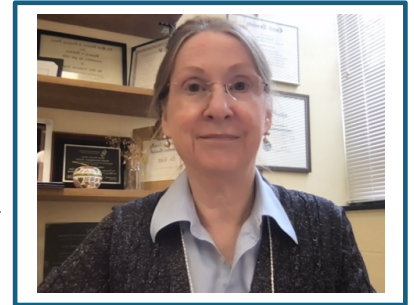


**(ALTA) CATHARINE ROSS**  
*CURRICULUM VITA*

PRESENT POSITION: Professor  
Department of Nutrition  
College of Agriculture and Life Sciences  
Texas A&M University  
and  
Scientific Director, Texas Pregnancy Study  
Texas A&M AgriLife Institute for  
Advancing Health Through Agriculture



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373 Olson Blvd  
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College Station, TX 77843  
E-mail: [catharine.ross@tamu.edu](mailto:catharine.ross@tamu.edu)

EMERITUS POSITION: Professor Emerita of Nutritional Sciences  
and Dorothy Foehr Huck Chair Emerita  
Pennsylvania State University  
([acr6@psu.edu](mailto:acr6@psu.edu))

Citizenship: U.S.A.  
(Born Santa Monica, CA)

Marital status: Married, Alex F. Ross

**EDUCATION**

B.S. 1970 University of California at Davis; (College of Letters and Sciences, major in zoology)

M.N.S. 1972 Cornell University, Graduate School of Nutrition, (College of Agriculture and Life Sciences, emphasis in nutritional biochemistry)

Ph.D. 1976 Cornell University, Department of Biochemistry, Molecular and Cell Biology (graduate advisor Donald B. Zilversmit, Ph.D.)

Post-doctoral 1976-78 Columbia University, Department of Medicine, Division of Metabolism and Nutrition (preceptor DeWitt S. Goodman, M.D.)

Summary of scholarly accomplishments. My research and public service in nutrition have been recognized by four career awards from the American Society for Nutrition (ASN) and election to Fellow of the American Association for the Advancement of Science (AAAS, 2003) and ASN (2013). In 2002, I was elected to membership in the National Academy of Science (NAS). My research has been focused on basic mechanisms that regulate nutrient metabolism, gene expression and immune function, with emphasis on better understanding

the life stages of pregnancy, lactation and neonatal/young child development. I have participated directly in human nutrition research as a member of the Malnutrition as an Enteric Disease (MAL-ED) research project that was funded by the Bill and Melinda Gates Foundation through the NIH Fogarty International Center. The MAL-ED study evaluated the relationships of malnutrition to risk of enteric diseases in children in eight low-income countries in Asia, Africa, and South America. My laboratory provided the vitamin A analyses for this project. I have also conducted vitamin supplementation studies in children vaccinated for flu in collaboration with researchers at St. Jude Children's Research Hospital, Memphis. I have written papers for the World Health Organization, Life Sciences Research Office of FASEB, the Canadian International Development Agency, and private corporations on issues related to human nutrition. I have broad experience with NIH, having served on multiple NIH study sections (thrice as a chair), and as a member for 5 years and chair in my final year of the Board of Scientific Councilors of the National Institute of Diabetes, Digestive and Kidney Diseases (NIDDK), which reviews the NIDDK's intramural research program. I was invited to serve on the Thought Leaders Panel that developed the first draft of the NIH's 10-year strategic plan for nutrition. I have served twice on the Food and Nutrition Board, and have reviewed for the USDA (NP107), Food and Drug Administration, Department of Defense, and NIH Office of Dietary Supplements. I have served on several consensus study panels for the National Academies that have addressed subjects of importance to human nutrition, agriculture, and public policy, for example the consensus reports on: Opportunities in the Nutrition and Food Science; Dietary Reference Intakes for Micronutrients; Dietary Intakes for Calcium and Vitamin D; a new food package for the Women, Infants and Children (WIC) program; Evaluating the Process for Establishing the Dietary Guidelines for Americans (DGAs), and a follow-up study that assessed the progress made by USDA on the use of this new process. Currently, I am an editor of *Modern Nutrition in Health and Disease*, now in its 12<sup>th</sup> edition, having served as senior editor for the 11<sup>th</sup> edition, and I contribute regularly to two Pediatric textbooks. I have organized summer conferences and symposia. In 2017-18, I was awarded a Fulbright fellowship for teaching and research on food culture in Japan. I have held elected positions on the board of ASN and have served for 10 years as Editor-in-Chief of the *Journal of Nutrition*. My CV lists my academic positions, other evidence of scholarly achievements and service to the scientific community, and provides a link to my full bibliography.

#### PREVIOUS POSITIONS HELD

1978-1982	Assistant Professor of Biochemistry, Department of Physiology and Biochemistry, Medical College of Pennsylvania Assistant Professor of Pediatrics (Nutrition), Department of Pediatrics, Medical College of Pennsylvania
1983-1989	Associate Professor of Biochemistry, Department of Physiology and Biochemistry, Medical College of Pennsylvania
Spring 1982	Visiting Scientist, Institute of Nutrition Research, University of Oslo, Oslo, Norway

1989-1994 Professor of Biochemistry, Department of Biochemistry (known as Department of Physiology and Biochemistry prior to 1992)

1991-1994 Professor of Pediatrics (Nutrition), Department of Pediatrics

1986-1994 Director, Division of Nutrition, Medical College of Pennsylvania

1991-1993 Director of Graduate Training, Department of Biochemistry, Medical College of Pennsylvania

Jan. 1998-Aug. 1999 Professor and Head, Department of Veterinary Science, Pennsylvania State University

1994-1997 and 1999-2022 Professor of Nutrition, Dorothy Foehr Huck Chair, Department of Nutritional Sciences, Pennsylvania State University

Jan-Feb 2017 Interim Head, Department of Nutritional Sciences

Mar 2017-June 2022 Head, Department of Nutritional Sciences

Sept 2017-Feb 2018 Visiting Professor/ lecturer (Fulbright), Kagawa Nutrition University, Japan

Jan 2023-present Present positions as above

## HONORS AND PROFESSIONAL ACTIVITIES

### Honors

High honors at graduation, University of California at Davis, 1970

Phi Kappa Phi, Cornell University, 1972

Research Career Development Award, NIH, 1985-90

Mead-Johnson Award, American Institute of Nutrition (AIN, currently ASN), 1986

Vice-Chairman/Chairman, FASEB Summer Conference on Retinoids, 1992-1994

Evan G. and Helen G. Pattishall Award for Excellence in Research, College of Health and Human Development, Penn State University, 1996

Osborne and Mendel Award (basic research), American Society for Nutrition (ASN), 2001

National Academy of Sciences, elected 2003

Fellow, American Association for the Advancement of Science (AAAS), elected 2003

Pauline Schmitt Russell Career Achievement Award, College of Health and Human Development, Pennsylvania State University, 2009

Outstanding Researcher, Nutrient-Gene Interaction Research Interest Group, American Society for Nutrition, 2012

Fellow, American Society for Nutrition, elected 2013

Honorary Editor, Nutrition Discovery, 2014

Honorary professorship, China Agricultural University, National Key Laboratory of Functional Dairy Foods, Beijing, China. External scientific advisory committee, 2014-2017

Food Advisory Committee of the Food and Drug Administration, Member 2013-2017

Scientific Advisory Committee, ODIN (Food-based solutions for Optimal Vitamin D Nutrition and Health through the Life Cycle), EU collaborative project, 2014-2017  
Project Consultant, Institute of Agro-food Science and Technology, Chinese Academy of Agriculture Sciences, Key Laboratory of Agricultural Product Processing and Quality Control, Beijing, China, 2014-2017  
Fulbright Core scholar award (Lecturer/Research; five months teaching and research in Japan), Sept. 2017-Feb. 2018  
Mary Swartz Rose Senior Investigator Award, American Society for Nutrition, 2019.  
Member, Food and Nutrition Board, Institute of Medicine, 2014-2020  
Guest Editor for Special Collection, *Nutrients*, 2022  
College of Health and Human Development Alumni Association's Faculty Appreciation Award, 2022  
Conrad A. Elvehjem Award for Public Service in Nutrition, American Society for Nutrition Foundation, 2022  
Committee member for the NASEM study, "Evaluating the Process to Develop the Dietary Guidelines for Americans, 2020-2025." 2021-2022  
Professor Emerita and Occupant of the Dorothy Foehr Huck Chair Emerita, Pennsylvania State University, June 30, 2022.  
Honored with creation of the A. Catharine Ross Award for Best Paper in Experimental Nutrition, given in my name by Research Diets, Inc. to the American Society for Nutrition for papers published in *The Journal of Nutrition*. 2024-

Major current professional activities outside Penn State

External Advisory Board, NIH P20 COBRE grant to Department of Nutrition and Health Sciences, University of Nebraska-Lincoln, NE, 2016-2024

Mentoring Committee, Maria del Mar Romero Lopez, University of Texas at Houston (K award mentoring committee and collaborator)

Past professional activities: editorial appointments and scientific meeting organization

*Journal of Lipid Research* Editorial Board, 1983-84; 1989-1995

*Journal of Lipid Research*, Associate Editor, 1986-1990

*Modern Nutrition in Health and Disease*, Editor, 9<sup>th</sup> edition, 1999, and 10<sup>th</sup> edition, 2006

*Modern Nutrition in Health and Disease*, Senior Editor, 11<sup>th</sup> edition, 2014

*Modern Nutrition in Health and Disease*, Editor, 12<sup>th</sup> edition, 2024 in print

*Experimental Biology and Medicine*, Editorial Board, 2003-2008

*Annual Reviews of Nutrition*, Editorial Board, 2008-2015

*Journal of Nutrition*, Editor-in-Chief, 2004-2013

*Archives of Biochemistry and Biophysics*, Editorial Board 1992-1995; Associate Editor 1984-86

*Nutrition Reviews* Editorial Board, 1986-88

Public Affairs Committee, AIN and American Society for Clinical Nutrition, 1985-1988

Chairman, FASEB Minisymposium, "Factors Affecting the Uptake and Tissue Distribution of Retinoids and Carotenoids," 1987

Co-chairman, FASEB Minisymposium, "Recent Advances in Retinoids Research," 1988

AIN symposium organizer and chairman, "Retinoids: cellular metabolism and activation," FASEB meeting, April 1992

Publications Management Committee; Finance Committee; ASN, 1992-1994

Technical Advisory Group, "Effects of vitamin A supplementation in the control of young child mortality in developing countries: a meta-analysis," University of Toronto, 1991-

1993

Theme Representative for AIN (Immunoregulation/Inflammation) for Experimental Biology 1993 Program Planning Committee  
Guest Editor, *Journal of Nutrition* Supplements (*Journal of Nutrition* 123: 277S-480S, 1993; Symposia proceedings from the 1992 annual meeting; *Journal of Nutrition* 133: 271S-296S, 2003, Symposium organized and chaired in 2001)  
*FASEB Journal*, Coordinator (with J. A. Olson and P. Chambon), Special theme issue on "The Retinoids Revolution," July, 1996  
*Journal of Nutrition*, Co-Editor (with J. W. Suttie) of a Supplement to volume 127: 1997; scientific papers on olestra, a nonabsorbable fat substitute  
*Annual Reviews of Nutrition*, Editorial Board, 1993-97; 2007-2015  
Editorial and scientific consultant, The Proctor and Gamble Co., 1996-1998  
Consultant, Biological Sciences Curriculum Study (planned Nutrition content for high school textbook design), 2001-2002  
Mentor, Department of Defense Summer High School Science Teachers Program, 2002  
Consultant, Johnson & Johnson, scientific review panel, 2005  
Consultant, University of South Carolina Department of Higher Education, review of endowed chair proposals, 2006.  
External Member, Thesis Defense Committee, Faculty of Medicine, University of Oslo, Oslo, Norway, 2007  
*Molecular Cancer Immunology* (MCI), Editorial Board, 2012  
*Annual Reviews of Nutrition*, Editorial Board, 2007-2015  
Selection committee, American Society for Nutrition (new editors-in-chief for *Advances in Nutrition* and *Journal of Nutrition*), 2021-22

