# CURRICULUM VITA - Earl H. Harrison

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Education:

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| Cornell University | A.B. | 1971 |
| Cornell University | M.N.S. | 1973 |
| Columbia University | M. Phil. | 1976 |
| Columbia University | Ph.D. | 1978 |

Positions Held:

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| 2006- | Dean's Distinguished Professor of Human Nutrition<br>The Ohio State University, Columbus, OH |
| | Professor, Ohio State Biochemistry Program |
| | Investigator, Davis Heart & Lung Research Institute |
| | Member, OSU Comprehensive Cancer Center |
| | Member, Center for Advanced Functional Foods Research and Entrepreneurship (CAFFRE) |
| 2002- 2006 | Research Leader, Phytonutrients Laboratory<br>USDA Human Nutrition Research Center, Beltsville, MD |
| 2000-2002 | Research Leader, Diet & Human Performance Laboratory<br>USDA Human Nutrition Research Center, Beltsville, MD |
| 1998- 2006 | Research Chemist<br>USDA Human Nutrition Research Center, Beltsville, MD |
| 1994-1998 | Professor of Biochemistry,<br>MCP-Hahnemann School of Medicine, Philadelphia, PA |

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| 1986-1993 | Associate Professor of Biochemistry and Physiology<br>The Medical College of Pennsylvania, Philadelphia, PA |
| 1982-1985 | Assistant Professor of Biological Chemistry, Wright State University School of Medicine, Dayton, OH |
| 1979-1981 | USPHS Postdoctoral Fellow, The Rockefeller University, New York, NY |

Honors and Awards:

American Institute of Nutrition Graduate Student Research Award (1977)
National Research Service Award (National Cancer Institute) (1978-1981)
NIH Nutrition Study Section (1996-2000)
National Diabetes & Digestive & Kidney Diseases Advisory Council (2002-2005)
Member of Editorial Board, *The Journal of Nutrition* (2004-2010)
College of CSR Reviewers, Center for Scientific Review, NIH (2010-2012)
Chair FASEB Summer Research Conference on Retinoids (2012)
Associate Editor, *The Journal of Nutrition* (2012-2014)
Fellow, International Carotenoid Society (2017)

Membership in Scientific Societies:

The American Chemical Society, American Society for Nutrition, American Society for Biochemistry and Molecular Biology, American Physiological Society
American Association for the Advancement of Science

Research Funding:

American Heart Association/Miami Valley Heart Chapter.
"Peroxisomes in Aorta and Heart." 01/01/82-01/01/85. $37,950.

National Society to Prevent Blindness. "Subcellular Localization of Vitamin A in Corneal Epithelium". 01/01/82-01/01/83. $8,420.

National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases (NIH). "Localization of Vitamin A in Target Tissues and Liver." 08/01/83-07/31/86. $107,375.

National Heart, Lung, and Blood Institute (NIH). "Cellular and Molecular Biology of Lipoprotein Metabolism." (PPG, Dr. G.H. Rothblat, P.I.) 07/01/88 -07/01/93. E.H. Harrison was co-investigator on Project 1 (Regulation of the metabolism of plasma lipoproteins, $770,000), Project 4 (Cellular retinol metabolism, $483,000) and Project 5 (Cellular cholesteryl ester metabolism, $792,000).

National Institute of Diabetes and Digestive and Kidney Diseases (NIH). "Hydrolysis of Vitamin A Esters in Liver." 09/30/92-10/01/96. $501,878.

National Heart, Lung, and Blood Institute (NIH). "Dietary Carotenoids: Transport in Human Plasma" 07/01/94-03/31/98. $343,749.

W.W. Smith Charitable Trust. "Cholesteryl Ester Hydrolase and Dietary Cholesterol Absorption." 01/01/96-12/31/97. $69,961.

National Institute of Diabetes and Digestive and Kidney Disease (NIH). "Hydrolysis of Vitamin A Esters in Liver." 12/01/96-11/30/02. $663,799.

National Heart, Lung, and Blood Institute (NIH). "Dietary Carotenoids: Lipoprotein-Cell Interactions." 08/01/98-07/31/02. $568,735.

National Cancer Institute (NIH). "Allium Foods & Cancer Prevention" via a specific cooperative agreement with the Nutritional Sciences Research Group, Division of Cancer Prevention. FY 2002. $30,000.

National Cancer Institute (NIH). "Vitamin A, Carotenoids & Cancer Prevention" via a specific cooperative agreement with the Nutritional Sciences Research Group, Division of Cancer Prevention. FY 2003. $35,000.

