

Curriculum Vitae

Dean Adam Kopsell, Ph.D.

Assistant Professor

Department of Plant Science

University of Tennessee

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Carotenoid project web site: <http://luteinlab.unh.edu/>

Formal Education:

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.

Rockford College, Rockford, IL, 61108. 1988-1989.

Positions Held:

Assistant Professor.

The University of Tennessee, Plant Sciences Department, Institute of Agriculture, Knoxville, TN 37996.

Aug. 2004 - present.

FTE: 10% teaching and 90% research for 12-month appointment.

Assistant Professor.

University of New Hampshire, Plant Biology Department, Durham, NH 03824.

Jan. 2000 – July 2004. 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.
Grain and Soybean Production, 1992. Supervisor: Dr. Ken Smiciklas.

Manager and Operator.

Dean and David's Tree Transplanting, Inc., Harvard, IL, 60033.
1989-1993 (Summers)

Other Experience:**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.

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 Acquaaah. 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.

Courses Previously Taught:

- ***PS 210 Horticulture: Principles and Practices*** (Lecture; 2 credit hours)
The University of Tennessee, Plant Sciences Department. Fall Semester.
Year (number of students):
2005 (23); 2006 (23)
- ***PS 504 Graduate Seminar*** (Lecture; 1 credit hour)
The University of Tennessee, Plant Sciences Department.
Year (number of students):
Spring 2005 (14); Fall 2005 (8); Spring 2006 (14)
- ***PBIO 421 Concepts of Plant Growth*** (Lecture and lab; 4 credit hours)
The University of New Hampshire, Plant Biology Department. Fall Semester.
Year (number of students):
2000(37), 2001(25), 2002(45), 2003 (28)
- ***PBIO 546 Plants, Soils and Environment*** (Lecture and lab; 4 credit hours)
The University of New Hampshire, 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)
The University of New Hampshire, Plant Biology Department. Spring Semester.
Year (number of students):
2002(5), 2003(8)
- ***PBIO 797 Senior Seminar*** (Lecture; 1 credit hour of P/F)
The University of New Hampshire, Plant Biology Department
Fall Semester.
2002(6), 2003 (3)
- ***PBIO 795 Special Investigations*** (1-4 credit hours)
The University of New Hampshire, 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:

- ***World Food and Fiber Plant Production***
Guest lecturer, 2006.

- The University of Tennessee, Plant Sciences Department, Knoxville, TN.
- ***Landscape Plant Physiology***
Guest lecturer, 2006.
The University of Tennessee, Plant Sciences Department, Knoxville, TN.
 - ***Introduction to Plant Science***
Guest lecturer, 2005; 2006.
The University of Tennessee, Plant Sciences Department, Knoxville, TN.
 - ***Fruit and Vegetable Crops***
Guest lecturer, 2004; 2005.
The University of Tennessee, Plant Sciences Department, Knoxville, TN.
 - ***Plant Propagation***
Laboratory coordinator, 2004.
The University of New Hampshire, Department of Plant Biology, Durham, NH.
 - ***Vegetable Crop Production Technologies***
Guest lecturer, 2001.
The University of New Hampshire, Department of Plant Biology, Durham, NH.
 - ***Introduction to Horticulture***
Guest lecturer, 1995-1999.
The University of Georgia, Department of Horticulture, Athens, GA.
 - ***Introduction to Vegetable Production***
Co-instructor and guest lecturer, 1996.
The University of Georgia, Department of Horticulture, Athens, GA.
 - ***Olericulture***
Guest lecturer, 1995.
The University of Georgia, Department of Horticulture, Athens, GA.
 - ***Introduction to Soil Science***
Undergraduate Teaching Assistant, 1991.
Illinois State University, Agriculture Department, Normal, IL.
 - ***Introduction to Grain and Soybean Production***
Undergraduate Teaching Assistant, 1992.
Illinois State University, Agriculture Department, Normal, IL.

Students Advised:

Current Graduate Students:

Amy Belitz (M.S. candidate, Plant Sciences Department, The University of Tennessee, current committee member).

Ann Marie Craig (Ph.D. candidate, Department of Food Science and Technology, The University of Tennessee, current committee member).

Lisa Hunt (M.S. candidate, Plant Biology, The University of New Hampshire, current co-advisor).