Consultant and Consensus Reports, Federal Review Groups, Expert Panels and Advisory Committees

Consultant, World Health Organization Expanded Program on Immunization, 1991 (prepared internal document on "Vitamin A and Immunity")  
Consultant, Life Sciences Research Office of FASEB, 1991 (prepared report "Vitamin A and Cancer")  
Councilor (elected), American Institute for Nutrition (AIN), 1990-93  
Treasurer (treasurer-elect 1995), American Society for Nutritional Science (ASNS), 1996-1999  
Member, Food and Nutrition Board, Institute of Medicine, 1997-2000; reappointed 2001-2005  
Reviewer: USDA Human Nutrition Program Competitive Research Grants Review Panel, 1984; 1985  
Expert Panel on Vitamin A Nutriture, Life Sciences Research Office of FASEB, 1984-85  
Expert Panel on the National Nutrition Monitoring System, Life Sciences Research Office of FASEB, 1987-1989  
Nutrition Study Section, NIH, member 1986-1990  
Committee on Opportunities in the Nutrition and Food Sciences, Food and Nutrition Board, Institute of Medicine, National Academy of Sciences, 1992-1994  
Metabolic Pathology Study Section, NIH, member 1993-97 (Chair, 1995-1997)  
External Advisory Committee, SCOR on Atherosclerosis, Johns Hopkins, 1995-1997  
Department of Defense Review Panel on Breast Cancer Research, 1997  
Consensus committee member, Dietary reference intakes for vitamin A, vitamin K, arsenic, boron, chromium, copper, iodine, iron, manganese, molybdenum, nickel,

silicon, vanadium, and zinc, IOM (publication ISBN 0-309-07290-5), 1999-2001  
 Consultant, USDA Western Human Nutrition Research Center, Five-year review, 2001  
 Consultant, USDA Human Nutrition Research Centers, NP107 review, 2006  
 Work Group for Office of Dietary Supplements (ODS) and Tufts-New England Medical Center Evidence-Based Nutrition Study, 2007  
 Integrated Nutrition and Metabolic Processes (INMP) Initial Review Group, NIH, member 2007-2010 (Chair, 2008-2010)  
 Member, Board of Scientific Counselors for the National Institute of Diabetes, Digestive, and Kidney Diseases, 2007-2012 (Chair, 2011-2012)  
 Member, Data Safety Monitoring Board, National Institute of Deafness and Other Communication Disorders, 2007-2014  
 Working Group, Thresholds approach for risk assessment, International Life Sciences Institute, Washington DC, 2008-2010  
 Consensus committee member (chair), Institute of Medicine, Dietary Reference Intakes (DRI) for Calcium and Vitamin D, 2009-2011  
 Member (appointed), ASN Nutrition Research Needs Working Group, 2011-2012  
 Member (elected), Committee on Membership Classes, National Academy of Science, 2011-2014  
 Consultant, NIH Biomarkers of Nutrition for Development (BOND) –Vitamin A, November 16-17, 2011  
 Scientific Steering Committee, Inflammation and nutrition science for programs/policies and interpretation of research evidence (INSPIRE, sponsored by IAEA, WHO, CDC, Sight and Life, and NIH), 2012-2013  
 Review task group member. Institute of Medicine (IOM), “Role of the Chair,” 2012  
 Consensus Committee member, IOM (NAM) Committee on Evaluation of the Women, Infants and Children (WIC) Food Package, 2014-17  
 Member (appointed), ASN Scientific Program Planning Committee, 2015-17  
 Member (appointed), ASN Nominating Committee, 2015-17  
 Panelist, NIH Nutrition Research Thought Leader Panel, Workshop and Presentation (Bethesda), 2017  
 Consensus Committee member, NAM Committee on Improving the Process for the Dietary Guidelines for Americans, member, 2016-18.  
 Special Panel (panel II) to evaluate implications of statistical errors in the 2011 DRI report on vitamin D, NASEM, 2017.  
 Review Coordinator for the NASEM report on “Examining Special Nutritional Requirements in Disease States: Proceedings of a Workshop,” 2017  
 Co-Chair, SCORE study section, NIGMS, 2018-2019  
 Reviewer, NAS Division of Health and Medicine report on “Advancing Nutrition and Food Science: 1940-2020: Proceedings of a Symposium,” 2020  
 Reviewer, NAS Division of Health and Medicine report on “Dietary Reference Intakes for Energy,” 2022  
 Consensus Committee member, NASEM committee on “Evaluation of the Process to Improve the Dietary Guidelines for Americans”, 2022.  
 Reviewer, NAS Division of Health and Medicine, Food and Nutrition Board report on “Dietary Reference Intakes for Energy,” 2022  
 Reviewer, NASEM Division of Health and Medicine Food and Nutrition Board report on “Using Systematic Reviews to Support Future Dietary Reference Intakes: a Letter Report,” 2023  
 Reviewer, NAS Division of Health and Medicine, Food and Nutrition Board report on

“The Role of Seafood Consumption on Child Growth and Development,” 2024  
Reviewer, NAS Division of Health and Medicine, Food and Nutrition Board letter report on “Re-Thinking the Acceptable Macronutrient Distribution Range for the 21st Century,” 2024.

#### Mentoring committees and mentoring awards

Mentor, University Center of Exemplary Mentoring (UCEM), Penn State. Award from Alfred P. Sloan Foundation for Minority Ph.D. Program, 2013-2020

Mentor, Penn State’s Building Interdisciplinary Research Careers in Women’s Health (BIRCWH) Program (NIH K12 award). Primary mentor to Alison Diane Gernand, PhD, RD, MPH, 2013-2016.

Mentoring committee, Rachel Walker, PhD. USDA Postdoctoral fellowship, 2021-2022.

Mentoring committee, Maria del Mar Romero Lopez, MD, PhD, Department of Pediatrics, University of Texas at Houston, 2021-2022.

Mentoring committee, Lina Heurta Saenz, MD, Department of Pediatrics, Hershey College of Medicine, for Children’s Miracle Network grant, “Insulinitis, Systemic Inflammation and Omega-3 Biostatus in Youth with Partial Remission of Type 1 Diabetes,” 2020-present.

#### Memberships in professional organizations

American Society for Nutrition (ASN)

American Association for the Advancement of Science (AAAS)

National Academy of Sciences

Sigma Xi

#### Ad hoc reviewer for projects, grant proposals and publications (selected)

NIDDK program project, NCI special review; NHLBI and NIDDK training grants review; Epidemiology study section, NIH; NHLBI SCOR reviews; NCI Clinical Nutrition Research Unit site visit; Nutrition Study Section special review; USDA Human Nutrients Requirements Program; NIDDK Review Committee for Research Training and Career Development Awards in Nutrition and Obesity Research; Medical Research Council, UK; Thrasher Research Foundation; Ad hoc reviewer, NCI Program Project grants, 2007; Ad hoc reviewer, Physio program of the National Research Agency (ANR, Paris, France), 2007, 2009; Austrian Science Council, 2010-12; Canadian Research Foundation, 2012, 2016; Netherlands NWO Council for the Earth and Life Sciences, 2015; Ohio State University Research Program, 2016; Austrian Science Council, 2018, 2019. University of Nebraska NIH Cobre Grant, NPOD Scientific Advisory Committee, 2016-present.

#### Ad hoc reviewer for journals including--

American Journal of Clinical Nutrition; Advances in Nutrition; Analytical Methods; Archives of Biochemistry and Biophysics; Biochemistry; Biochimica Biophysica Acta; Clinical & Experimental Immunology; Experimental Gerontology; Cancer Research; EMBO Journal; FASEB Journal; Hepatology; Journal of Biological Chemistry; Journal of Immunology; Journal of Leukocyte Biology; Journal of Infectious Diseases; Journal of Leukocyte Biology; Journal of Lipid Research; Journal of Nutrition; Journal of Nutritional Biochemistry; Journal of Pediatrics; Pediatric Research; Nutrition Research; PLoS Medicine; Proceedings of the National Academy of Sciences (USA), Translational Research; Nephrology; Comparative Biochemistry and Physiology-Part A: Molecular &

Integrative Physiology; European Journal of Clinical Nutrition; Nutrition Reviews; Nutrients (Guest Editor and Editorial Board); New England Journal of Medicine; Frontiers in Nutrition; Nutrition Today.

## PUBLICATIONS

### Complete List of Published Work in MyBibliography:

<https://www.ncbi.nlm.nih.gov/myncbi/a.%20catharine.ross.1/bibliography/public/>

ORCID: 0000-0002-6180-9570

1976

Ross, AC, Zilversmit DB, Disposition of plasma cholesterol in the pregnant hypocholesterolemic rabbit. *Am. J. Physiol.* 230: 754-761, 1976.

1977

Ross AC, Zilversmit DB, Chylomicron remnant cholesteryl esters as the major constituent of very low density lipoproteins in plasma of cholesterol-fed rabbits. *J. Lipid Res.* 18: 169-181, 1977.

Ross AC, Zilversmit DB, Use of esterified retinol to trace the degradation of chylomicrons in cholesterol-fed rabbits. In: *Atherosclerosis*, G. W. Manning and D. M. Haust, eds., Plenum Press, New York, pgs. 142-145, 1977.

1978

Ross AC, Minick CR, Zilversmit DB, Equal atherosclerosis in rabbits fed cholesterol-free, low-fat diet or cholesterol-supplemented diet. *Atherosclerosis* 29: 301-315, 1978.

Ross AC, Takahashi Y, Goodman DS, The binding protein for retinol from rat testis cytosol: isolation and partial characterization. *J. Biol. Chem.* 253: 6591-6598, 1978.

1979

Ross AC, Goodman DS, Intracellular binding proteins for retinol and retinoic acid: comparison with each other and with serum retinol-binding protein. *Fed. Proc.* 38: 2515-2518, 1979.

Ross AC, Adachi N, Goodman DS, The binding protein for retinoic acid from rat testis cytosol: isolation and partial characterization. *J. Lipid Res.* 21; 100-108, 1979.

1981

Ross AC, Separation of long-chain fatty acid esters of retinol by high-performance liquid chromatography. *Anal. Biochem.* 115: 324-330, 1981.

1982

Ross AC, Retinol esterification by mammary gland microsomes from the lactating rat. *J. Lipid Res.* 23: 133-144, 1982.



Ross AC, Retinol esterification by rat liver microsomes. Evidence for a fatty acyl-CoA: retinol acyltransferase. *J. Biol. Chem.* 257: 2453-2459, 1982.

1984

Ross AC, Go K, Heider J, Rothblat GH, Selective inhibition of acyl-coenzyme A: cholesterol acyltransferase by compound 58-035. *J. Biol. Chem.* 259: 815-819, 1984.

Ross AC, and J. F. Rowe, Cholesterol esterification by mammary gland microsomes from the lactating rat. *Proc. Soc. Exp. Biol. Med.* 176: 42-47, 1984.

1985

Davila ME, Norris L, Cleary MP, Ross AC, Vitamin A during lactation: relationship of maternal diet to milk vitamin A content and to the vitamin A status of lactating rats and their pups. *J. Nutr.* 115: 1033-1041, 1985.

Ross AC, Davila ME, Cleary MC, Fatty acids and retinyl esters of rat's milk: effect of diet and duration of lactation. *J. Nutr.* 115: 1488-1497, 1985.

1986

Ross AC, Separation and quantitation of retinyl esters and retinol by high-performance liquid chromatography. *Meth. Enzymol.* 123: 68-74, 1986.

1987

Lenich CM, Ross AC, Chylomicron remnant vitamin A metabolism by the human hepatoma cell line HepG2. *J. Lipid Res.* 28: 183-194, 1987.