National Cancer Institute (NIH). "Bioactive Food Components & Gene & Protein Expression in Tumor Cells" via a specific cooperative agreement with the Nutritional Sciences Research Group, Division of Cancer Prevention. FY 2006. $27,000.

National Heart, Lung, and Blood Institute (NIH). "Dietary Carotenoids: Lipoprotein-Cell Interactions." 01/01/03-12/31/09, $600,000.

National Institute of Diabetes and Digestive and Kidney Disease (NIH). "Hydrolysis of Vitamin A Esters in Liver." 09/01/03-06/30/10. $1,230,000.

Ohio Agricultural Research and Development Center (OARDC), “Occurrence & Function of New Carotene Metabolites in Human Cells.” 03/01/09-02/28/11. $100,000.

National Heart, Lung, and Blood Institute (NIH). "Cleavage Products of Dietary Carotenoids: Occurrence & Nutritional Function." 02/01/10-12/31/14, $1,000,000.

United States Department of Agriculture (USDA). “Nutrition Research to Reduce the Risk of Cancer.” 09/01/15 – 08/31/17, $79,200.

National Institute of Diabetes and Digestive and Kidney Disease (NIH). "Vitamin A Homeostasis: Retinyl Ester Stores." 04/01/16 - 03/31/19. $481,400.

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Harrison, E.H., and D.B. McCormick (1974) The metabolism of dl[1,6-$^{14}$C]lipoic acid in the rat. Arch. Biochem. Biophys. 160:514-522.

Harrison, E.H., J.E. Smith, and DeW.S. Goodman (1979) Unusual properties of retinyl palmitate hydrolase activity in rat liver. J. Lipid Res. 20:760-771.

Furr, H.C., J.C.H. Shih, E.H. Harrison, H.-H. Chang, J.T. Spence, L.D. Wright, and D.B. McCormick (1979) Chromatographic and spectral properties of lipoic acid and its metabolites. Methods Enzymol. 62D:129-135.

LaBadie, J.H., C.F. Beyer, E.H. Harrison, R.N. Mitchell, and W.E. Bowers (1979) The cellular volume changes of viable cells during mitogenic stimulation of rat lymphocytes. In: The Molecular Basis of Immune Cell Function (Kaplan, J.G., editor) Elsevier/North Holland Biomedical Press, New York. pp. 423-425.

Harrison, E.H., J.E. Smith, and DeW. S. Goodman (1980) Effects of vitamin A deficiency on the levels and distribution of retinol-binding protein and marker enzymes in homogenates and Golgi-rich fractions of rat liver. Biochim. Biophys. Acta 628:489-497.

Harrison, E.H., V. Zbuzek, J.H. LaBadie, and W.E. Bowers (1981) Enzymatic composition of mitogen-induced lymphoblasts and untreated lymphocytes fractionated by rate-zonal centrifugation. Biochim. Biophys. Acta 676:321-328.

Harrison, E.H., and W.E. Bowers (1981) Lysosomal enzymes. In: Methods for Studying Mononuclear Phagocytes (Adams, D.O., P. Edelson, and H. Koren, editors) Academic Press, Inc., New York. pp. 433-448.

Harrison, E.H., and W.E. Bowers (1981) Inhibition of gamma-glutamyltranspeptidase by treatment of intact lymphocytes with periodate. FEBS Letters 136:289-292.

Harrison, E.H., and W.E. Bowers (1983) Characterization of rat lymphocyte cell membranes by analytical isopycnic centrifugation. J. Biol. Chem. 258:7134-7140.

Walusimbi-Kisitu, M., and E.H. Harrison (1983) Fluorometric assay for rat liver peroxisomal fatty acyl-coenzyme A oxidase activity. J. Lipid Res. 24:1077-1084.

Mitchell, R.N., E.H. Harrison, and W.E. Bowers (1984) The use of radioactive cysteine methyl ester for labeling glycosylated molecules oxidized by periodate or neuraminidase plus galactose oxidase. Arch. Biochem. Biophys. 229:544-554.

Harrison, E.H. (1984) Action of clofibrate and its analogs in rats. Dissociation of hypolipidemic effects and the induction of peroxisomal beta-oxidation. Biochim. Biophys. Acta 796:163-168.

Harrison, E.H., W.S. Blaner, DeW. S. Goodman, and A.C. Ross (1987) Subcellular localization of retinoids, retinoid-binding proteins, and acyl-CoA:retinol acyltransferase in rat liver. J. Lipid Res. 28:973-981.

