, LA.
- Archbold, D.D.** 1988. ABA facilitates sucrose import by strawberry fruit explants and cortex disks *in vitro*. *HortScience* 23:880-881.
- Archbold, D.D.** and R.L. Houtz. 1988. Photosynthetic characteristics of strawberry plants treated with paclobutrazol or flurprimidol. *HortScience* 23:200-202.
- Archbold, D.D.** and C.T. MacKown. 1988. Fate of fertilizer nitrogen in matted row strawberry culture. *Advances in Strawberry Production* 7:32-35.
- Archbold, D.D.**, J.G. Strang, and D.M. Hines. 1988. Yield component responses of 'Hull Thornless' blackberry to nitrogen rate and organic mulch. *HortScience* 24:604-607.

- Archbold, D.D.**, G. R. Brown, and P. L. Cornelius. 1987. Rootstock and in-row spacing effects on growth and yield of spur-type 'Delicious' and 'Golden Delicious' apple. *Journal of the American Society for Horticultural Science* 112:219-222.
- Archbold, D.D.** and J. G. Strang. 1986. Effect of BA on growth and yield of 'Redchief' strawberry. *HortScience* 21:1377-1379.
- Archbold, D.D.** 1986. Control of strawberry plant growth and runner production by flurprimidol. *Advances in Strawberry Production* 5:28-30.
- Strang, J. G., **D.D. Archbold**, J. R. Hartman, and J. W. Hendrix. 1985. Strawberry cultivar yield response to soil fumigation. *Advances in Strawberry Production* 4:36-38.
- Archbold, D.D.** and F. G. Dennis, Jr. 1985. Strawberry receptacle growth and endogenous IAA content as affected by growth regulator application and achene removal. *Journal of the American Society Horticultural Science* 110:816-820.
- Archbold, D.D.** and F. G. Dennis, Jr. 1984. Quantification of free ABA and free and conjugated IAA in strawberry (*Fragaria x ananassa* Duch.) achene and receptacle tissue during fruit development. *Journal of the American Society for Horticultural Science* 109:330-335.
- Dennis, F. G., Jr., **D.D. Archbold**, and C. O. Vecino. 1983. Effects of inhibitors of ethylene synthesis or action, GA<sub>4+7</sub>, and BA on fruit set of apple, sour cherry, and plum. *Journal of the American Society for Horticultural Science* 108:570-573.
- Archbold, D.D.**, F. G. Dennis, Jr., and J. A. Flore. 1982. Accumulation of <sup>14</sup>C-sucrose by tomato ovaries during fruit set and initial development. *Journal of the American Society for Horticultural Science* 107:19-23.

### Refereed Proceedings

- Johnstone, C. # and **D.D. Archbold**. 2009. Handling and storage effects on quality and health-beneficial compounds of 'ready-to-eat' edamame. *Acta Horticulturae* 841:467-469. (# indicates undergraduate student)
- Galli, F.\*, **D.D. Archbold** and K.W. Pomper. 2008. Heat treatment and intermittent warming fail to slow loss of firmness and mould development of pawpaw fruit (*Asimina triloba* (L.) Dunal). Proceedings of COST Action 924 International Congress - Novel approaches for the control of postharvest diseases and disorders, Bologna, Italy: CRIOF, University of Bologna, pp. 185-191.
- Galli, F.\*, **D.D. Archbold** and K.W. Pomper. 2007. Pawpaw: an old fruit for new needs. *Acta Horticulturae* 744:461-466
- Archbold, D.D.**, M. Nosarzewski, A.M. Clements, and A.B. Downie. 2004. Early apple fruit development and sorbitol dehydrogenase. *Acta Horticulturae* 636:443-436.
- Archbold, D.D.**, T.R. Hamilton-Kemp, and E. Fallik. 2002. Postharvest injury, strawberry volatiles, and *Botrytis* development. *Acta Horticulturae* 567:767-769.
- Archbold, D.D.** and A.M. Clements. 2002. Identifying heat tolerant *Fragaria* accessions using chlorophyll fluorescence. *Acta Horticulturae* 567:341-344
- Hamilton-Kemp, T.R., **Archbold, D.D.** and R.W. Collins. 2002. Two volatile sulfur compounds promote increases in natural aroma compounds in strawberry. *Acta Horticulturae* 567:775-777
- Archbold, D.D.**, T.R. Hamilton-Kemp, and E. Fallik. 2000. Aroma volatiles as modulators of postharvest mold development on fruit: *in vivo* role and fumigation tools. *Acta Horticulturae* 518:87-92.

- Archbold, D.D.**, T.R. Hamilton-Kemp, B.E. Langlois, and M.M. Barth. 1997. Natural volatile compounds control *Botrytis* on strawberry fruit. *Acta Horticulturae* 439:923-930.
- Archbold, D.D.** 1996. Drought resistance in strawberry: What is the potential for improvement? M.P. Pritts, C.K. Chandler, and T.E. Crocker, eds. *Proceedings of the IVth North American Strawberry Conference*, pp. 127-132. University of Florida Press, Gainesville, Fla.
- Archbold, D.D.** 1993. Foliar attributes contributing to drought stress tolerance in *Fragaria* species. *Acta Horticulturae* 348:347-350.
- Archbold, D.D.** 1989. Integrating paclobutrazol, GA<sub>3</sub>, and plant density in ribbon row strawberry production, and sustained effects of the growth regulators. *Acta Horticulturae* 239:289-292.

### Book Chapters

- Archbold, D.D.** and T.R. Hamilton-Kemp. 2000. Surface disinfection of berry crops with the natural volatile (*E*)-2-hexenal. In: *Integrated View of Fruit & Vegetable Quality, International Multidisciplinary Conference*, ed. W.J. Florkowski, S.E. Prussia, and R.L. Shewfelt. Technomic Pub. Co., Lancaster, PA., pp. 268-272.
- Hamilton-Kemp, T.R., **D.D. Archbold**, and R.W. Collins. 2000. Enhancement of strawberry aroma quality components after exposure to a novel fumigant of natural origin. In: *Integrated View of Fruit & Vegetable Quality, International Multidisciplinary Conference*, ed. W.J. Florkowski, S.E. Prussia, and R.L. Shewfelt. Technomic Pub. Co., Lancaster, PA., pp. 250-256.
- Archbold, D.D.** and B. Zhang. 1991. Drought stress resistance in *Fragaria* species. In: *The Strawberry Into the 21st Century*. Chapter 28, p. 138-144. A. Dale and J.J. Luby (eds.). Timber Press, Inc. Portland, Oregon.