Sklan D, Ross AC, Synthesis and function of retinol binding protein and transthyretin in yolk sac and fetus. *J. Nutr.* 117: 436-442, 1987.

Marinari L, Lenich CM, Ross AC, Production and secretion of retinol-binding protein by a human hepatoma cell line HepG2. *J. Lipid Res.* 28: 941-948, 1987.

Harrison EH, Blaner WS, Goodman DS, Ross AC, Subcellular localization of retinoids, retinoid-binding proteins, and acyl-CoA: retinol acyltransferase in rat liver. *J. Lipid Res.* 28: 973-981, 1987.

Callaway CW, McNutt KW, Rivlin RS, Ross AC, Sanstead HS, Simopoulos AP, Statement on vitamin and mineral supplements. *J. Nutr.* 117: 1649, 1987 (committee report).

1988

Yost RW, Harrison EH, Ross AC, Esterification by liver microsomes of retinol bound to cellular retinol-binding protein. *J. Biol. Chem.* 263: 18693-18701, 1988.

McCloskey HM, Glick JM, Ross AC, Rothblat GH, Effect of fatty acid supplementation on cholesterol and retinol esterification in J774 macrophages. *Biochim. Biophys. Acta* 963: 456-467, 1988.

1989

Pasatiempo AMG, Bowman TA, Taylor CE, Ross AC, Effects of vitamin A depletion and

- repletion on the antibody response to the capsular polysaccharide of *Streptococcus pneumoniae*, type III (SSS-III). *Am. J. Clin. Nutr.* 49: 501-510, 1989.
- Ross AC, The future direction of nutrition research. Predicting the future is problematical but planning for it is possible. *J. Nutr.* 119: 948-949, 1989 (invited commentary).
- Zolfaghari R, Harrison EH, Ross AC, Fisher EA, Expression in *Xenopus* oocytes of rat liver mRNA coding for a bile salt-dependent cholesteryl ester hydrolase. *Proc. Nat'l. Acad. Sci. (USA)* 86: 6913-6916, 1989.
- 1990
- Pasatiempo AMG, Ross AC, Effects of food or nutrient restriction on milk vitamin A transfer and neonatal vitamin A stores in the rat. *Brit. J. Nutr.* 63: 351-362, 1990.
- Pasatiempo AMG, Kinoshita M, Taylor CE, Ross AC, Antibody production in vitamin A-depleted rats is impaired after immunization with bacterial polysaccharide and protein antigens. *FASEB J.* 4: 2518-2527, 1990.
- Bowman TA, Goonwardeene MI, Pasatiempo AMG, Ross AC, Taylor CE, Vitamin A deficiency decreases natural killer cell activity and interferon production in rats. *J. Nutr.* 120: 1264-1273, 1990.
- Ross AC, Measurement of acyl-CoA dependent esterification of retinol. *Methods Enzymol.* 189: 442-445, 1990.
- Nauss KM, Ross AC, Twining SS, Immunotrophic methodology. *Meth. Enzymol.* 190: 259-273, 1990.
- 1991
- Ross AC, Vitamin A: current understanding of the mechanisms of action. *Nutr. Today* 26: 6-12, 1991.
- Pasatiempo AMG, Taylor CE, Ross AC, Vitamin A status and the immune response to pneumococcal polysaccharide: effects of age and early stages of retinol deficiency in rats. *J. Nutr.* 121: 556-562, 1991.
- Randolph RK, Ross AC, Regulation of retinol uptake and esterification in MCF-7 and HepG2 cells by exogenous fatty acids. *J. Lipid Res.* 32: 809-820, 1991.
- Randolph RK, Winkler KE, Ross AC, Fatty acyl CoA-dependent and -independent retinol esterification by rat liver and lactating mammary gland microsomes. *Arch. Biochem. Biophys.* 288: 500-508, 1991.
- Kinoshita M, Pasatiempo AMG, Taylor CE, Ross AC, Immunological memory to tetanus toxoid is established and maintained in the vitamin A-deficient rat. *FASEB J.* 5: 2473-2481, 1991.
- Randolph RK, Ross AC, Vitamin A status regulates hepatic lecithin: retinol acyltransferase in rats. *J. Biol. Chem.* 266: 16453-16457, 1991.
- Ross AC, Evaluation of publicly available scientific evidence regarding certain nutrient-disease relationships: vitamin A and cancer. Life Sciences Research Office, Federation

of American Societies for Experimental Biology, Bethesda, MD 1991.

1992

Pasatiempo AMG, Abaza M, Taylor CE, Ross AC, Effects of timing and dose of vitamin A on tissue retinol concentrations and antibody production in previously vitamin A-deficient rats. *Am. J. Clin. Nutr.* 55: 443-451, 1992.

Ross AC, Vitamin A status: Relationship to immunity and the antibody response. *Proc. Soc. Exp. Biol. Med.* 200: 303-320, 1992.

Winkler KE, Harrison EH, Marsh JB, Glick JM, Ross AC, Characterization of a bile salt-dependent cholesteryl ester hydrolase activity secreted from HepG2 cells. *Biochim. Biophys. Acta* 1126: 151-158, 1992.

Sri Kantha S, Kinoshita M, Pasatiempo AMG, Ross AC, Effects of beta-carotene and retinol repletion on antibody production in vitamin A-deficient rats immunized with pneumococcal polysaccharide. *Nutr. Res.* 12: 1009-1024, 1992.

Sri Kantha S, Taylor CE, Ross AC, Effects of vitamin A deficiency and repletion with retinol and beta-carotene on concanavalin A-induced lymphocyte proliferation in the rat. *Nutr. Res.* 12: 1527-1539, 1992.

Ross AC, Vitamin A and protective immunity. *Nutr. Today* 27: 18-26, 1992.

1993

Ross AC, Consequences of vitamin A deficiency. Proceedings of the Bellagio Meeting on Vitamin A Deficiency & Childhood Mortality, Helen Keller International, New York, pg. 24-28, 1993. (workshop summary)

Ross AC, Influence of vitamin A on the immune response. Proceedings of the Bellagio Meeting on Vitamin A Deficiency & Childhood Mortality, Helen Keller International, New York, pg. 28-31, 1993. (workshop summary)

Ross AC, Introduction to symposium: Retinoids: cellular metabolism and activation. *J. Nutr.* 123: 344-345, 1993.

Ross AC, Overview of retinol metabolism. *J. Nutr.* 123: 346-350, 1993.

Ross AC, Cellular metabolism and activation of retinoids: roles of cellular retinoid-binding proteins. *FASEB J.* 7: 317-327, 1993.

Matsuura T, Ross AC, Regulation of hepatic lecithin: retinol acyltransferase by retinoic acid. *Arch. Biochem. Biophys.* 301: 221-227, 1993.

Ross AC, Kempner ES, Radiation inactivation analysis of acyl-CoA: retinol acyltransferase and lecithin: retinol acyltransferase in rat liver. *J. Lipid Res.* 34: 1201-1208, 1993.

Kinoshita M, Ross AC. Quantitative analysis of immunoglobulin G subclasses in the rat. *J. Immunoassay* 14: 149-166, 1993.

- Ross AC, Kinoshita M, Arora D, Studies on the relationship of vitamin A deficiency to the antibody response to tetanus toxoid in the rat. In: Botulinum and tetanus neurotoxins: neuro-transmission and biomedical aspects, B. R. DasGupta, ed., Plenum Press, NY. pg. 483-490, 1993.
- Gardner EM, Ross AC. Vitamin A restriction produces marginal vitamin A status in young rats. *J. Nutr.* 123: 1435-1443, 1993.
- Kinoshita M, Ross AC. Vitamin A status and immunoglobulin G subclasses in rats immunized with tetanus toxoid. *FASEB J.* 7: 1277-1282, 1993.
- Ross AC, Ternus ME. Vitamin A as a hormone—recent advances in understanding the actions of retinol, retinoic acid and beta-carotene. *J. Am. Diet. Assn.* 93: 1285-1290, 1993.
- Beaton GH, Martorell R, Aronson KJ, Edmonston B, McCabe G, Ross AC, Harvey B, Effectiveness of vitamin A supplementation in the control of young child morbidity and mortality in developing countries. ACC/SCN State-of-the-Art Series Nutrition Policy Discussion Paper No. 13, World Health Organization, Geneva, 1993.
- Ross AC, Zhao Z, Arora D, Pasatiempo AMG, Kinoshita M, Gardner EM, Sri Kantha S, Taylor CE, Retinoids in specific and nonspecific immunity: studies on antibody production and natural killer cells, In: *Retinoids: progress in research and clinical applications, Proceedings of the European Retinoids Research Conference*, Livrea MA, Packer L, eds., Marcel Dekker, Inc., NY, 1993.
- 1994
- Ross AC, Hämmerling U. Retinoids and the immune system. In: *The Retinoids: chemistry, metabolism and medicine*, Sporn MB, Roberts AB, Goodman DS, eds., Raven Press, NY, pg. 521-543, 1994.
- Pasatiempo AMG, Kinoshita M, Foulke DT, Ross AC, The antibody response of vitamin A-deficient rats to pneumococcal polysaccharide is enhanced through co-immunization with lipopolysaccharide. *J. Infect. Dis.* 169: 441-444, 1994.
- Zhao Z, Murasko DM, Ross AC, The role of vitamin A in natural killer cell cytotoxicity, number and activation in the rat. *Natural Immunity Cell Growth Reg* 13: 29-41, 1994.
- Ross AC, Vitamin A and cancer, In: *Nutrition and Disease Update: Cancer*, Carroll KK, Kritchevsky D, eds., AOCS Press, Champaign, IL, pgs. 27-110, 1994.
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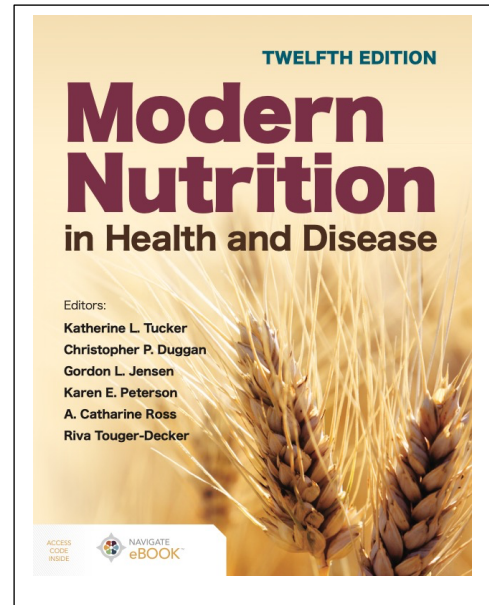
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- Whaley S, Rasmussen KM, Pérez-Escamilla R, Ross AC, Baker SS, Hatfield T, and Latulippe ME. Toward optimizing support for WIC participants that choose to breastfeed. Society for Nutrition Education and Behavior, Annual Conference, July 20-24, 2017, Washington DC.
- Huang K-h, Nichols RG, Sebastian A, Albert, I, Patterson AD, Ross AC. Gut microbiota increased by omega-3 fatty acids are negatively correlated with hepatic lipid metabolism-associated genes in mice with high carbohydrate diet-induced steatosis. Poster presented at Keystone conference on Lipidomics and Bioactive Lipids in Metabolism and Disease, Tahoe City, CA, Feb. 26–Mar 2, 2017.
- Weaver A, Wei C-h, Ross AC. Impact of age and vitamin a supplementation on thermogenic factors in a rat model of childhood obesity. Poster presented by Schreyer Honors College student Alexis Weaver at the Undergraduate Research Exhibition, Penn State, April 2017.
- Snyder, L, Weaver V, Ross AC, Cantorna MT. Retinoic acid induces CD11b+ leukocyte production of IL-17 and T cell responses that protect the vitamin A deficient (A-) host from gastrointestinal infection. Poster at International Congress for Mucosal Immunology conference, Washington DC, July 19-22, 2017.
- Wei C-H, Ross AC. The impact of early postnatal vitamin A supplementation on changes in metabolic regulation related to childhood obesity risk — A study in rat model. The 4<sup>th</sup> international FASEB conference on Retinoids, Steamboat Springs, Colorado, USA, June 10-15, 2018.
- Li Y, Wei C-H, Hodges JK, Green MH, Tan L, Ross AC. Intestinal uptake of vitamin A is stimulated by retinoic acid pretreatment in neonatal rats. The 4<sup>th</sup> international FASEB conference on Retinoids, Steamboat Springs, Colorado, USA, June 10-15, 2018.
- Chai Z, Lyu Y, Chen Q, Wei C-H, Snyder L, Weaver V, Cantorna MT, Li Q, Ross AC. Differential expression and co-expression analyses on transcriptional profiles of lower small intestine suggest key pathways regulated by vitamin A. American Society for Nutrition Annual Meeting, Boston, Massachusetts, USA, June 9-12, 2018.
- Snyder L, Tian Y, Weaver V, Ross AC, Cantorna MT. In the vitamin A deficient host retinoic acid acts through CD11b+ cells to produce IL-17 and promote clearance of *Citrobacter rodentium*. Mucosal Immunology Course and Symposium (MICS) abstract,

Oxford, UK, July 18-20, 2018.

