ERIC ANDREW DECKER

Professor and Fergus M. Clydesdale Endowed Chair
Department of Food Science
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Education

University of Massachusetts, Amherst, Doctor of Philosophy in Food Science and Nutrition, (redacted)

Washington State University, Master of Science in Food Science and Nutrition, (redacted)

Pennsylvania State University, Bachelor of Science in Biology, (redacted)

Professional Experience

September 2005 to present
Director, Culinary Science Program, University of Massachusetts, Amherst

September, 2000 to Present
Professor, Department of Food Science, University of Massachusetts, Amherst

September, 1993 to August, 2000
Associate Professor, Department of Food Science, University of Massachusetts, Amherst

July, 1993 to August, 1993
Associate Professor, Food Science Section, Department of Animal Sciences, University of Kentucky

October, 1988 to June, 1993
Assistant Professor, Food Science Section, Department of Animal Sciences, University of Kentucky

Honors and Awards

- Research and Development Award, Institute of Food Technologists (2006)
- Stephan S. Chang Award for Lipid and Flavor Science, Institute of Food Technologists (2006)
- Appointed to National Academy of Science, Institute of Medicine Committee on Nutrition Standards for Foods in Schools, 2006.
- Named to ISI Most Highly Cited Agricultural Scientists (2005 to present)
- Named Fergus M. Clydesdale Endowed Chair (2002-2007)
- Malcolm Trout Visiting Scholar, Michigan State University (2003)
- Outstanding Scientific Publication, Phospholipid Division, American Oil Chemist Society (2003)
- Outstanding Advising Award, College of Food and Natural Resources, University of Massachusetts (2002)
- Elected Secretary and Chair, Food Chemistry Division, Institute of Food Technologists (2002-2005)
- Guest Professor, Huazhong Agricultural University, China (2001-2004)
- Elected American Meat Science Association Board of Directors (2000-2002)
- Institute of Food Technologists Distinguished Lecturer (2000-2002)
- Visiting Scientist, Linus Pauling Institute, Oregon State University (2000)
- Outstanding Teaching Award, College of Food and Natural Resources, University of Massachusetts (1998)
- Division Lectureship, Division of Muscle Foods, Institute of Food Technologists (1998)

- Samuel Cate Prescott Award, Institute of Food Technologists (1997)
- Future Leader Award, International Life Science Institute (1996)
- Hokkaido Overseas Guest Researcher Fellowship, Hokkaido Food Processing Research Center, Japan (1995)
- Young Scientist Award, Agriculture and Food Chemistry Division, ACS (1994)
- Achievement Award for Young Scientists, American Meat Science Society (1993)
- Outstanding Paper Presentation Award, American Oil Chemist Society (1993)
- USDA National Needs Fellow, Department of Food Science, Univ. of Massachusetts, Amherst (1985-1988)

Research Interests and Experience

Refereed Journal Articles

1. Redacted.

2. Redacted

3. Redacted

4. Redacted.

5. Lee, S.; Hernandez, P.; Djordjevic, D.; Faraji, H.; Hollender, R.; Faustman, C. and Decker, E.A. Effect of Antioxidants and Cooking on Stability of n-3 Fatty Acids in Fortified Meat Products. J. Food Sci., **2006**, ***71 (3): C233-C238***.

6. Mun, S.: Decker, E.A.; McClements, D.J. Effect of Molecular Weight and Degree of Deacetylation of Chitosan on the Formation of Oil-in-Water Emulsions Stabilized by Surfactant-Chitosan Membranes. *J. Colloid and Interface Sci*., **2006**, 296: 581-590.

7. Klinkesorn, U.; Sophanodora, P.; Chinachoti, P; Decker, E.A. .; McClements, D.J. Characterization of spray-dried tuna oil emulsified in two-layered interfacial membranes prepared using electrostatic layer-by-layer deposition. *Food Res. Intl,* **2006**, 39: 449-457.

8. Kim, H-J.; Decker, E.A.; McClements, D.J. Preparation of multiple emulsions based on thermodynamic incompatibility of heat-denatured whey protein and pectin solutions. *Food Hydrocolloids*. **2006,** 20: 586-595.

9. Surh J., Decker E.A., McClements D.J. Properties and stability of oil-in-water emulsions stabilized by fish gelatin. *Food Hydrocolloids*. **2006,** 20: 596-606.

10. Surh J., Decker E.A., McClements D.J. Influence of pH and pectin type on properties and stability of sodium-caseinate stabilized oil-in-water emulsions. *Food Hydrocolloids*. **2006,** 20: 607-618.

11. Thanonkaew, A.; Benjakul, S.; Visessanguan, W.; Decker, E.A. Development of yellow pigmentation in squid (*Loligo peali*) as a result of lipid oxidation. *J. Agric. Food Chem,* **2006**, 54:956-962.

12. Lee, S.; Djordjevic, D.; Faraji, H.; Decker, E.A.; Faustman, C. Effects of antioxidant on stabilization of meat products with n-3 fatty acids. *Meat Science*, **2006**, 72:18-24.