Harrison, E.H., J.S. Lane, S. Luking, M.J. Van Rafelghem, and M.E. Andersen (1988) Perfluoro-n-decanoic acid: Induction of peroxisomal beta-oxidation by a fatty acid with dioxin-like toxicity. Lipids 23:115-118.

Harrison, E.H., and M. Walusimbi-Kisitu (1988) Properties and subcellular localization of myocardial fatty acyl-coenzyme A oxidase. Am. J. Physiol. 255: H441-H445.

Harrison, E.H. (1988) Bile salt-dependent, neutral cholesteryl ester hydrolase of rat liver: Possible relationship with pancreatic cholesteryl ester hydrolase. Biochim. Biophys. Acta 963:28-34.

Yost, R.W., E.H. Harrison, and A.C. Ross (1988) Esterification of retinol bound to cellular retinol-binding protein by rat liver microsomes. J. Biol. Chem. 263:18693-18701.

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Harrison, E.H., and M.Z. Gad (1989) Hydrolysis of retinyl palmitate by enzymes of rat pancreas and liver: Differentiation of bile salt-dependent and bile salt-independent, neutral retinyl ester hydrolases in rat liver. J. Biol. Chem. 264:17142-17147.

Laposata, E.A., E.H. Harrison, and E.B. Hedberg (1990) Synthesis and degradation of fatty acid ethyl esters by cultured hepatoma cells exposed to ethanol. J. Biol. Chem. 265:9688-9693.

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Halminski, M.A., J.B. Marsh, and E.H. Harrison (1991) Differential effects of fish oil, safflower oil and palm oil on fatty acid oxidation and glycerolipid synthesis in rat liver. J. Nutr. 121: 1554-1561.

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Harrison, E.H. (1993). Enzymes catalysing the hydrolysis of retinyl esters. Biochim. Biophys. Acta 1170: 99-108.

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Romanchik, J.E., D.W. Morel, and E.H. Harrison (1995) Distributions of carotenoids and α-tocopherol among lipoproteins do not change when plasma is incubated in vitro. J. Nutr. 125: 2610-2617.

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Harrison, E.H. and E.S. Kempner (1997) Size of the catalytically active unit of rat hepatic carboxylester lipase in the presence and absence of bile salt. Biochim. Biophys. Acta 1347: 177-182.

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During, A., M.M. Hussain, D.W. Morel, and E.H. Harrison (2002) Carotenoid uptake and secretion by caco-2 cells: β-carotene isomer selectivity and carotenoid interactions. J. Lipid Res. 43: 1086-1095.

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McDevitt, T.M., R. Tchao, E.H. Harrison, and D.W. Morel (2005) Carotenoids normally present in serum inhibit proliferation and induce differentiation of a human monocyte/macrophage cell line (U937). J. Nutr. 135: 160-164.

Linke, T., H. Dawson and E.H. Harrison (2005) Microsomal acid retinyl ester hydrolase: Isolation, characterization, substrate and tissue specificity. J. Biol. Chem. 280: 23287-23294.

Harrison, E.H. (2005) Mechanisms of digestion and absorption of dietary vitamin A. Ann. Rev. Nutr. 25: 87-103.

During, A. and E.H. Harrison (2005) An in vitro model to study the intestinal absorption of carotenoids. Food Research International 38: 1001-1008.

During, A., H. Dawson and E.H. Harrison (2005) Carotenoid transport is decreased and expression of the lipid transporters SR-BI, NPC1L1 and ABCA1 is down-regulated in CACO-2 cells treated with ezetimibe. J. Nutr. 135: 2305-2312.

Linke, T., A.C. Ross and E.H. Harrison (2006) Proteomic analysis of rat plasma by two-dimensional liquid chromatography and MALDI-TOF mass spectrometry. J. Chromatography A 1123: 160-169.

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Trasino, S.E., E.H. Harrison and T.Y. Wang (2007) Androgen regulation of aldehyde dehydrogenase 1A3 (ALDH1A3) in the androgen responsive human prostate cancer cell LNCaP. Exp. Biol. Med. 232: 762-771.

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During, A. and E.H. Harrison (2007) Mechanisms of provitamin A (carotenoid) and vitamin A (retinol) transport into and out of intestinal Caco-2 cells. J. Lipid Res. 48: 2283-2294.

During, A., S. Doraiswamy and E.H. Harrison (2008) Xanthophylls are preferentially taken up compared to β-carotene by retinal cells via a scavenger receptor BI-dependent mechanism. J. Lipid Res. 49: 1715-1724.

