

Curriculum Vitae

Dean Adam Kopsell, Ph.D.
Associate Professor of Vegetable Crop Physiology
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Educational and Employment History

Educational History:

Doctorate of Philosophy Degree, 1999.

The University of Georgia, Horticulture Department, Athens, GA, 30602. 1996 – 1999.
Dissertation Title: Incorporation of selenium in *Alliums* and *Brassicas* for delivery to human diets.

Masters of Science Degree, 1995.

The University of Georgia, Horticulture Department, Athens, GA, 30602. 1993 – 1995.
Thesis Title: Selenium and sulfur antagonism in the metabolic and flavor pathways of *Allium cepa* L.

Bachelors of Science Degree, 1992.

Illinois State University, Agriculture Department, Normal, IL, 61790. 1989-1992.
Agribusiness Major – Horticulture sequence.
Rockford College, Rockford, IL, 61108. 1988-1989.

Employment History:

Associate Professor, July 2008 – present. Assistant Professor, Aug. 2004 – June 2008.

The University of Tennessee, Plant Sciences Department, Institute of Agriculture, Knoxville, TN 37996. *Current appointment:* 15% teaching; 85% research for 12-month appointment.

Assistant Professor, Jan. 2000 – July 2004.

University of New Hampshire, Plant Biology Department, Durham, NH 03824.
Environmental Horticulture Program.
FTE: 60% teaching and 40% research for 9-month (academic) appointment.

Ph.D. Graduate Research Assistant.

The University of Georgia, Horticulture Department, Athens, GA 30602.

Jan. 1996 – Dec. 1999. Major professor: Dr. Bill Randle

M.S. Graduate Research Assistant.

The University of Georgia, Horticulture Department, Athens, GA 30602.

Sept. 1993 – Dec. 1995. Major professor: Dr. Bill Randle

Manager and Landscape Designer.

Clavey's Nursery, Inc., Harvard, IL, 60033.

May 1992 – Aug. 1993.

Undergraduate Teaching Assistant.

Illinois State University, Agriculture Department, Normal, IL 61790.

Introduction to Soil Science, 1991. Supervisor: Dr. Wilbur Chrudimsky.

Manager and Operator.

Dean and David's Tree Transplanting, Inc., Harvard, IL, 60033.

1989-1993 (Summers)

Teaching Activity:

List of Courses Taught:

The University of Tennessee:

FYS 129 First-Year Seminar Program. Seminar program designed to engage freshman.

Course is 1-credit hour and Pass/Fail.

Course topic: Unraveling the unique bonds shared by TWINS.

Course proposal solicited and administered through the UT Provost's Office.

Year (number of students): Spring 2008 (15); Fall 2008 (10)

PS 210 Horticulture: Principles and Practices (Lecture; 2 credit hours in 2005 and 2006; 3 credit hours starting 2007)

Plant Sciences Department. Fall Semester.

Year (number of students): 2005 (23); 2006 (23); 2007 (42); 2008 (43); 2009 (45)

PS 504 Graduate Seminar (Seminar; 1 credit hour)

Plant Sciences Department.

Year (number of students): Spring 2005 (14); Fall 2005 (8); Spring 2006 (14)

The University of New Hampshire:

PBIO 421 Concepts of Plant Growth (Lecture and lab; 4 credit hours)

Plant Biology Department. Fall Semester.

Year (number of students): 2000(37), 2001(24), 2002(47), 2003 (28)

PBIO 546 Plants, Soils and Environment (Lecture and lab; 4 credit hours)

Plant Biology Department. Spring Semester.

Year (number of students): 2000(12), 2001(17), 2002(12), 2003(10)

PBIO 720/820 Plant Nutrition (Lecture and lab; 4 credit hours)

Plant Biology Department. Spring Semester.

Year (number of students): 2002(5), 2003(8)

PBIO 797 Senior Seminar (Lecture; 1 credit hour of P/F)

Plant Biology Department. Fall Semester.
Year (number of students): 2002(6), 2003 (3)
PBIO 795 Special Investigations (1-4 credit hours)
Plant Biology Department
Supervision of student projects as requested.

Other Teaching Experience: I have helped teach sections, or served as a teaching assistant for the following courses:

The University of Tennessee, Plant Sciences Department, Knoxville, TN:

Advanced Plant Breeding and Genetics. Guest Lecturer, 2007.
Fruit and Vegetable Crops. Guest lecturer, 2004; 2005.
Introduction to Plant Science. Guest lecturer, 2005; 2006.
Landscape Plant Physiology. Guest lecturer, 2006; 2007.
Plant Biotechnology, Genetics, and Breeding. Guest lecturer, 2010.
World Food and Fiber Plant Production. Guest lecturer, 2006; 2009.

The University of New Hampshire, Department of Plant Biology, Durham, NH:

Plant Propagation. Laboratory instructor/coordinator, 2004.
Vegetable Crop Production Technologies. Guest lecturer, 2001.

The University of Georgia Department of Horticulture, Athens, GA. (as a graduate student):

Introduction to Horticulture. Guest lecturer, 1995-1999.
Introduction to Vegetable Production. Co-instructor (I taught 5 weeks of the course) and guest lecturer, 1996.
Olericulture. Guest lecturer, 1995.

Illinois State University, Agriculture Department, Normal, IL. (as an undergraduate student):

Introduction to Grain and Soybean Production. Undergraduate Teaching Assistant/Lab Coordinator, 1992.
Introduction to Soil Science. Undergraduate Teaching Assistant/Lab Coordinator, 1991.

List of Supervised Graduate Students:

Kristin Abney (M.S., Plant Sciences Department, The University of Tennessee, October 2009, major advisor).
Mark Lefsrud (Ph.D. in Plants, Soils, and Insects, Plant Sciences Department, The University of Tennessee, May 2006, major advisor).
Ron Wik (M.S., Plant Biology, The University of New Hampshire, December 2003, major advisor).

List of Past Undergraduate Honor Theses Supervised:

Christin Chenard (advisor for Honor's Thesis Project, 2002-2003; advisor for Undergraduate Research Opportunities Project (UROP) funded during AY 2002-2003).
Joe Sheehan (co-advisor for Undergraduate Research Opportunities Project (UROP), Spring 2001).

Membership on Graduate Degree Candidates' Committees:

Current member of the following graduate student committees:

Richard Gualandi (M.S. candidate, Plant Sciences Department, The University of Tennessee, current committee member).
John Kauffman (Ph.D. candidate, Plant Sciences Department, The University of Tennessee, current committee member).
Reggie Millwood (M.S. candidate, Plant Sciences Department, The University of Tennessee, current committee member).
Jennifer Noseworthy (Ph.D. candidate, Department of Biological Sciences, The University of New Hampshire, current committee member).
Catherine N. Nyinyi (Ph.D. candidate, Plant Sciences Department, The University of Tennessee, current committee member).
Susannah Stofer (M.S. candidate, Plant Sciences Department, The University of Tennessee, current committee member).
Adam Thoms (Ph.D. candidate, Plant Sciences Department, The University of Tennessee, May 2008, current committee member).

Former member of the following graduate student committees:

Casey Barickman (M.S., Plant Sciences Department, The University of Tennessee, October 2009, former committee member).
Amy Belitz (M.S. Plant Sciences Department, The University of Tennessee, August 2007, former committee member).
Melanie Berg (M.S. Plant Biology, Plant Biology, The University of New Hampshire, April 2004, former committee member).
Ann Marie Craig (Ph.D. Department of Food Science and Technology, The University of Tennessee, July 2007, former committee member).
Ben Fallen (M.S., Plant Sciences Department, The University of Tennessee, July 2009, former committee member).
James McCurdy (M.S. Plant Sciences Department, The University of Tennessee, March 2008, former committee member).
Hua Cui (M.S. Plant Biology, The University of New Hampshire, May 2005, former committee member).
Vicki Davidson (M.S. Plant Biology, The University of New Hampshire, former committee member).
Amanda Gayda (M.S. Soil Science, Natural Resources, The University of New Hampshire, April 2004, former committee member).
Yu-Ting Hung (M.S. Plant Sciences Department, The University of Tennessee, December 2008, former committee member).
Lisa Hunt (M.S. candidate, Plant Biology, The University of New Hampshire, former co-advisor).
Drew Jeffers (M.S. Plant Sciences Department, The University of Tennessee, December 2008, former committee member).
Catherine N. Nyinyi (M.S. Plant Sciences Department, The University of Tennessee, May 2008, former committee member).
Brandon Smith (M.S., Plant Biology, The University of New Hampshire, July 2002, former committee member).

Allison Stewart (M.S. Plant Sciences Department, The University of Tennessee, May 2008, former committee member).

Adam Thoms (M.S. Plant Sciences Department, The University of Tennessee, May 2008, former committee member).

Research, Scholarship, and Creative Activity:

Research and/or Scholarly Publications:

Articles Published in Refereed Journals: * undergraduate or graduate student authors are underlined.

1. Lefsrud, M.G., J.C. Sorochan, **D.A. Kopsell**, and J.S. McElroy. 2010. Pigment concentrations in heat tolerant turfgrasses. *HortScience* 45(4):650-653.
2. **Kopsell, D.A.**, C.E. Sams, D.E. Deyton, K.R. Abney, D.E. Kopsell, and L. Robertson. 2010. Characterization of nutritionally important carotenoids in bunching onion accessions. *HortScience* 45(3):463-465.
3. Kang, B-G., L. Osburn, **D.A. Kopsell**, G.A. Tuskan, and Z-M. Cheng. 2009. Micropropagation of *Populus trichocarpa* ‘Nisqually-1’: the genotype driving the *Populus* reference genome. *PCTOC: Journal of Plant Biotechnology* 99(3):251-257.
4. **Kopsell, D.A.**, D.E. Kopsell, J. Curran-Celentano, and A.J. Wenzel. 2009. Genetic variability for lutein concentrations in leafy vegetable crops can influence serum carotenoid levels and macular pigment optical density in human subjects. *Acta Horticulturae* 841:113-117.
5. **Kopsell, D.A.**, D.E. Kopsell, and M.G. Lefsrud. 2009. Pre-harvest cultural growing conditions can influence carotenoid phytochemical concentrations in vegetable crops. *Acta Horticulturae* 841:283-293.
6. Barickman, T.C., **D.A. Kopsell**, and C.E. Sams. 2009. Impact of nitrogen and sulfur fertilization on the phytochemical concentration of watercress, *Nasturtium officinal* R. Br. *Acta Horticulturae* 841:479-481.
7. McElroy, J.S. and **D.A. Kopsell**. 2009. Physiological role of carotenoids and other antioxidants in plants and application to turfgrass stress management. *New Zealand Journal of Crop and Horticultural Science* 37(4):327-333.
8. **Kopsell, D.A.**, G.R. Armel, T.C. Mueller, C.E. Sams, D.E. Deyton, J.S. McElroy, and D.E. Kopsell. 2009. Increase in nutritionally important sweet corn kernel carotenoids following mesotrione and atrazine applications. *Journal of Agricultural and Food Chemistry* 57(14):6362-6368.
9. Farnham, M.W. and **D.A. Kopsell**. 2009. Importance of Genotype on Carotenoid and Chlorophyll Levels in Broccoli Heads. *HortScience* 44(5):1248-1253.
10. Jeffers, A., M. Palma, W. Klingeman, C. Hall, D. Buckley, and **D. Kopsell**. 2009. Assessments of bare-root liner quality and purchasing decisions made by green industry professionals. *HortScience* 44(3):717-724.
11. McCurdy, J.D., J.S. McElroy, **D.A. Kopsell**, and C.E. Sams. 2009. Mesotrione control and pigment concentration of large crabgrass (*Digitaria sanguinalis*) under varying environmental conditions. *Pest Management Science* 65:640-644.

12. **Kopsell, D.A.**, C.E. Sams, T. Casey Barickman, D. E. Deyton, and D.E. Kopsell. 2009. Selenization of basil and cilantro through foliar applications of selenate-Se and selenite-Se. *HortScience* 44(2):438-442.
13. Lefsrud, M.G., **D.A. Kopsell**, and C. E. Sams. 2008. Irradiance from distinct wavelength light-emitting diodes affect secondary metabolites in kale. *HortScience* 43(7):2243-2244.
14. McCurdy, J.D., J.S. McElroy, **D.A. Kopsell**, C.E. Sams, and J.C. Sorochan. 2008. Effects of Mesotrione on Perennial Ryegrass (*Lolium perenne* L.) Carotenoid Concentrations under Varying Environmental Conditions. *Journal of Agricultural and Food Chemistry* 56(19):9133-9139.
15. Lefsrud, M.G., **D.A. Kopsell**, C. Sams, R. Augé, J. Wills, and A.J. Both. 2008. Dry matter content and stability of carotenoids in kale and spinach during drying. *HortScience* 43(6):1731-1736.
16. McCurdy, J.D., J.S. McElroy, G.K. Breeden, and **D.A. Kopsell**. 2008. Mesotrione plus prodiamine for smooth crabgrass (*Digitaria ischaemum*) control in established bermudagrass turf. *Weed Technology* 22:275-279.
17. **Kopsell, D.A.** and D.E. Kopsell. 2008. Genetic and environmental factors affecting plant lutein/zeaxanthin. *AgroFOOD industry Hi-tech* 19(2):44-46.
18. **Kopsell, D.A.**, T. Casey Barickman, C.E. Sams, and J.S. McElroy. 2007. Influence of Nitrogen and Sulfur on Biomass and Carotenoid and Glucosinolate Concentrations in Watercress (*Nasturtium officinale* R. Br.). *Journal of Agricultural and Food Chemistry* 55:10628-10634.
19. **Kopsell, D.A.**, J.S. McElroy, C.E. Sams, and D.E. Kopsell. 2007. Genetic variation in carotenoid concentrations among diploid and amphidiploid *Brassica* species. *HortScience* 42(3):461-465.
20. Lefsrud, M.G., **D.A. Kopsell**, and D.E. Kopsell. 2007. Nitrogen levels influence biomass, elemental accumulations, and pigment concentrations in spinach. *Journal of Plant Nutrition* 30(2):171-185.
21. Lefsrud, M.G., **D.A. Kopsell**, A. Wenzel, and J. Sheehan. 2007. Changes in kale (*Brassica oleracea* L. var. *acephala*) carotenoid and chlorophyll pigment concentrations during leaf ontogeny. *Scientia Horticulturae* 112(2):136-141.
22. **Kopsell, D.A.**, D.E. Kopsell, and J. Curran-Celentano. 2007. Carotenoid pigments in kale are influenced by nitrogen concentration and form. *Journal of the Science of Food and Agriculture* 87(5):900-907.
23. **Kopsell, D.A.**, C.E. Sams, C.S. Charron, W.M. Randle, and D.E. Kopsell. 2007. Kale carotenoids remain stable while glucosinolates and flavor compounds respond to changes in selenium and sulfur fertility. *Acta Horticulturae* 744:303-309.
24. Toler, H.D., C.S. Charron, **D.A. Kopsell**, C.E. Sams, and W.M. Randle. 2007. Increasing selenium concentration in *Brassica oleracea* decreases glucosinolate concentration. *Acta Horticulturae* 744:311-315.
25. McElroy, J.S., **D.A. Kopsell**, J.C. Sorochan, and C.E. Sams. 2006. High and low irradiance adaptability of creeping bentgrass carotenoid composition. *Crop Science* 46(6):2606-2612.
26. **Kopsell, D.A.**, D.E. Kopsell, M.G. Lefsrud, A.J. Wenzel, C. Gerweck, and J. Curran-Celentano. 2006. Spinach cultigen variation for tissue carotenoid concentrations influence human serum carotenoid levels and macular pigment optical density following a twelve-week dietary intervention. *Journal of Agricultural and Food Chemistry* 54(21):7998-8005.