13. Alamed, J.; McClements, D.J.; Decker, E.A. Influence of heat processing and calcium ions on the ability of EDTA to inhibit lipid oxidation in oil-in-water emulsions containing omega-3 fatty acids. *Food Chem.*, **2006**, 95:585-590.

14. Thanonkaew, A; Benjakul, S.; Visessanguan, W. and Decker, E.A. The effect of metal ions on lipid oxidation, colour and physiochemical properties of cuttlefish (*Sepia pharaonis*) subjected to multiple freeze-thaw cycles. *Food Chem.*, **2006**, 95:591-599.

15. Elias, R.J.; McClements, D.J.; Decker, E.A. Antioxidant activity of cysteine, tryptophan and methionine residues in continuous phase β-lactoglobulin in oil-in-water emulsions. *J. Agric. Food Chem,* **2005**, 53: 10248-10253.

16. Okuda, S.; McClements, D.J.; Decker, E.A. Impact of the Physical State of Lipids in Oil–in–Water Emulsions on the Oxidation of Methyl Linolenate. *J. Agric. Food Chem,* **2005**, 53:9624-9628.

17. Klinkesorn, U.; Sophanodora, P.; Chinachoti, P.; McClements, D.J.; Decker, E.A. Stability of Spray Dried Tuna Oil Emulsions Encapsulated with Two-Layered Interfacial Membranes. *J. Agric. Food Chem,***2005**, 53:8365-8371.

18. Chee, C.P.; Gallaher, J.J.; Djordjevic, D.; Faraji, H.; McClements, D.J. Decker, E.A.; Hollender, R.; Peterson, D.G.; Roberts R.F. and Coupland, J.N. Chemical and sensory analysis of strawberry flavored yogurt supplemented with an omega-3 rich emulsion. *J. Dairy Res*., **2005**,72:311-316.

19. Thanonkaew, A.; Benjakul, S.; Visessanguan, W.; Decker, E.A. Lipid oxidation in microsomal fraction of squid muscle (*Loligo peali*) *J. Food Sci* **2005**, 70:C478-482.

20. Klinkesorn, U.; Sophanodora, P.; Chinachoti, P; Decker, E.A. .; McClements, D.J. Encapsulation of emulsified tuna oil in two-layered interfacial membranes prepared using electrostatic layer-by-layer deposition. *Food Hydrocolloids*. **2005**, 19:1044-1053.

21. Mun, S.: Decker, E.A.; McClements, D.J. Influence of droplet characteristics on the formation of oil-in-water emulsions stabilized by surfactant-chitosan layers. *Langmuir*. **2005** 21:6228-34.

22. Gu, Y.S.; Decker, E.A.; McClements, D.J. Influence of environmental stresses on stability of oil-in-water emulsions containing droplets stabilized by β-lactoglobulin– ι-carrageenan membranes. *J. Colloid Interface Sci*., **2005**, *286:* 551-558.

23. Gu, Y.S.; Decker, E.A.; McClements, D.J. Production and characteristics of oil-in-water emulsions containing droplets stabilized by β-lactoglobulin-ι-carrageenan-gelatin membranes. *Langmuir,* **2005**, 21:5752-5760.

24. Chaiyasit, W.; McClements, D.J.; Decker, E.A. Ability of antioxidants to alter interfacial tension and lipid oxidation in bulk oil and oil-in-water emulsions. *J. Agric. Food Chem,* **2005**, 53:4982-4988.

25. Park, Y.J.; Volpe, S.L;. Decker, E.A. Quantitation of Carnosine in Humans Plasma after Dietary Consumption of Beef. *J. Agric. Food Chem,* **2005**, 53:4736-4739.

26. Lee, S.; Decker, E.A.; Faustman, C.; Mancini, RA.. The effects of antioxidant combinations on color and lipid oxidation in n-3 oil fortified ground beef patties. *Meat Science*, **2005**, 70:683-689.

27. Klinkesorn, U.; Sophanodora, P.; Chinachoti, P.; McClements, D.J.; Decker, E.A. Increasing the oxidative stability of liquid and dried tuna oil-in-water emulsions with electrostatic layer-by-layer deposition technology. *J. Agric. Food Chem,* **2005**, 53:4561-4566.

28. Surh J.; Gu Y.S.; Decker E.A.; McClements D.J. Influence of Environmental Stresses on Stability of O/W

Emulsions Containing Cationic Droplets Stabilized by SDS-Fish Gelatin Membranes. *J Agric Food Chem.* **2005**, 53:4236-44.

29. Decker, E.A.; Warner, K.; Richards, M.P.; Shahidi, F. Measuring Antioxidant Effectiveness in Food. *J. Agric. Food Chem,* **2005**, 53:4303-4310.

30. Daiz, M.; Decker, E.A. Antioxidant mechanisms of caseinophosphopeptides and casein hydrolysates and their application in ground beef. *J. Agric. Food Chem,* **2005**, 52:8208-8213.