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Kopec, R.E., K.M. Riedl, E.H. Harrison, R.W. Curley, D.P. Hruszkewycz, S.K. Clinton and S.J. Schwartz (2010) Identification and Quantification of Apo-lyopenals in Fruits, Vegetables, and Human Plasma. J. Agric. Food Chem. 58: 3290-3296.

Novotny, J.A., D.J. Harrison, R. Pawlosky, V.P. Flanagan, E.H. Harrison and A.C. Kurlich (2010) β-Carotene Conversion to Vitamin A Decreases As the Dietary Dose Increases in Humans. J. Nutr. 140: 915-818.

Marsh, R.S., Y. Yan, V. M. Reed, D. Hruszkewycz, R.W. Curley and E.H. Harrison (2010) β-Apocarotenoids do not significantly activate retinoic acid receptors α or β. Exp. Biol. Med. 235: 342-348.

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Eroglu, A., D.P. Hruszkewycz, R.W. Curley and E.H. Harrison (2010) The eccentric cleavage product of β-carotene, β-apo-13-carotenone, functions as an antagonist of RXRα. Arch. Biochem. Biophys. 504: 11-16.

Reichert, B., R. Yasmeen, S.M. Jeyakumar, F. Yang, T. Thomou, H. Alder, G. Duester, A. Maiseyeu, G. Mihai, E.H. Harrison, S. Rajagopalan, J.L. Kirkland, and O. Ziouzenkov (2011) Concerted action of aldehyde dehydrogenases influences depot-specific fat formation. Molecular Endocrinology 25: 799-809.

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Fleshman, M.K., K.M. Riedl, J.A. Novotny, S.J. Schwartz and E.H. Harrison (2012) An LC/MS method for d8-β-carotene and d4-retinyl esters useful in studies of β-carotene absorption and its conversion to vitamin A in humans. J. Lipid Res. 53: 820-827.

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Eroglu, A. and E.H. Harrison (2013) Carotenoid metabolism in mammals, including man: formation, occurrence, and function of apocarotenoids. J.Lipid Res. 54: 1719-1730.

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I. Committees and Administrative Service

Wright State University, Dayton, OH

1. Department of Biological Chemistry
   Coordinator, Department seminar series, 1983-84, Committee on Depart - mental Evaluation, 1984-85. Graduate Admissions Committee, Chairman, 1984-85.

2. College of Science and Engineering
   Undergraduate Petitions Committee, 1983-85.

3. School of Medicine
   Ad Hoc Committee on Professional Conduct, 1984. Coordinator, National Dairy Council Visiting Professor in Nutrition Program, 1982, 1984.

Medical College of Pennsylvania, Philadelphia, PA

1. Department of Physiology & Biochemistry
   Coordinator, Department seminar series, 1987-88. Graduate Program Committee, 1987-1994. Basic Science Task Force, Division of Nutrition, Chairman, 1987.

2. College
   Research Committee, 1994-1998. Curriculum Committee, 1987-92. First Year Curriculum Subcommittee, Chairman, 1988-90. Coordinator, Burroughs Wellcome/FASEB Visiting Professor in the Basic Medical Sciences Program, 1989.

Federation of American Societies for Experimental Biology

1. Member, FASEB Summer Research Conferences Advisory Committee (appointed representative of the American Institute of Nutrition), 1991-94.

Society for Experimental Biology and Medicine

1. Membership Committee, 1992-96.
2. Ad Hoc Travel Grant Committee, 1999.

American Society for Nutritional Sciences

1. Mead Johnson Award Nominating Committee, 1997, 1998 (Chair)
2. New Members Committee, 1997-2000.

Beltsville Human Nutrition Research Center, USDA, ARS, Beltsville, MD

1. BHNRC, Search Committees for New Scientist, 1999, 2000, 2002, 2005.
2. BHNRC Seminar Committee, Chair, 1999-2000.

Beltsville Agricultural Research Center, USDA, ARS, Beltsville, MD

1. Beltsville Area Animal Care & Use Committee (2001)
2. Beltsville Area Bioinformatics Committee (2001)
3. Beltsville Area Proteomics Committee, Chair (2001-2002)

United States Departments of Health & Human Services and Agriculture

1. Bioactive Food Components Federal Working Group (2003-2006)

The Ohio State University, Columbus, OH

1. Department of Human Nutrition
   Graduate Studies Committee, 2006-; Promotion and Tenure Committee, 2006-; Faculty Search Committee, 2007, 2012, 2016

2. College of Human Ecology
   Promotion and Tenure Committee, 2006-2015

3. Office of Research
   Mass Spectrometry & Proteomics Users Advisory Group, 2008-2012

4. The Graduate School
   University Fellowship Selection Committee 2010-2011

## II. Graduate Students Directed

Wright State University, Department of Biological Chemistry -- Mbaga S. Walusimbi-Kisitu, M.S. in Biological Chemistry, 1984.