### GenBank Submission

- Clements, A.M., B. Downie, and **D.D. Archbold**. 2001. Sorbitol dehydrogenase cDNA sequence from Red Delicious apple. Accession No. AY053504

### Website

- Archbold, D.D.** and K.W. Pomper. Pawpaw: Recommendations for Maintaining Postharvest Quality. <http://postharvest.ucdavis.edu/Produce/ProduceFacts/Fruit/pawpaw.shtml>

### INVITED PRESENTATIONS/SEMINARS

#### International

- Beijing, China, Institute of Botany, Fruit Tree Laboratory 2011  
‘Insights into Sorbitol Dehydrogenase Metabolism in Plants’
- Wuhan, China, Huazhong Agricultural University, 2011  
‘Insights into Sorbitol Dehydrogenase Metabolism in Plants’
- Lampung, Indonesia, University of Lampung 2010  
‘Fruit and Vegetable Production in the U.S.’
- Lampung, Indonesia, International Seminar on Horticulture to Support Food Security 2010  
Keynote Address - ‘Increasing Food Security with Postharvest Research’
- Malang, Indonesia, University of Brawijaya 2010  
‘Fruit and Vegetable Production in the U.S.’  
‘Postharvest Biology and Technology of Fruit and Vegetables’
- Shanghai, China, Key Practical Technologies of the Modern Peach Industry, August 14-21, 2009,

‘Peach Production Practices for a Cold Climate’

Chiang Mai University Institute for Postharvest Research, Chiang Mai, Thailand 2005

‘Postharvest control of *Botrytis* on berry crops with natural volatile compounds’

Beijing, China, Institute of Botany, Fruit Tree Laboratory 2005

- ‘Fruit Production in the United States’
- ‘Sorbitol Dehydrogenase and Apple Fruit Set’
- ‘Pawpaw (*Asimina triloba* L.): Commercial Emergence of a Tree Fruit Native to North America’

Department of Postharvest Science, The Volcani Center, Bet Dagan, Israel 1998

‘Postharvest control of *Botrytis* on berry crops with the natural volatile (*E*)-2-hexenal’

### **National**

American Society for Horticultural Science Annual Meeting Workshop, 2006: Carbon Metabolism in Sorbitol-synthesizing Deciduous Fruit Trees, ‘Sorbitol metabolism and the regulation of sorbitol dehydrogenase activity during apple fruit set and development’

American Society for Horticultural Science Annual Meeting Workshop, 1995: Effect of Development on Carbon Partitioning and Photosynthesis, ‘Seasonal and cultivar differences in sorbitol dehydrogenase activity during apple fruit development’

4th National Strawberry Conference, Orlando, FL 1994

Title: Drought resistance in strawberry: What is the potential for improvement?

3rd National Strawberry Conference, Houston, TX 1990

Title: Drought stress resistance in *Fragaria* species

### **Regional**

Southern Small Fruit Workers, Southern Region American Society for Horticultural Science Meeting, 2000, Lexington, KY, ‘Volatile Compounds and Mold on Berry Crops’

## **ABSTRACTS OF CONFERENCE PRESENTATIONS**

### **International**

Wilson, P.E.\*, **D.D. Archbold**, T.H. Cottrell and S.K. Kurtural. 2010. Cultural practices to improve primary bud cold hardiness of Vidal blanc grapevines in the continental climate. HortScience

Nosarzewski, M. and **D.D. Archbold**. 2008. Sorbitol availability and SORBITOL DEHYDROGENASE expression during apple bud development from budbreak to bloom. 9<sup>th</sup> International Symposium on Integrating Canopy, Rootstock, and Environmental Physiology in Orchard Systems, Geneva, NY, Program and Abstracts, p. 36.

**Archbold, D.D.**, M. Nosarzewski, B. Wu, and P. Vuppapapati. 2008. Does availability of soluble carbohydrate reserves determine apple fruit set? 9<sup>th</sup> International Symposium on Integrating Canopy, Rootstock, and Environmental Physiology in Orchard Systems, Geneva, NY, Program and Abstracts, p. 37.

Johnstone, C. and **D.D. Archbold**. 2007. Handling and storage effects on quality and health-beneficial compounds of ‘ready-to-eat’ edamame. 2<sup>nd</sup> International Symposium on Human Health Effects of Fruits and Vegetables, Houston, TX. Program and Abstracts, p. 104.

Wilson, P.E., T.H. Cottrell, **D.D. Archbold**, and S.K. Kurtural. 2007. Effect of crop load on vigor, yield, fruit composition, and wine phenolic composition of Vidal Blanc grapevines, 2<sup>nd</sup>