- Li Y, Wei C-H, Green MH, Ross AC. Unfavorable change in vitamin A kinetics induced by iron deficiency is reversed by iron repletion in rats. 4<sup>th</sup> International Congress on Hidden Hunger, Institute for Chemistry and Nutrition, University of Hohenheim and Society for Nutrition and Food Science, University of Hohenheim, Germany. February 27-March 1, 2019. (Poster presentation; poster competition winner.)
- Li Y, Wei C-H, Hodges JK, Green MH, Tan L, Ross AC. Intestinal uptake of vitamin A is stimulated by retinoic acid pretreatment in neonatal rats. Poster presentation at NUTRITION 2019, Baltimore MD, June 7-11, 2019.
- Li Y, Wei C-H, Xiao X, Green MH, Ross AC. Perturbed whole-body vitamin A kinetics induced by iron deficiency is corrected by dietary iron repletion in rats. Oral and poster presentation (Post-doc category winner at Carotenoids/Retinoids Research Interest Group meeting) at NUTRITION 2019, Baltimore MD, June 7-11, 2019.
- Caulfield LE, McCormick BJJ, Murray-Kolb LE, Lee GO, Schulze K, Ross AC, Ahmed T, John S, Bhutta Z, Maciel B, Shrestha S, Mduma E, Bessong P, Kosek M, on behalf of the MAL-ED Network Investigators. Intestinal permeability and inflammation mediate the association between nutrient density of complementary foods and biochemical measures of micronutrient status in young children: results from the MAL-ED study. Oral presentation at NUTRITION 2019, Baltimore MD, June 7-11, 2019.
- Whalen C, Mattie FJ, Caamano A, Bach E, Huang K-H, Thomas Neuberger T, Ross AC, Castro R. Mild hyperhomocysteinemia induced by a hypomethylating diet does not favor aortic plaque formation in ApoE knockout mice. Poster presentation at NUTRITION 2019, Baltimore MD, June 7-11, 2019.
- Chai Z, Lyu Y, Chen Q, Wei C-H, Snyder L, Weaver V, Li Q, Cantorna MT, Ross AC. RNAseq studies reveal distinct transcriptional response to vitamin A (VA) deficiency in small intestine (SI) versus colon, discovering novel VA-regulated genes. Poster presentation at NUTRITION 2019, Baltimore MD, June 7-11, 2019.
- Whalen C, Mattie FJ, Huang K-H, Tavares de Almeida I, Heil SG, Thomas Ross AC, Neuberger T, Castro R. Twelve or 16 weeks of diet-induced mild hyperhomocysteinemia did not increase plaque burden nor altered specific histone methylation in aortas from apo-E knockout mice. Presented at the American Heart Association annual meeting, Philadelphia, PA. November 16-18, 2019.
- Golonka RM, Yeoh BS, Li Y, Abokor A, Saha P, Ross AC, Vijay-Kumar M. Gut Microbiota fermentable fiber-induced liver cancer is associated with essential fatty acid and fat-soluble vitamin deficiencies. Presented at the American Association for the Study of Liver Disease annual meeting, Boston, MA, November 8-10, 2019.
- Li Y, Tajima A, Mattie FJ, Dexheimer EG, Soucy EA, Green MH, Ross AC. Pregnancy and lactation alter vitamin A metabolism and kinetics in rats under vitamin A-adequate dietary conditions. Submitted for American Society for Nutrition Annual Meeting, Seattle WA, May 28-June 2, 2020.
- Whalen CA, Mattie FJ, Bottiglieri T, Ross AC, Neuberger T, Castro R. A ketogenic diet is

protective against atherosclerosis in apolipoprotein E knockout mice. Submitted for American Society for Nutrition Annual Meeting, Seattle WA, May 28-June 2, 2020. (presented virtually on June 1 as on line poster P01-087-20, Emerging Leaders in Nutrition Science Award Finalist).

Whalen CA, Mattie FJ, Zidik Z, Fatemi A, Ross AC, Castro R, Neuberger T., "See it to believe it": Diet and Vascular Disease. Submitted to the ICDS 2020 conference, February 2020.

Whalen CA, Mattie, FJ, Ross AC, Neuberger T., Castro R, MRI in the automated segmentation of experimental atherosclerosis. Submitted to the ICDS 2020 conference, February 2020.

Whalen CA, Mattie FJ, Florindo C, van Zeist B, Huang K-H, Tavares de Almeida I, Heil SG, Neuberger T, Ross AC, Castro R Effect of diet-induced mild hyperhomocysteinemia on vascular methylating capacity, atherogenic progression, and specific histone methylation. Poster for FASEB conference. September 2020.

Whalen CA, Gullette S, Ross AC, Castro R, Neuberger T, Using High Resolution MR microscopy to assess atherosclerosis in ApoE-KO mice fed diets of varying macronutrient content. Submitted for presentation to the (virtual) 2021 meeting of the International Society for Magnetic Resonance Research, Dec 2020.

Whalen CA, Gullette S, Mattie F, Ross AC, Neuberger T, Castro R. Diet-induced mild hyperhomocysteinemia in mice fed a ketogenic diet does not alter the development of atherosclerosis nor vascular specific epigenetic content. Submitted for presentation to the (virtual) 2021 meeting of the American Society for Nutrition.

Azul M, Penkert RR, Ross AC, Hurwitz JL, Hankins JS. Vitamin A and D levels correlate with outcome following acute parvovirus B19 infection in children with Sickle Cell Disease, submitted for the 2022 annual meeting of the American Society for Hematology.

Gullette S, Stephens A, Whalen C, Mattie FJ, Ge X, Ross (A)C, Castro R, Neuberger T. High-field magnetic resonance microscopy of aortic plaques in a mouse model. Submitted Nov 201 for presentation to the (virtual) 2022 meeting of the International Society for Magnetic Resonance Research.

da Silva IV, Gullette S, Florindo C, Huang NK, Neuberger T, Ross AC, Soveral G, Castro R. Nutritional ketosis, aquaporins, and energy homeostasis. ASN Annual meeting; oral presentation OR12-07-22, June 14, 2022.

Walker R, Nommsen-Rivers L, Harvatine KJ, Ross AC, Wagner E, Riddle S, Gernand AD. Association between serum and milk fatty acid profiles are altered in women with low milk production: a potential role for inflammation. ASN Annual meeting; oral presentation OR17-01-22, June 2022.

Tajima A, Shearer GC, Matsufuji S, Ross AC. Docosahexaenoic acid suppresses the generation of reactive oxygen species in endothelial cells: a role for retinoid X receptor. Submitted March 2022 for International Congress of Nutrition, Tokyo, in December 2022.



INVITED PRESENTATIONS (1990 to present)

- "The cholesterol debate," 7th Annual Update on Reproductive Health and Nutrition, Family Health Council, Inc., Pittsburgh, June, 1990.
- "Role of intracellular retinoid binding proteins in retinol esterification," Symposium in honor of Donald B. Zilversmit's retirement, Cornell University, June, 1990.
- "Vitamin A nutrition status and the immune response," Human Nutrition Research Center on Aging, Tufts University, October, 1990.
- "Influence of vitamin A status on antibody production in the young rat," Department of Immunology and Infectious Diseases, Johns Hopkins University School of Hygiene and Public Health, January, 1991.
- "Vitamin A status and the immune response to bacterial antigens," Center for Nutritional Sciences, University of Florida, February, 1991.
- "Vitamin A: recent advances," American Dietetics Association, October, 1991.
- "Vitamin A status and antibody production," Pediatric Grand Rounds, Medical College of Pennsylvania, January, 1992.
- "Consequences of vitamin A deficiency" and "Influence of vitamin A on the immune response," Bellagio Conference on "Public health significance of vitamin A deficiency and its control," Bellagio, Italy, February, 1992.
- "Vitamin A nutrition and immune function," Beltsville Human Nutrition Research Center, USDA, Beltsville, MD, March, 1992.
- "Overview of retinoid metabolism," in the symposium: "Retinoids: cellular metabolism and activation," Annual meeting of the Federation of American Societies for Experimental Biology, Anaheim, CA, April, 1992.
- "Retinoid status and the antibody response," FASEB Summer Conference on Retinoids, Saxton's River, VT, June, 1992.
- "Vitamin A status and antibody production," Pennsylvania Nutrition Interurban Club, Philadelphia, PA, November, 1992.
- "Vitamin A status: effects on the immune response and on the metabolism of retinol," G. M. Trout Lectureship, Michigan State University, Department of Food Science and Human Nutrition, Lansing, MI, November, 1992.
- "Effects of beta-carotene and retinol on the antibody response to pneumococcal polysaccharide," Carotenoids Research Interaction Group meeting, New Orleans, March, 1993.
- "Vitamin A nutritional status: effects on immunity and on the metabolism of retinol,"

- Institute for Biosciences and Technology, Texas A & M University, Houston, TX, May, 1993.
- "Vitamin A nutritional status: effects on immunity and on the metabolism of retinol," Food Science and Human Nutrition Department, University of Florida, Gainesville, FL, May, 1993.
- "Vitamin A status and the regulation of immunity and hepatic retinol metabolism," First Department of Internal Medicine, Jikei University School of Medicine, Tokyo, Japan, May, 1993.
- "Vitamin A status and the regulation of immune function," Clinical Research Institute, National Medical Center, Tokyo, Japan, May, 1993.
- "Vitamin A status and the regulation of hepatic retinol metabolism: roles of the cellular retinol-binding protein, CRBP, and the enzyme retinol: lecithin acyltransferase," DeWitt S. Goodman Memorial Symposium on Transport and Receptors Proteins for Retinoids, Gifu City, Japan, May 1993.
- Invited discussant (no title), Marabou Conference on "Vitamin A: from molecular biology to public health," Stockholm, Sweden, June, 1993.
- "Retinol metabolism: uptake and esterification in lactating mammary gland," Gordon Conference on Mammary Gland Biology, Colby-Sawyer College, New London, NH, June, 1993.
- "Retinoid metabolism and function," Department of Nutritional Sciences, University of California, Berkeley, CA, July, 1993.
- "Vitamin A and immune function," Department of Nutrition, The Pennsylvania State University, University Park, PA, August, 1993.
- "The relationship between vitamin A and humoral immunity," Johns Hopkins University School of Hygiene and Public Health, Symposium on Vitamin A and Immunity, Baltimore, MD, September 1993.
- "Vitamin A nutritional status and immune function," Department of Nutrition and Food Management, Oregon State University, Corvallis, OR, November, 1993.
- "Vitamin A status and immune function," Institute for Human Nutrition, Columbia University, New York, NY, December, 1993.
- "Vitamin A status and immune functions," Division of Nutrition, Department of Human Ecology, University of Texas, Austin, TX, February, 1994.
- "Vitamin A deficiency and the immune response," NIH Epidemiology Seminar Series, Bethesda, MD, March, 1994.
- "Vitamin A nutritional status and immunity," Division of Nutrition, Children's Hospital