Medical College of Pennsylvania, Department of Biochemistry -- Margaret A. Halminski, Ph.D. in Biochemistry, 1991.

Medical College of Pennsylvania, Department of Biochemistry -- Mohamed Z. Gad, Ph.D. in Biochemistry, 1991.

Medical College of Pennsylvania, Department of Biochemistry -- Joelle E. Romanchik, Ph.D. in Biochemistry, 1996.

The Ohio State University, Department of Human Nutrition – Sara Thomas, M.S. in Nutrition, 2008.

The Ohio State University, Department of Human Nutrition – Yan Yan, M.S. in Nutrition, 2008.

The Ohio State University, Department of Human Nutrition – Emily Brown, M.S. in Nutrition, 2010.

The Ohio State University, Department of Human Nutrition – Julie Mayeku, M.S. in Nutrition, 2010.

The Ohio State University, Department of Human Nutrition – Shiva Singh, M.S. in Nutrition, 2011.

The Ohio State University Interdisciplinary Program in Nutrition (OSUN) – Matthew Fleshman, PhD in Nutrition, 2011.

The Ohio State University Biochemistry Program (OSBP) – Abdulkerim Eroglu, PhD in Biochemistry, 2012.

The Ohio State University, Department of Human Nutrition – Vanessa Reed, M.S. in Nutrition, 2013.

The Ohio State University Biochemistry Program (OSBP) – Carlo Dela Sena, PhD in Biochemistry, 2013.

The Ohio State University, Department of Human Nutrition – Boluwatiwi Durojaye, M.S. in Nutrition, 2015.

The Ohio State University Interdisciplinary Program in Nutrition (OSUN) – Sara Thomas, PhD in Nutrition, 2016.

The Ohio State University Interdisciplinary Program in Nutrition (OSUN) – Yan Yuan, PhD in Nutrition, 2017.

The Ohio State University Interdisciplinary Program in Nutrition (OSUN) – Boluwatiwi Durojaye, PhD. student, current.

III. Postdoctoral Scientists

At the Medical College of Pennsylvania, Department of Biochemistry:

Dr. Camilo Rojas, Ph.D. in Biochemistry, University of Wisconsin at Milwaukee

Dr. Gwoshing Sun, Ph.D. in Nutritional Sciences, University of Arizona

Dr. Ariette van Bennekum, Ph.D. in Biochemistry, State University of Leiden, The Netherlands

Dr. Tammy R. Dugas, Ph.D. in Chemistry, Louisiana State University

At the USDA Beltsville Human Nutrition Research Center:

Dr. Alexandrine During, Ph.D. in Applied Biochemistry, Bordeaux University, France

Dr. Thomas Linke, Ph.D. in Biochemistry, University of Bonn, Germany

Dr. Keary Cope, Ph.D. in Toxicology, The Johns Hopkins University

At The Ohio State University:

Dr. Rebekah Marsh, Ph.D. in Biochemistry, Iowa State University

Dr. Snigdha Ghosh, Ph.D. in Genetics, University of Erlangen, Germany

Dr. Sureshbabu Narayanasamy, Ph.D. in Chemistry, University of Madras, India

Dr. S.M. Jeyakumar, Ph.D. in Lipid Chemistry, Indian Council of Medical Research

Dr. Jian Sun, Ph.D. in Physical Chemistry, The Chinese Academy of Sciences

## IV. Review Activities

Grants etc.