- International Symposium on Human Health Effects of Fruits and Vegetables, Houston, TX. Program and Abstracts, p. 134.
- Galli, F., **D.D. Archbold**, and K.W. Pomper. 2005. Pawpaw: An old fruit for new needs. International Symposium on Human Health Effects of Fruits and Vegetables, August 17-20. Quebec City, Quebec, Canada. Program of Abstracts, p. 36.
- Sigal Escalada, V. and **D.D. Archbold**. 2005. Use of AVG and MCP to sustain 'Gala' apple fruit quality in cold storage. 9<sup>th</sup> International Controlled Atmosphere Research Conference. July 5-10, 2005, East Lansing, MI, p. 9.
- Archbold, D.D.** and K.W. Pomper. 2004. Response of pawpaw fruit to cold storage temperature and duration. Volume of Abstracts, 5<sup>th</sup> International Postharvest Symposium, Verona, Italy, p. 10.
- Galli, F., **D.D. Archbold**, K.W. Pomper, T.R. Hamilton-Kemp, and R.W. Collins. 2004. Symptoms of cold storage injury of pawpaw fruit. Volume of Abstracts, 5<sup>th</sup> International Postharvest Symposium, Verona, Italy, p. 11.
- Sigal-Escalada, V. and **D.D. Archbold**. 2004. Use of AVG and heat treatment to sustain 'Lodi' apple fruit quality in cold storage. Volume of Abstracts, 5<sup>th</sup> International Postharvest Symposium, Verona, Italy, p. 11.
- Archbold, D.D.**, M. Nosarzewski, A.M. Clements, and A.B. Downie. 2002. Early apple fruit development and sorbitol dehydrogenase. Abstracts of the XXVI International Horticultural Congress, Toronto, CAN, p. 367.
- Koslanund, R., **D.D. Archbold**, and K.W. Pomper. 2002. Fruit softening and heat treatment of pawpaw fruit. Abstracts of the XXVI International Horticultural Congress, Toronto, CAN, p. 251.
- Archbold, D.D.**, R. Koslanund, and K.W. Pomper. 2001. Ripening and postharvest storage of pawpaw. Book of Abstracts, 2<sup>nd</sup> International Pawpaw Conference, Frankfort, KY, p. 20.
- Archbold, D.D.**, T.R. Hamilton-Kemp, and E. Fallik. 2000. Postharvest injury, strawberry volatiles, and *Botrytis* development. Book of Abstracts, 4<sup>th</sup> International Strawberry Symposium, Tampere, Finland, p. 225.
- Archbold, D.D.** and A.M. Clements. 2000. Using chlorophyll fluorescence to identify *Fragaria* accessions with photosynthetic heat tolerance. Book of Abstracts, 4<sup>th</sup> International Strawberry Symposium, Tampere, Finland, p. 225.
- Hamilton-Kemp, T.R., **D.D. Archbold**, and R. W. Collins. 2000. Two volatile sulfur compounds promote increases in natural aroma compounds in strawberry. Book of Abstracts, 4<sup>th</sup> International Strawberry Symposium, Tampere, Finland, p.227
- Archbold, D.D.**, T.R. Hamilton-Kemp, and E. Fallik. 1998. Aroma volatiles as modulators of postharvest mold development on fruit: *In vivo* role and fumigation tools. Abstracts XXV International Horticultural Congress, Brussels, Belgium, 1998, p. 69.
- Archbold, D.D.**, T.R. Hamilton-Kemp, B.E. Langlois, and M.M. Barth. 1996. Natural compounds control *Botrytis* on strawberry fruit. Book of Abstracts, Vol. 1, 3<sup>rd</sup> International Strawberry Symposium, Veldhoven, The Netherlands, p. 63.
- Archbold, D.D.** 1992. Foliar attributes contributing to drought stress tolerance in *Fragaria* species. Proc. 2<sup>nd</sup> International Strawberry Symposium, Baltimore, MD, Sept. 13-18, 1992.



## National

- Wilson, P.E., **D.D. Archbold**, and S.K. Kurtural. 2010. Cultural practices to improve primary bud cold hardiness of vidal blanc grapevines in the continental climate. American Society for Horticultural Science Conference, HortScience 45:
- Wilson, P.E., **D.D. Archbold**, T.H. Cottrell and S.K. Kurtural. 2008. Effects of pruning severity and cluster thinning on vigor, yield, fruit composition and crop load of Vidal Blanc grapevines. 33<sup>rd</sup> American Society of Enology and Viticulture/Eastern Section Conference. July 2008 St. Catharines, Ontario, Canada.
- Wilson, P.E., T.H. Cottrell, **D.D. Archbold**, and S.K. Kurtural. 2008. Grapevine sustainability and wine composition ameliorated by severity of canopy management. American Society for Horticultural Science Conference, HortScience 43:1233.
- Eskelson, M.J., E.G. Chapman, **D.D. Archbold**, J.J. Obrycki, and J.D. Harwood, 2008. Interaction pathways between slugs and carabid beetles in strawberry agroecosystems: Implications for biological control. Program and Abstracts, 56<sup>th</sup> Annual Meeting, Entomological Society of America Annual Meeting, Reno, NV.
- Eskelson, M.J., J.J. Obrycki, **D.D. Archbold**, and J.D. Harwood. 2008. The diversity and activity patterns of carabid beetles and slugs in strawberry agroecosystems. Program and Abstracts, North Central Branch, Entomological Society of America Annual Meeting, Columbus, OH.
- Galli, F., **D.D. Archbold**, K.W. Pomper, and R.W. Collins. 2007. Cold storage injury and antioxidant systems of pawpaw during cold storage. American Society for Horticultural Science Conference, HortScience 42:1019.
- Archbold, D.D.**, M. Nosarzewski, and P. Vuppalapati. 2007. Carbohydrate availability and sorbitol metabolism in apple buds and fruit from bud swell to fruit drop. American Society for Horticultural Science Conference, HortScience 42:908-909.
- Eskelson, M.J., J.D. Harwood, J.J. Obrycki, and **D.D. Archbold**. 2007. Tracking the role of generalist predators in biological control of slugs in strawberry crops. Program and Abstracts, 55<sup>th</sup> Annual Meeting, Entomological Society of America Annual Meeting, San Diego, CA.
- Archbold, D.D.** and M. Nosarzewski. 2006. Sorbitol metabolism and the regulation of sorbitol dehydrogenase activity during apple fruit set and development. American Society for Horticultural Science Conference, HortScience 41:931.
- Sigal Escalada, V. and **D.D. Archbold**. 2006. Effect of AVG and MCP on volatile production of 'Gala' apple. American Society for Horticultural Science Conference, HortScience 41:977.
- Galli, F., **D.D. Archbold**, and K.W. Pomper. 2006. Cold storage effects on pawpaw fruit ripening and quality. American Society for Horticultural Science Conference, HortScience 41:989.
- Galli, F., R. Koslanund, **D.D. Archbold**, and K.W. Pomper. 2006. Common strategies to manipulate pre- and postharvest ripening of fruit fail with pawpaw. American Society for Horticultural Science Conference, HortScience 41:1051.
- Galli, F., **D.D. Archbold**, and K.W. Pomper. 2005. Do pawpaw varieties behave differently during ripening and cold storage? American Society for Horticultural Science Conference, HortScience 40:1088.
- Sigal Escalada, V. and **D.D. Archbold**. 2005. Influence of pre-harvest AVG application on the activity of sorbitol dehydrogenase in apple fruit. American Society for Horticultural Science Conference, HortScience 40:1143.