- of Philadelphia, PA, April, 1994.
- "Antioxidant nutrients and breast cancer," (Education session for women who have experienced breast cancer), American Cancer Society of New Jersey, Atlantic City, April, 1994.
- "Introduction to retinoid metabolism," FASEB Summer Conference on Retinoids, Copper Mountain, CO, June, 1994.
- "Retinoid-binding proteins: roles in retinoid transport and metabolism," Department of Biochemistry and Molecular Biology, Milton S. Hershey Medical School, Penn State, October, 1994.
- "Animal models of vitamin A deficiency and the immune response to bacterial antigens," New Frontiers in the Immunoregulation of Allergic and Autoimmune Diseases, Phoenix, AZ, March 1995.
- "Vitamin A--Basic Biology," Fourteenth Annual Bristol-Myers Squibb/Mead Johnson Nutrition Research Symposium, Washington, DC, June, 1995.
- "The role of cellular retinol-binding protein in vitamin A metabolism," FASEB Summer Conference on Retinoids, Copper Mountain, CO, June, 1996.
- "Vitamin A and immunity: implications for the young and the old," E. G. and H. G. Pattishall Award Lecture, Penn State, April, 1997.
- "Vitamin A: a requirement for antibody production and effective immunity," University Hospitals of Cleveland Symposium, Cleveland, Ohio, March 1998.
- "Metabolism and functions of vitamin A (retinoids)," Pathobiology Graduate Program, October 1998.
- "Immune responses in a vitamin A deficiency state: changes in cellularity and antibody responses," NIH/NIAID Workshop on "Micronutrients and Infectious Diseases: Cellular and Molecular Immunomodulatory Mechanisms," Bethesda, MD September 1999.
- "Retinoid regulation of cytokine gene expression and antibody production," invited presentation at the British Society for Immunology Congress, Harrogate, England, Nov. 30-Dec. 3, 1999.
- "Vitamin A status: perspectives from public health to molecular biology," Department of Nutrition, Case Western Reserve University School of Medicine, February 17, 2000.
- "Vitamin A status: a physiological and molecular perspective," Clinical Nutrition Research Center, Vanderbilt University School of Medicine, March 23, 2000.
- "Modulation of antibody and cytokine responses by vitamin A," Nutrition and Oral Infectious Disease Workshop, The Forsyth Institute, Boston, MA, November 5, 2000.

- "Expression and regulation of lecithin:retinol acyltransferase (LRAT) in liver and extrahepatic tissues," Oral presentation at Experimental Biology 2001, Orlando FL, April 2001.
- "Vitamin A status and the regulation of antibody production," Mead-Johnson Nutritionals Symposium, New Harmony, IN, June 4-6, 2001.
- "Hepatic retinol metabolism: perspectives from vitamin A status," Symposium in Memory of James Allen Olson, Iowa State University, Ames, IA, June 21-24, 2001.
- "Vitamin A Status: Molecular Regulation," Seminar. Graduate Program in Nutrition, Penn State University, Sept. 11, 2001.
- "Regulation of Vitamin A Status: Does the Liver Play a Special Role?" Seminar. Tufts University Human Nutrition Research Center on Aging, Dec. 10, 2001.
- "Molecular Regulation of Vitamin A Status," Seminar. USDA Human Nutrition Research Center, Beltsville, MD, Feb. 19, 2002.
- "Molecular Regulation of Retinoid Concentrations," Seminar. Cornell University Division of Nutritional Sciences, Apr. 15, 2002.
- "Regulation of Retinoid Production and Catabolism: Role of Diet," Talk presented in Symposium, "Advances in Retinoid Research: Mechanisms of Cancer Chemoprevention", A. C. Ross and R. M. Niles, co-chairs, Experimental Biology 2002, Apr. 26, 2002.
- "Vitamin A," Talk presented to Wyeth Consumer Health Care's Global Nutrition Advisory Council, Quebec City, Canada, Sept. 30-Oct.2, 2002.
- "Vitamin A status and the regulation of antibody production," FASEB Summer conference on Nutrition and Regulation of Immune Functions, Saxtons River, VT, July 5-10, 2003.
- "Vitamin A status: molecular regulation of lecithin:retinol acyltransferase (LRAT) and cytochrome P450 CYP 26." Seminar to Division of Differentiation and Cancer Control, National Cancer Institute, Bethesda, MD, Dec. 4, 2003.
- "Role of vitamin A in shaping the T-cell dependent antibody response," Invited seminar to Nutrition and Gastroenterology Division, Childrens' Hospital of Philadelphia, Feb. 25, 2004.
- "Vitamin A and immune stimulation," Seminar to The Intercollege Faculty of Nutrition and The Center for Environmental and Rural Health, Texas A&M University, College Station, TX, April 6, 2004.
- "Retinoid regulation of immune cell activation," Invited seminar to Nutritional Immunology Research Group, Michigan State University, East Lansing, MI, April 8,

2004.

"Overview: Vitamin A and immunity," Invited introductory lecture in session "Vitamin A--Immunity and Placental Transport," Experimental Biology '04, April 18, 2004.

"Retinoids in the neonatal period," Invited speaker, FASEB Summer Conference on Retinoids, Calloway Gardens, GA, June 12-17, 2004.

"Retinoid regulation of immune cell activation." Jean Andrews Visiting Professor, University of Texas, Austin, TX, Nov. 19, 2004 (Invited scientific seminar).

"Optimizing vitamin A intake across the life cycle," Jean Andrews Visiting Professor, University of Texas, Austin, TX, Nov. 18, 2004 (invited public lecture).

"Vitamin A and immune regulation," Invited seminar presentation to the Department of Nutrition, Southampton University, Southampton, UK, Dec. 13, 2004.

"Retinoid regulation of macrophage functions in THP-1 cells and in vivo," The 14<sup>th</sup> International Symposium on Molecular Cell Biology of Macrophages, Sonic City, Omiya, Japan, June 3-4, 2005.

"Retinoid biology—an overview and closer look at retinoid functions in the immune system," Opening lecture. 2005 FASEB Summer Research Conference on Nutrient Control of Gene Expression and Cell Signaling, Tucson, AZ, July 30-August 4, 2005.

"Regulation of the antibody response to bacterial antigens" Invited speaker. Japanese Society for Retinoid Research, Sixteenth Symposium on Retinoids. Invited speaker. Tokyo, Japan, November 10-11, 2005.

"The predictive power of radiation inactivation," Invited speaker. Symposium honoring the career of Ellis S. Kempner, NIAMS, NIH. Bethesda, MD, April 21, 2006.

"Trafficking of retinoids: implications for diverse functions," Invited lecturer, Mary Shorb Lecture. The 33<sup>rd</sup> Shorb Lecture, College of Agricultural and Natural Resources, University of Maryland, College Park, MD, April 27, 2006.

"Regulation of hepatic retinol metabolism," Invited seminar. Department of Nutritional Sciences, University of Wisconsin-Madison, May 4, 2006.

"Vitamin A and immune function," Invited lecturer. Reviews in Nutrition series, College of Physicians & Surgeons Institute of Human Nutrition, Columbia University, May 8, 2006.

"Retinoids and co-stimulation in the regulation of antibody production," Invited seminar. Distinguished Lectures in Nutritional Sciences series. College of Physicians & Surgeons Institute of Human Nutrition, Columbia University, May 8, 2006.

"Retinoids in B-cell activation and lipid-antigen presentation" Invited speaker and

- session chair. 2006 FASEB Summer Research Conference on Retinoids, Indian Wells, CA, June 17-22, 2006.
- “Regulating a key regulator of differentiation—how is the production and metabolism of retinoic acid controlled?” Richard H. and Elizabeth C. Hageman Lectureship in Agricultural Biochemistry, Department of Biochemistry, Kansas State University, Nov. 8, 2006.
- “Vitamin A status—why it still matters,” Colloquium, Department of Biochemistry, Kansas State University, Nov. 9, 2006.
- “Vitamin A, inflammation and immunity,” Colloquium, Graduate Program in Nutrition, Penn State, Jan. 16, 2007.
- “Vitamin A in the lungs and immune system,” Invited Lecture, University of Florida/IFAS, Feb. 19, 2007.
- “Retinoid regulation of retinoid metabolic pathways,” Invited seminar, Department of Pharmacology, University of Minnesota Medical School, Mar. 23, 2007.
- “Retinoids as potential regulators of lipid-antigen presentation,” Invited speaker, FASEB Summer Conference on Nutritional Immunology, Tucson AZ, July 2007.
- “Sensors of vitamin A and retinoic Acid: Cytochrome P450s 26A1, 26B1 and 2C22 and Lecithin:Retinol Acyltransferase (LRAT),” Minisymposium presentation, Experimental Biology, 2008.
- “Retinoids and antibody production: practical studies and insights into mechanisms,” Invited talk, Cornell University Graduate Students in Animal Science Association “Award Winning Research” Symposium, Sept. 7, 2007.
- “Vitamin A in the neonatal period,” Invited lecture. 2007 Lucille S. Hurley Lecture in Nutrition, University of California at Davis, Sept 2007.
- “Mechanisms controlling retinoic acid, an agent of differentiation,” Marshall University, Invited lecture, March 2008.
- “Retinoid homeostasis in the liver and lungs: lecithin:retinol acyltransferase (LRAT), and cytochrome P450s,” FASEB Summer Conference on Retinoids, New Haven, CT, June 15-20, 2008.
- “Vitamin A: past, present and future,” Japanese Society for Retinoid Research, Tokyo, Nov. 21-22, 2008.
- “Vitamin A for healthy living--the importance of retinoid homeostasis,” Tokyo Agricultural University, Nov. 25, 2008.
- “Vitamin A homeostasis--Genes and enzymes that regulate vitamin A stores,” University of Tennessee-Knoxville, January 9, 2009.

- “Application of a key event dose-response analysis to nutrients: a case study with vitamin A (retinol),” Experimental Biology Late-Breaking Symposium, New Orleans, LA, April 22, 2009 (invited speaker).
- “Vitamin A intake and host response to vaccines,” Nutrition and Wellness Research Center 3<sup>rd</sup> Annual Symposium on *Vaccines, Immunity and Well-being*, Iowa State University, Ames, IA, May 18, 2009 (invited speaker).
- “β-Carotene as a source of vitamin A,” University of Hohenheim, Stuttgart, Germany, July 11, 2009 (invited speaker).
- “Retinol and β-Carotene as important vitamin A sources for humans,” Presentation to Nestlé, Solon, OH, August 24, 2009. (invited speaker).
- “Vitamin A in the neonatal period,” World Health Organization, Geneva, Dec. 2, 2009 (invited speaker).
- “Vitamin A in early life—why does it matter?” Pauline Schmidt Russell Lecture, College of Health and Human Development, March 2, 2010.
- “Experimental laboratory studies to explain and validate findings from public health trials” Mini-Workshop: Evidence in Multiple Micronutrient Nutrition: From History to Science to Effective Programs; Klaus Kraemer and Richard Semba, session chairs, Porto, Portugal, Sept. 23, 2010.
- “Vitamin A and immunity” Presentation for GPN Recruiting Day, October, 2010.
- “Vitamins and host defense—Vitamin A” Seminar to VINUTAS (Vietnam Nutrition Association, Biannual Meeting), Ho Chi Minh City, Vietnam, Nov. 12, 2010.
- “The importance of vitamins in host defense system--A role for vitamin A” Ho Chi Minh City University of Medicine and Pharmacy, Program in Endocrinology, Ho Chi Minh City, Vietnam, Nov. 12, 2010.
- “Vitamin A—metabolism and host defense,” Jichi University Graduate School of Biomedical Sciences, Jichi University-Saitama Medical Center, Omiya, Japan, Nov. 15, 2010.
- “Retinoid homeostasis—Why it is important to public health and medicine” seminar to Department of Nutrition and Health Science, University of Nebraska-Lincoln, April 18, 2011.
- “The 2011 DRIs for calcium and vitamin D,” Report to federal sponsors, Institute of Medicine, November 29, 2011.
- “The 2011 DRIs for Calcium and Vitamin D,” Report to media, National Press Club, Washington DC, November 30, 2011.
- “Retinoid homeostasis and immune function” Seminar to Department of Biochemistry and Molecular Biology, East Carolina University, Greenville, NC, Dec. 6, 2010.