1. American Heart Association, Ohio Affiliate, Ad Hoc reviewer, 1983, 1984.
2. USDA Nutrition Grants Program, Ad Hoc reviewer, 1984, 1989, 1991.
3. March of Dimes Birth Defects Foundation, Ad Hoc reviewer, 1987.
4. Air Force Office of Scientific Research, Ad Hoc reviewer, 1988.
5. Clinical Science Special Emphasis Panel (ZRG4-NTN), NIH 1995.
6. Special Reviewer, Nutrition Study Section, NIH, 1995, 2001.
7. Member, Nutrition Study Section, NIH, 1996-2000.
8. CSR Special Emphasis Panel (ZRG1-REN), NIH, 2002.
9. USDA-NRI Nutrition Grants Program, 2002.
10. Association of Official Analytical Chemists (AOAC) Expert Review Panel on Lycopene, 2004
11. Austrian Science Board, Ad Hoc Reviewer, 2004.
12. Austrian Science Board, Ad Hoc Reviewer, 2007.
13. NIH Challenge Grants (ZRG1-EMNR-C 58), NIH, 2009
14. NIH Grand Opportunities in Large Scale DNA Sequencing and Molecular Profiling of Well Phenotyped NHLBI Cohorts (ARRA) (ZHL1 CSR-D (O1)), NIH, 2009
15. NIH College of CSR Reviewers, 2010-2012
16. Medical Research Council (UK), ad hoc reviewer 2014
17. NIH Early-Stage Preclinical Validation of Therapeutic Leads for Diseases of Interest to NIDDK (ZRG1-EMNR-B 50), 2016

Journals

1. Biochimica et Biophysica Acta
2. Journal of Lipid Research
3. Journal of Nutrition
4. Laboratory Investigation
5. Journal of Biochemical and Biophysical Methods
6. Journal of Biological Chemistry
7. Analytical Biochemistry
8. Journal of Nutritional Biochemistry
9. Biochemical Pharmacology
10. Biochemistry
11. Biospectroscopy
12. Hepatology
13. Experimental Biology and Medicine
14. Cancer Research
15. Journal of Insect Physiology
16. Gene
17. Lipids
18. American Journal of Clinical Nutrition
19. Clinical Cancer Research
20. The Biochemical Journal
21. Proteome Science
22. BMC-Cell Biology
23. BMC-Nutrition & Metabolism
24. Nutrition Research
25. Proceedings of the National Academy of Sciences
26. Proteomics
27. Journal of Investigative Dermatology
28. Journal of Chromatography
29. Current Opinion in Molecular Therapeutics
30. Analytical Chemistry
31. Journal of Separation Science
32. British Journal of Nutrition
33. Journal of Food Composition & Analysis
34. Rapid Communications in Mass Spectrometry
35. Obesity
36. IUBMB Life
37. Lipids in Health & Disease
38. Journal of Agricultural & Food Chemistry
39. Chemical Reviews
40. Journal of Experimenal Zoology
41. Investigative Opthalmology & Visual Science
42. Experimental Cell Research
43. Plos ONE
44. Hepatobiliary Surgery & Nutrition
45. The FASEB Journal
46. Experimental Eye Research
47. Hormone Molecular Biology & Clinical Investigation
48. Molecular Nutrition & Food Research

Editorial Boards

1. Experimental Biology and Medicine (1999-2004)
2. The Journal of Nutrition (2004-2010), Associate Editor (2012-2014)
3. Nutrition and Metabolism (BMC) (2004-present) Associate Editor

V. Teaching

Wright State University, Dayton, OH:

- Course director for Human Nutrition, a 4-quarter hour lecture course for undergraduate and nursing students.
- Lecturer in Medical Biochemistry, a team-taught course for first year medical students.
- Lecturer in advanced graduate/tutorial courses on analytical biochemistry, cell biology and nutrition.

Medical College of Pennsylvania, Philadelphia, PA:

- Lecturer in Physiology/Biochemistry, a team-taught course for first year medical students.
- Course director, Nutrition, a course for graduate and first year medical students taught in co-ordination with Physiology/Biochemistry.
- Lecturer in Bioinstrumentation, a team-taught graduate course in analytical biochemistry.
- Course director, Advanced Topics in Micronutrients, an advanced graduate seminar in the molecular mechanisms of action of vitamins and minerals.
- Faculty tutor, Quantitative Aspects of Physiology and Biochemistry, a team-taught graduate tutorial in quantitative calculations in biochemistry.

The Ohio State University, Columbus, OH:

- Course director, Nutrition Seminar, a series of research based lectures by OSU faculty and visiting nutritional scientists.
- Lecturer, Nutrition Research & Assessment – Principles & Techniques, a team-taught course in research methodology.
- Course co-director, Nutrition in the Post-Genome Era, a graduate course in the application of genomics and proteomics to nutrition research.
- Course director, Principles of Nutrient Metabolism, an advanced undergraduate and first year graduate course in nutritional biochemistry.
- Course Director, Advanced Vitamins and Minerals, an advanced graduate course in metabolism and function of vitamins and minerals