- Archbold, D.D.** and M. Nosarzewski. 2004. Patterns of sorbitol metabolism and availability during apple fruit set. American Society for Horticultural Science Conference, HortScience 39:887.
- Galli, F., **D.D. Archbold**, K.W. Pomper, T.R. Hamilton-Kemp, and R.W. Collins. 2004. Can pawpaw fruit be cold-stored for extended periods? American Society for Horticultural Science Conference, HortScience 39:780.
- Fulkerson, J.M. and **D.D. Archbold**. 2004. Impact of modified atmosphere storage on eastern thornless blackberry quality and antioxidant levels. American Society for Horticultural Science Conference, HortScience 39:826.
- Sigal-Escalada, V. and **D.D. Archbold**. 2004. Cultivar variation in response to AVG and heat treatments for sustaining apple fruit quality in cold storage. American Society for Horticultural Science Conference, HortScience 39:781
- Archbold, D.D.** and A.M. Clements. 2001. Chlorophyll fluorescence identifies heat effects upon photosynthesis but not heat tolerant genotypes in *Fragaria*. American Society for Horticultural Science Conference, HortScience. 36:559.
- Koslanund, R., **D.D. Archbold**, and K.W. Pomper. 2001. Ethylene production and fruit softening during pawpaw ripening. American Society for Horticultural Science Conference, HortScience. 36:469.
- Yu, K., T.R. Hamilton-Kemp, **D.D. Archbold**, and M.C. Newman. 2001. Survival of *E. coli* O157:H7 on strawberry fruit and removal by sanitizing agents. American Society for Horticultural Science Conference, HortScience. 36:557.
- Koslanund, R., **D.D. Archbold**, and K.W. Pomper. 2000. Ripening and the climacteric of pawpaw. American Society for Horticultural Science Conference, HortScience 35:560.
- Archbold, D.D.**, A. M. Clements, T.R. Hamilton-Kemp, and R.W. Collins. 1999. Compression bruising alters the strawberry volatile profile. American Society for Horticultural Science Conference, HortScience 34:511.
- Archbold, D.D.** and A. M. Clements. 1999. Heat tolerance varies with species, provenance, and accession in *Fragaria*. American Society for Horticultural Science Conference, HortScience 34:498.
- Ringo, J.D., **D.D. Archbold**, and A. M. Clements. 1999. Transpiration and membrane competence in *Fragaria* exhibit genotype-specific responses to ABA. American Society for Horticultural Science Conference, HortScience 334:490.
- Koslanund, R. and **D.D. Archbold**. 1999. Postharvest quality of eastern north American strawberry cultivars during short-term storage. American Society for Horticultural Science Conference, HortScience 34:511.
- Yu, K., T.R. Hamilton-Kemp, **D.D. Archbold**, M. Newman, and B.E. Langlois. 1999. Volatiles of *E. coli* O157:H7 and foodborne pathogen detection on strawberry fruit. American Society for Horticultural Science Conference, HortScience 34:510.
- Archbold, D.D.**, T.R. Hamilton-Kemp, A.M. Clements, and R.W. Collins. 1998. Fumigation of 'Flame Seedless' grape With *E*-2-hexenal reduces mold during long term cold storage. American Society for Horticultural Science Conference, HortScience 33:511.
- Hamilton-Kemp, T.R., **D.D. Archbold**, B.E. Langlois, and R.W. Collins. 1998. Antifungal activity of (*E*)-2-hexenal on strawberries and grapes. American Chemical Society Abstracts, AFCD 33.

- Villalba, A., B.E. Langlois, **D.D. Archbold**, and T.R. Hamilton-Kemp. 1998. Effect on selected pathogens of exposure to naturally occurring volatile compounds. 1998 International Association of Milk, Food, and Environmental Sanitarians Meeting Abstracts.
- Fallik, E., **D.D. Archbold**, T.R. Hamilton-Kemp, A.M. Clements, R.W. Collins, and M.M. Barth. 1997. (*E*)-2-Hexenal both stimulates and inhibits *Botrytis cinerea* growth *in vitro* and on strawberry fruit *in vivo*. American Society for Horticultural Science Conference, HortScience 32:505.
- Archbold, D.D.** 1996. Temperature response of *Fragaria* species. American Society for Horticultural Science Conference, HortScience 31:640.
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- Archbold, D.D.**, T.R. Hamilton-Kemp, M.M. Barth, and B.E. Langlois. 1996. Volatile compounds for control of *Botrytis* on strawberry: duration of treatment and polymer film. American Society for Horticultural Science Conference, HortScience 31:683.
- Archbold, D.D.** and L. Cheng. 1995. Partitioning of a drought-induced root signal within the *Fragaria chiloensis* plant. American Society for Horticultural Science Conference, HortScience 30:836.
- Archbold, D.D.** 1994. Sink activity and carbohydrate allocation patterns within developing apple fruit with and without fruit thinning. American Society for Horticultural Science Conference, HortScience 29:472.
- McDonald, S.S., **D.D. Archbold**, and L. Cheng. 1994. Evaluation of  $g_{ti}$  method to assess heat and desiccation injury among *Fragaria* species. American Society for Horticultural Science Conference, HortScience 29:477.
- Hamilton-Kemp, T.R., R.A. Anderson, D.F. Hildebrand, W. Deng, and **D.D. Archbold**. 1993. Volatile antimicrobial compounds from plants. Abstracts of the 206th American Chemical Society Annual Meeting, Chicago, IL. No. 101.
- McDonald, S.S., T.R. Hamilton-Kemp, and **D.D. Archbold**. 1993. Genotypic variation of lipoxygenase/lyase-derived volatile production by *Fragaria* species. American Society for Horticultural Science Conference, HortScience 28:591.
- Archbold, D.D.** and T.R. Hamilton-Kemp. 1993. Developmental and cultivar comparisons of lipoxygenase/lyase-derived volatile compounds from strawberry fruit. American Society for Horticultural Science Conference, HortScience 28:570.
- Archbold, D.D.** 1993. Seasonal variation in the activity of nitrogen assimilation enzymes from strawberry roots. American Society for Horticultural Science Conference, HortScience 28:570.
- Archbold, D.D.** 1993. Sorbitol dehydrogenase activity and cultivar-specific apple fruit growth rates. American Society for Horticultural Science Conference, HortScience 28:449.
- Archbold, D.D.** 1992. Regulation of apple fruit growth rate by turgor pressure? American Society for Horticultural Science Conference, HortScience 27:625.
- Zhang, B. and **D.D. Archbold**. 1991. Solute accumulation in leaves of *Fragaria chiloensis* and *F. virginiana* in response to water deficit stress. American Society for Horticultural Science Conference, HortScience 26:792.
- Malik, H. and **D.D. Archbold**. 1991. Nitrogen partitioning in thornless blackberry. American Society for Horticultural Science Conference, HortScience 26:687.