27. Lefsrud, M.G. and **D.A. Kopsell**. 2006. Biomass production and pigment accumulation in kale grown under different radiation cycles in a controlled environment. *HortScience* 41(6):1412-1415.
28. **Kopsell, D.A.** and D.E. Kopsell. 2006. Assessing bioavailability of carotenoids in vegetable crops. *Trends in Plant Science* 11(10):499-507.
29. Lefsrud, M.G., **D.A. Kopsell**, D.E. Kopsell and J Curran-Celentano. 2006. Irradiance levels affect growth parameters and carotenoid pigments in kale and spinach grown in a controlled environment. *Physiologia Plantarum* 127(4):624-631.
30. Lefsrud, M.G., **D.A. Kopsell**, R. Augé, and A.J. Both. 2006. Biomass production and pigment accumulation in kale grown under increasing photoperiods. *HortScience* 41(3):603-606.
31. Lefsrud, M.G., **D.A. Kopsell**, D.E. Kopsell, and W.M. Randle. 2006. Kale carotenoids are unaffected by, whereas biomass production, elemental concentrations, and selenium accumulation respond to, changes in selenium fertility. *Journal of Agricultural and Food Chemistry* 54(5):1764-1771.
32. Wik, R.M., P.R. Fisher, **D.A. Kopsell**, and W.R. Argo. 2006. Iron form and concentration affect nutrition of container-grown *Pelargonium* and *Calibrachoa*. *HortScience* 41(1):244-251.
33. Lefsrud, M.G., **D.A. Kopsell**, D.E. Kopsell, and J. Curran-Celentano. 2005. Air temperature affects biomass and carotenoid pigment accumulation in kale and spinach grown in a controlled environment. *HortScience* 40(7):2026-2030.
34. **Kopsell, D.A.**, D.E. Kopsell, and J Curran-Celentano. 2005. Carotenoid and chlorophyll pigments in sweet basil grown in the field and greenhouse. *HortScience* 40(4):1230-1233.
35. Chenard, C.H., **D.A. Kopsell**, and D.E. Kopsell. 2005. Nitrogen concentration affects nutrient and carotenoid accumulation in parsley. *Journal of Plant Nutrition* 28(2): 285-297.
36. **Kopsell, D.A.**, D.E. Kopsell, M.G. Lefsrud, J. Curran-Celentano, and L. Dukach. 2004. Variation in lutein, β -carotene, and chlorophyll concentrations among *Brassica oleracea* cultigens and seasons. *HortScience* 39(2):361-364.
37. Coolong, T.W., **D.A. Kopsell**, D.E. Kopsell, and W.M. Randle. 2004. Nitrogen and sulfur influence nutrient usage and accumulation in onion (*Allium cepa* L.). *Journal of Plant Nutrition* 27(9):1667-1686.
38. Kopsell, D.E., **D.A. Kopsell**, M.G. Lefsrud, and J. Curran-Celentano. 2004. Variability in elemental accumulations among leafy *Brassica oleracea* cultivars and selections. *Journal of Plant Nutrition* 27(10):1813-1826.
39. Kopsell, D.E., **D.A. Kopsell**, W.M. Randle, T.W. Coolong, C.E. Sams, and J. Curran-Celentano. 2003. Kale carotenoids remain stable while flavor compounds respond to changes in sulfur fertility. *Journal of Agricultural and Food Chemistry* 51(18):5319-5325.
40. **Kopsell, D.A.**, D.E. Kopsell, and W.M. Randle. 2003. Seed germination response of rapid-cycling *Brassica oleracea* grown under increasing sodium selenate. *Journal of Plant Nutrition* 26(7):1355-1366.
41. Randle, W.M., D.E. Kopsell, and **D.A. Kopsell**. 2002. Sequentially reducing sulfate availability during onion growth and development affects bulb flavor at harvest. *HortScience* 37(1):118-121.
42. **Kopsell, D.A.** and W.M. Randle. 2001. Genetic variance and selection potential for selenium accumulation in a rapid-cycling *Brassica oleracea* population. *Journal of the American Society for Horticultural Science* 126(3):329-335.

43. Charron, C.S., **D.A. Kopsell**, W.M. Randle, and C.E. Sams. 2001. Sodium selenate fertilization increases selenium accumulation and decreases glucosinolate concentration in rapid-cycling *Brassica oleracea*. *Journal of the Science of Food and Agriculture* 81(9):962-966.
44. **Kopsell, D.A.**, W.M. Randle, and H.A. Mills. 2000. Nutrient accumulation in the leaf tissue of rapid-cycling *Brassica oleracea* responds to increasing sodium selenate concentrations. *Journal of Plant Nutrition* 23(7):927-935.
45. **Kopsell, D.A.** and W.M. Randle. 1999. Selenium accumulation in a rapid-cycling *Brassica oleracea* population responds to increasing sodium selenate concentrations. *Journal of Plant Nutrition* 22(6):927-937.
46. **Kopsell, D.A.** and W.M. Randle. 1999. Selenium affects the *S*-alk(en)yl cysteine sulfoxides among short-day onion cultivars. *Journal of the American Society for Horticultural Science* 124(3):307-311.
47. Randle, W.M., D.E. Kopsell, **D.A. Kopsell**, and R.L. Snyder. 1999. Total sulfur and sulfate accumulation in onions is affected by sulfur fertility. *Journal of Plant Nutrition* 22(1):45-51.
48. Randle, W.M., **D.A. Kopsell**, D.E. Kopsell, R.L. Snyder, and R. Torrence. 1998. Field sampling short-day onions for bulb pungency. *HortTechnology* 8(3):329-332.
49. **Kopsell, D.A.** and W.M. Randle. 1997. Selenate concentration affects selenium and sulfur uptake and accumulation by 'Granex 33' onions. *Journal of the American Society for Horticultural Science* 122(5):721-726.
50. **Kopsell, D.A.** and W.M. Randle. 1997. Short-day onion cultivars differ in bulb selenium and sulfur accumulation which can affect bulb pungency. *Euphytica* 96(3):385-390.

Articles Submitted that are *In Review*:

1. **Kopsell, D.A.**, J.T. Brosnan, G.R. Armel and J.S. McElroy. Mesotrione Increases Bermudagrass (*Cynodon dactylon* (L.) Pers.) Tissue Pigments During Post-application Recovery. *Submitted to HortScience*.
2. Brosnan, J.T., **D.A. Kopsell**, M.T. Elmore, G.K. Breeden, G.R. Armel, and J.S. McElroy. Variability in bermudagrass (*Cynodon dactylon* (L.) Pers.) tissue pigments following treatment with mesotrione, topramezone, and tembotrione. *Submitted to Journal of Agricultural and Food Chemistry*.
3. **Kopsell, D.A.**, G.R. Armel, T.C. Mueller, C.E. Sams, D.E. Deyton, J.S. McElroy, and D.E. Kopsell. Sweet corn carotenoid concentrations influenced by herbicide applications. *Submitted to Acta Horticulturae*.
4. Barickman, T.C., **D.A. Kopsell**, and C.E. Sams. Effect of selenium fertilization on glucosinolate and isothiocyanates in *Arabidopsis thaliana* and rapid-cycling *Brassica oleracea*. *Submitted to Acta Horticulturae*.
5. C.E. Sams, D.R. Panthee, C.S. Charron, **D.A. Kopsell**, T.C. Barickman, and J.S. Yuan. Microarray analysis reveals selenium down-regulates glucosinolate biosynthesis in *Arabidopsis* shoots. *Submitted to Acta Horticulturae*.
6. **Kopsell, D.A.**, G.R. Armel, K. Abney, J.J. Vargas, D.E. Kopsell. Leaf tissue carotenoids and chlorophyll fluorescence parameters differ among sweet corn genotypes with differential herbicide sensitivity. *Submitted to Journal of Agricultural and Food Chemistry*.
7. Panthee, D.R., **D.A. Kopsell**, and C.E. Sams. Diversity analysis of *Arabidopsis thaliana* for glucosinolates in shoots and seeds. *Submitted to HortScience*.

8. Fallen, B.D., V.R. Pantalone, C.E. Sams, **D.A. Kopsell**, S.F. Vaughn, B.R. Moser. Effect of selenium application and soybean oil fatty acid composition on biodiesel properties. Submitted to *Journal of the American Oil Chemists Society*.

Articles that are *In Preparation*:

1. Barickman, T.C., **D.A. Kopsell**, and C.E. Sams. Impact of selenium fertilization on glucosinolate concentrations in *Arabidopsis thaliana* and Rapid Cycling *Brassica oleracea*.
2. Fallen, B.D., V.R. Pantalone, C.E. Sams, and **D.A. Kopsell**. Soybean enhancement for improved biodiesel production.
3. Kopsell, D.E., **D.A. Kopsell**, and C.E. Sams. Calcium/Magnesium nutrient ratios influence biomass and bioactive pigment concentrations in kale.
4. **Kopsell, D.A.**, J.S. McElroy, and C.E. Sams. Spinach shoot tissue nutrient concentrations respond to foliar applications of chelated titanium.
5. Abney, K. and **D.A. Kopsell**. Carotenoid variability among *Brassica* and *Raphanus* species grown as microgreens.
6. **Kopsell, D.A.** and C.E. Sams. Lycopene in tomatoes is unaffected by choice of organic vs. chemical bio-fumigants.
7. Nyinyi, C.N., F.L. Allen, V.R. Pantalone, **D.A. Kopsell**, and C.E. Sams. Identification and confirmation of agronomic trait QTL in soybean.
8. Panthee, D.R., C.S. Charron, **D.A. Kopsell**, J.S. Yuan, and C.E. Sams. Microarray analysis reveals that selenium application down-regulates glucosinolates and carotenoid biosynthesis in *Arabidopsis* shoots.
9. Toler, H.D., **D.A. Kopsell**, and R.M. Augé. Leaf carotenoid fluctuations in mycorrhizal *Cucurbita pepo* L.

Books/Book Chapters:

1. **Kopsell, D.A.** and D.E. Kopsell. 2010. Carotenoids in vegetables: biosynthesis, occurrence, impacts on human health, and potential for manipulation, pp. 645-662. In: R. Ross and V.R. Preedy (eds.). *Bioactive Food in Promoting Health: Fruits and Vegetables*. Elsevier, St. Louis, Mo. 737 pp.
2. **Kopsell, D.A.** and D.E. Kopsell. 2006. Selenium, pp. 515-550. In: A.V. Barker and D. Pilbeam (eds). *Handbook of plant nutrition*. CRS Press – Taylor & Frances Group, Boca Raton, Fla. 613 pp.
3. Kopsell, D.E. and **D.A. Kopsell**. 2006. Copper, pp. 293-328. In: A.V. Barker and D. Pilbeam (eds). *Handbook of plant nutrition*. CRS Press – Taylor & Frances Group, Boca Raton, Fla. 613 pp.

Contributions to Edited Volumes:

1. Kopsell, D.E., A.M. VanDerZanden, and **D.A. Kopsell**. 2006. Teaching horticulture. *American Society for Horticultural Science Newsletter* 22(8):1&4.
2. Kopsell, D.E. and **D.A. Kopsell**. 2001. Tips on surviving graduate school. *American Society for Horticultural Science Newsletter* 17(5):4.

Paper or Extended Abstracts Published in Conference Proceedings:

1. **Kopsell, D.A.** 2001. Kale (*Brassica oleracea* Acephala Group): Major health benefits from a minor crop. Proceedings of the New England Vegetable and Berry Conference. New England Vegetable and Berry Grower's Association. Sturbridge, MA. pp. 12-16.
2. **Kopsell, D.A.** and W.M. Randle. 1998. The forms of selenium delivered by onions to human diets. Proceedings of the National Onion Research Conference. Sacramento, CA. pp. 179-182.
3. Randle, W.M., D.E. Kopsell, and **D.A. Kopsell**. 1998. Considerations for implementing pungency field testing and its practical implications. Proceedings of the National Onion Research Conference. Sacramento, CA. pp. 171-173.
4. Randle, W.M. and **D.A. Kopsell**. 1995. Selenium accumulation in onions and its effect on sulfur metabolism. Proceedings of the National Onion Research Conference. Madison, WI. pp. 84-90.