31. Kim, H-J.; Decker, E.A.; McClements, D.J. Influence of protein concentration and order of addition on thermal stability of beta-lactoglobulin stabilized n-hexane oil-in-water emulsions at neutral pH. *Langmuir* **2005**, 21:134-139.

32. Gu, Y.S.; Decker, E.A.; McClements, D.J. Influence of pH and carageenan type on properties of beta-lactoglobulin stabilized oil-in-water emulsions. *Food Hydrocolloids* **2005**, 19:83-91.

33. Aoki, T.; Decker, E.A.; and McClements, D.J. Influence of environmental stresses on stability of O/W emulsions containing droplets stabilized by multilayered membranes produced by a layer-by-layer electrostatic deposition technique. *Food Hydrocolloids*, **2005**, 19:209-220.

34. Gu, Y.S.; Decker, E.A.; McClements, D.J. Influence of iota-carageenan type on droplet flocculation of beta-lactoglobulin stabilized oil-in-water emulsions during thermal processin. *Langmuir* **2004**, 20:9565-9570.

35. Kim, H-J.; Decker, E.A.; McClements, D.J. Influence of free protein on flocculation stability of beta-lactoglobulin stabilized oil-in-water emulsions at neutral pH and ambient temperature. *Langmuir* **2004**, 20:10394-10398.

36. Hu, M.; McClements, D.J.; Decker, E.A. Antioxidant Activity of a Procyanidin-Rich Extract from Grape Seed in Whey Protein Isolate-Stabilized Algae Oil-in-Water Emulsions *J. Agric. Food Chem,* **2004**, *52*:5272-5276.

37. Kim, H-J.; Decker, E.A. and McClements, D.J. Comparison of Droplet Flocculation in Hexadecane Oil-in Water Emulsions Stabilized by β-Lactoglobulin at pH 3 and 7. *Langmuir,* **2004**, *20*: 5753-5758.

38. Faraji, H.; McClements, D.J.; Decker, E.A. The Role of Continuous Phase Protein on the Oxidative Stability of Fish Oil-in-water Emulsions *J. Agric. Food Chem*., **2004**, *52*: 4558-4564.

39. Hu, M.; McClements, D.J.; Decker, E.A. Impact of Chelators on the Oxidative Stability of Whey Protein Isolate-Stabilized Oil-in-Water Emulsions containing ω-3 Fatty Acids. *Food Chem,*. **2004**, *88*: 57-62.

40. Baik, M.-Y.; Suhendro, E.L.; Nawar, W.W.; McClements, D.J.; Decker, E.A.; Chinachoti, P. Effects of Antioxidants and Humidity on the Oxidative Stability of Micro-encapsulated Fish Oil. *J. Amer. Oil Chem. Soc*. **2004**, *81*: 355-360.

41. Petursson, S.; Decker, E.A.; McClements, D.J. Stabilization of Oil-in-Water Emulsions by Cod Protein Extracts. *J. Agric. Food Chem.,***2004**, *52*:3996-4001.

42. Djordjevic, D.; Kim, H-J.; McClements, D.J.; Decker, E.A. Physical Stability of Whey Protein-Stabilized Oil-in-Water Emulsions at pH 3: Potential ω-3 Fatty Acid Delivery Systems (Part A). *J. Food Sci.,* **2004**, *69:* C351-355.

43. Djordjevic, D.; Kim, H-J.; McClements, D.J.; Decker, E.A. Oxidative Stability of Whey Protein-Stabilized Oil-in-Water Emulsions at pH 3: Potential ω-3 Fatty Acid Delivery Systems (part B). *J. Food Sci.*, **2004**, *69:* C356-

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44. Gu, Y.S.; Decker, E.A.; McClements, D.J. Influence of pH and ι-carregeenan concentrations on the physiochemical properties and stability of β-lactoglobulin-stabilized oil-in-water emulsions. *J. Agric. Food Chem*., **2004,** *52*: 3626-3632.

45. Ogawa, S.; Decker, E. A.; McClements, D. J. Production and Characterization of O/W Emulsions Containing Droplets Stabilized by Lecithin-Chitosan-Pectin Mutilayered Membranes. *J. Agric. Food Chem*., **2004,** *52*: 3595-3600.

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47. Park, Y.; Kelleher, S.D.; McClements, D.J.; Decker, E.A. Incorporation and Stabilization of Omega-3 Fatty Acids in Surimi. *J. Agric. Food Chem,* **2004**, *52*:597-601.

48. Moreau, L.; Kim, H-J.; Decker, E.A.; McClements, D.J. Production and characterization of oil-in-water emulsions containing droplets stabilized by β-lactoglobulin-pectin membranes. J. Agric. Food Chem., **2003**, *51*:6612-6617.

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50. Cho, Y-J.; Alamed, J.; McClements, D.J.; Decker, E.A. Ability of Chelators to Alter the Physical Location and Reactivity of Iron in Oil-in-Water Emulsions. *J. Food Science* **2003**, *68,* 1952-1957.