- Houtz, R.L., **D.D. Archbold**, and M.L. Royer. 1990. Atmospheric CO<sub>2</sub> enrichment of tomato and strawberry plants under field production conditions. American Society for Horticultural Science Conference, HortScience 25:1141.
- Zhang, B. and **D.D. Archbold**. 1990. Diurnal changes in leaf conductance and water relations in *Fragaria chiloensis* and *F. virginiana* following water deficit stress. American Society for Horticultural Science Conference, HortScience 25:1105.
- Archbold, D.D.**, T.R. Hamilton-Kemp, and J.H. Loughrin. 1990. Floral-derived volatile compounds: a role in pollination? American Society for Horticultural Science Conference, HortScience 25:1128.
- Archbold, D.D.** 1990. Cultivar variation in apple fruit growth rates, sorbitol accumulation, and tissue osmotic potential. American Society for Horticultural Science Conference, HortScience 25:1070.
- Zhang, B. and **D.D. Archbold**. 1990. Water deficit effects on water relations and photosynthesis in *Fragaria chiloensis* and *F. virginiana*. Plant Physiol. 93 (Suppl.):103.
- Zhang, B. and **D.D. Archbold**. 1989. Adaptive responses of *Fragaria chiloensis* and *F. virginiana* to water stress. Program and Abstracts of the 1989 American Society for Horticultural Science Annual Meeting. p. 111.
- Zhang, B. and **D.D. Archbold**. 1988. Osmotic adjustment in *Fragaria chiloensis* leaves. Plant Physiol. 86(Suppl.):156.
- Zhang, B. and **D.D. Archbold**. 1988. Morphological and biochemical responses of strawberry plants to water stress. American Society for Horticultural Science Conference, HortScience 23:817.
- Archbold, D.D.** and C. T. MacKown. 1988. Fertilizer nitrogen allocation patterns at harvest in short day strawberry cultured in matted rows. American Society for Horticultural Science Conference, HortScience 23:741.
- Archbold, D.D.**, J. G. Strang, and D. M. Hines. 1988. Thornless blackberry vegetative growth, yield components, and foliar elemental content as influenced by nitrogen rate and organic mulch. American Society for Horticultural Science Conference, HortScience 23:776.
- Archbold, D.D.** 1988. Abscisic acid biosynthesis, import, and metabolism during apple fruit development. American Society for Horticultural Science Conference, HortScience 23:808.
- Lakitan, B., D. E. Knavel, R. L. Houtz, R. L. Geneve, and **D.D. Archbold**. 1987. Water influx and calcium content as related to fruit cracking in pepper (*Capsicum annuum* L.). American Society for Horticultural Science Conference, HortScience 22:1082.
- Jones, R. T., **D. Archbold**, and J. Strang. 1987. Evaluation of fifteen everbearing strawberry varieties for yield and winter survival. American Society for Horticultural Science Conference, HortScience 22:719.
- Strang, J. G., **D.D. Archbold**, and D. M. Hines. 1987. Effects of nitrogen levels and organic mulches on growth and yield of 'Hull Thornless' blackberry. American Society for Horticultural Science Conference, HortScience 22:718.
- Archbold, D.D.** 1987. GA<sub>3</sub> as an antidote to paclobutrazol on field-cultured strawberry. American Society for Horticultural Science Conference, HortScience 22:720.
- Archbold, D.D.** and C. T. MacKown. 1987. Recovery and partitioning patterns of <sup>15</sup>N-ammonium nitrate following spring or fall application to short-day strawberry. American Society for Horticultural Science Conference, HortScience 22:1043.

- Archbold, D.D.** 1987. Influence of abscisic acid on sucrose uptake by strawberry fruit explants and tissue discs *in vitro*. American Society for Horticultural Science Conference, HortScience 22:1134.
- Archbold, D.D.** and R. L. Houtz. 1986. Strawberry plant growth, photosynthesis, and ribulose-1, 5-bisphosphate carboxylase/oxygenase (rubisco) activity as affected by paclobutrazol and flurprimidol. American Society for Horticultural Science Conference, HortScience 21:708
- Archbold, D.D.** and J. G. Strang. 1985. Effect of 6-benzyladenine on growth and fruiting of strawberry. American Society for Horticultural Science Conference, HortScience 20:564.
- Brown, G. R. and **D.D. Archbold**. 1984. Twelve year summary of the effect of rootstock and spacing on growth and yield of apple. American Society for Horticultural Science Conference, HortScience 19:203.
- Archbold, D.D.** and F. G. Dennis, Jr. 1982. Quantification of abscisic acid and free and bound indoleacetic acid in strawberry (*Fragaria x ananassa*) achenes and receptacles during fruit development. American Society for Horticultural Science Conference, HortScience 17:72
- Archbold, D.D.** and F.G. Dennis, Jr. 1980. Tomato fruit set: Is mobilization involved? American Society for Horticultural Science Conference, HortScience 14:473.