Articles Appearing in In-House Organs:

1. **Kopsell, D.A.** and D.E. Kopsell. 2007. Choice of spinach cultivar influences eye health. SPROUTS - Tennessee Vegetable Newsletter, p. 2, vol. 1, issue 2. April 19.
2. **Kopsell, D.A.** 2007. The "baby" leafy greens craze. SPROUTS - Tennessee Vegetable Newsletter, p. 2, vol. 1, issue 3. April 26.
3. **Kopsell, D.A.** 2007. What makes an onion "sweet". SPROUTS - Tennessee Vegetable Newsletter, p. 2, vol. 1, issue 12. June 29.
4. **Kopsell, D.A.** 2007. Kale is a super veggie for the fall garden. SPROUTS - Tennessee Vegetable Newsletter, p. 2, vol. 1, issue 23. September 18.

Research Reports Submitted to Sponsors:

1. **Kopsell, D.A.** AD-421 Progress/Termination Report for USDA-IFAFS Competitive Grant NHW-2001-04552. Reporting period 01 October 2001 to 30 September 2002. Submitted to Current Research Information System (CRIS) on 01 February 2003.
2. **Kopsell, D.A.** AD-421 Progress/Termination Report for USDA-IFAFS Competitive Grant NHW-2001-04552. Reporting period 01 October 2002 to 30 September 2003. Submitted to Current Research Information System (CRIS) on 01 March 2004.
3. **Kopsell, D.A.** AD-421 Progress/Termination Report for USDA-IFAFS Competitive Grant NHW-2001-04552. Reporting period 01 October 2003 to 30 September 2004. Submitted to Current Research Information System (CRIS) on 01 June 2005.
4. **Kopsell, D.A.** AD-421 Progress/Termination Report for USDA-IFAFS Competitive Grant NHW-2001-04552. Reporting period 01 October 2004 to 30 September 2005. Submitted to Current Research Information System (CRIS) on 01 April 2006.

Articles Published in Non-refereed Journals:

1. **Kopsell, D.A.** and D.E. Kopsell. 2007. Potent leafy greens. American Vegetable Grower November 2007, 55(11):62-64.
2. Kopsell, D.E. and **D.A. Kopsell**. 2004. It's in the leaves: high levels of carotenoids are found in dark-green leaves of spinach and kale. American Vegetable Grower May 2004:28.

3. Randle, W.M., D.E. Kopsell, and **D.A. Kopsell**. 1999. Considerations for implementing pungency field testing and its practical implications. *Onion World* 15(2):14-18.

Published Abstracts: * undergraduate or graduate student authors are underlined.

1. **Kopsell, D.A.**, G.R. Armel, T.C. Mueller, and J.S. McElroy. 2009. Mesotrione applications impact kernel carotenoid concentrations among different sweet corn genotypic sensitivities. *HortScience* 44(4):1132.
2. Kopsell, D.E. and **D.A. Kopsell**. 2009. Carotenoid pigments in kale are influenced by the ratio of calcium to magnesium. *HortScience* 44(4):1118.
3. Abney, K. and **D.A. Kopsell**. 2009. Carotenoid concentration in Brassicaceae sprouts do not differ among genotypes. *HortScience* 44(4):1158.
4. Armel, G., **D.A. Kopsell**, and J. Vargas. 2009. Leaf tissue carotenoids and chlorophyll fluorescence parameters differ among sweet corn genotypes with differential sensitivity to mesotrione. *HortScience* 44(4):1022.
5. Farnham, M. and **D.A. Kopsell**. 2009. Genotype and environment effect on carotenoid content of broccoli. *HortScience* 44(4):1017.
6. **Kopsell, D.A.** 2008. Workshop abstract: Current analytical techniques to identify nutritionally important secondary metabolites in fruit and vegetable crops. *HortScience* 43(4):1062-1063.
7. **Kopsell, D.A.** 2008. Extraction and analytical methods for the analysis of carotenoids (terpenoids) in fruit and vegetable crops. *HortScience* 43(4):1063.
8. Panthee, D.R., C.S. Charron, **D.A. Kopsell**, and C.E. Sams. 2008. Identification of differentially expressed genes in *Arabidopsis* shoots in response to selenium application. *HortScience* 43(4):1289.
9. Panthee, D.R., **D.A. Kopsell**, and C.E. Sams. 2008. Screening of *Arabidopsis* ecotypes for glucosinolates accumulated in shoots and seeds. *HortScience* 43(4):1288.
10. Abney, K., **D.A. Kopsell**, C.E. Sams, and L. Robertson. 2008. Characterization of nutritionally important carotenoids in scallion onion. *HortScience* 43(4):1200.
11. Stofer, S., **D.A. Kopsell**, D. Sanders, T. Karpinets, and C.E. Sams. 2008. Tomato fruit carotenoids do not differ between applications of a chemical soil fumigant vs. an organic biofumigant. *HortScience* 43(4):1227.
12. Stewart, A., V. Pantalone, C. Sams, and **D. Kopsell**. 2008. Isoflavone concentration and pod removal force vary with pod maturity in four soybean lines. *HortScience* 43(4):1244.
13. **Kopsell, D.A.** 2007. Symposium abstract: Unique methodologies to assess morphological and physiological plant stress. *HortScience* 42(4): 814.
14. **Kopsell, D.A.**, S. McElroy, and C.E. Sams. 2007. Spinach shoot tissue nutrient concentrations respond to foliar applications of chelated titanium. *HortScience* 42(4):934.
15. Lefsrud, M., **D.A. Kopsell**, J. Wills, C.E. Sams, and A.J. Both. 2007. Leaf dry matter content determines pigment concentrations in kale and spinach. *HortScience* 42(4):875.
16. Barickman, T.C., **D.A. Kopsell**, and C.E. Sams. 2007. Impact of selenium fertilization on glucosinolate concentration in *Arabidopsis thaliana* and rapid-cycling *Brassica oleracea*. *HortScience* 42(4):986.
17. **Kopsell, D.A.**, J. Curran-Celentano, A.J. Wenzel, and D.E. Kopsell. 2006. Serum carotenoids and macular pigment responses in a 12-week dietary intervention comparing lutein supplements with whole spinach. *Vitamins* 2006: Health Ingredients

Metabolism Analysis - Abstract Book, UNIVEZITA PARDUBICE PRESS, Czech Republic, pp. 26-27.

18. **Kopsell, D.A.**, J.S. McElroy, C.E. Sams, and D.E. Kopsell. 2006. Carotenoid accumulation among the diploid and amphidiploid *Brassica* species. *HortScience* 41(4):1081.
19. **Kopsell, D.A.**, D.E. Kopsell, and J. Curran-Celentano. 2005. Carotenoid and chlorophyll pigments in sweet basil grown in the field and greenhouse. *HortScience* 40(4):1119.
20. **Kopsell, D.A.**, D.E. Kopsell, J. Curran-Celentano. 2005. Nitrogen level and form influence kale growth and leaf pigment concentrations. *HortScience* 40(4):1119.
21. Lefsrud, M.G. and **D.A. Kopsell**. 2005. Changes in kale pigment profiles during leaf ontogeny. *HortScience* 40(4):1118.
22. Lefsrud, M.G. and **D.A. Kopsell**. 2005. Radiation cycle affects biomass production and carotenoid accumulation in kale. *HortScience* 40(4):1009.
23. Curran-Celentano, J., A. Wenzel, J. Sheehan, **D.A. Kopsell** and D.E. Kopsell. 2005. Changes in serum lutein and macular pigment optical density following a twelve week intervention with lutein supplement or spinach. *Investigative Ophthalmology & Visual Science* 46:1767-S.
24. **Kopsell, D.A.** and J. Curran-Celentano. 2005. Assessing the bioavailability of enhanced dietary carotenoids in vegetable crops. *Journal of the Society for In Vitro Biology* vol. 41 Abstract Spring 2005, p. 16-A.
25. Davidson, V.L., **D.A. Kopsell**, and J.E. Pollard. 2004. The effect of interrupting short day cycles with day-length extension on floral bud initiation in strawberry (*Fragaria x ananasa*). *HortScience* 39(4):849.
26. **Kopsell, D.A.**, D.E. Kopsell, and J. Curran-Celentano. 2004. Phytonutrient carotenoids in basil and parsley. *HortScience* 39(2):456.
27. Lefsrud, M.G., **D.A. Kopsell**, and D.E. Kopsell. 2004. Carotenoid accumulation and mineral uptake in kale due to irradiance. *HortScience* 39(2):460.
28. Kopsell, D.E., **D.A. Kopsell**, and J. Curran-Celentano. 2004. Carotenoid variability among kale and spinach cultivars. *HortScience* 39(2):458.
29. Kopsell, D.E., **D.A. Kopsell**, J. Curran-Celentano, W. Randle, T. Coolong, and C. Sams. 2004. Sulfur fertility influences kale flavor but not carotenoid content. *HortScience* 39(2):458-459.
30. **Kopsell, D.A.** and D.E. Kopsell. 2003. Variability in lutein and beta-carotene accumulation among leafy *Brassica oleracea* cultigens. *HortScience* 38(5):677.
31. Kopsell, D.E. and **D.A. Kopsell**. 2003. Kale carotenoids remain stable while flavor compounds respond to sulfur fertility. *HortScience* 38(5):830.
32. Lefsrud, M.G., D.E. Kopsell, and **D.A. Kopsell**. 2003. Carotenoid accumulation and mineral uptake in kale due to temperature. *HortScience* 38(5):719.
33. Hunt, L. and **D.A. Kopsell**. 2003. Calcium application rates significantly increased leaf tissue Ca in field-grown kale. *HortScience* 38(5):766.
34. **Kopsell, D.A.**, D.E. Kopsell, and J. Curran-Celentano. 2003. Iron fertility affects chlorophyll and carotenoid pigments in kale (*Brassica oleracea* L. Acephala Group). *HortScience* 38(3):489-490.
35. Kopsell, D.E., **D.A. Kopsell**, and J. Curran-Celentano. 2003. Magnesium fertility affects elemental content but not carotenoid pigments in kale. *HortScience* 38(3):490.
36. Lefsrud, M.G., **D.A. Kopsell**, and D.E. Kopsell. 2003. Carotenoid accumulation and mineral uptake in spinach due to temperature. *HortScience* 38(3):489.

37. Hunt, L. and **D.A. Kopsell**. 2003. Uptake and accumulation of calcium in kale (*Brassica oleracea* L. Acephala Group). HortScience 38(3):488.
38. Wik, R.M., P.R. Fisher, and **D.A. Kopsell**. 2003. Iron form alleviates iron deficiency in horticultural crops. HortScience 38(3):488-489.
39. **Kopsell, D.A.**, J. Curran-Celentano, and J. Sheehan. 2002. Influences of nitrogen form on elemental content, pigmentation, and carotenoid accumulation among kale (*B. oleracea* Acephala Group) cultivars. HortScience 37(3):442.
40. **Kopsell, D.A.**, W.M. Randle, and D.E. Kopsell. 2001. Seed germination response of rapid-cycling *Brassica oleracea* grown under increasing sodium selenate. HortScience 36(4):643-644.
41. **Kopsell, D.A.**, W.M. Randle, and H.A. Mills. 1999. Nutrient content of a model system of rapid-cycling *Brassica oleracea* responds to increasing sodium selenate. HortScience 34(3):541.
42. **Kopsell, D.A.** 1996. Beyond the sweet taste, the benefits of onions. Proceedings of the Georgia Vegetable Conference and Trade Show. Tifton, GA. p. 58.
43. **Kopsell, D.A.** and W.M. Randle. 1995. Selenium affects sulfur uptake and metabolism in onions (*Allium cepa* L.). HortScience 30(4):769.

Projects, Grants, Commissions, and Contracts:

Total funding for grants, contracts and support (as PI or Co-PI) from Jan. 6, 2000 to present: \$4,515,230.00

Completed:

- 2009 USDA-CSREES NRI Competitive Grants Program. Specialty Crop Research Initiative (FY) 2010. “Development of East Coast Broccoli Production and Processing”. PD: Thomas Björkman; PIs: Mark Farnham, Miguel Gomez, Phillip Griffiths, Mark Hutton, **Dean Kopsell**, James Myers, and Carl Sams. Planning Grant. (1 year/\$50,000.00).
- Research contract with Floratine Products Group, Collierville, TN. “Foliar calcium fertilizer types and application rates to increase internal tuber calcium for resistance to internal disease and postharvest disorders”. Carl Sams and **Dean Kopsell** (Co-PIs). August 30, 2007 to September 1, 2009. (\$76,000.00)
- The University of Tennessee Institute of Agriculture, Tennessee Agricultural Experiment Station. “The use of microarray technology for comparison of proteomic and analytic data for selected secondary metabolites in vegetable crop species.” Carl Sams (Co-PI) and **Dean Kopsell** (Co-PI). July 1, 2007 to June 30, 2009. (\$120,000.00).
- The University of Tennessee Institute of Agriculture, Tennessee Agricultural Experiment Station. Strengthening Award – Equipment Grant. Requested Equipment: Agilent 1200 Series Rapid Resolution LC System. June 1, 2007. (\$71,124.00).