- “The 2011 DRIs for Calcium and Vitamin D,” Webinar sponsored by the American Society for Nutrition and Society for Bone and Mineral Research, 1:30-3:30 p.m. EST, December 16, 2010.
- “The 2011 DRIs for calcium and vitamin D--what have we learned?” Graduate Program in Nutrition Colloquium, Penn State, February 14, 2011.
- “Vitamin A, retinoic acid and immune function,” In: New Developments in Carotenoids Research, Tufts USDA Human Nutrition Research Center on Aging, March 12, 2011.
- “Panel discussion on developing leadership through participation in scientific policy committees,” Dannon Leadership Group Alumni meeting. Experimental Biology, April 9, 2011.
- “Overview of the report,” Oral Presentation in Symposium on the 2011 DRIs for Calcium and Vitamin D, Experimental Biology, April 12, 2011.
- “Vitamin A and gene expression,” Oral presentation at FASEB Summer Conference on Nutrition and Immune Function,” Carefree Arizona, July 14, 2011.
- “The IOM’s 2011 DRIs for calcium and vitamin D,” Oral presentation to National Institute of Health and Nutrition, Shinjuku, Tokyo, Japan, October 25, 2011.
- “Vitamin A, retinoic acid and regulation of immune function,” Seminar to Department of Nutrition, Ohio State University, December 5, 2011.
- “Vitamin A status, indicators and thresholds.” Seminar to Office of Dietary Supplements, NIH, January 4, 2012.
- Invited participant, GAVA Technical Consultation on Guidance to VAS programs for children 6-59 months, in Ottawa, Canada on February 7-9, 2012.
- “Vitamin A homeostasis: tissue differences in liver and lung.” Seminar to Department of Biochemistry, Temple University School of Medicine, March 19, 2012.
- “An overview of the Institute of Medicine’s DRI data review process and the role of the basic, laboratory scientist in investigating vitamin D markers of inadequacy. Symposium on "Utilizing a multi-level team approach: Lessons learned from the vitamin D DRI-setting activity." Experimental Biology 2012, San Diego, CA.
- “Vitamin A homeostasis—focus on neonates,” FASEB Science Research Conference on Retinoids, Snowmass, CO, June 10-14, 2012.
- “Kinetics of vitamin A supplementation in the neonatal period,” talk given at the 2nd OPTIMMUNIZE WORKSHOP, sponsored by The Novo Nordisk Foundation, NNF, and the Research Center for Vitamins and Vaccines, CVIVA, Danish National Research Foundation, Copenhagen, August 20-22, 2012.
- “Vitamin A, retinoic acid and gene regulation,” Fralin Institute for Life Sciences lecture, Virginia Tech, Oct. 12, 2012.



- “Vitamin A and vitamin D: important nutrients for public health,” 2nd International Guangzhou Conference on Nutrition and Chronic Disease, held in Guangzhou, China, Dec. 7-9, 2012. Jointly organized by the Guangdong Nutrition Society & School of Public Health, Sun Yat-sen University.
- “Retinoic acid regulation of antigen-presenting cells and B cells,” Shenzhen Institutes of Advanced Technology (SIAT), Chinese Academy of Science, Shenzhen, China. Seminar given to Institute of Biomedical and Health Engineering, Dec. 10, 2012.
- “Impact of vitamin A on human health,” Section keynote lecture at International Symposium on Hidden Hunger, Stuttgart, Germany, March 7-10, 2013.
- “Molecular mechanisms of Vitamin A metabolism,” National Key Laboratory of Functional Dairy Foods,” China Agricultural University, Beijing, China, May 14-17, 2013.
- “Molecular mechanisms of vitamin A metabolism,” lecture at West Lake Frontiers in Nutrition and Research Training Program (WFNRTP), Hangzhou, China, May 18-19, 2013.
- “How to prepare a successful manuscript for an international nutrition journal,” lecture at West Lake Frontiers in Nutrition and Research Training Program (WFNRTP), Hangzhou, China, May 18-19, 2013.
- “Impact of vitamin A on human health,” lecture to Kagawa Nutrition University, Saitama, Japan, May 21, 2013.
- “Changing requirements for registered dietitians in the US,” lecture to Kagawa Nutrition University, Saitama, Japan, May 21, 2013.
- “Vitamin A and retinoic acid—inducers of differentiation in the immune system,” colloquium to Biochemistry, Molecular and Cell Biology Department, Penn State, September 9, 2013.
- “Retinoic acid synthesis and degradation—nutritional and pharmacological aspects,” Jikei University Medical School, Core-to-Core Program Seminar, Nov. 20, 2013.
- “Vitamin A: history, metabolism and health effects,” Keynote lecture, 3<sup>rd</sup> International Vitamin Conference, Washington DC, May 12-16, 2014.
- “Vitamin A and carotene research—some recent advances,” lecture to China Agricultural University, July 12, 2014.
- “Dietary Reference Intakes and Dietary Guidelines —Useful tools for nutrition policy,” lecture to China Agricultural University, July 12, 2014.
- “Overview of Vitamin A and Carotene Research—Some recent advances,” lecture to Shanxi Medical University, July 16, 2014.
- “Vitamin A in early life—why does it matter?” Presented to the Obesity Research Center, University of Alabama-Birmingham, January 6, 2015.
- “Vitamin A and the antibody response to bacterial antigens,” presented to the

Department of Infectious Disease, St. Jude Children's Research Hospital, Memphis TN, February 2, 2015.

"Application of a Key Events Dose-Response Analysis to nutrients," presented at an Office of Dietary Supplements Workshop, Options for Consideration of Chronic Disease Endpoints for Dietary Reference Intakes (DRIs), NIH, Bethesda, MD March 10-11, 2015.

"Forum: Nutrition science in the new era of life: human nutrition" Presented to the 12<sup>th</sup> National Congress of the Chinese Nutrition Society, Beijing, China, May 16-18, 2015.

"Vitamin A and carotene research—Some recent advances," seminar presented to the School of Public Health, Xi'an Jiaotong University, Xi'an, China, May 20, 2015.

"Regulation of B cell maturation by vitamin A and costimulatory signals," invited talk at 2015 FASEB Science Conference on Nutritional Immunology, Lisbon, Portugal, July 29, 2015.

"Lipid emulsion in the prevention of non-alcoholic fatty liver disease," seminar at the Nebraska Center for the Prevention of Obesity Diseases 1<sup>st</sup> Annual Symposium, University of Nebraska-Lincoln, Sept 28-29, 2015.

"Lipid emulsion in the prevention and treatment of non-alcoholic fatty liver disease," seminar to Department of Nutritional Science, Texas Tech University, Lubbock, TX, October 8, 2015.

"Vitamin A in intestinal health and response to gut infection," invited talk in symposium on "Food Systems Approach to Gut Health," Penn State University, October 14-15, 2015.

"Acute inflammation effects on vitamin A metabolism and immune function," invited talk at Carotenoids and Retinoids Interaction Group (CARIG) Satellite Symposium, Experimental Biology April 1, San Diego, CA, 2016.

"Wrapping up—how to have a credible presence," invited talk at symposium, Making Your Scientific Discoveries Known: Best Practices" Experimental Biology April 4, San Diego CA, 2016.

"Direct and indirect effects of VA supplementation in neonates," invited talk at FASEB Summer Conference and 3<sup>rd</sup> International Conference on Retinoids, June 19-24, West Palm Beach, FL, 2016.

"n-3 Fatty Acids in the reversal of lean NAFLD," Invited talk, Rutgers "Big 10" Lipid Conference, Rutgers University, Nov. 9-10, 2016.

"Vitamin A supplementation in the neonatal period: to neonates, or mothers?" Pritchard Lecture, Cornell University Division of Nutritional Sciences, Jan. 27, 2017.

"Exploring nutritional means to alleviate fatty liver disease," Weis Center, Geisinger Medical Center, August 25, 2017.

"Exploring nutritional means to alleviate fatty liver disease." RIKEN International Woman Scientist Colloquium and Exchange Meeting RIKEN Wako-shi campus,

Saitama, Japan, September 26, 2017.

“Competition of dietary carbohydrate and lipid in the regulation of liver fatty acid metabolism,” University of Tokyo Hospital, Departments of Diabetes and Metabolic Diseases / Clinical Nutrition Therapy, October 26, 2017.

“Retinol trafficking: using mathematical modeling to understand vitamin A in the neonate,” Presented at symposium in honor of the retirement of Prof. Dr. Hans Konrad Biesalski, University of Hohenheim, Stuttgart, Germany, November 3, 2017.

“Competition of dietary carbohydrate and lipid in the regulation of liver fatty acid metabolism.” University of Kyoto Hospital, Diabetes and Metabolic Diseases, November 23, 2017.

“Evaluation of Nutritional Adequacy in the American Diet: Roles of Dietary Reference Intakes and Dietary Guidelines.” Public lecture to Kagawa Nutrition Institute, Komagome Campus (Tokyo), November 25, 2017.

“Changing requirements for Registered Dietitians in the US.” Kagawa Nutrition University Special Lecture. December 20, 2017.

“Emerging requirements for the dietitians in the U.S.—education, capacity building and competencies.” Japanese Society for Metabolism and Clinical Nutrition, Kyoto, Japan, January 13, 2018.

“Retinoids in the priming of retinol metabolism: studies in the neonatal lung, liver, and whole body.” Japan Society for the Promotion of Science Core-to-Core Symposium and Japanese Society for Retinoid Research, Hotel Tokyo Garden Palace, January 29, 2018.

“DGAs and DRIs: What does the future hold?, invited talk at ASN NUTRITION 2018, Boston MA, June 11, 2018.

“Visualizing Nutrition in Japan,” invited Colloquium to Graduate Program in Nutritional Sciences, August 27, 2018.

“Molecular and cellular roles of nutrients in the immune system: Vitamin A and the immune system,” invited address, Immunonutrition in Health and Disease, XI<sup>SIN</sup> London, September 10-12, 2018.

“Carotenoid and Vitamin A DRIs—What Comes Next and Special Considerations for Pregnancy and Early Life,” Invited speaker for James Allen Olson Lecture, Carotenoid and Retinoid Interest Group Preconference Symposium, American Society for Nutrition, Baltimore MD, June 8 (8-11), 2019.

“Retinoid research in the Heisei era: progress in our field and personal reflections on vitamin A metabolism and function,” Keynote lecture presented to the Japan Society for Retinoid Research annual meeting, Tokyo, October 19-20, 2019.

“Challenge: Significance of 25-OH vitamin D measurement by LC-MS,” Presented to Shimadzu Corporation, Kyoto, Japan, October 28, 2019.