51. Ogawa, S.; Decker, E. A.; McClements, D. J. Influence of environmental conditions on the stability of oil in water emulsions containing droplets stabilized by lecithin-chitosan membranes. J. Agric. Food Chem., 2003, *51*:5522-552.

52. Daiz, M.; McClements, D.J.; Decker, E.A. Use of caseinphosphopeptides as natural metal chelators to inhibit oxidative reactions in oil-in-water emulsions. *J. Agric. Food Chem.* **2003**, *51*:2365-2370.

53. Hu, M.; McClements, D.J.; Decker, E.A. Lipid oxidation in corn oil-in-water emulsions stabilized by casein, whey protein isolate and soy protein isolate *J. Agric. Food Chem.* **2003**, *51*:1696-1700.

54. Ogawa, S. Decker; E.A.; McClements, D.J. Production and characterization of O/W emulsions containing cationic droplets stabilized by lechithin-chitosan membranes. *J. Agric. Food Chem.* **2003**, *51*:2806-2812.

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56. Hu, M.; McClements, D.J.; Decker, E.A. Impact of whey protein emulsifiers on the oxidative stability of salmon oil-in-water emulsions. *J. Agric. Food Chem.* **2003**, *51*:1435-1439.

57. Nestle, P., Briend, A. de Benoist, B. Decker, E., Ferguson, E., Fontaine, O., Micardi, A. and Nalubola, R. Complementary food supplements to achieve micronutrient adequacy for infants and young childern. *J. Pediatric Gastroenterology and Nutr.* **2003**, *36*:316-328.

58. Kim, H-J.; Decker, E.A.; McClements, D.J. Influence of sucrose on droplet flocculation in hexadecane oil-in-water emulsions stabilized by β-lactoglobulin. *J. Agric. Food Chem.* **2003**, *51*:766 -772.

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Cereal Foods World **2002,** *47* (8): 370-373

60. Kim, H-J.; Decker, E.A.; McClements, D.J. Impact of protein surface denaturation on droplet flocculation in hexadecane oil-in-water emulsions stabilized by β-lactoglobulin. *J. Agric. Food Chem.* **2002**, *50*:7131-7137.

61. Cho, Y-J.; McClements, D.J.; Decker, E.A. Ability of surfactant micelles to alter the physical location and reactivity of iron in oil-in-water emulsions. *J. Agric. Food Chem.* **2002**, *50:*5704-5710.

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63. Danviriyakul, S. McClements, D.J., Decker, E.A., Nawar, W.W. and Chinachoti, P. Physical Stability of Spray Dried Emulsion as affected by Emulsifiers and Processing Conditions. *J. Food Sci.* **2002**, *67*:2183-2189.

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Aldehydic Lipid Oxidation Products. *J. Agric. Food Chem.* **1999.** 47:51-55.

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Measuring Antioxidant Activity in Food Systems at the First International Congress on Antioxidant Methods, Orlando, FL 2004.

Lipid Oxidation in Complex Systems. Co-Organizer Toshiaki Ohshima, Annual Meeting of American Oil Chemist Society, Kansas City, MO, 2003.

Food Supplements to Achieve Micronutrient Adequacy in Complementary Feeding, Co-Organizers P. Nestel, A. Briend and A. Micardi, USAID/WHO Workshop, Paris, France, 2002.

Oxidation in Heterogenous Foods and Biological Tissues: Impact on Food Quality and Health, Institute of Food Technologist, New Orleans, LA, 2001

Are Nutritional Claim Appropriate for Muscle Foods, Reciprocal Meat Conference, Stillwater, OK, 1999.

Antioxidants and Oxidative Processes in Food and Health, University of Massachusetts, Amherst, MA, 1998

Dietary Strategies for Improving Muscle-Based Food Products, Madrid, Spain, Sept. 7-8, 1998.

Capitalizing on the Benefits of Natural Antioxidants in Nutrition, Health and Food, Dallas, Texas, 1997.

Special Forum on Bovine Spongiform Encephalopathy, Institute of Food Technologists, New Orleans, 1995.

Convergences in the Science of Meat, Poultry and Fish Protein Functionality, Institute of Food Technologist, Atlanta, GA 1994

The Role of Muscle Foods In Health and the Molecular Basis of Disease, Institute of Food Technologist, Atlanta, GA, 1994

Selected Invited Presentations

Oxidation in Emulsions: Critical Issues and Current Challenges, Nestle', San Seplco, Italy

Inhibition of Lipid Oxidation by Coating Oil-in-Water Emulsions with Multiple Layers of Emulsifiers, International Society of Fat Research, Prague, Czech Republic.

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Ability of Proteins and Peptides to Impact the Oxidation Kinetics of Omega-3 Fatty Acids in Oil-in-Water Emulsions, uropean Liipd Federation, Edinburgh, Scotland.