Catherine N. Nyinyi (M.S. candidate, Plant Sciences Department, The University of Tennessee, current committee member).

Allison Stewart (M.S. candidate, Plant Sciences Department, The University of Tennessee, current committee member).

Former Graduate Students:

- Melanie Berg (M.S. Plant Biology, Plant Biology, The University of New Hampshire, April 2004, former committee member).
- Hua Cui (M.S., Plant Biology, The University of New Hampshire, May 2005, former committee member).
- Vicki Davidson (M.S. candidate, 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).
- Mark Lefsrud (Ph.D. in Plants, Soils, and Insects, Plant Sciences Department, The University of Tennessee, May 2006, major advisor).
- Brandon Smith (M.S., Plant Biology, The University of New Hampshire, July 2002, former committee member).
- Ron Wik (M.S., Plant Biology, The University of New Hampshire, December 2003, former co-advisor with Dr. Paul Fisher).

Former Undergraduate Students:

- Christin Chenard (advisor for Honor's Thesis Project, 2002-2003; advisor for Undergraduate Research Opportunities Project (UROP) funded for \$400.00 during AY 2002-2003).
- Joe Sheehan (co-advisor for Undergraduate Research Opportunities Project (UROP), Spring 2001).

Refereed Journal Publications:

1. Lefsrud, M.G., **D.A. Kopsell**, and D.E. Kopsell. Nitrogen levels influence biomass, elemental accumulations, and pigment concentrations in spinach. *Journal of Plant Nutrition In Press*
2. **Kopsell, D.A.**, C.E. Sams, C.S. Charron, W.M. Randle, and D.E. Kopsell. Kale carotenoids remain stable while glucosinolates and flavor compounds respond to changes in selenium and sulfur fertility. *Acta Horticulturae – Proceeding of the International Society for Horticultural Science In Press*
3. Toler, H.D., C.S. Charron, **D.A. Kopsell**, C.E. Sams, and W.M. Randle. Increasing selenium concentration in *Brassica oleracea* decreases glucosinolate concentration. *Acta Horticulturae - Proceeding of the International Society for Horticultural Science In Press*
4. **Kopsell, D.A.**, D.E. Kopsell, and J. Curran-Celentano. 2006. Carotenoid pigments in kale are influenced by nitrogen concentration and form. *Journal of the Science of Food and Agriculture In Press*.
5. **Kopsell, D.A.**, J.S. McElroy, C.E. Sams, and D.E. Kopsell. 2006. Genetic variation in carotenoid concentrations among diploid and amphidiploid *Brassica* species. *HortScience In Press*.
6. 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 In Press*.
7. **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.
8. 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.
 9. **Kopsell, D.A.** and D.E. Kopsell. 2006. Assessing bioavailability of carotenoids in vegetable crops. *Trends in Plant Science* 11(10):499-507.
 10. 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.
 11. 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.
 12. 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.
 13. 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.
 14. 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.
 15. **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.
 16. 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.
 17. **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.
 18. 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.
 19. 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.
 20. 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.
 21. **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.
 22. 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.

23. **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.
24. 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.
25. **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.
26. **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.
27. **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.
28. 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.
29. 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.
30. **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.
31. **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.

Book Chapter Publications:

1. **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.
2. 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.

Contributed Papers:

1. Kopsell, D.E., A.M. VanDerZanden, and **D.A. Kopsell**. 2006. Teaching horticulture. *Amer. Soc. Hort. Sci. Newsletter* 22(8):1&4.
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. **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.
4. Kopsell, D.E. and **D.A. Kopsell**. 2001. Tips on surviving graduate school. *Amer. Soc. Hort. Sci. Newsletter* 17(5):4.

5. 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.
6. **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.
7. 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.
8. 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.

Published Abstracts:

1. **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.
2. **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.
3. **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.
4. **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.
5. Lefsrud, M.G. and **D.A. Kopsell**. 2005. Changes in kale pigment profiles during leaf ontogeny. *HortScience* 40(4):1118.
6. Lefsrud, M.G. and **D.A. Kopsell**. 2005. Radiation cycle affects biomass production and carotenoid accumulation in kale. *HortScience* 40(4):1009.
7. 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.
8. **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.
9. 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.
10. **Kopsell, D.A.**, D.E. Kopsell, and J. Curran-Celentano. 2004. Phytonutrient carotenoids in basil and parsley. *HortScience* 39(2):456.
11. Lefsrud, M., **D.A. Kopsell**, and D.E. Kopsell. 2004. Carotenoid accumulation and mineral uptake in kale due to irradiance. *HortScience* 39(2):460.
12. Kopsell, D.E., **D.A. Kopsell**, and J. Curran-Celentano. 2004. Carotenoid variability among kale and spinach cultivars. *HortScience* 39(2):458.