“Understanding Vitamin D deficiency and interpretation of vitamin D status in the

- United States,” presented to the project: Research Branding Project of the Ministry of Education, Culture, Sports, Science and Technology (MEXT), “Evidence-based Methods for Strengthening Resilience to Workers’ Fatigue and Stress.” Jikei University, Tokyo, October 29, 2019.
- “Vitamin A and antibody responses, murine and human,” Penn State One-Health Workshop on Nutrition and Infection, University Park, December 9, 2019.
- “The future of the Food and Nutrition Board,” brief oral and slide presentation to the Symposium on the 80<sup>th</sup> Anniversary of the Food and Nutrition Board, National Academy of Sciences, Washington DC, February 28, 2020.
- “Vitamin A in infection and immunity,” invited oral presentation to the China International Forum, American Society for Nutrition annual meeting, June 4, 2020. Selected for posting on NUTRITION 2020 LIVE ONLINE, Community Activity Recording on YouTube, Sept 2020.
- “Vitamin A and immunity,” invited oral (virtual) presentation to the Guangdong Province Annual Nutrition Society meeting, Nov 28 2020. (Shared with Tiangjing University).
- “Dietary Reference Intakes—past, present, and future,” Orman Harris Lecture, Department of Human Nutrition and Hospitality Management, University of Alabama, April 8, 2021.
- “Micronutrients and infectious disease—through the lens of vitamin A.” Dale E. Bauman Lectureship, Cornell Institute for Food Systems. Cornell University, Ithaca, NY, October 5, 2021.
- “Nutrition and infection: through the lens of vitamin A.” Tokyo Agricultural University 130<sup>th</sup> Anniversary Symposium (Keynote Lecture), December 15, 2021.
- “Vitamin D: What have we learned about supplements and bone health?” Research in Action talk, presented to the Penn State College of Health and Human Development Alumni Association, April 19, 2022.
- “Fluxomics”--Applications to basic nutritional science and DRI development” presented remotely to the Foundational Nutrition Research Group, NIH, April 21, 2022.
- “Visualizing nutrition in Japan,” In-person seminar to Nutrition Department, Texas A&M University, College Station, May 31, 2022.
- “Impacts of iron deficiency-repletion and pregnancy-lactation on retinol kinetics,” Presented orally at 6th International Conference on Retinoids (FASEB Summer Research Conference), Athens, OH, June 5-10, 2022.
- “Nutrition and Infection: through the Lens of Vitamin A.” Presented orally at Tokyo Agricultural University, Annual Symposium, Dec. 2, 2022.
- “Vitamin A in Public Health—Immune Response” Fifth North America Chinese Association for Nutrition (NCAN) Summit Frontiers in Nutrition Joint Symposium, Online, July 28-30, 2023.

Lecture series (4 lectures on human nutrition and metabolism) to students at Tokyo University of Agriculture, May 13-24, 2024.

“Vitamin A and Immunity,” Keynote address to International Retinoids Conference VII, Minneapolis, MN, July 7-11, 2024.

#### CURRENT RESEARCH SUPPORT

Recipient of a Chancellor’s Research Initiative (CRI) award, “Funding Request and Recruitment Proposal,” 02-292159, Texas A&M AgriLife Research, \$5,000,000, 2023-2028

Recipient of a Governor’s University Research Initiative (GURI) award for Recruitment of Distinguisher Research, to Texas A&M University and Texas A&M AgriLife Research, \$5,000,000 construction funds, 2023-2025

#### RECENTLY COMPLETED RESEARCH SUPPORT

2 R01 HD066982 Ross, AC (PI) 04/01/2012 — 02/28/2022  
Vitamin A Supplementation and Retinol Metabolism in the Neonatal Period  
The goal is to understand the kinetics of retinol metabolism in the neonate, using rat models, with emphasis on the effects of vitamin A and its metabolites on whole-body vitamin A metabolism and maturation of the lungs.  
Role: PI

USDA National Institute of Food and Agriculture. Walker, Rachel (PI) 06/15/20-06/14/22, The Role of Metabolic Health and Lipid Metabolism in Human Lactation and Milk Composition  
Role: Mentor  
The goal of this postdoctoral project is to test if lipid types and inflammatory factors are elevated in women who experience low milk production.

Service as Core faculty on two NIH Training Grants.

R56 AI114972 Cantorna MT, Ross AC (Dual PI)  
08/01/2015 - 07/31/2017  
Vitamin A Mediated Protection from Gastrointestinal Infection  
The goal of this 1-year grant was to strengthen preliminary data regarding the impact of blocking retinoic acid signaling on the host’s response to *Citrobacter rodentium* infection using a mouse model.  
Role: Co-PI

2 R01 DK41479 Ross AC (PI) 09/01/1991 — 05/31/2018  
Retinoid Nutritional Status and Immune Function  
The goals of this renewed project were to understand the ways in which vitamin A and its active metabolite retinoic acid (RA) regulate antibody production, including by regulation of co-stimulatory molecules and transcription factors.  
Role: PI

1 R15 AR067418 Luo, XM (PI)

08/01/2017— 07/31/2020

Dissecting the Roles of Vitamin A in Autoimmunity

The goal was to conduct studies in lupus-prone mice to determine the roles of retinol and retinoic acid in reducing lupus related nephritis and immune activation.

Role: Co-I

(Table available on request of 10-year funding as prepared for 2024 Academic Program Review)

## TEACHING EXPERIENCE

### Cornell University

Teaching assistant, Biochemistry 432 (undergraduate tutorial version), Cornell University, 1974

Instructor, Biochemistry 431 (undergraduate lecture course, summer session; taught one-third of course, covering all of intermediary metabolism), Cornell University, 1975

### Medical College of Pennsylvania

Course director and lecturer, Nutrition (medical and graduate student course), 1978-85

Lecturer, Biochemistry (medical and graduate student course), 1980-87

Lecturer, Medical Nutrition (2-3 lectures), 1986-93

Lecturer, Biomedical Research Techniques (graduate student course), 1984-94

Lecturer, Advanced Micronutrients (graduate student course), 1993

Course director, Readings and Literature Critique in Nutrition (graduate student course), 1989

Lecturer, Readings and Literature Critique in Nutrition, 1992

Lecturer, Lipids, Lipoproteins and Atherosclerosis, taught jointly between the Medical College of Pennsylvania and Bryn Mawr College, 1978; 1982

Lecturer, Cell and Molecular Biology (graduate course), Medical College of Pennsylvania, 1994

### Pennsylvania State University, 1994-2022

Regulation of Nutrient Metabolism II (NUTRN 582), (lecturer in graduate course), Fall 1994-2012

Regulation of Nutrient Metabolism II (NUTR 502), Spring 2013-2016

Graduate Seminar in Nutrition, (NUTRN 551.2), (organizer and lecturer), Spring, 1995

Careers in Biochemistry, BIOCHEM 50, (Guest), Spring, 1995

Guest lecturer in Pathobiology (Veterinary Science) 510, Spring 1996, 1998

Co-organizer, NUTRN 596, 1999-2005

Organizer, NUTRN 551, Graduate Seminar. Topic: Hormonal Regulation of Nutrient Function, 2006-2008

NUTRN 597D, Molecular Regulation of Nutrient Functions, Spring and Fall 2008, 2009, 2010, 2011, 2012, Spring 2013 (converted to a permanent course NUTR 508 in 2014)

Instructor, NUTR 445, Nutrient Metabolism I, Summer 2011

Instructor, NUTR 490W, Nutrition Seminar, Fall 2011, 2012

Instructor, NUTR 502, Regulation of Nutrient Metabolism II (formerly NUTRN 582), Spring 2013 through 2022

Instructor, NUTR 508, Critical Readings in Molecular Nutrition, Spring 2014 through 2016

Instructor, NUTR 583, Nutritional Epidemiology, Spring 2014 through 2016  
Instructor, PHSIO 510, Graduate Seminar, Spring 2015, 2016  
Visiting Lecturer, Kagawa Nutrition University (Fulbright lecturer), 2017-18 (taught undergraduate course in advanced nutrition and lectured to graduate students in seminar course)  
Instructor, NUTR 497H (Japanese Food Culture), Spring 2019, 2020  
Instructor, NUTR 499 (Foreign Travel), Maymester 2019  
Instructor, NUTR 551, Graduate Seminar. Topic: Dietary Reference Intakes: Past, Present and Future, Spring 2021

#### Texas A&M University

Instructor (shared with Heidi Vanden Brink): NUTR 489, Mechanisms of Nutrition and Disease, Fall 2023, taught as NUTR 489/689 in Fall 2024  
Guest Instructor, NUTR 681, Seminar  
Instructor, NUTR481, Seminar. Fall 2024

#### Academic service (main appointments since 1994)

##### Penn State:

Graduate Program in Nutritional Sciences (GPNS), 1994-present  
Graduate Program in Pathobiology, 1994-99  
Steering Committee, Graduate Program in Nutrition, elected, 1994-97;  
Promotion and Tenure Committee, Department of Nutrition, elected 1994-97 (chair, 1996-97)  
Executive Committee, Department of Nutrition, elected 1995-98  
Life Sciences Consortium Steering Committee, 1995-98  
Co-Director, LSC Integrative Biosciences option in Nutrition Science, 1996-2003  
Administrative Committee, Animal BioSciences program, 1998-99  
Chair, Life Sciences Building Program Committee, 1998-1999  
Kellogg Learning Communities (LINC) project, 1998-2000  
Promotion and Tenure Committee, College of Health and Human Development, 2000-2002  
Chair, Search Committee for Department Head, Department of Nutrition, 2000-01  
University Isotopes Committee, member, 2003-2022  
Search Committee (Molecular Nutrition), 2004  
Strategic Planning Committee, Department of Nutritional Sciences, 2004-05.  
Promotion and Tenure Committee, College of Health and Human Development, 2004-2005  
Search Committee for Department head for Nutritional Sciences, 2005  
Search Committee for Assistant Professor of Nutritional Genomics), 2005  
Awards Committee, Department of Nutritional Sciences, 2006-2008, 2010  
Promotion and Tenure Committee, Department of Nutritional Sciences, 2006-2009, 2010-2013, 2013-2016  
Special ad hoc Committee (RA10), Vice President for Research and Graduate Education, 2007  
Ad hoc President's Committee on Stature of Faculty at Penn State, 2011  
Search Committee for Department head for Nutritional Sciences, 2015-2016  
Faculty Advisor, University Center of Exemplary Mentoring (UCEM), Sloan Foundation Program, July 1, 2013-June 30, 2018

Search Committee for University Veterinarian for Animal Resource Program, Penn State University, 2019  
College of Health and Human Development Diversity Council, 2017-2019  
Carol Clark Ford Staff Excellence Award, selection committee, Health and Human Development, 2019  
University Down-Select Committee, 2020-2021

Texas A&M:

Search/hiring Committee for two tenure-track faculty members, 2023-24 (2 successful hires)

AgriLife Task Force on ways to increase NIH funding. 2023-24

Graduate Degree Thesis Committees (Advisor or co-advisor)

Maria E. Davila (M.S., Program in Nutrition, Drexel University; thesis research conducted at MCP); "Effects of the maternal diet on the composition of retinyl esters of human milk and rat's milk," 1982.

Catherine M. Lenich (Ph.D., Department of Physiology and Biochemistry, MCP); "Chylomicron vitamin A metabolism by the human hepatoma cell line HepG2," 1985.

Laura Marinari (M.S., Department of Physiology and Biochemistry, MCP); "Production and secretion of retinol-binding protein from a human hepatoma cell line, HepG2," 1984. Tracey A. Bowman (M.S., Department of Microbiology and Immunology, MCP); "Vitamin A deficiency decreases natural killer cell activity and interferon production in rats," 1989 (co-directed with Christopher E. Taylor).

Zirong Zhao (Ph.D., Department of Biochemistry, Division of Nutrition, MCP); "The role of vitamin A in maintaining natural killer cell activity," 1993.

Deepa Arora (Ph.D., Department of Biochemistry, Division of Nutrition, MCP); "Regulation of the antibody response against tetanus toxoid by lipopolysaccharide, tumor necrosis factor-alpha, and vitamin A," 1994.

Elizabeth M. Gardner (Ph.D.; Department of Biochemistry, Division of Nutrition, MCP); "The effects of vitamin A status on growth, vitamin A metabolism, and humoral immunity in young rats," 1994.

Harry D. Dawson (Ph.D.; Graduate Program in Nutrition, PSU), "The effects of vitamin A nutriture and aging on leukocyte subsets and cytokine production," 1998.

Yi Ning Johanna Strube (M.S.; Graduate Program in Nutrition, PSU); "Marginal vitamin A deficiency affects iron metabolism gene expression" 2000.