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Impact of Fat on Human Health and Food Quality. IFT Annual Meeting

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The Biology and Chemistry of Omega-3 Fatty Acids: Challenges in Obtaining Our Nutritional Needs, Biology Department, Northeastern University, 2003.

Obtaining Dietary Omega-3 Fatty Acids through the Development of Functional Foods, Department of Agricultural, Food and Nutritional Sciences, University of Alberta, 2003.

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Carnosine as a Natural Antioxidant in Foods, Department of Agricultural Chemistry, Kyoto University, Japan, 1995.

Factors Influencing Oxidative Reactions in Fish Skeletal Muscle, Department of Food Science, Tokyo Fisheries University, Japan, 1995.

New Food Ingredients and Pharmaceutical Foods, Nutrient Databank Conference, Buffalo, NY, 1995

Oxidative Processes in Mackerel Muscle, Atlantic Mackerel Workshop, National Marine Fisheries Service, Gloucester, MA, 1995.

Determination of Pyrroloquinoline Quinone in Dairy Foods, Dairyman Inc., Chicago, IL, 1994.

Altering the Nutritional Composition of Muscle Foods, Symposium on "The role of Muscle Foods in Health and the Molecular Basis of Disease", Institute of Food Technologist, Atlanta, GA, 1994.

The Physiological Role of Carnosine in Fish Muscle, National Marine Fisheries Lab, Gloucester, MA, 1994.

The Role of Carnosine in the Oxidative Stability of Skeletal Muscle, Dept. of Animal Science, University of Connecticut, 1994.

Water and Lipid-Soluble Antioxidants, International Life Science Institute, Nassau, Bahamas, 1994.

Nonnutritient Antioxidants, International Life Science Institute, Washington D.C., 1993.

Antioxidants in Oats and Other Grains, Opta Food Ingredients, Inc., Bedford, MA, 1993.

Control of Lipid Oxidation and Warmed-Over Flavor in Poultry, Kentucky Fried Chicken, Louisville, KY, 1993.

Extending the Shelf-life of Meat. Kentucky, Tennessee Meat Processors Association, Lexington, KY 1992.

Antioxidant Mechanism of Carnosine. Seminar Series for the University of Kentucky Multidisciplinary PhD Program in Nutritional Sciences. Lexington, KY, 1992.

Carnosine and Other Water-Soluble Proteinaceous Antioxidants. Dept. Food Science, University College, Cork, Ireland, 1991.

Formation of Conjugated Linoleic Acid in Processed Cheese. CLA in Dairy Foods and Their Nutritional Implications, National Dairy Council, Baltimore, MD, 1991.

Lipid Oxidation as it Relates to Heart Disease. Kentucky Heart Institute. Multidisciplinary Cardiovascular Research Forum, Lexington, KY, 1991.

Identification and Characterization of Water Soluble Antioxidants for Use as Food Additives. University of Kentucky Membrane Science Center Colloquium, 1990.

Popular Press Publications

Role of Antioxidant Enzymes in the Development of Oxidative Rancidity in Cooked and Salted Muscle Foods, Meat Focus International 5(9):50

Nonessential Dietary Antioxidants, Health Media Communications, 13(11):73.

Concentrations of the Anticarcinogen, Conjugated Linoleic Acid, in Processed Beef Products, Meat Focus International 3(2):61

Antioxidant Potential of Carnosine and Anserine, Meat Focus International 1(5):224.

Use of the Natural Dipeptide Carnosine to Prevent Lipid Oxidation in Pork, 1992, A Look to the Future, Where Marketing and Research Meet, National Livestock & Meat Board.

Natural Antioxidants, Research for a Difference, UK College of Agriculture, Co-Author Ellen Brightwell.

MSG: Friend or Foe, UK College of Agriculture News, Co-Author Ellen Brightwell.

Grants Funded, PRIMARY INVESTIGATOR:

Production of Oxidatively Stable Soybean oil Emulsions, Bunge Foods, (redacted) 2006

Oxidative Stability of Emulsified Omega-3 Fatty Acids. Cargill,(redacted) 2005.

Utilization of Emulsion Interface Engineering to Improve the Oxidative Stability of Food Emulsions: The Role of Antioxidant Proteins, USDA National Research Initiative Competitive Grants Program, 9/1/04-8/31/08, $304,000.

Oxidative deterioration of squid leading to discoloration during prolonged storage, Thailand Ministry of Education, $16,400, 2004.

Stabilization of Citrus Flavors in Emulsions Systems, Kraft Foods, (Redacted) 2003

Light Induced Discoloration of Beverages, Pepsi-Cola Company, (Redacted) 2002.

Producing stable, value-added fish oil emulsions for use in functional foods. SK-NOAA, (Redacted).

Efficacy of producing stable omega-3 fatty acid enhanced foods to improve human health, USDA-IFAFS, 9/15/01-9/14-05, $1,722,000.