#### **EXTRAMURAL FUNDING/GRANTS**

USDA National Research Initiative Competitive Grants Program 2001-2004	\$114,212
Ripening and Storage Life Extension of the Native American Pawpaw Fruit	
D.D. Archbold (PI) and K.W. Pomper	
USDA National Research Initiative Competitive Grants Program 1994-1996	\$110,000
Natural Volatile Compounds for Control of Microbial Spoilage and Quality of Strawberry	
During Modified Atmosphere Storage	
D.D. Archbold (PI), T.R. Hamilton-Kemp, B. Langlois, and M. M. Barth	
Cooperative Regional Project S-263 1995-2000	\$ 76,000
Enhancing Food Safety Through Control of Foodborne Disease Agents	
B.E. Langlois (PI), D.D. Archbold, and T.R. Hamilton-Kemp	
New Crop Opportunities Grants Program	
As PI	
Specialty Crop Block Grant Program USDA-AMS/KY Department of Agriculture	
Optimizing Orchard Management Strategies for Yield, Plant Health, and Fruit Quality in	
Organic Apple Production D.D. Archbold (PI), M.A. Williams, J.G. Strang, R.	
Bessin	2010-2013 \$ 73,590
New Crop Opportunities Grants Program USDA Special Program	
Marketing Nutrition for Kentucky Produce T. Woods (PI), W. Hu, J. Strang, T. Coolong, D.	
Archbold (Co-PI)	2009-2010 \$ 23,000
Evaluating the role of generalist predators in reducing damage and disease transmission by	
slugs in strawberry crops J.D. Harwood (PI), D.D. Archbold (Co-PI), J.J. Obrycki	
	2005-2009 \$ 69,378
Optimizing Market Quality of Edamame	2005-2008 \$ 57,450
Developing Organic Apple Thinning Agents For Kentucky Fruit Growers	2004-2006 \$70,047
Extending Blackberry Fruit Shelf Life with Modified Atmosphere Storage	2002-04 \$ 48,250

## As Co-PI

Evaluating the Role of Generalist Predators in Reducing Damage and Disease Transmission  
by Slugs in Strawberry Crops J.D. Harwood (PI), D.D. Archbold, J.J. Obrycki

2005-2009 \$ 69,378

National Science Foundation

1990 \$ 87,000

Acquisition of a Stable Isotope Ratio Mass Spectrometer for Determining Nitrogen  
Transformations and Metabolism in Soil, Plant, and Animal Systems

C.T. MacKown (PI), D.D. Archbold, M.S. Smith, J.A. Boling

North American Strawberry Growers Association - as PI - 1986-1993 - 6 grants \$ 8,150

Tennessee Valley Authority – as PI – 1987 \$ 6,000

Hatch Project

Regulation of Expression and Activity of Sorbitol Dehydrogenase in Apple 2007-2011

**GRADUATE STUDENTS****Graduated**

Porntip Thavong	Ph.D., Chiang Mai University, Thailand		Co-advisor
Federica Galli	Ph.D. Plant Physiology	2007	Co-advisor
Marta Nosarzewski	Ph.D. Plant Physiology	2007	Advisor
Valeria Sigal Escalada	Ph.D. Plant Physiology	2006	Advisor
Federica Galli	M.S. Nutritional Sciences	2005	Advisor
Kyung Myung	Ph.D. Plant Physiology	2005	Co-advisor
Rumphon Koslanund	Ph.D. Plant Physiology	2003	Advisor
Matthew Fulkerson	M.S. Plant & Soil Science	2004	Co-advisor
Keshun Yu	Ph.D. Nutritional Sciences	2001	Co-advisor
Suzanne McDonald	M.S. Horticulture	1995	Advisor
Baolin Zhang	Ph.D. Plant Physiology	1991	Advisor
Hermen Malik	M.S. Horticulture	1990	Advisor

Graduate Committees since 1982 >20

Outside examiner 10 Ph.D. Defenses since 1982

**Current**

Patsy Wilson	Ph.D. candidate		Advisor
Sutapa Roy	Ph.D. candidate		Advisor

**VISITING SCIENTISTS/POSTDOCTORAL SCHOLARS**

Dr. Khalid Al Absi, Mu-tah University, Jordan Fulbright Scholar 9/2010-6/2011

Vilma Ruth Calderon, CENTA, El Salvador Borlaug Fellow 10/2009

Dr. Benhong Wu Visiting Scientist, Institute of Botany, Beijing, China 11/2007-11/2008

Dr. Xiaodan Zhao Postdoctoral Scholar 5/2007-5/2008

Angelo Niculescu Laboratory of Fresh Fruits and Vegetables Research, Development Institute for  
Industrialization and Marketing of Horticultural Products, Bucharest, Romania November  
2006

Roberta Magnani, Ph.D. Candidate, University of Bologna, Bologna, Italy, January-November, 2003

Yugang Sun, Associate Professor, Shandong Institute of Pomology, Taian, Shandong, China,  
11/2002-4/2003

Dr. Hana Konradova, Assistant Professor, Dept of Plant Physiology, Charles University, Prague,  
Czech Republic, 8 weeks, Summer 2002

Dr. Elazar Fallik, Senior Research Scientist, The Volcani Center, Bet Dagan, Israel 8/1996-8/1997

Dr. Lailiang Cheng, Assistant Professor, Shandong Agricultural College, Shandong, China  
9/1993 – 8/1994

## **MENTORING**

Chlodys Johnstone	UK Horticulture undergraduate	7/2006 – 12/2007
Aurora Raveneau	French undergraduate summer intern	2005
Erin Truitt	Sayre High School	2005-2006
Cindy Kulik	UK Biology undergraduate	1999-2000
Rameeza Allie	UK Biology undergraduate	1998-1999
Decker Ringo	Dunbar High School	1997-1998
Genelle Price	U.S. Dept. of Education Minority Science Summer Fellowship	1991

## **PROFESSIONAL ACTIVITIES/SERVICE**

### **Editorial/Review Activities**

#### International

##### Editorial Committees

Notulae Botanicae Horti Agrobotanici Cluj-Napoca from University of Agricultural Sciences  
and Veterinary Medicine, Cluj-Napoca, Romania, 2008-2012

Proceedings of the 4<sup>th</sup> International Strawberry Symposium, 2000, Tampere, Finland,  
International Society for Horticultural Science

Proceedings of the 3<sup>rd</sup> International Strawberry Symposium, 1996, Veldhoven, The  
Netherlands, International Society for Horticultural Science

#### National

Associate Editor, Journal for the American Society for Horticultural Science - 2001 to 2004