- The University of Tennessee, Professional Development Award Proposal. “Foliar applications to enhance selenium levels in herbal crops”. March 13, 2007 to March 13, 2008. (\$3,750.00).
- Beckman Coulter Genomics Educational Grant Proposal Program. “Bridging Knowledge of Genomics, Biochemistry, and Plant Physiology to Enhance Teaching and Training of Undergraduate and Graduate Students.” Dr. Vince Pantalone (PI), Dr. Carl Sams (Co-PI), and **Dr. Dean Kopsell** (Co-PI). Funded as a 50% match for equipment (up to \$57,000.00).
- The University of Tennessee, Professional Development Award Proposal. “HPLC separation and identification of plant-derived carotenoid isomers using a polymeric C30 column.” Nov. 22, 2004 to Nov. 22, 2005. (\$4,875.00).
- Research sub-contract award from the University of New Hampshire. USDA-IFAFS (Initiative for Future Agriculture and Food Systems) Nutritional Impact of Functional Foods. “Assessing lutein bioavailability from nutritionally-enhanced leafy vegetable crops”. Oct. 30, 2004 to Sept. 30, 2006. (\$57,989.00).
- Equipment transfer from active USDA-NRI grant project. USDA-IFAFS (Initiative for Future Agriculture and Food Systems) Nutritional Impact of Functional Foods. “Assessing lutein bioavailability from nutritionally-enhanced leafy vegetable crops”.
I transferred equipment purchased under the grant project listed above from UNH to UT. Equipment included: four (4) Conviron Model E15 Plant Growth Chambers (\$80,000.00); Remote Air-cooled condenser unit (\$8,000.00); Ultra-low freezer (\$7,827.00); Freeze-Dryer Unit (\$23,000.00); Refrigerator/Freezer (\$500.00); Sample mill grinder (\$3,500.00); Spectrophotometer (\$4,000.00); Computer equipment (\$5,000.00).
August 1, 2004. (Total equipment transfer = \$131,827.00)
- USDA-NRI (National Research Initiative) Agricultural Research Enhancement Awards (AREA) Program. Strengthening Award – Equipment Grants. Plant responses to the environment. “Influence of growing conditions on carotenoid accumulation”. June 2002 to June 2003. (\$19,500.00).
- USDA-IFAFS (Initiative for Future Agriculture and Food Systems) Nutritional Impact of Functional Foods. “Assessing lutein bioavailability from nutritionally-enhanced leafy vegetable crops”. Co-PI with Dr. Joanne Curran-Celentano, Animal and Nutritional Sciences, The University of New Hampshire. Sept. 2001 to Sept. 2005. (\$800,000.00).
- Office of Vice President for Research Discretionary Research Grant. The University of New Hampshire. “The effects of iron fertility on enhancement of dietary carotenoids in kale (*Brassica oleracea* Acephala Group)”. June 1, 2001 to June 30, 2002. (\$5,106.00).

Funded and In Progress:

- *Submitted 01-15-2010:* USDA-CSREES NIFA Competitive Grants Program. Specialty Crop Research Initiative (FY) 2011. “Developing an Eastern Broccoli Industry” PD is Dr. Thomas Björkman, Co-PIs are Dr. Mark Farnham, Dr. Miguel Gómez, Dr. Phillip Griffiths, Dr. Mark Hutton, **Dr. Dean Kopsell**, Dr. James Myers, Dr. Carl Sams, and Dr. Mary Van Ryn, Collaborators are John Hewitt, Gene Mero, Steve Bellavia, Jeanine Davis, Christy Hoepting, Powell Smith, Wythe Morris, Richard Straw, Brinkley Benson, David Hille, Joe Pezzini, Maria Lopez, Charles Wingard, James Christopher Rawl, Brock Christian, Eric Hansen, Michael Riner, and William Pool. (\$3,176,000.00/5 years).
- *Submitted 01-15-2010:* USDA-CSREES NIFA Competitive Grants Program. Specialty Crop Research Initiative (FY) 2011 – Planning Grant. “Developing a Commercial Edamame Industry in the Eastern U.S.” PD is Dr. Carl Sams, Co-PIs are **Dr. Dean Kopsell**, Dr. Vince Panalone, and Dr. Svetlana Zivanovic. (\$50,000.00/1 year).
- 2009 American Recovery and Reinvestment Act (ARRA) grant administered through the University of Tennessee Agricultural Experiment Station. “Heirloom vegetables vs. modern cultivars: have modern breeding techniques reduced flavor and nutritional quality?” Co-PIs are Dr. Carl Sams and Dr. Dennis Deyton. (1 year/\$24,000.00).

Under Review:

Submitted Grants, but Not Selected for Funding:

- *Submitted 06-01-2009:* Southern Region Sustainable Agriculture Research and Education Program. FY2010 Pre-Proposal. “Biological pest control utilizing banker plant systems for greenhouse production of strawberries and tomatoes.” PD is Dr. Dennis Deyton, Co-PDs are Dr. Carl Sams, **Dr. Dean Kopsell**, Dr. Frank Hale, Carol Glenister (IPM Labs), and Susannah Amundson. (Requesting \$128,430.00/3 years). Accepted for full proposal submission. NOT FUNDED.
- *Submitted 12-16-2009:* Tennessee Soybean Promotion Board. “Edamame: A High Value New Crop for Tennessee Growers”. Dr. Carl Sams (PI), Drs. Vince Pantalone, and **Dean Kopsell** (Co-PIs). (\$71,000/2 year). NOT FUNDED.
- *Submitted 12-16-2009:* Tennessee Soybean Promotion Board. “Application of chitosan-rich waste from the food industry in enhancing the growth and resistance of soybeans to pathogenic fungi and nematodes”. Dr. Svetlana Zivanovic (PI), Drs. **Dean Kopsell**, Carl Sams, and Vince Pantalone (Co-PIs). (\$55,434/2 year). NOT FUNDED.
- *Submitted 06-01-2009:* Southern Region Sustainable Agriculture Research and Education Program. FY2010 Pre-Proposal. “Integrated mustard seed meal biofumigation into tomato, cucurbit, and strawberry production in the southeast.” PD is Dr. Carl Sams, Co-PDs are Dr. **Dean Kopsell**, Dr. Dennis Deyton, Dr. Tim Coolong (U. of Kentucky), Dr. Frank Louws (NC State U.), and Dr. Benny Bruton (USDA-ARS). (Requesting \$299,000.00/3 years). NOT SELECTED FOR FULL PROPOSAL.
- *Submitted 06-01-2009:* Southern Region Sustainable Agriculture Research and Education Program. FY2010 Pre-Proposal. “Seed meal fertilizer amendments in organic vegetable production systems.” PD is Dr. **Dean Kopsell**, Co-PDs are Dr. Carl Sams, Dr. Dennis Deyton, and Dr. Tim Coolong (U. of Kentucky). (Requesting \$170,710.00/3 years). NOT SELECTED FOR FULL PROPOSAL.

- *Submitted 05-01-2009*: USDA-CSREES-Agriculture and Food Research Initiative (AFRI) Grant Program for FY2010. “Role of plant stress responses in the attachment, internalization, and survival of foodborne pathogens on leafy greens and berries.” PD is Dr. Marilyn Erickson (UGA), Co-PDs are Dr. Ynes Ortega (UGA), Dr. Cathy Webb (UGA), Dr. Doris D’Souza (UT), **Dr. Dean Kopsell (UT)**, and Dr. Carl Sams (UT). Oct. 2009-Sept. 2012. (Requesting \$399,180.00/3 years). NOT FUNDED.
- *Submitted 04-15-2009*: USDA-CSREES NRI Competitive Grants Program. Specialty Crop Research Initiative (FY) 2010. “Urban Sustainable Agriculture (USA): Marketing, selection and breeding for shade-tolerant, container-grown ornamental food crops.” PD: Dr. Neil Anderson (University of Minnesota). Co-PDs: Drs. Vince Fritz (University of Minnesota); Barbara Grossman (University of Minnesota Extension); Emily Hoover (University of Minnesota); Tim Kenny (University of Minnesota); **Dean Kopsell (University of Tennessee)**; Thomas Michaels (University of Minnesota); Helene Murray (University of Minnesota); William Randle (The Ohio State University); Carl Rosen (University of Minnesota); Susan Stieve (The Ohio State University); Zata Vickers (University of Minnesota); Julie Weisenhorn (University of Minnesota); Shengrui Yao (University of Minnesota); and Chengyan Yue (University of Minnesota). Oct. 2009-Sept. 2013. (\$1,627,116.00/ 4years; Sub-award to UT for \$69,996.00/ 4 years). NOT FUNDED.
- *Submitted 04-10-2009*: USDA-CSREES-Agriculture and Food Research Initiative (AFRI) Grant Program for FY2010. “Impacts of reduced phosphorus on plant stress tolerance afforded by plant secondary metabolites.” Co-PDs with Dr. Carl Sams (UT), Dr. Dennis Deyton (UT), and Dr. David Kopsell (ISU). Oct. 2009-Sept. 2012. (Requesting \$340,172.00/3 years). NOT FUNDED.
- *Submitted 01-29-2009*: National Institute of Health (NIH) T-R01 Grant Program for FY2009. “Innovative modifications of soy-based bioactive compounds for preventive and therapeutic applications using novel tissue-specific targeting of estrogen receptors.” Co-PDs with Dr. Carl Sams (UT Plant Sciences), Dr. Jay Wimalasena (UT Medical Center), Dr. Naima Moustaid-Moussa (UT Obesity Center), and Dr. Eric Boder (UT Chemical Engineering). Sept. 2009-Sept. 2014. (requesting \$6,754,393.00/5 years). NOT FUNDED.
- *Submitted 01-16-2009*: The University of Tennessee, Professional Development Award Proposal. “Extraction and purification techniques for authentic carotenoid pigment compounds from vegetable crop species – travel grant to visit international collaborator in Brazil.” (\$2,684.00/ 1 year). NOT FUNDED.
- *Submitted 08-14-2008*: USDA-CSREES NRI Competitive Grants Program. Specialty Crop Research Initiative (FY) 2008. “Production of a nutritionally superior *Brassica oleracea* hybrid adapted to changing climactic conditions and the emphasis of specialty vegetable crop nutritional quality from farm-to-fork through educational programs.” Co-PD with Dr. Carl E. Sams, Dr. Svetlana Zivanovic, and Dr. Janie Burney. (\$1,206,473.00/3 years). NOT FUNDED.
- *Submitted on 10-2-2007*. Program area: 56.0 Plant Biology (B): Environmental Stress. Title of Proposed Project: “Adaptations to antioxidant secondary metabolic pathways in *Brassica* species in response to global change stress”. Project Collaborators: Drs. Carl Sams, Brandon Smith, John Sorochan, and Larry Robertson (\$349,389/ 3 years). LETTER OF INTENT. SELECTED FOR FULL PROPOSAL 10-19-2007. FULL PROPOSAL *Submitted 12-19-2007*. NOT FUNDED.
- *Submitted 06-01-2007*: Southern Region Sustainable Agriculture Research and Education Program. 2008 Pre-Proposal. “Allelopathic wood by-products as alternative weed management strategies in sustainable vegetable systems.” Co-PI with Drs. Adam Taylor, Carl Sams, Brandon Smith and Annette Wszelaki. (\$151,800.00/3 years). SELECTED FOR FULL PROPOSAL SUBMISSION. FULL PROPOSAL *Submitted 11-15-2007*. NOT FUNDED.
- *Submitted 06-01-2007*: Southern Region Sustainable Agriculture Research and Education Program. 2008 Pre-Proposal. “Development of a low-cost, biodegradable mulch fabric to replace polyethylene plastic”. PI: Smith, B.R. Co-PIs: Wadsworth, L., Wszelaki, A., Kamath, M.G., Kopsell, D.A., and C.E. Sams. (\$209,650/3 years).

SELECTED FOR FULL PROPOSAL SUBMISSION. FULL PROPOSAL *Submitted 11-15-2007*. NOT FUNDED.

- *Submitted 06-01-2007*: Southern Region Sustainable Agriculture Research and Education Program. 2008 Pre-Proposal. “Silicon fertilizers to improve pest resistant and drought tolerance in sustainable vegetable crop production.” Co-PI with Drs. Carl Sams, Brandon Smith and Annette Wszelaki. (\$82,951.00/2 years). NOT SELECTED FOR FULL PROPOSAL.
- *Submitted 06-01-2007*: Southern Region Sustainable Agriculture Research and Education Program. 2008 Pre-Proposal. “Heirloom vegetables vs. modern cultivars: have we lost the keys to flavor and nutrition?” Co-PI with Drs. Carl Sams, Brandon Smith and Annette Wszelaki. (\$73,311.00/2 years). NOT SELECTED FOR FULL PROPOSAL.
- *Submitted 06-01-2007*: Southern Region Sustainable Agriculture Research and Education Program. 2008 Pre-Proposal. “Optimizing fertility for organic vegetable transplant production”. PI: Smith, B.R. Co-PIs: Kopsell, D.A., Wszelaki, A., C.E. Sams, and P.R. Fisher. (\$153,193/3 years). NOT SELECTED FOR FULL PROPOSAL.
- *Submitted 12-18-2006*: USDA-CSREES NRI Competitive Grants Program. (FY) 2007. Section 113 Integrated Organic Program. “Nutrient and media management in organic hydroponic greenhouse production systems.” Co-PD with Dr. Carl E. Sams. Collaborators are Drs. Charlie Hall, Brandon Smith, Dennis Deyton, and Ms. Pam Rye. (\$474,794.00/3 years). NOT FUNDED.
- *Submitted on 11-1-2006*. Program area: 71.1 Improving Food Quality and Value. Title of Proposed Project: Incorporation of selenium in herbal crop species for delivery to human diets. Proposed Project Collaborators: Drs. Carl Sams, Svetlana Zivanovic, Jean Meullenet (U. of Arkansas), and David Kopsell (U. of Wisconsin-Platteville). NOT SELECTED FOR FULL PROPOSAL.
- *Submitted on 10-4-2006*. Program area: 56.0 Plant Biology (B): Environmental Stress. Title of Proposed Project: “Physiology of Titanium Hormesis in Crop Plants”. Project Collaborators: Drs. Carl Sams, Brandon Smith, and Tom Ammons. NOT SELECTED FOR FULL PROPOSAL.
- *Submitted 06-01-2006*: Southern Region Sustainable Agriculture Research and Education Program. 2007 Pre-Proposal. “Herbs as high-value off-season crops in tobacco float bed production systems.” Co-PI with Drs. Carl Sams and Paul Denton and Rob Ellis. (\$184,520.00/3years). NOT FUNDED.
- *Submitted 06-01-2006*: Southern Region Sustainable Agriculture Research and Education Program. 2007 Pre-Proposal. “Sampling organically produced small fruits and vegetable for nutritional contents.” Co-PI with Drs. Carl Sams and Dennis Deyton and Pam Rye. (\$134,680.00/2years). NOT FUNDED.
- *Submitted 06-01-2006*: Southern Region Sustainable Agriculture Research and Education Program. 2007 Pre-Proposal. “Sulfur-free potassium fertilizers to reduce flavor intensity in organically grown *Brassica* and *Allium* crops.” Co-PI with Drs. Carl Sams and Bill Randle. (\$191,820.00/3years). NOT FUNDED.
- *Submitted 01-09-2006*: USDA-CSREES NRI Competitive Grants Program. (FY) 2006. Section 22.1 Agricultural Plants and Environmental Adaptation. “Light Emitting Diodes to Assess Carotenoids in Vegetable Crops under Varying Wavelengths.” Collaborator with Mark Lefsrud. (\$340,327.00/3 years). NOT FUNDED.
- *Submitted 12-2-2005*: Tennessee Soybean Promotion Board. “Edamame type soybeans are a potentially high value new crop for Tennessee growers.” Collaborator with Drs. Carl Sams, Vince Pantalone, and Dennis Deyton. (\$48,188.00/1 year). NOT FUNDED.
- *Submitted 12-2-2005*: USDA-CSREES NRI Competitive Grants Program. (FY) 2006. Section 113 Integrated Organics Program. “Organic hydroponic greenhouse production systems for high value vegetable crops.” Co-