The Role of Nitric Oxide Synthase and Peroxynitrite on the Oxidative Stability of Muscle Foods, USDA National Research Initiative Competitive Grants Program, 10/15/01-8/31/04, $185,000

Spectrophotometers for Food Science Laboratories, CFNR Instructional Development Grant, 2001 ,(Redacted).

Impact of Emulsifiers on the Oxidative Stability of Lipid Dispersions, USDA National Research Initiative Competitive Grants Program, 9/1/99-8/31/02, $140,000

Antioxidant Potential of Carnosine, a Beef Dipeptide, National Cattlemen's Beef Association, 9/1/99-8/31/01, (Redacted).

Mechanisms of Lipid Oxidation in Cooked Meats Containing Antioxidants, Cultor Food Science, 6/1/98-5/31/00, (Redacted).

Production of a Carnosine and Anserine-Containing Antioxidant Extract from Surimi Wash Water, National Marine Fisheries Service/NOAA, 6/1/97-5/31/99, $82,151.

Development of Model Systems to Evaluate Carnosine-Myoglobin Interactions. USDA National Needs Graduate Grant Programs, 1997, $3,000

Evaluation of Factors Influencing the Antioxidant Activity of Carnosine and Related Peptides, USDA National Research Initiative Competitive Grants Program, 11/1/96-3/30/99, $116,767.

Assessing the Relationship Between Antioxidants and Exercise by Studying Oxidative Processes in Muscle Biopsies, International Life Science Institute Future Leader Award, 6/1/96-5/31/98 (Redacted).

Production of a Carnosine-Containing Antioxidant Extract from Mechanically Separated Pork, National Livestock and Meat Board, 9/1/95-8/31/97, (Redacted)

Isolation and Characterization of Water-Soluble Antioxidants in Milk, Dairyman Inc. 9/1/95-3/30/97, (Redacted).

Identification of Oxidation Products of the Skeletal Muscle Antioxidants, Anserine and Carnosine, Healy Endowment Grant, University of Massachusetts, 9/1/95-8/31/96 (Redacted)

Development of Methodology to Measure the Oxidative Status of Skeletal Muscle Biopsies, Roche Vitamins & Fine Chemicals, 6/1/95-5/31/96, (Redacted)

Development of Training Workshops for Teachers of Food and Health Science, Massachusetts Agriculture in the Classroom, 1/1/95-12/31/95, $3,500

Development of Food Antioxidant Screening Tests, Pfizer Food Science Group, 6/1/94-5/31/95, (Redacted)

Sodium Electrode System for Food Science Laboratories, CFNR Instructional Development Grant, 1995, (Redacted).

Identification and Characterization of Whey Antioxidants, University of Massachusetts Faculty Research Grant, 2/1/94-1/31/95, $4,700

Evaluation of Pfizer Antioxidants, Pfizer Food Science Group, 10/93-9/94, $39,064

Increasing Endogenous Carnosine Concentrations in the Skeletal Muscle of Pork by Dietary Supplementation, National Pork Producers Council, 10/1/93-9/31/94, $16,200

Antioxidant Activity of Modified Soybean Lecithin, Kentucky Soybean Association, 9/1/93-8/31/94, (Redacted)

Modification of Beef Tallow to Decrease the Concentration of Saturated Fatty Acids, Kentucky Beef Cattle Association, 11/1/92-10/31/93, (Redacted)

Evaluation of Conjugated Linoleic Acid Content in Milk Fat and Dairy Products, National Dairy Council 6/1/92-5/31/94, (Redacted)

Modification of Beef Fat to Increase the Concentration of the Anticarcinogen, Conjugated Linoleic Acid, National Livestock and Meat Board, 3/1/92-8/30/93, (Redacted)

Preservation of the Fresh Flavor or Pork Using Carnosine in Combination with Other Natural Antioxidants, National Livestock and Meat Board, 3/1/92-8/30/93, (Redacted)

Isolation and Characterization of an Antioxidant Peptide From Acid Whey Permeate, University of Kentucky Graduate School, 1991, (Redacted)

Extraction of Anserine & Carnosine From Beef for Use as a Food Additive, Kentucky Beef Cattle Association, 3/1/91-2/28/92, (Redacted)

Characterization and Identification of Toxic Lipids and Lipid Oxidation Products in Foods and Biological Tissue, University of Kentucky, 1991 (Redacted)

Identification of Protein-Bound Fe in Muscle Foods Which Promotes Lipid Oxidation, USDA, USA-Ireland Cooperative Research Program, 1991 (Redacted)

Determination of the Antioxidant Mechanism of Carnosine, Biomedical Research Support Grant, 1/1/90-12/31/90 (Redacted)

Effect of Processing Conditions and Food Additives on the Formation of Conjugated Linoleic Acid in Processed Cheese, National Dairy Research and Promotion Board, 1/1/90- 2/31/90, (Redacted)

Use of the Natural Dipeptide, Carnosine, to Prevent Lipid Oxidation in Pork, National Livestock and Meat Board, 1/1/90-12/31/90, (Redacted)