International Journal of Fruit Science – Editorial Board since 1996

### **Peer Reviewer**

10 year mean – 16/year

#### Refereed Journals including:

Plant Molecular Biology

Annals of Botany

Plant Cell Reports

Physiologia Plantarum

Journal of Plant Physiology

PLoS ONE

BMC Plant Biology

Journal of the American Society for Horticultural Science

Scientiae Horticulturae

HortScience

HortTechnology

Postharvest Biology and Technology

Tree Physiology

Journal of the American Society of Enology and Viticulture  
 Australian Journal of Grape and Wine Research  
 Journal of the American Pomological Society  
 Crop Protection  
 Acta Horticulturae  
 Journal of Agricultural and Food Chemistry  
 Journal of Food Science  
 International Journal of Food Science and Technology  
 Food Science and Technology International  
 Crop Protection  
 Italian Journal of Food Science  
 LWT - Food Science and Technology  
 Agrivita Journal of Agricultural Science, Agriculture Faculty Brawijaya University  
 Journal of Zhejiang University-Science-B (Biomedicine & Biotechnology)

#### Competitive Grants Programs Proposal Reviews

NSF Plant Genome Research Program - 2010

USDA National Research Initiative Competitive Grants Program

2006, 2005, 2001, 1999, 1998, 1995, 1993, 1992

U.S.-Israel Binational Agriculture and Research Development (BARD) Program

2011, 2010, 2006, 2005, 2004, 2003, 2001, 2000, 1999

German-Israeli Foundation Grants Program 2000

USDA/CSRS Regional Research Project W-130: Freeze Damage and Protection of Fruit and Nut Crops 1993

USDA/CSRS Small Business Innovations Research Program 1991

Fulbright Scholarship Review Committee 2002

California Dept. of Food and Agriculture Fertilizer Research and Education Grants Program Reviewer 2008

Outside reviewer of promotion packages for faculty at the Department of Postharvest Science, The Volcani Center, Bet Dagan, Israel 2009, 2008, 2006, 2003, 2001, 1997

Outside Reviewer of promotion package, University of Jordan, Amman, Jordan 2010

Book reviews (6) for the magazine Choice: Current Reviews for Academic Libraries

#### **Committees**

##### International

Scientific Review Committee, Eurasia 2007: International Symposium on Quality Management in Chains, Bangkok, Thailand.

International Scientific Committee of the 2002 International Berry Crops Symposium; Berry Crop Breeding, Production, and Utilization for a New Century; XXVIth International Horticultural Congress Toronto, CAN, August 11-17, 2002.

##### National

American Society for Horticultural Science



- 2001 Organized and chaired a Colloquium at the 2001 Annual Meeting of the American Society for Horticultural Science, 'Understanding Floral Induction and Morphogenesis'
- 1996 Technical Program Committee Member for national ASHS Meeting
- 1993-1995 Chair Crop Physiology Working Group
- 1988, 1994 Cross-commodity Publication Award Screening Committee
- USDA NCCC-22 Small Fruit and Viticulture Committee, 1985 to present; Chair 1988-1989
- USDA Small Fruit Crop Germplasm Committee, 1996 to 2004
- American Pomological Society
- A.P Wilder Award Selection Committee 2003-2011, Chair 2008-2011

### **Societies**

American Society for Horticultural Science  
 International Society for Horticultural Science  
 American Pomological Society  
 Sigma Xi  
 Gamma Sigma Delta  
 Kentucky State Horticultural Society

### **HONORS**

George M. Darrow Award 1985, American Society for Horticultural Science  
 For excellence in viticulture and small fruits research during Ph.D. dissertation for the paper - Quantification of free ABA and free and conjugated IAA in strawberry achene and receptacle tissue during fruit development. 1984. D. D. Archbold and F. G. Dennis, Jr. J. Amer. Soc. Hort. Sci. 109:330-335.

### **SABBATIC AND RELATED ACTIVITIES**

Beijing, China, Institute of Botany, Fruit Tree Laboratory  
 October – November, 2011, 2 month sabbatical, research collaboration, grant and manuscript reviews. Funded by Chinese Academy of Sciences.

October 2007. Invited for a 2 week visit to discuss research projects with faculty and graduate students, and have provided preliminary reviews of over 15 manuscripts in 2007-2008. Travel and expenses funded by the Institute.

May 7 – June 5, 2005. Invited to spend 1 month sabbatic at the Institute, to discuss and plan collaborative research, to observe fruit and vegetable production in the region, and to present 3 seminars of my research. Travel and expenses funded by the Institute.

Chiang Mai University Institute for Postharvest Research, Chiang Mai, Thailand, August 19 – September 4, 2005. Appointed as Adjunct Faculty to serve as Co-Advisor for Ph.D. student Porntip Thavong. Planned and designed the Ph.D. research, along with scientists from the Thailand Department of Agriculture and Chiang Mai University Institute for Postharvest Research, a study of natural products for control of postharvest diseases of longan fruit. Presented a seminar on my research at the Institute. Travel and expenses funded by the Institute

Bangkok and Chiang Mai, Thailand, March 10-20, 2004  
 Visited the Thailand Department of Agriculture, Kasetsart University, and Chiang Mai

University Institute for Postharvest Research for possible research collaboration. Travel and expenses funded by the Institute.

## TEACHING

### Courses

PLS 520 Fruit & Vegetable Production	2006-2011
PLS 597 Vegetable Crop Production	2000-2005
PLS 597 Fruit Crop Production	2000-2005
PLS 623 Physiology of Plants II (Plant Hormones)	1987-2008
PLS 622 Physiology of Plants I (Water Relations)	1992-1998
PLS 697 Postharvest Biology and Technology Of Horticultural Crops	2003
GEN 200 Issues in Agriculture	2002-2004
HOR 402 Fruit Crop Production	1983-1999
HOR 410 Growth and Development of Horticultural Crops	1987-1998
PLS 605 Growth and Development of Horticultural Crops: Advanced Production Systems	1997-1998
HOR 601 Physiological Mechanisms in Horticultural Plants	1994, 1998