PD with Dr. Carl E. Sams. Collaborators are Dr. Dennis Deyton and Pam Rye. (\$344,276.00/3 years). NOT FUNDED.

- *Submitted 06-01-2005*: Southern Region Sustainable Agriculture Research and Education Program. 2006 Pre-Proposal. “Adapting pumpkin production through sustainable living mulches and reduced-tillage systems.” Co-PI with Dr. Carl Sams. (\$141,314.00/3years). NOT FUNDED.
- *Submitted 06-01-2005*: Southern Region Sustainable Agriculture Research and Education Program. 2006 Pre-Proposal. “Organic hydroponic greenhouse production systems for high value vegetable crops in the mid-South.” Co-PI with Dr. Carl Sams. (\$185,300.00/3years). NOT FUNDED.
- *Submitted 03-11-2005*: United States Golf Association (USGA). “Evaluation of the role of carotenoids in relation to heat and shade stress in turfgrass species.” Collaborator with Drs. Scott McElroy and John Sorochan. Pre-proposal (\$87,819.00/3 years). NOT FUNDED.
- *Submitted 01-05-2005*: USDA-CSREES NRI Competitive Grants Program. (FY) 2005. Section 54.3 Agricultural Plant Biochemistry. “Mechanistic biochemical analysis of selenium incorporation into *Brassica* sulfur metabolic pathways.” Co-PD with Dr. Carl E. Sams. (\$229,610/2 years). NOT FUNDED.
- *Submitted 12-06-2004*: Tennessee Soybean Promotion Board. “Production and marketing potential of Edamame type soybean in Tennessee.” Collaborator with Drs. Carl Sams, Vince Pantalone, Dennis Deyton, and Lana Zivanovic. (\$56,540). NOT FUNDED.
- *Submitted 10-01-2004*: The University of Tennessee, Institute of Agriculture Idea Grants Program. “Characterization of beneficial carotenoids in the diploid and amphidiploid species of rapid-cycling *Brassica* species.” (\$2,800.00). PROGRAM NO LONGER ACTIVE.
- *Submitted 12-01-2004*: USDA-CSREES NRI Competitive Grants Program. (FY) 2005. Section 71.1 Improving Food Quality and Value. “Fate of beneficial carotenoids in vegetable crops during postharvest storage and distribution.” Co-PD with Drs. Carl E. Sams, Svetlana Zivanovic, and Joanne Curran-Celentano. (\$383,440.00/3 years). NOT FUNDED.
- *Submitted 01-23-2004*: USDA-CSREES NRI Competitive Grants Program. (FY) 2004. Plant Responses to the Environment. “Behavior of beneficial carotenoids in vegetable crops during post harvest storage.” Co-PD with Drs. David Kopsell and Joanne Curran-Celentano. (\$184,395.00). NOT FUNDED.
- *Submitted 03-01-2004*: NE Agriculture Experimental Station Multi-investigator Research Grant Program. “Feasibility study of alternative crops for biodiesel and organic pesticide production in NH”. Collaborator with Drs. Leland Jahnke, Douglas Morris, Cheryl Smith, Ihab Farag (project PI), James Malley, Sterling Tomellini, and Mr. Bruce Clements, Mr. Michael Briggs (project PI), and Mr. Joe Pearson. (\$300,000.00). NOT FUNDED.
- *Submitted to*: USDA-CSREES NRI Competitive Grants Program. (FY) 2003. Plant Responses to the Environment. “Effects of storage condition and duration on the carotenoid content of green leafy vegetable crops.” Co-PI with Dr. David Kopsell. Collaborator with Dr. Joanne Curran-Celentano. (\$400,000.00). NOT FUNDED.
- *Submitted to*: The Arnold and Mabel Beckman Foundation. Young Investigator’s Grant Program 2002. “Formation of carotenoid epoxides and isomers in *Brassica oleracea* L. and their importance in explaining antioxidant function in human health.” (pre-proposal for grant worth \$200,000.00). NOT FUNDED.
- *Submitted to*: The Arnold and Mabel Beckman Foundation. Young Investigator’s Grant Program 2000. “Genetic and environmental factors affecting essential carotenoid content in *Brassica* vegetable crops with potential dietary importance.” (pre-proposal for grant worth \$200,000.00). NOT FUNDED.

- *Submitted to:* The Herb Society of America, Inc. 2000. "Genetic and environmental influences on essential carotenoids in parsley." (\$4,937.40). NOT FUNDED.

International Experience or Expertise:

Member of Editorial Board for proceeding of the 2nd International Symposium on Human Health Effects of Fruits and Vegetables. Acta Horticulturae vol. 841. International Society for Horticultural Science (ISHS), Leuven, Belgium. August 2009.

Member of Editorial Board, Communications in Soil Science and Plant Analysis, Taylor & Francis Press, Abingdon - Oxfordshire, UK. 2007- present.

Member of Editorial Board, Journal of Plant Nutrition, Taylor & Francis Press, Abingdon - Oxfordshire, UK. 2006 - present.

Member of International Scientific Committee, Vitamins 2007 – 7th International Conference, The University of Pardubice, Pardubice, Czech Republic. 2006 - 2007.

Record of Participation in, and Description of, Seminars and Workshops:

2008 Agilent Technologies, Educational Training Session – HPLC (3D) ChemStation Operation, Alpharetta, GA. January 15-18.

I attended an education training session provided by Agilent Technologies on the operation of ChemStation software and basic LC operation. The 4-day course was a mixture of classroom educational training and hands-on LC operation and ChemStation programming.

2007 University of Tennessee, Plant Sciences Department Faculty Retreat. Townsend, TN. March 7-9.

I attended the faculty retreat and participated in the teaching faculty breakout sessions. I gave a formal presentation describing current program information on the vegetable production/physiology faculty group to the Plant Sciences Department Advocacy Board.

2006 Tennessee Agriculture Experiment Station New Faculty Orientation. Knoxville, TN. December 7.

I attended the orientation as a new faculty member in the TAES. Topics discussed were the AES mission, tips for faculty success, AES budgeting, facilities and operations, grants and contracts, faculty opportunities.

2005 "Putting your best foot forward". Tennessee Agriculture Experimental Station Workshop. Knoxville, TN. October 19.

I attended the workshop which focused on leadership and marketing research impacts and achievements.

2005 Organic Production of Fruits and Vegetables Short Course. The University of Tennessee. Knoxville, TN. February 24.

I attended the workshop which covered several cultural management strategies for organic production operations.

2004 Southern Region Grantsmanship Workshop. Co-sponsored by the University of Georgia, Clemson University, and Auburn University. Atlanta, GA. Sept. 15-16.

I attended the workshop which focused on grantsmanship within USDA, NRI, and NSF agencies. The topics covered were the grant writing process, grant submissions and reviewing, and post-award management.

- 2003 'Functional Foods and Biotechnology: A critical Interaction' Workshop. Showcase of accomplishments of FY '00 and '01 awardees of the IFAFS's Nutritional Aspects of Functional Foods (12.2) and Biotechnology (11.1 and 11.2) programs. Washington, DC. Oct. 31 to Nov 1.

I attended the workshop and presented my grant project in an oral presentation to the group. I also presented several posters on our grant projects.

- 2001 New Hampshire Agriculture Experimental Station Retreat. The University of New Hampshire, Durham, New Hampshire. November 12.

I attended the retreat workshop as a faculty member in the NH-AES. Topics discussed were current reporting, achievements during the previous year, and goals for future years.

- 2000 Northeast Regional Teaching Workshop. Sponsored by Cook College and the North Brunswick Teaching Excellence Center, Rutgers, The State University of New Jersey, North Brunswick, New Jersey. October 5-7.

I attended the workshop which focused on teaching principles at land-grant institutions. Topics included syllabus preparation, effectively teaching in both small- and large-class settings, and student evaluations.

- 2000 UNH Blackboard Training Workshop. Modular training for joint project for web based course information between Library and Computing and Information Services. The University of New Hampshire, Durham, NH. July 10-11.

I attended this training workshop which prepared participants to utilize BlackBoard on-line teaching aids for courses taught.

Papers Presented at Technical and Professional Meetings: Dean Kopsell presented all of the presentation listed below. * Indicates invited presentation. § Indicates presentation at an international conference. Undergraduate or graduate student co-authors are underlined.

1. **2010** Illinois State University, Agriculture Department. Invited seminar, April 15.
* *Oral Presentation:* Can herbicides actually increase the nutritional value of specialty crops?
2. **2010** Tennessee Horticulture Expo – TN Fruit and Vegetable Growers Association Subsection. Nashville, TN. January 29.
Oral presentation: Can herbicides actually increase nutritional values of crops?
Co-authors: Greg Armel, Tom Mueller, Carl Sams, Dennis Deyton, Scott McElroy, and David Kopsell.
3. **2009** FAV Health 2009: International Symposium on Human Health Effects of Fruits and Vegetables, International Society for Horticultural Science. Avignon, France. October 18-21.
§ *Oral Presentation:* Sweet corn carotenoid concentrations influenced by herbicide applications.
Co-authors: Greg Armel, Tom Mueller, Carl Sams, Dennis Deyton, Scott McElroy, and David Kopsell
4. **2009** UT Science Forum, UT Campus, Knoxville, TN. October 9.
* *Oral Presentation:* Can herbicides actually increase nutritional values of crops?

Co-authors: Greg Armel, Tom Mueller, Carl Sams, Dennis Deyton, Scott McElroy, and David Kopsell.

5. **2009** 106th Annual International Conference of the American Society for Horticultural Science. St. Louis, MO. July 25-28.
Poster Presentation: Mesotrione applications impact kernel carotenoid concentrations among different sweet corn genotypic sensitivities.
Co-authors: Greg R. Armel, Tom C. Mueller, J. Scott McElroy, Dennis E. Deyton, Carl E. Sams, and David E. Kopsell.
6. **2009** Tennessee Horticulture Expo – TN Fruit and Vegetable Growers Association Subsection. Nashville, TN. January 29-31.
Oral presentation: Tips and secrets to growing giant pumpkins.
Co-authors: David E. Kopsell and George W. Kopsell.
7. **2008** 236th American Chemical Society Fall National Meeting & Exposition. Philadelphia, PA. August 17-21. AFGD - Division of Agricultural and Food Chemistry, Technical session on Pre- and Postharvest and Processing Factors Affecting Bioactive Health Maintaining Properties.
**Invited Symposium Presentation:* Pre-harvest cultural growing conditions can influence carotenoid phytochemical concentrations in vegetable crops.
Co-authors: David E. Kopsell and Mark G. Lefsrud
8. **2008** 105th Annual International Conference of the American Society for Horticultural Science. Orlando, FL. July 21-24.
**Invited Workshop Oral Presentation:* Extraction and analytical methods for the analysis of carotenoids (terpenoids) in fruit and vegetable crops.
9. **2008** 105th Annual International Conference of the American Society for Horticultural Science. Orlando, FL. July 21-24.
Poster Presentation: Selenization of basil and cilantro through foliar applications of selenate-Se and selenite-Se.
Co-author: Carl Sams
10. **2007** FAV Health 2007: International Symposium on Human Health Effects of Fruits and Vegetables, International Society for Horticultural Science. Houston, TX. October 9-13.
§ *Oral Presentation:* Genetic variability for lutein concentrations in leafy vegetable crops can influence serum carotenoid levels and macular pigment optical density in human subjects.
Co-authors: Joanne Curran-Celentano, Adam J. Wenzel, and David E. Kopsell
11. **2007** FAV Health 2007: International Symposium on Human Health Effects of Fruits and Vegetables, International Society for Horticultural Science. Houston, TX. October 9-13.
**§ Invited Plenary Presentation:* Pre-harvest management factors that influence production of carotenoid phytonutrients in vegetables and herbal crops.
12. **2007** Steak & Potatoes Field Day, Plateau Research and Education Center, The University of Tennessee Institute of Agriculture and the Tennessee Agricultural Experiment Station, Crossville, TN. August 7.
Field day presentation (Three 15-minute presentations): Amending soils to improve vegetable crop nutritional quality – nitrogen.
13. **2007** 104th Annual International Conference of the American Society for Horticultural Science. Scottsdale, AZ. July 16-19.