13. 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.
14. **Kopsell, D.A.** and D.E. Kopsell. 2003. Variability in lutein and beta-carotene accumulation among leafy *Brassica oleracea* cultigens. *HortScience* 38(5):677.
15. Kopsell, D.E. and **D.A. Kopsell**. 2003. Kale carotenoids remain stable while flavor compounds respond to sulfur fertility. *HortScience* 38(5):830.
16. 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.
17. Hunt, L. and **D.A. Kopsell**. 2003. Calcium application rates significantly increased leaf tissue Ca in field-grown kale. *HortScience* 38(5):766.
18. **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.
19. 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.
20. 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.
21. Hunt, L. and **D.A. Kopsell**. 2003. Uptake and accumulation of calcium in kale (*Brassica oleracea* L. Acephala Group). *HortScience* 38(3):488.
22. Wik, R.M., P.R. Fisher, and **D.A. Kopsell**. 2003. Iron form alleviates iron deficiency in horticultural crops. *HortScience* 38(3):488-489.
23. **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.
24. **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.
25. **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.
26. **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.
27. **Kopsell, D.A.** and W.M. Randle. 1995. Selenium affects sulfur uptake and metabolism in onions (*Allium cepa* L.). *HortScience* 30(4):769.

Presentations to Professional Groups:

1. **2006** Institute of Experimental Botany, Prague, Czech Republic. September 15.
* *Invited Oral Presentation:* Assessing carotenoid bioavailability in leafy vegetable crops after enhancement strategies.
2. **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

3. **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.
4. **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)
5. **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.
6. **2006** Tennessee Organic Growers Association (TOGA), Tennessee State University, Nashville, TN. April 8.
** Invited Oral presentation:* Increasing the Nutritional Quality of Vegetable Crops.
7. **2005** University of Tennessee, Institute of Agriculture, Agriculture Development Board. Knoxville, TN. Oct. 29.
Oral presentation: Increasing Phytonutrients in Vegetables.
8. **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.
9. **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.
10. **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.
11. **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.
12. **2005** TAES Visit to Plant Sciences Department. Knoxville, TN. March 16.
Oral presentation: Greenhouse and alternative cropping systems for east and middle Tennessee.
13. **2005** CASNR Alumni Council – Plant Sciences Alumni. Knoxville, TN. February 4.
Oral presentation: Phytonutrient enhancement of vegetable crops.
14. **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.
15. **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.

16. **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.
17. **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* cultivars.
18. **2003** Summer Vegetable Twilight Meetings. Co-sponsored by UNH Cooperative Extension Service and the New England Vegetable & Berry Growers Association. 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.
19. **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.
20. **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.
21. **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.
22. **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).
23. **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.
24. **2002** New England Vegetable & Berry Growers Association. Portsmouth, NH. Nov. 9.
Oral presentation: Nutrient fertility affects crop quality in *Brassicas*.
25. **2002** Durham Community Garden Club. Durham, NH. Oct. 15th.
Oral presentation: The value of vegetables: nutritional and phytonutritional value of vegetable *Brassica* crops.
26. **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.
27. **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.

28. **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* Acephala Group).
29. **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.
30. **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.
31. **2000** North Country Fruit and Vegetable Seminar. Lancaster, NH. November 1.
Oral presentation: Phytonutrient enhancement of *Brassica* vegetable crops.
32. **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.
33. **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.
34. **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.
35. **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.
36. **1996** Georgia Vegetable Conference and Trade Show. Tifton, GA. November 21-23.
Oral presentation: Beyond the sweet taste, the health benefits of onions.
37. **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:

(*Presenter/Author)

1. **2006** International Meeting, ASA-CSSA-SSSA, Indianapolis, IN. November 12-16.
J. Scott McElroy*, **Dean A. Kopsell**, John C. Sorochan, and Carl Sams.
Oral Presentation: Evaluation of bentgrass carotenoid composition under high and low irradiance.
2. **2006** International Meeting, ASA-CSSA-SSSA, Indianapolis, IN. November 12-16.
J. Scott McElroy*, **Dean A. Kopsell**, and John C. Sorochan.