Use of the Dipeptides, Anserine and Carnosine, as Food Antioxidants, University of Kentucky Research Committee, 1989 (Redacted)
Use of Natural Antioxidants in Blood Plasma to Control Lipid Oxidation in Food, University of Kentucky Graduate School, 11/1/88-10/31/89 (Redacted)

Use of Natural Antioxidants From Beef Plasma to Control Lipid Oxidation in Food, American Meat Protein Corporation, 1/1/90-12/31/90, (Redacted)

Total Funds Awarded as a PI: (Redacted)

Grants Funded, CO-INVESTIGATOR

Food-Based Solutions to Health and Wellness Proposal for Academic-Industry Strategic Alliance. Weiss, J. (PI), McClements, D.J., Decker E.A. and Park,Y. University of Massachusetts Science and Technology Initiatives Fund .(Redacted) 2005.

Utilization of Interfacial Engineering to Improve Emulsion Stability. D.J. McClements (PI) and Decker E.A. USDA-National Research Initiative, Competitive Grants Program (Redacted) (2005-2009).

Seafood Safety and Health, PI: R.E. Levin, Dept. of Food Science, UMass, USDA, 2002-2005 (Redacted).

Distribution of Lipid-soluble Antioxidants in Muscle Lipids and Effect on Stability. PI. H.O. Hultin, Dept. Food Sci, UMass, USDA-NRI, 2000-2003 (Redacted)

Improvement of Oxidative Stability of Encapsulated Fish Oil in Food Powders, PI. Pavinee Chinachoti, Dept. Food Science, UMass, NOAA-SK, 2000-2002 (Redacted)

Acquisition of High Performance Liquid Chromatograph (HPLC) for Mass Spectrometer Sample Introduction. PI: Uden, P.C., Chemistry Dept., Faculty Research Grant, UMass, 1999 (Redacted).

International Symposium on Dietary Strategies for Improving Animal-Based Food Products, Co-PI, Cameron Faustman, University of Connecticut, OCED Cooperative Research Program, 1998 (Redacted).

Stabilization of Spray-Dried Dairy-Based Creamers, Dairyman Inc., PI: Pavinee Chinachoti, Dept. Food Science, UMass (PI), 1/1/96-12/31/99 (Redacted).

Commercialization of an Ultrasonic Device for Measuring the Fat Content of Mackerel, National Marine Fisheries Service/NOAA, David J. McClements, Dept. Food Science, UMass (PI), 6/1/97-12/31/98,(Redacted)

Development of a Rapid Nondestructive Technique to Measure the Fat Content of Mackerel, National Marine Fisheries Service/NOAA, David J. McClements, Dept. Food Science, UMass (PI), 9/1/95-2/28/97, $52,000

National Needs Fellowships in Food Science, USDA, Robert Levin, Dept. Food Science, UMass (PI), 9/1/95-8/31/98, (Redacted)

Fat-Mediated Endothelial Injury: Implications in Atherosclerosis, National Dairy Council, 5/1/94-4/30/95, Bernhard Hennig, Dept. of Nutr. and Food Science (PI), (Redacted)

Nutritional Requirements and Production of Hybrid Striped Bass in Kentucky, United States Department of Agriculture, 5/93-12/95, Carl Webster, Kentucky State University (PI), $105,320

Analysis of Glycoproteins in Cultured Endothelial Cells with HPLC, University of Kentucky Research Equipment Competition, 1992, Bernhard Hennig, Dept. of Nutrition and Food Science (PI), (Redacted)

Measurement of Food Texture with an Instron Universal Testing Instrument, University of Kentucky Research Equipment Competition, 1992, Youling Xiong, Dept. of Animal Sciences (PI), (Redacted)

Toxicity of Lipids and Lipid Oxidation Products, University of Kentucky Research Equipment Competition 1992, Gilbert Boissonneault, Dept. of Clinical Sciences (PI), (Redacted)

Improving Beef Heart Surimi Functionality through Control of Oxidation, Kentucky Beef Cattle Association, 6/1/92-5/31-93, Youling Xiong, Dept. of Animal Sciences (PI) (Redacted)

Anti-Atherogenic Potential of Conjugated Linoleic Acid, University of Kentucky Multidisciplinary Nutrition Program, 1992, Gilbert A. Boissonneault, Dept. of Clinical Sciences (PI) (Redacted)

Influence of Cu on Inflammation and Antioxidant Activity in the Bovine Udder, United States Department of Agriculture, 1/1/92-6/30/94, Robert Harmon, Dept. of Animal Sciences (PI), $123,608

Fat-Mediated Endothelial Injury: Implications in Atherosclerosis, National Dairy Council, 1/1/91-12/31/92, Bernhard Hennig, Dept. of Nutrition and Food Science, (Redacted)

Dietary Carnosine and Breast Cancer Risk: Protection by Red Meats?, National Livestock and Meat Board, 3/1/91-2/28/92, Gilbert A. Boissonneault, Dept. of Clinical Sciences (PI), (Redacted)