Poster Presentation: Spinach shoot tissue nutrient concentrations respond to foliar applications of chelated titanium.

Co-authors: J. Scott McElroy, and Carl E. Sams

14. **2007** 18th Annual Summer Celebration Field Days, West Tennessee Research and Education Center, The University of Tennessee Institute of Agriculture and the Tennessee Agricultural Experiment Station, Jackson, TN. July 12.

Oral presentation: Eat your vegetables!: health and nutrition of fruits and vegetables.

15. **2007** Bloom's Day, UT Botanical Garden and Plant Sciences Department, The University of Tennessee, Knoxville, TN. June 23.

Oral presentation: Fertilizers 101.

16. **2007** Department of Food Science and Technology, The University of Tennessee, Knoxville, TN. April 13.

Invited Seminar: Lutein supplements vs. whole spinach: results from a 12-week dietary intervention to determine plant carotenoid enhancement potential.

17. **2006** Tennessee Fruit and Vegetable Growers Association Annual Meeting, Nashville, TN. December 11-12.

Oral Presentation: "I'm strong to the finish cause, I eats my spinach", say Popeye the sailor man.

Co-authors: Joanne Curran-Celentano and David E. Kopsell

18. **2006** Institute of Experimental Botany. Academe of Sciences of the Czech Republic. Prague, Czech Republic. September 15.

* *Invited Oral Presentation:* Assessing carotenoid bioavailability in leafy vegetable crops after enhancement strategies.

19. **2006** 6th International Conference. Vitamins 2006: Health Ingredients Metabolism Analysis, The University of Pardubice, Czech Republic. September 11-13.

*§ *Invited Oral Presentation:* Serum carotenoids and macular pigment responses in a 12-week dietary intervention comparing lutein supplements with whole spinach.

Co-authors: Joanne Curran-Celentano, Adam J. Wenzel, and David E. Kopsell

20. **2006** 103rd Annual International Conference of the American Society for Horticultural Science. New Orleans, LA. July 27-30.

Poster presentation: Carotenoid accumulation among the diploid and amphidiploid *Brassica* species. Co-authors: J.S. McElroy, C.E. Sams, and D.E. Kopsell.

21. **2006** 17th Annual Summer Celebration Field Days, West Tennessee Research and Education Center, The University of Tennessee Institute of Agriculture and the Tennessee Agricultural Experiment Station, Jackson, TN. July 13.

Oral presentation: Vivid vegetable and beyond. (presentation given 3 times)

22. **2006** Bloom's Day, UT Botanical Garden and Plant Sciences Department, The University of Tennessee, Knoxville, TN. June 25.

* *Invited Oral presentation:* Super healthy vegetables and herbs - you really *are* what you eat.

23. **2006** Tennessee Organic Growers Association (TOGA), Tennessee State University, Nashville, TN. April 8.

* *Invited Oral presentation:* Increasing the Nutritional Quality of Vegetable Crops.

24. **2005** University of Tennessee, Institute of Agriculture, Agriculture Development Board. Knoxville, TN. Oct. 29.

Oral presentation: Increasing Phytonutrients in Vegetables.

25. **2005** FAV Health 2005: International Symposium on Human Health Effects of Fruits and Vegetables, International Society for Horticultural Science. Québec City, Québec, Canada. August 17-20.
**§ Invited Oral Presentation for Symposium:* Kale carotenoids remain stable while glucosinolates and flavor compounds respond to changes in selenium and sulfur fertility.
26. **2005** 102nd Annual Conference of the American Society for Horticultural Science. Las Vegas, NV. July 17-21.
Oral presentation: Nitrogen level and form influence kale growth and leaf pigment concentrations.
27. **2005** 102nd Annual Conference of the American Society for Horticultural Science. Las Vegas, NV. July 17-21.
Oral presentation: Carotenoid and chlorophyll pigments in sweet basil grown in the field and greenhouse.
28. **2005** Annual Conference of the Society for In Vitro Biology, Baltimore, MD. June 5-7.
**Invited Oral Presentation for Symposium:* Assessing the bioavailability of enhanced dietary carotenoids in vegetable crops.
29. **2005** TAES Visit to Plant Sciences Department. Knoxville, TN. March 16.
Oral presentation: Greenhouse and alternative cropping systems for east and middle Tennessee.
30. **2005** CASNR Alumni Council – Plant Sciences Alumni. Knoxville, TN. February 4.
Oral presentation: Phytonutrient enhancement of vegetable crops.
31. **2004** 17th International Lettuce and Leafy Vegetable Conference. Leafy Vegetable Crops Germplasm Committee. Montreal, Quebec, Canada. Aug. 28-31.
**§ Invited Oral Presentation for Symposium:* Enhancement of lutein and beta-carotene carotenoids in leafy-green vegetable crops.
32. **2004** The University of Tennessee, Plant Sciences Department, Knoxville, TN. May 6.
Invited Seminar: Enhancement of lutein and beta-carotene carotenoids in leafy-green vegetable crops.
33. **2003** ‘Functional Foods and Biotechnology: A critical Interaction’ Workshop. Showcase of accomplishments of FY ’00 and ’01 awardees of the IFAFS’s Nutritional Aspects of Functional Foods (12.2) and Biotechnology (11.1 and 11.2) programs. Washington, DC. Oct. 31 to Nov 1.
Oral presentation: Enhancement of lutein and beta-carotene carotenoids in leafy-green vegetable crops.
34. **2003** 100th Annual Conference of the American Society for Horticultural Science. Providence, RI. Oct. 3-6.
Oral presentation: Variability in lutein and beta-carotene accumulation among leafy *Brassica oleracea* cultigens.
35. **2003** Summer Vegetable Twilight Meetings. Co-sponsored by UNH Cooperative Extension Service and the New England Vegetable & Berry Growers Association.
Field day presentation and demonstration of research projects: The influence of sulfur fertility on the flavor of *Brassica* crops.
 June 16, Rosaly’s Garden, Peterborough, NH.
 July 7, Moulton Farm, Meredith, NH.
 July 30, Roots and Fruits Farm, Dalton, NH.
36. **2003** Auburn University. Department of Horticulture, Auburn, AL. March 19.

- Oral presentation:* Invited seminar in vegetable crop physiology. Kale: the major health benefits of a minor crop.
37. **2003** Tri-County Vegetable & Cut Flower Seminar. The University of New Hampshire, Cooperative Extension Service. Feb. 25.
Oral presentation: Common nutrient deficiency symptoms of vegetables and cut flowers.
 38. **2003** Plant Biology Departmental Seminar. The University of New Hampshire, Durham, NH. Feb. 6. Co-presenter: Dr. David Kopsell, Post-doctoral research scientist.
Oral presentation: Vegetable carotenoid research in Plant Biology.
 39. **2003** Annual Meeting Northeast Region of American Society for Horticultural Science. Baltimore, MD. Jan. 7-9.
Oral presentation: Iron fertility affects chlorophyll and carotenoid pigments in kale (*Brassica oleracea* L. Acephala Group).
 40. **2002** New England Cemetery Association. 33rd Annual Management Seminar. Dec. 4. New England Conference Center, The University of New Hampshire, Durham, NH.
Oral Presentation: Fertilizer management and essential nutrients.
 41. **2002** New England Vegetable & Berry Growers Association. Portsmouth, NH. Nov. 9.
Oral presentation: Nutrient fertility affects crop quality in *Brassicas*.
 42. **2002** Durham Community Garden Club. Durham, NH. Oct. 15th.
Oral presentation: The value of vegetables: nutritional and phytonutritional value of vegetable *Brassica* crops.
 43. **2002** XXVIth International Horticultural Congress and Exhibition (IHC 2002). Toronto, Ontario, Canada. August 11-17.
§ *Poster presentation:* Influences of iron fertility on elemental content, pigmentation, and phytonutrient carotenoids among kale (*B. oleracea* Acephala group) cultivars.
 44. **2002** Annual Meeting Northeast Region of American Society for Horticultural Science. Philadelphia, PA. Jan. 8-10.
Oral presentation: Influences of nitrogen form on elemental content, pigmentation, and carotenoid accumulations among kale (*B. oleracea* Acephala group) cultivars.
 45. **2001** New England Vegetable and Berry Grower's Association Conference. New England Vegetable and Berry Grower's Association. Sturbridge, MA. Dec. 11.
Oral presentation: The health benefits of kale (*Brassica oleracea* L. var. Acephala Group).
 46. **2001** Plant Biology Greenhouse Openhouse. Department of Plant Biology. The University of New Hampshire. Durham, NH. March 23-24.
Oral presentation: The value of vegetables: nutritional and phytonutritional value of vegetable crops.
 47. **2001** Annual Meeting Northeast Region of American Society for Horticultural Science. Cambridge, MA. Jan. 3-5.
Oral presentation: Seed germination response of rapid-cycling *Brassica oleracea* grown under increasing sodium selenate.
 48. **2000** North Country Fruit and Vegetable Seminar. Lancaster, NH. November 1.
Oral presentation: Phytonutrient enhancement of *Brassica* vegetable crops.
 49. **1999** 96th Annual International Conference of the American Society for Horticultural Science. Minneapolis, MN. July 28-31.
Oral presentation: Nutrient content of a model system of rapid-cycling *Brassica oleracea* responds to increasing sodium selenate.

50. **1999** The University of New Hampshire. Department of Plant Biology, Durham, NH. July 13.
Oral presentation: Interview seminar for teaching/research position in plant biology department.
51. **1998** 7th Biennial National Onion (and other *Alliums*) Research Conference. Sacramento, CA. December 10-12.
Oral presentation: The form of selenium delivered by onions to human diets.
52. **1997** Alliums Australia: 2nd International Symposium on Edible Alliaceae. Adelaide, Australia. November 10-13.
§ *Poster presentation:* Selenium fertility affects *S*-alk(en)yl cysteine sulfoxides among short-day onion cultivars.
53. **1996** Georgia Vegetable Conference and Trade Show. Tifton, GA. November 21-23.
Oral presentation: Beyond the sweet taste, the health benefits of onions.
54. **1995** 92nd Annual Meeting of the American Society for Horticultural Science and the 40th Congress of the Canadian Society for Horticultural Science. Montreal, Quebec, Canada. July 30-August 3.
§ *Oral presentation:* Selenium affects sulfur uptake and metabolism in onions (*Allium cepa* L.).

Co-author of Presentations to Professional Groups: * Identifies the presenter/author for each of the following presentations. Undergraduate or graduate student authors are underlined.

1. **2010** Illinois State University, Alumni Center, “Morning with the Professors” series. April 16.
David E. Kopsell and Dean A. Kopsell.
* *Oral presentation:* Spinach is spinach, you say?
2. **2010** Environmental Protection Agency (EPA), Herbicide Registration Division, April 13.
Greg R. Armel and Dean A. Kopsell.
* *Oral presentation:* Evaluation of sweet corn safety and variations in nutritional quality following applications of multiple herbicides and crop safeners.
3. **2010** Weed Science Society of America Annual Meeting. Denver, CO. February 8-12.
G.R. Armel*, D.A. Kopsell, H. Wilson, C. Sams, J. Vargas, T. Hines, and R. Koepke-Hill.
Oral presentation: Evaluation of sweet corn safety and variations in nutritional quality following applications of multiple herbicides and crop safeners.
4. **2009** FAV Health 2009: International Symposium on Human Health Effects of Fruits and Vegetables, International Society for Horticultural Science. Avignon, France. October 18-21.
T. Casey Barickman*, Dean Kopsell, and Carl Sams.
Oral Presentation: Impact of selenium fertilization on glucosinolate metabolism in *Arabidopsis* and rapid-cycling *Brassica oleracea*.
5. **2009** FAV Health 2009: International Symposium on Human Health Effects of Fruits and Vegetables, International Society for Horticultural Science. Avignon, France. October 18-21.
Carl Sams, Dillip Panthee, T. Casey Barickman*, Dean Kopsell, Craig Charron, and Joshua Yuan.
Poster Presentation: Microarray analysis reveals selenium down-regulates glucosinolate biosynthesis in *Arabidopsis* shoots.

6. **2009** 106th Annual International Conference of the American Society for Horticultural Science. St. Louis, MO. July 25-28.
D.E. Kopsell* and D.A. Kopsell.
Poster presentation: Carotenoid pigments in kale are influenced by the ratio of calcium to magnesium.
7. **2009** 106th Annual International Conference of the American Society for Horticultural Science. St. Louis, MO. July 25-28.
K. Abney* and D.A. Kopsell
Poster presentation: Carotenoid concentration in Brassicaceae sprouts do not differ among genotypes.
8. **2009** 106th Annual International Conference of the American Society for Horticultural Science. St. Louis, MO. July 25-28.
G. Armel*, D.A. Kopsell, and J. Vargas.
Oral presentation: Leaf tissue carotenoids and chlorophyll fluorescence parameters differ among sweet corn genotypes with differential sensitivity to mesotrione.
9. **2009** 106th Annual International Conference of the American Society for Horticultural Science. St. Louis, MO. July 25-28.
M. Farnham* and D.A. Kopsell
Oral presentation: Genotype and environment effect on carotenoid content of broccoli.
10. **2009** Weed Science Society of America Annual Meeting. Orlando, FL February 9-13.
G.R. Armel*, D.A. Kopsell, B.R. Smith, J.J. Vargas, P.L. Rardon, M. Ruggiero, and S. A. Gower.
Oral presentation: Differential visual and physiological responses of several wild-type and herbicide resistant weed populations treated with different inhibitors of photosystem II and carotenoid biosynthesis.
11. **2008** 105th Annual International Conference of the American Society for Horticultural Science. Orlando, FL. July 21-24.
D.R. Panthee*, C.S. Charron, D.A. Kopsell, and C.E. Sams.
Poster presentation: Identification of differentially expressed genes in *Arabidopsis* shoots in response to selenium application.
12. **2008** 105th Annual International Conference of the American Society for Horticultural Science. Orlando, FL. July 21-24.
D.R. Panthee*, D.A. Kopsell, V. Pantalone, and C.E. Sams.
Poster presentation: Screening of *Arabidopsis* ecotypes for glucosinolates accumulated in shoots and seeds.
13. **2008** 105th Annual International Conference of the American Society for Horticultural Science. Orlando, FL. July 21-24.
K. Abney*, D. Kopsell, C.E. Sams, and L. Robertson.
Poster presentation: Characterization of nutritionally important carotenoids in scallion onion.
14. **2008** 105th Annual International Conference of the American Society for Horticultural Science. Orlando, FL. July 21-24.
S. Stofer*, D. Kopsell, and C.E. Sams.
Poster presentation: Tomato fruit carotenoids do not differ between applications of a chemical soil fumigant vs. an organic biofumigant.
15. **2008** 105th Annual International Conference of the American Society for Horticultural Science. Orlando, FL. July 21-24.