- Oral Presentation:** Changes in bermudagrass carotenoid composition following mesotrione application.
3. **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.
 4. **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.
 5. **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.
 6. **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.
 7. **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.
 8. **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.
 9. **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.
 10. **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.
 11. **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*).

12. **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.
13. **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.
14. **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.
15. **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.
16. **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.
17. **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.
18. **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.
19. **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.
20. **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.
21. **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.
 22. **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*).
 23. **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.
 24. **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.
 25. **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.]
 26. **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.
 27. **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.

Grant Funding/Awards:

- 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).

- 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)
- 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).
- 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)
- UNH-Agricultural Experimental Station Federal Hatch Project. “Genetic and environmental influences on the nutritional content of vegetable *Brassicac*.” October 2001 to September 2004 (\$47,700.00)

Service on University and Organizational Committees:

The University of Tennessee Committees:

University of Tennessee Institute of Agriculture (UTIA)

Member College of Agricultural Sciences and Natural Resources (CASNR) Dean Search Committee. 2006-present.

Plant Sciences Department

4-H Junior High Academic Conference, Faculty participant. 2005, 2006

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

College Commencement, 2005, 2006.

Seminar Committee, 2004-present.

Greenhouse Committee, 2004-present.

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.

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

The University of New Hampshire Committee:

Organic Gardening Club

Office of Sustainable Program, The University of New Hampshire.

Club Academic Advisor, 2003-2004.

University Writing Committee.

The University of New Hampshire.

2003-2004.

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.

Graduate Admissions Committee.

The University of New Hampshire, Plant Biology Department.

2001-2004.

Farm and Greenhouse Committee.

The University of New Hampshire, Plant Biology Department.

2000-2004 (Chair 2001-2003).

Seminar Committee.

The University of New Hampshire, Plant Biology Department.

2000-2002.

Greenhouse Open House Committee.

The University of New Hampshire, Plant Biology Department.

2000-2002.

Food and Society Working Group.

Office of Sustainable Program, The University of New Hampshire.

2001-2004.

Northern New England Junior Science & Humanities Symposium.

The University of New Hampshire, March 28-29, 2002.

Competition Judging Committee.

American Society for Horticultural Science Committees/Duties:

Working Groups

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

Produce Quality and Food Safety. Chair-elect: 2006-2008.

Society Committees

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

Oral Session Moderator.

- 100th Annual International Conference of the American Society for Horticultural Science. Providence, RI. Oct. 3-6, 2003. Oral Session 5 – Vegetable Breeding.
- 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.
- 103rd Annual Conference of the American Society for Horticultural Science. New Orleans, LA. July 27-30, 2006. Oral Session – Vegetable Crops Culture & Management 3.

Northeast Region of the American Society for Horticultural Science.

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

Graduate Student Competition Awards Committee.

Member - Annual Meeting 2002.

Chair - Annual Meeting 2003.

Nominations Committee.
Member - Annual Meeting 2002

North American Colleges and Teachers of Agriculture (NACTA).

New Hampshire State Coordinator, 2002-2004.

Other Organizations/Activities.

Oral Session Chair – 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 Society 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.

Workshops attended:

- 2005 “Putting your best foot forward”. Tennessee Agriculture Experimental Station Workshop. Knoxville, TN. October 19.
- 2005 Organic Production of Fruits and Vegetables Short Course. The University of Tennessee. Knoxville, TN. February 24.
- 2004 Southern Region Grantsmanship Workshop. Co-sponsored by the University of Georgia, Clemson University, and Auburn University. Atlanta, GA. Sept. 15-16.
- 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
- 2001 New Hampshire Agriculture Experimental Station Retreat. The University of New Hampshire, Durham, New Hampshire. November 12.
- 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.

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.

Educational/Scholarship Society Memberships:

- Gamma Sigma Delta, 1995.
- Alpha Zeta, 1990.
- Golden Key National Honor Society, 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.

Educational Honors and Awards:

- 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.