### Student Evaluations Since 2000

<u>Course</u>	<u>Year</u>	<u>Credit Hrs</u>	<u>Students</u>	<u>Course Commitment</u>	<u>Teaching Quality Course (College/Dept. Means)</u>
PLS 520	2011	4	7	100%	4.0 (3.3/3.5)
	2010	4	7	100%	3.8 (3.4/3.4)
	2009	4	13	100%	3.9 (3.3/3.4)
	2008	4	10	100%	3.9 (3.3/3.4)
	2007	4	9	100%	3.9 (3.4/3.5)
	2006	4	18	100%	3.8 (3.4/3.6)
PLS 597 Fruit	2005	2	13	100%	3.6 (3.4/3.5)
	2004	2	20	100%	3.6 (3.4/3.4)
	2003	2	13	100%	3.4 (3.4/3.4)
	2002	2	20	100%	3.4 (3.2/3.4)
	2001	2	13	100%	3.2 (3.4/3.5)
	2000	2	11	100%	3.3 (3.4/3.2)
PLS 597 Vegetables	2005	2	14	100%	3.5 (3.4/3.5)
	2004	2	20	100%	3.6 (3.4/3.4)
	2003	2	13	100%	3.4 (3.4/3.4)
	2002	2	20	100%	3.4 (3.2/3.4)
	2001	2	13	100%	3.2 (3.4/3.5)
	2000	2	14	100%	3.3 (3.4/3.2)
PLS 623	2000-2008	3	8-12/year	16.3%	Not rated
GEN 200	2004	3	25	100%	3.3 (3.4/3.4)

	2003	3	25	100%	3.5 (3.3/3.4)
	2002	3	27	100%	2.5 (3.4/3.2)
PLS 697	2003	3	6	100%	Not rated

## **OUTREACH, SERVICE AND MISCELLANEOUS ACTIVITIES**

### **International**

Bolivia and Ecuador, Partners of the Americas Conference and site visits June 1998  
 University of Lampung, Lampung, Indonesia October 1989 and January 1990  
 Taught Crop Physiology Short Course to Indonesian University faculty  
 Ecuador, Partners of the Americas site visits June 1984

### **National**

North American Strawberry Growers Association Annual Meeting, Louisville, KY 1997  
 Presentation: 'Natural volatile compounds control gray mold on strawberry during postharvest storage'  
 Session moderator: Plasticulture strawberry production  
 North American Bramble Growers Association Annual Meeting, Louisville, KY 1997  
 Presentation: 'Nitrogen recovery and cycling by thornless blackberry'  
 Session moderator: Blackberry and raspberry nutrition  
 North American Strawberry Growers Association Annual Meeting, St. Petersburg, FL 1991  
 Presentation: 'Use of gel polymers as slow-release sources of nitrogen'  
 Intel International Science Fair, Louisville, KY, Judge 1998

### **State/Region**

Kentucky State Horticultural Society, Secretary 1983-2012  
 Kentucky Department of Agriculture Grape Industry Advisory Board 1991-1994  
 Kentucky State Horticultural Society Annual Winter Meeting Presentations  
 Apple Fruit Thinning 2010  
 Results of the NC-140 Rootstock Trials in KY 2009  
 Promoting Fruit and Vegetable Phytochemical Content 2008  
 History of the KSHS 2007  
 Aminoethoxyvinylglycine (AVG) and Apple Fruit Quality in Cold Storage 2005  
 Extending Apple Storage Life with 1-MCP 2004  
 Extending Strawberry and Blackberry Seasons with Tunnels And Greenhouses 2001  
 The Future of Strawberries in Kentucky: Roundtable Discussion Leader 2000  
 Strawberry Cultivar Trial Results Using the Matted Row System and Plasticulture 1999  
 Alternative Strawberry Production Systems 1998  
 Innovations in Matted Row Strawberry Production 1997  
 New Strawberry Cultivars for Kentucky 1993  
 Seasonal Patterns of Plant Growth and Nitrogen Recovery 1993  
 Marketing Table Grapes 1992  
 Strawberry Water Use and Drought Stress 1990  
 New Horizons in Small Fruit Research 1989  
 Nitrogen Use in Strawberry and Blackberry 1988

Can Your Fruit Trees Be Overthinned? 1987

Summer Pruning Fruit Trees 1986

Fruit Production in Ecuador 1986

Strawberry Cultivars 1984

Nutrient Deficiency Problems in Peach 1983

Pruning Peach Trees 1982

#### Kentucky State University Presentations

Pawpaw Workshop

Storing Pawpaw Fruit 2008

Postharvest Storage and Handling of Pawpaw 2004

Sustainable Agriculture Workshop

Strawberries and Brambles 2000

Storing Pawpaws 1999

#### Kentucky Grape and Wine Production Courses

Phenolics and Ripening in Grape Berries 2007

Cultural Practices and Chemicals that Affect Berry Size and Quality 1994

Cold Tolerance and Injury in Grapes 1993

pH and Titratable Acidity in Grape Musts 1986

#### Boone County-Northern Kentucky Extension Meeting 2001

Strawberry and Bramble Production

#### Illinois Small Fruit and Strawberry Schools 1997

Strawberry Cultural Systems: Matted Rows And Beyond

Kentucky Blackberry Industry and Research

#### Ohio Pawpaw Festival, Albany, Ohio, September 2004

Ripening and Storing Pawpaws

#### South Farm and Princeton Field Days

Numerous presentations since 1982 on tree fruit management, rootstocks, grapes, and berry crops

### **University of Kentucky**

#### College

Promotion and Tenure Committee, College of Agriculture 2007-2009, Chair 2008-2009

Faculty Appeals Committee 2007

#### Department

Coordinator of Graduate Studies, Department of Horticulture 2007-2008

Chair, Viticulture Position Search and Screening Committee 2008

Departmental Advisory Committee 1995-2008

Biochemistry/Molecular Biology Position Search and Screening Committee 2006

Research Group Coordinator 1995-2007

Viticulture and Enologist Positions Search and Screening Committees 2003-2004

Nursery Crops Search and Screening Committee 2005

Princeton Fruit Extension Position Search and Screening Committee 2001

Hatch Proposal Review Committee 2000-2007

Landscape /Nursery Position Search and Screening Committee 2000

Director of Graduate Studies 1989-1996

Faculty Meeting Secretary 1982-1989