- A. Stewart*, V. Pantalone, C. Sams, and D. Kopsell.
Poster presentation: Isoflavone concentration and pod removal force vary with pod maturity in four soybean lines.
16. **2007** International Meeting, ASA-CSSA-SSSA, New Orleans, LA. November 4-8.
James McCurdy*, Scott McElroy, Dean Kopsell, Carl Sams, and John Sorochoan.
Oral presentation: The effect of mesotrione on perennial ryegrass carotenoid concentrations under varying environmental conditions.
 17. **2007** International Meeting, ASA-CSSA-SSSA, New Orleans, LA. November 4-8.
Catherine Nyinyi*, Vincent Pantalone, D. Landau-Ellis, F.L. Allen, Carl Sams, and Dean Kopsell.
Oral presentation: Confirmation of fatty acid modifier QTL in soybean.
 18. **2007** FAV Health 2007: International Symposium on Human Health Effects of Fruits and Vegetables, International Society for Horticultural Science. Houston, TX, October 9-13.
Thomas C. Barickman*, **Dean Kopsell**, and Carl Sams.
Poster Presentation: Impact of nitrogen and sulfur fertilization on the phytochemical concentration of watercress, *Nasturtium officinale* R. Br.
 19. **2007** Northeast Agricultural and Biological Engineering Conference, Wooster, OH. July 29-August 1.
Mark Lefsrud*, **Dean Kopsell**, Carl Sams, Bob Augé, Jim Wills, A.J. Both.
Poster Presentation: Determination of % dry matter and stability of carotenoids in kale and spinach during drying.
 20. **2007** 104th Annual International Conference of the American Society for Horticultural Science. Scottsdale, AZ. July 16-19.
Mark Lefsrud*, **Dean Kopsell**, Jim Wills, Carl Sams, and A.J. Both.
Oral Presentation: Leaf Dry Matter Content Determines Pigment Concentrations in Kale and Spinach Greens
 21. **2007** 104th Annual International Conference of the American Society for Horticultural Science. Scottsdale, AZ. July 16-19.
Thomas C. Barickman*, **Dean Kopsell**, and Carl Sams.
Poster Presentation: Impact of Selenium Fertilization on Glucosinolate Concentration in *Arabidopsis thaliana* and Rapid Cycling *Brassica oleracea*.
 22. **2007** Plant Canada, Saskatoon, Saskatchewan. June 10-14.
Mark Lefsrud*, **Dean Kopsell**, Carl Sams, Bob Augé, Jim Wills, A.J. Both.
Oral Presentation: Determination of dry matter and stability of carotenoids in kale and spinach during drying.
 23. **2006** International Meeting, ASA-CSSA-SSSA, Indianapolis, IN. November 12-16.
J. Scott McElroy*, **Dean A. Kopsell**, John C. Sorochoan, and Carl Sams.
Oral Presentation: Evaluation of bentgrass carotenoid composition under high and low irradiance.
 24. **2006** International Meeting, ASA-CSSA-SSSA, Indianapolis, IN. November 12-16.
J. Scott McElroy*, **Dean A. Kopsell**, and John C. Sorochoan.
Oral Presentation: Changes in bermudagrass carotenoid composition following mesotrione application.
 25. **2006** International Meeting, ASA-CSSA-SSSA, Indianapolis, IN. November 12-16.
Catherine N. Nyinyi*, Fred L. Allen, **Dean A. Kopsell**, Carl E. Sams, and Vincent R. Pantalone.

- Oral Presentation:* Confirmation of soybean fatty acid modifier QTL.
26. **2005** FAV Health 2005: International Symposium on Human Health Effects of Fruits and Vegetables, International Society for Horticultural Science. Québec City, Québec, Canada. August 17-20.
 Carl Sams, Craig Charron, **Dean Kopsell***, William Randle, and Heather Toler.
Poster Presentation: Increasing selenium concentration in *Brassica oleracea* decreases glucosinolate concentration.
 27. **2005** 102nd Annual Conference of the American Society for Horticultural Science. Las Vegas, NV. July 17-21.
Mark G. Lefsrud* and **Dean A. Kopsell**
Poster presentation: Radiation cycle affects biomass production and carotenoid accumulation in kale.
 28. **2005** 102nd Annual Conference of the American Society for Horticultural Science. Las Vegas, NV. July 17-21.
Mark G. Lefsrud* and **Dean A. Kopsell**
Oral presentation: Changes in kale pigment profiles during leaf ontogeny.
 29. **2005** Annual meeting of the Association for Research in Vision and Ophthalmology (ARVO). Fort Lauderdale, FL. May 1-5.
 Joanne Curran-Celentano, Adam Wenzel*, Joe Sheehan, **Dean Kopsell**, and David Kopsell.
Poster Presentation: Changes in serum lutein and macular pigment optical density following a twelve week intervention with lutein supplement or spinach.
 30. **2004** 17th International Lettuce and Leafy Vegetable Conference. Leafy Vegetable Crops Germplasm Committee. Montreal, Quebec, Canada. Aug. 28-31.
 David E. Kopsell, **Dean A. Kopsell***, Joanne Curran-Celentano, William M. Randle, Timothy W. Coolong, and Carl E. Sams.
Poster Presentation: Sulfur fertility influences kale flavor, but not carotenoid content.
 31. **2004** 17th International Lettuce and Leafy Vegetable Conference. Leafy Vegetable Crops Germplasm Committee. Montreal, Quebec, Canada. Aug. 28-31.
 David E. Kopsell, **Dean A. Kopsell***, and Joanne Curran-Celentano.
Poster Presentation: Carotenoid variability among kale and spinach cultivars.
 32. **2004** 17th International Lettuce and Leafy Vegetable Conference. Leafy Vegetable Crops Germplasm Committee. Montreal, Quebec, Canada. Aug. 28-31.
Mark G. Lefsrud*, **Dean A. Kopsell** and David E. Kopsell.
Oral presentation: Influences of HPS and UV supplemental light on carotenoid accumulation in kale.
 33. **2004** 101st Annual Conference of the American Society for Horticultural Science. Austin, TX. July 17-20.
Victoria L. Davidson*, **Dean A. Kopsell**, and James E. Pollard.
Oral presentation: The effect of interrupting short day cycles with day-length extension on floral bud initiation in strawberry (*Fragaria x ananasa*).
 34. **2004** Annual Meeting Northeast Region of American Society for Horticultural Science. Cambridge, MA. Jan. 6-8.
 David E. Kopsell*, **Dean A. Kopsell**, Joanne Curran-Celentano, William M. Randle, Timothy W. Coolong, and Carl E. Sams.
Poster presentation: Sulfur fertility influences kale flavor but not carotenoid content.

35. **2004** Annual Meeting Northeast Region of American Society for Horticultural Science. Cambridge, MA. Jan. 6-8.
David E. Kopsell*, **Dean A. Kopsell**, and Joanne Curran-Celentano.
Poster presentation: Carotenoid variability among kale and spinach varieties.
36. **2004** Annual Meeting Northeast Region of American Society for Horticultural Science. Cambridge, MA. Jan. 6-8.
David E. Kopsell* and **Dean A. Kopsell**.
Oral presentation: Phytonutrient carotenoids in basil and parsley.
37. **2004** Annual Meeting Northeast Region of American Society for Horticultural Science. Cambridge, MA. Jan. 6-8.
Mark G. Lefsrud*, **Dean A. Kopsell** and David E. Kopsell.
Oral presentation: Carotenoid accumulation and mineral uptake in kale due to irradiance.
38. **2003** 'Functional Foods and Biotechnology: A critical Interaction' Workshop. Showcase of accomplishments of FY '00 and '01 awardees of the IFAFS's Nutritional Aspects of Functional Foods (12.2) and Biotechnology (11.1 and 11.2) programs. Washington, DC. Oct. 31 to Nov 1.
David Kopsell*, **Dean Kopsell**, and Joanne Curran-Celentano.
Poster presentation: Carotenoid variability among kale and spinach varieties.
39. **2003** 'Functional Foods and Biotechnology: A critical Interaction' Workshop. Showcase of accomplishments of FY '00 and '01 awardees of the IFAFS's Nutritional Aspects of Functional Foods (12.2) and Biotechnology (11.1 and 11.2) programs. Washington, DC. Oct. 31 to Nov 1.
David Kopsell*, **Dean Kopsell**, Joanne Curran-Celentano, William Randle, Timothy Coolong, and Carl Sams.
Poster presentation: Sulfur fertility influences kale flavor but not carotenoid content.
40. **2003** 'Functional Foods and Biotechnology: A critical Interaction' Workshop. Showcase of accomplishments of FY '00 and '01 awardees of the IFAFS's Nutritional Aspects of Functional Foods (12.2) and Biotechnology (11.1 and 11.2) programs. Washington, DC. Oct. 31 to Nov 1.
Joanne Curran-Celentano, **Dean Kopsell***, David Kopsell, Adam Wenzel, Catherine Gerweck, and Joseph Sheehan.
Poster Presentation: Retinal carotenoids from spinach versus supplements - a work in progress.
41. **2003** 100th Annual International Conference of the American Society for Horticultural Science. Providence, RI. Oct. 3-6.
David E. Kopsell* and **Dean A. Kopsell**.
Oral presentation: Kale carotenoids remain stable while flavor compounds respond to changes in sulfur fertility.
42. **2003** 100th Annual International Conference of the American Society for Horticultural Science. Providence, RI. Oct. 3-6.
Mark G. Lefsrud*, David E. Kopsell and **Dean A. Kopsell**.
Oral presentation: Carotenoid accumulation and mineral uptake in kale due to temperature.
43. **2003** 100th Annual International Conference of the American Society for Horticultural Science. Providence, RI. Oct. 3-6.
Lisa Hunt* and **Dean A. Kopsell**.

Oral presentation: Calcium application rates significantly increased leaf tissue Ca in field-grown kale.

44. **2003** 12th Annual COLSA Undergraduate Research Conference, The New England Center, The University of New Hampshire, Durham, NH. May 3.

Christin Chenard*, **Dean A. Kopsell**, and David Kopsell.

Oral presentation: The influence of nitrogen on carotenoid production in the herbal crop parsley (*Petroselinum crispum*).

45. **2003** Annual Meeting Northeast Region of American Society for Horticultural Science. Baltimore, MD. Jan. 7-9.

David E. Kopsell*, **Dean A. Kopsell**, and Joanne Curran-Celentano.

Oral presentation: Magnesium fertility affects elemental content but not carotenoid pigments in kale.

46. **2003** Annual Meeting Northeast Region of American Society for Horticultural Science. Baltimore, MD. Jan. 7-9.

Mark G. Lefsrud*, **Dean A. Kopsell**, and David E. Kopsell.

Oral presentation: Carotenoid accumulation and mineral uptake in spinach due to temperature.

47. **2003** Annual Meeting Northeast Region of American Society for Horticultural Science. Baltimore, MD. Jan. 7-9.

Lisa Hunt* and **Dean A. Kopsell**.

Oral presentation: Uptake and accumulation of calcium in kale (*Brassica oleracea* L. Acephala Group). [3rd place finish for annual Graduate Student Competition.]

48. **2003** Annual Meeting Northeast Region of American Society for Horticultural Science. Baltimore, MD. Jan. 7-9.

Ron M. Wik*, Paul R. Fisher, and **Dean A. Kopsell**.

Oral presentation: Iron form alleviates iron deficiency in horticultural crops.

49. **2001** 10th Annual COLSA Undergraduate Research Conference, The New England Center, The University of New Hampshire, Durham, NH. May 5.

Joe Sheehan*, Joanne Curran-Celentano, and **Dean A. Kopsell**.

Oral presentation: Influence of percent $\text{NO}_3^{2-}:\text{NH}_4^+$ on growth, pigmentation, and Carotenoid content of kale grown in hydroponics.

List of Honors or Awards for Research/Scholarship/Creative Achievement:

- Co-author of article selected for a press release by the American Society for Horticultural Science (ASHS). Article: Farnham, M.W. and D.A. Kopsell. 2009. Importance of Genotype on Carotenoid and Chlorophyll Levels in Broccoli Heads. HortScience 44(5):1248-1253.
- Selected as the University of Tennessee's Quest Scholar of the Week for August 30th to September 5th, 2009 by the UT Knoxville Office of Research. The Scholar of the Week highlights the work of a faculty member at UT Knoxville who is doing outstanding work regardless of the field. Only one individual campus-wide is honored each week.
- Recipient of the 2009 T.J. Whatley Distinguished Young Scientist Award. This award is given annually by The University of Tennessee Institute of Agriculture in recognition of outstanding research achievement. The award is presented to a young scientist who has less than 12 years of professional experience beyond the terminal degree, with a minimum of 5 years of service on the agricultural faculty of The University of Tennessee. To be eligible, a

person must not have exceeded his/her 45th birthday by June 30 of the year of award. In addition, the faculty member must also have an appointment such that 50% of the annual time commitment is administered by either the College of Agricultural Sciences and Natural Resources and/or UT AgResearch.