Type of Fat as Related to Endothelial Injury: Implications in Atherosclerosis, National Livestock and Meat Board 6/1/89-6/30/91, Bernard Hennig, Dept. of Nutrition and Food Science (PI), (Redacted)

Lipid Mediated Endothelial Injury, National Institutes of Health, 9/30/90-9/29/95, Bernard Hennig, Dept. of Nutrition and Food Science (PI) (Redacted)

Fish Oil, Vitamin E and Macrophage Lipoprotein Uptake, American Heart Association, 7/1/90-6/30/92, Gilbert A. Boissonneault, Dept. of Clinical Sciences (PI), (Redacted)

Enzyme Tenderization of Beef, Kentucky Beef Cattle Association, 10/1/90-9/30/91, Warrie J. Means, Dept. of Animal Sciences (PI) (Redacted)

Total Funds Awarded as a Co-PI: **(Redacted)**
Total Grant Funds Awarded: *(Redacted)*

Teaching and Mentorship Experience

Classroom Teaching

University of Massachusetts

Foods and Health (Fd. Sci. 101), 1993 to Present

Food Chemistry (Fd. Sci. 541), 1994 to Present

Food Chemistry Lab (Fd. Sci. 544), 1997 to Present

Food Lipids (Fd. Sci. 741), 1994 to Present

University of Kentucky

Food Chemistry (FSC 534), 1989 to 1993

Food Analysis (FSC 335), 1989 to 1992

Food Lipids (FSC 780), 1992

Advanced Meat Science (FSC 630), 1990

Introduction to Food Science (GEN 107), 1990-1991

Graduate Advising

Ph.D. Students 10

M.S. Students 13

Other Mentorship Activities

Post Doctoral Research Associates 9
Visiting Scientists 9

Advisor Food Science Club, 1989 to 1995

Chair, Undergraduate Program Committee, Dept. of Food Science, UMass, 1995-2002.

Selected Professional Recognitions and National Committee Assignments:

- Secretary/Chair-Elect/Chair, Food Chemistry Division, Institute of Food Technologists (2002-2005).
- Chair, Peer-Review Journal Sub-Committee, Institute of Food Technologists (2003-2005)
- Member, USDA-CSREES Review Team for Dept. of Food Science, Louisiana State University (2003)
- Member, Communication Management Committee, Institute of Food Technologists (2003-2005)
- Research Committee, Institute of Food Technologists (1999-2002)
- Panel Leader, USDA-NRI Food Characterization Grant Review Panel (2002-2003)
- Contributing Editor, Nutrition Reviews (1994-Present)
- Panel Member, USDA-NRI Food Characterization Grant Review Panel (2001-2002)
- Editorial Board, Meat Science (1999-Present)
- Associate Editor, Current Protocols in Food Analytical Chemistry, John Wiley & Sons (1998-Present)
- Program Committee, American Meat Science Association (1998-2000)
- Advisory Panel Member for TSE in Food Lipids, Food and Drug Administration (1998)
- Advisory Board for International Collaborative Doctoral Degreee Program, Thailand (1999-present)
- Advisory Panel Member for TSE in Gelatin, Food and Drug Administration (1997-1998)
- Grant Review Committee for Conjugated Linoleic Acid in Beef, National Cattlemen Association (1997-1999)
- Judge, Student Paper Competition, Phi Tau Sigma (1997)
- Member, Sustaining Member Committee, American Meat Science Association (1997-present)
- Member, Distinguished Research Award Committee, American Meat Science Association (1997)
- Member, Sausage Evaluation Committee, American Meat Science Association (1997)
- Chairman, Muscle Food Division, IFT (1994-1995)
- Member and Chair, Committee Sections and Divisions, IFT (1995-1998)
- Judge, Graduate Research Poster Competition, IFT (1996)
- Member, American Meat Science Assoc. Biochemistry Program Committee (1995)
- Chairman for Graduate Poster Competition, American Meat Science Assoc. (1995)
- Member, EPA Dioxin Reassessment Working Group, IFT (1994-1995)
- Judge, Graduate Poster Competition, American Meat Science Assoc. (1994)
- Member, Reciprocation Fair Program Committee, American Meat Science Assoc. (1994)
- Chair-Elect, Muscle Food Division, IFT (1993-1994)
- Session Chairman, Muscle Food Processing, Institute of Food Technologist (1992)
- Co-Chairman, Local Arrangement Committee, N. American Membrane Society Fifth Annual Meeting (1992)
- Member, Supelco Research Award Committee, American Oil Chemist Society (1992-1993)
- Member, Annual Meeting Program Committee, Institute of Food Technologist (1992-1995)
- Chairman, Bluegrass Section, Institute of Food Technologist (1991-1993)
- Member, Muscle Biochemistry Committee, American Meat Science Assoc. (1991)
- Secretary, Bluegrass Section Institute of Food Technologist (1989-1990)

Membership in Professional Organizations

Institute of Food Technologists	(redacted)
American Chemical Society	(redacted)
American Oil Chemist Society	