- Mentor to Kristin Abney (M.S. Candidate), who was awarded 1st place in the Herbs, Spices, and Medicinal Plants Graduate Student Poster Competition sponsored by the Coke-Cola Company at the 2009 Annual Meeting of the American Society for Horticultural Science. St. Louis, MO. July 25-28.
- Lead author of the manuscript entitled, "Increase in nutritionally important sweet corn kernel carotenoids following mesotrione and atrazine applications" published in the Journal of Agricultural and Food Chemistry. Published manuscript was selected for a press release by the American Chemical Society in their ACS News Service Weekly PressPac for July 8, 2009. The ACS PressPac contains reports of research selected from 34 peer-reviewed ACS journals and Chemical & Engineering News. This weekly service provides leads on the latest advances in science and their impact on the business world. The summary is distributed to over 2000 media outlets world-wide. The manuscript authors were: Kopsell, D.A., G.R. Armel, T.C. Mueller, C.E. Sams, D.E. Deyton, J.S. McElroy, and D.E. Kopsell.
- Invited Plenary Presentation, FAV Health 2007: International Symposium on Human Health Effects of Fruits and Vegetables, International Society for Horticultural Science. Houston, TX. October 9-13, 2007.
- Mentor to Lisa Hunt (M.S. Candidate), who was awarded 3rd place in the annual Graduate Student Presentation Competition at the 2003 Annual Meeting Northeast Region American Society for Horticultural Science. Baltimore, MD. Jan. 7-9.
- Senior author of publication highlighted in Research Spotlight section of May 1999 Journal of the American Society for Horticultural Science 124(3).
- Excellence in Doctoral Research and Writing (Krezdorn) Award given by the Southern Region of the American Society for Horticultural Science, 1998.
Manuscript entitled: Selenium affects S-alk(en)yl cysteine sulfoxides among short-day onion cultivars.
- Co-authored publication highlighted in Spotlight section of July-September 1998 HortTechnology 8(3).
- Graduated Cum Laude, Illinois State University, 1992.
- Most Outstanding Senior Award, Agriculture Department, Illinois State University, 1992.
- *Fifth Place* – 1992 NACTA Soil Judging Contest, Redlands Community College, El Rino, OK.
- *Seventh Place* – 1991 Region IV Soil Judging Contest, University of Wisconsin – River Falls, River Falls, WI.
- Most Outstanding Collegiate Soil Judger in Illinois, Illinois Soil Classifier's Association, 1991.

Institutional, Disciplinary, and/or Professional Service Activity:

Institutional Service:

Record of committee work at department, college, and university levels:

The University of Tennessee (UTK):

Chancellor's Scholarship Program Screening Committee. Screening and selection of student applications for 2010.

The University of Tennessee Institute of Agriculture (UTIA):

UTIA, College of Agricultural Sciences and Natural Resources (CASNR) Dean Search Committee. 2006-2007. Chair for sub-committee on media relations.

UTIA Greenhouse Committee. 2008-present.

UTIA Variety Release Committee. 2009-present (chair).

UTIA Outstanding Service Award Committee, 2009.

CASNR Honors Committee, 2009-present.

UT AgResearch, "UT Day on the Hill", Nashville, TN, 2010.

Plant Sciences Department:

4-H Junior High Academic Conference, Field crops/plant science faculty group leader. 2005, 2006, 2007.

Ag Day Display Departmental Committee. Fall 2005 (chair). Fall 2008 (chair).

Awards & Recognition Committee, 2009-present.

By-laws Committee, 2009-present.

College Commencement. Departmental faculty representative. 2005, 2006, 2007.

Greenhouse Committee, 2004-present.

Human Subjects Committee, 2008-2009.

Organic Working Group Committee, 2006-present.

Research Coordinator (10% administrative), Plant Sciences Department. 2008 – 2010.

Search Committee member and chair, 2008-present. Faculty position in Biofuels Crop Physiology.

Search Committee, 2008-present. Faculty position in Turfgrass Science.

Search Committee, 2007-2008. Research associate in Horticulture Weed Management.

Search Committee, 2007-2008. Extension associate in Organic Production Systems.

Search Committee, 2005-2006. Faculty position in Alternative Cropping Systems - Sustainable Specialty Crop Production.

Search Committee, 2005-2006. Faculty position in Vegetable Crop Extension and Research.

Seminar Committee, 2004-2006.

Summer Celebration Field Day, West Tennessee Research and Education Center. Faculty participant. 2006, 2007.

The University of New Hampshire:

Agriculture and Applied Sciences Working Group, Working group member in preparation for the 2nd COLSA re-organization retreat, College of Life Sciences and Agriculture, 2003.

Computer and Technology Committee, The University of New Hampshire, Plant Biology Department, 2003-2004.

Farm and Greenhouse Committee, The University of New Hampshire, Plant Biology Department, 2000-2004 (Chair 2001-2003).

Food and Society Working Group, Office of Sustainable Program, The University of New Hampshire, 2001-2004.

Graduate Admissions Committee, The University of New Hampshire, Plant Biology Department, 2001-2004.

Greenhouse Open House Committee, The University of New Hampshire, Plant Biology Department, 2000-2002.
Northern New England Junior Science & Humanities Symposium, The University of New Hampshire, March 28-29, 2002, Competition Judging Committee.
Organic Gardening Club, Office of Sustainable Program, The University of New Hampshire. Club Academic Advisor, 2003-2004.
Seminar Committee, The University of New Hampshire, Plant Biology Department, 2000-2002.
University Writing Committee, The University of New Hampshire, 2003-2004.

Disciplinary Service:

Record of membership and active participation in professional societies:

Memberships:

American Society for Horticultural Science, 1993-present.
American Society for Horticultural Science – Southern Region, 1993-1999, 2005-present.
American Society for Horticultural Science – Northeast Region, 2000-2004.
American Society of Agronomy – Student Activities Subdivision, 1990-1992.
Illinois Nurserymen's Association. Student Member, 1990-1992. Member, 1992-1993.
International Carotenoid Society, 2003-present.
International Society for Horticultural Science, 2005-present.
North American Colleges and Teachers of Agriculture, 2000-present.
Tennessee Organic Growers Association, 2005-present.

Educational/Scholarship Society Memberships:

Gamma Sigma Delta, inducted 1995.
Alpha Zeta, inducted 1990.
Golden Key National Honor Society, inducted 1990.
Illinois State University Honors Department, 1989-1992.

Other Memberships:

Soil Judging Team, Illinois State University, 1990-1992.
Agriculture Club, Illinois State University, 1989-1992.
Alpha Zeta Club, Illinois State University, 1990-1992. Treasurer and Vice President, 1992.
Rockford College Men's Varsity Basketball Team, 1988-1989.

Active Participation:

American Society for Horticultural Science Committees/Duties:

- Oral Session Moderator/Judging/Other Activities.
- 106th Annual Conference of the American Society for Horticultural Science. St. Louis, MO. July 25-28, 2009.
 - Member of the judging panel for the graduate student poster competition.
 - Undergraduate mentor program volunteer.
 - 105th Annual International Conference of the American Society for Horticultural Science. Orlando, FL. July 21-24, 2008.
 - Workshop Organizer/Chairperson - Current analytical techniques to identify nutritionally important secondary metabolites in fruit and vegetable crops.

Sponsored by the Produce Quality, Safety, and Health Properties Working Group.

- 104th Annual Conference of the American Society for Horticultural Science. Scottsdale, AZ. July 16-19, 2007.
 - Symposium Organizer/Chairperson – Unique Methodologies to Assess Morphological and Physiological Plant Stress. Sponsored by the Environmental Stress Physiology (STRS) Working Group.
 - Member of the judging panel for the graduate student poster competition for the Association of Horticulturists of Indian Origin.
- 103rd Annual Conference of the American Society for Horticultural Science. New Orleans, LA. July 27-30, 2006.
 - Oral Session – Vegetable Crops Culture & Management 3.
- 102nd Annual Conference of the American Society for Horticultural Science. Las Vegas, NV. July 18-22, 2005.
 - Oral Session 18 – Vegetable Crops Culture & Management 2.
- 100th Annual International Conference of the American Society for Horticultural Science. Providence, RI. Oct. 3-6, 2003.
 - Oral Session 5 – Vegetable Breeding.

Participation in Society Committees.

Vegetable Publication Award Committee. 2007-2010.

Nominations and Elections Committee – Research Division. 2004-2006.

Participation in Society Working Groups.

Environmental Stress Physiology. Chair-elect: 2005-2006; Chair: 2006-2007.

Produce Quality, Safety, and Health Properties. Secretary: 2007. Chair-elect: 2007-2008.

Chair: 2008-2009.

Vegetable Crop Management. Secretary-elect: 2009.

Northeast Region of the American Society for Horticultural Science.

Graduate Student Competition Awards Committee. Member - Annual Meeting 2002.

Chair - Annual Meeting 2003.

Nominations Committee. Member - Annual Meeting 2002

President Elect – 2004 (left NE region before accepting presidential post).

North American Colleges and Teachers of Agriculture (NACTA).

New Hampshire State Coordinator, 2002-2004.

Tennessee Fruit & Vegetable Growers Association.

Oral session moderator for breakout sessions on vegetable production – annual meeting 2006.

Other Organizations/Activities.

Presided at the technical session on Pre- and Postharvest and Processing Factors Affecting Bioactive Health Maintaining Properties at the 236th American Chemical Society Fall National Meeting & Exposition. Philadelphia, PA. August 17-21, 2008. AFGD - Division of Agricultural and Food Chemistry.

Member of poster judging committee - FAV Health 2007: International Symposium on Human Health Effects of Fruits and Vegetables, International Society for Horticultural Science. Houston, TX, October 9-13. Member of the graduate student poster competition judging panel (members from 5 different countries and scientific disciplines.)

Oral Session Chair/moderator – Fat Soluble Vitamins and Protection against Free Radicals
6th International Conference Vitamins 2006: Health Ingredients Metabolism Analysis,
The University of Pardubice, Czech Republic, September 10-13.

Professional Service:

Service to public/private organizations or institutions:

Served as an invited member of the grant review panel for the USDA-National Institute of Food and Agriculture (NIFA)-Agriculture and Food Research Initiative (AFRI) for the program of Human Nutrition and Obesity. Washington, DC. November 3-5, 2009.

Guest on Radio Talk Show, Served as a special guest on “The Garden Girls” radio talk show. Show anchored by Dr. Sue Hamilton and Beth Babbit of the UT Plant Sciences Department on WNOX News Talk Radio in Knoxville, TN. Guest appearance on Sept. 11, 2005.

Reviews of Scientific Journal Articles/Research Proposals/Text Books

Peer review of articles for publication for the following scientific journals:

Australian Journal of Plant Physiology, HortScience, HortTechnology, Journal of Agricultural and Food Chemistry, Journal of the American Society for Horticultural Science, Journal of Environmental Quality, Journal of Horticultural Science & Biotechnology, Journal of Industrial Microbiology and Biotechnology, Journal of the Science of Food and Agriculture, Journal of Vegetable Science, Plant Science.

Peer review of proposals submitted to the following funding agencies:

USDA-National Research Initiative
US Civilian Research & Development Foundation
Ohio Agricultural Research and Development Center (OARDC)

Peer review for new editions of the following text books:

Principles of Crop Production: theory, techniques, and technology by Dr. George Acquaah. Copyright 2002. Prentice Hall Publishing. ISBN: 0-13-022133-3.

Field work and data collection, Onion cultivar field trial for Hazera Seed Ltd., Mivhor M.P. Lachish, Darom, Israel. Reidsville, GA. 1995 and 1996.

Illinois Certified Nurserymen, Designated by the Illinois Nurserymen’s Association, 1993-1996.

Personal Information:

I grew up next to the small town of Hebron, IL (pop. 800), located 70 miles NW of Chicago, along the IL-WI border. My identical twin brother, David, and I were raised on the family-owned 200 acre field production nursery. Along with the nursery, my father started a small tree transplanting business before I graduated from high school. While in high school and college, I spent my summers working and gaining experience in both companies. I graduated from Illinois State University in 1992 with a degree in agribusiness/horticulture. Upon graduation, I helped form a landscape division of the nursery. I was involved in all areas of the landscape company and gained some very valuable experience and insight into horticultural business management. My father decided to retire from the business in 1993, and my brother and I chose a career in graduate school over purchasing the company from our parents. We made our way to the University of Georgia and enrolled in the graduate studies program. I received my Masters degree in December of 1995. I continued at the University of Georgia and received my doctorate of philosophy in December 1999, with emphasis on vegetable improvement and plant nutrition. I spent 4 ½ years as an assistant professor in the Department of Plant Biology at the University of New Hampshire. While at UNH, I taught introductory courses in plant science and plant-soils relations. I also taught an upper level course on the mineral nutrition of higher plants. My research focused on the phytonutrient enhancement of vegetable and other edible crops. In the summer of 2004, I joined the faculty of the Plant Sciences Department at the University of Tennessee to develop a research program in physiology, biochemistry, and biotechnology of vegetable crops. My current research program focuses on physiological, environmental and genetic interactions that contribute to the nutritive value of vegetable crops for improved human health. My research interests are in designer/functional foods, and the development of production systems to provide value added vegetable commodities.

Personal Interests:

I enjoy all sports, including basketball, golf, and softball. I like to do woodworking and home improvement projects. I have always enjoyed being outdoors and working with plants. Much of my time now is spent with my family. My wife and I keep very busy taking care of our two girls, Allison (age 6) and Caroline (age 4).