Liv Austenaa (Penn State non-degree status, enrolled at the University of Oslo, Norway), Retinoic acid as a regulator of nitric oxide production by macrophages in vitro.

Kathleen L. DiCicco (Ph.D., Graduate Program in Nutrition, PSU). "Interaction of retinoid status and interferons on humoral and cellular immunity," 2000.

John Youngdahl (M.S., Graduate Program in Nutrition, PSU). "Retinoid regulation of intercellular adhesion molecule-I (ICAM-I) expression," 2000.

Yuanping Wang (M.S.; Graduate Program in Nutrition, PSU). "Regulation of CYP26 gene expression by retinoic acid and vitamin A," 2001.



- Yifan Ma (Ph.D., Integrative Biosciences, PSU, 2005). "Retinoids and interferons as regulators of type 1 and type 2 immunity."
- Xin Luo (Ph.D., Integrative Biosciences, PSU, 2005). "Retinoid-interferon interactions in lung epithelial cells."
- Christopher J. Cifelli (Ph.D. student, Integrative Biosciences, PSU; Ph.D. Graduate Program in Nutrition, 2006); "All-trans-retinoic acid regulates vitamin A homeostasis."
- Amanda Wray, MS, RD (Graduate Program in Nutrition. PSU, M.S., 2010). "Vitamin A increases tibial cortical thickness and trabeculae number with no adverse change in bone stiffness."
- Yong Wu (Graduate Program in Nutrition, PSU, M.S. 2010). All-trans-retinoic acid combined with phorbol ester regulates CD300B expression in human monocytic THP-1 cells."
- Kara L. Mosovsky (integrated undergraduate and masters degree program (IUG, PSU, M.S. 2010), Schreyer Honors College and Immunology and Infectious Disease Graduate Program). "All-trans-retinoic acid and alpha-galactosylceramide regulate B cell costimulatory molecules and antibody production."
- Lili Wu (volunteer, 2004; M.S., PSU, 2008; Ph.D. 2011, Graduate Program in Nutrition). MS thesis: "Investigation of the mechanism of vitamin A uptake, accumulation and metabolism in the lungs of the neonatal rat." PhD thesis: "Vitamin A metabolism in the neonatal lung: studies in a rat model."
- Yao Zhang (volunteer, spring 2005, M.S., PSU, 2008; Ph.D. 2011, Graduate Program in Nutrition). MS thesis: "Identification of additional retinoic acid response elements involved in the inducibility of CYP26A1 in liver." PhD thesis: "Retinoic acid-induced MafB expression during myeloid cell differentiation in culture and bone chondrogenesis in vivo."
- Katherine H. Restori, Ph.D. PSU, December 2012, Immunology and Infectious Disease Graduate Program, Huck Institute for the Life Sciences. PhD thesis: "Immunization and vitamin A status as factors modulating an invasive *Streptococcus pneumoniae*-induced lung and a non-invasive *Citrobacter rodentium* gut infection in mice."
- Hanbing Zhao, M.S., PSU, December 2012. Immunology and Infectious Disease Graduate Program, M.S. Thesis: Comparison of retinoic acid (oral and subcutaneous) and vitamin A (oral) effects in immune response in vitamin A deficient mice."
- Libo Tan, Ph.D., PSU, August 2013, Graduate Program in Nutrition. Thesis: "Model-based compartmental analysis of the whole-body vitamin A metabolism and kinetics in neonatal rats."
- Lei Hao, Ph.D., PSU, August 2013, Graduate Program in Nutrition. Thesis: "Roles of dietary factors in the development of non-alcoholic fatty liver disease."
- Sarah A. Owusu, Ph.D., PSU, December 2015, Graduate Program in Physiology. Thesis: "VARA supplementation: effects on ontogeny, lung development and neonatal lung injury- studies in a rat model." (2011-2015 recipient of Alfred P. Sloan Fellowship).
- Kuan-Hsun (Neil) Huang, M.S.; Ph.D., PSU, Dec. 2016, Graduate Program in Nutrition (recipient of Baxter Young Investigator Award). Thesis: "Exogenous lipids regulate

the development of hepatic steatosis in a lean NAFLD model fed a high carbohydrate diet.”

Joanna (J.) Kalina Hodges (née Urbanek), M.S.; Ph.D., PSU, December 2016, Graduate Program in Nutritional Sciences. Thesis: “Vitamin A metabolism and kinetics during the neonatal period: studies in the rat model.”

Cheng-hsin (Gina) Wei, B.S.; M.S., Ph.D., PSU, August 2018, Graduate Program in Nutritional Sciences. Thesis: “The impact of vitamin A supplementation in the early postnatal period on metabolic regulation related to childhood obesity risk.”

Yaqi Li, B.S.; Ph.D., PSU, May 2019, Graduate Program in Nutritional Sciences. Thesis: “The impact of micronutrient status on vitamin A metabolism and kinetics in rats.”

Zhi Chai, B.S.; Ph.D., PSU, December 2019, Graduate Program in Physiology (Recipient of T32 training grant position). “Transcriptomics approach to understanding the role of vitamin A in *Citrobacter rodentium* infection in the mouse small intestine and colon.”

Service on candidacy and thesis committees, not as chair, since 2005 (21 students before 2005)

Sandhya Sankaranarayanan, Integrative Biosciences Graduate Program, Nutritional Sciences, 2004-05; Ph.D., 2005.

Sin (John) Gieng, Graduate Program in Nutrition doctoral committee, Ph.D., 2005.

Hyunjin (Grace) Park, Candidacy and Doctoral Committee, 2007-2011.

Zhizing (Jamie) Zhang, GPN doctoral committee, 2008-2010.

Frank A. Duca, Physiology program, M.S., 2009-2010.

Qianyi (Evelyn) Ma, GPN doctoral committee, 2008-2012.

Tina Harris, GPN Candidacy Committee, 2011.

Samuel P. Scott, GPN Candidacy Committee, 2011.

Sreelakshmi Vesudavan, Immunology and Infectious Disease, Candidacy Committee, 2012.

Simone Holligan, GPN doctoral committee, 2012-13.

Huicui Meng, Graduate Program in Nutrition doctoral committee, Ph.D., 2012-2015.

Samuel P. Scott, Graduate Program in Nutrition doctoral committee, Ph.D., 2013-2015.

Kaitlin L. McDaniel, Pathobiology doctoral committee Pathobiology, (co-chair with Margherita T. Cantorna), 2012-2015.

Eun Hyeon Song, Molecular, Cellular and Integrative Biosciences Program Candidacy examination committee, December 2015.

Morgan Jackson, M.S. Student in Physiology, 2015-2016.

Aditwa Dey, Ph.D. Student in Physiology, 2016-2018.

Lindsey M. Snyder, Ph.D. Student in Pathobiology (Immunology), 2016-2019.

Camila Hughes, Ph.D. Student in Animal Science, 2016-2019.

Mingyao Yang, Ph.D. Student in Animal Science, Reproductive Biology, 2020-2021.

Xinyuan (Cindy) Zhang, Ph.D. Student in Nutritional Sciences, 2021-2022.

Kalynn Parks, Ph.D. Student in Integrative Physiology, 2021-2022.

#### Undergraduate students

Rachel Evans, Nutritional Sciences major, 1994-95.

Jason Dietz, Nutrition and Foods Sciences majors. Honors College (supervisor for honors thesis), 1994-95.

Julie Nibert, Nutritional Sciences major, 1995-96.

Keigan M. Park, Biochemistry major, independent study, Fall 2001, Spring 2002-Fall 2003. Continued as a Ph.D. student in the Department of Pharmacology, University of Rochester.

Denise Lackey, Nutritional Sciences major, Honors College (supervisor for honors thesis), Fall 2002-Spring 2004. Continued as a Ph.D. student in the Department of Nutrition and Food Science, Michigan State University, and a Postdoctoral scholar, University of California at Davis /USDA Research Center.

Mary C. Bryson, Biology major, Fall 2004-Fall 2007 (supervisor for honors thesis). After graduation: Peace Corps, Togo; Continued as a Medical Student, Milton S. Hershey School of Medicine.

Emily Herron, Chemistry major, Fall 2005-Summer 2006. Supervisor for honors thesis; student received Scholarship Award.

David Kaufmann, Nutritional Sciences major, Spring 2006.

Genevieve Caron, Nutritional Sciences major, Fall 2006-Spring 2007.

Mary McHugh, Biology major, Fall 2006-2007t.

Julian Barkan, Biology major, Fall 2006-2008. Supervisor for honors thesis; student received Scholarship Award

Meghan A. Bisbey, Nutrition major, Summer 2007

Kara L. Mosovsky, Honors program, Animal Biosciences, 2007-2008

Stephanie E. Tomassetti, Honors program, Nutritional Science, 2008

Haley Gittleman (Oberlin College), Summer research assistant, 2009

Natalie Mueller, Undergraduate research, 2009-2012

Moksha Atluri, Undergraduate research, 2011-2012

Rachel Bloom, Undergraduate research, Honors program, 2011-2012

Jason Liu, Undergraduate research, Honors program, 2012-2014

Tiffany Bernardo, Undergraduate research, Honors program, 2012-2014

Alexis Hyczko, Undergraduate research, Honors program, 2013-2014

Jessica L. Adams (Auburn University), Visiting undergraduate researcher, Summer 2015

Alexis Weaver, Undergraduate research, Honors program, 2015-2017

Hyerin Yim, Undergraduate research (Biotechnology), 2017-2018

Han Xiao, Undergraduate research (Biochemistry), 2017-2018

Erin Dexheimer, Undergraduate research (Nutritional Sciences), 2019

Elizabeth Soucy, Undergraduate research (Nutritional Sciences), 2019-2020

Autum Budga, Undergraduate research, Honors program, 2020-2022

#### Summer high school students

SEECOS program (an Upward Bound Science and Math program sponsored by NSF and industry), Summer 2012: (awarded 3<sup>rd</sup> place SEECOS prize for research and presentation):

Christopher Halliger

Jazmin Slaughter

Michael Willoughby

#### Postdoctoral fellows directed

Barbara A. Kochanowski (Ph.D., U. Illinois); 1985-1986.

Robert W. Yost (Ph.D., U. Pennsylvania); 1986-1988

Anna Maria G. Pasatiempo (M.D., Philippines); 1986-1990.

Reza Zolfaghari (Ph.D., Texas Tech); 1988-1991.

Makiko Kinoshita (M.D., Jikei University); 1989-1991.

Diane W. Morel (Ph.D., Case Western Reserve); 1988-1989.

R. Keith Randolph (Ph.D., Bowman Gray, Wake Forest); 1989-1991.  
 S. Sri Kantha (Ph.D., U. Illinois); 1989-1991.  
 K. Elise Winkler (Ph.D., MCP); 1989-1991.  
 Tomokazu Matsuura (M.D., Ph.D., Jikei University); 1991-93 (Uehara Fellowship).  
 Takaki Shimada (M.D., Ph.D., Jikei University); 1994-96 (Uehara Fellowship).  
 Francisco Rosales (M.D., University Francisco Marroquin School of Medicine; Sc.D., Johns Hopkins University), 1993-98 (NIH National Research Service Award, 1995-1997).  
 Nan-qian Li (Ph.D., 1995, PS); 1995-1997.  
 Yuji Andrew Yamamoto (Ph.D., 1995; Tokyo Agricultural University); 1996-1998.  
 Melanie D. Banta (Ph.D., 1995, Biochemistry, Molecular and Cell Biology, Cornell University); 1998-1999.  
 Shigeki Tsutsui (D.V.M., Nihon University School of Veterinary Medicine, 1993; Ph.D., Faculty of Agriculture, University of Tokyo; 1998); 1998-2001. Funded in part by an award from the Japanese Ministry of Education (Japan Society for the Promotion of Science).  
 Richard Schlenker (Sc.D., University of Maryland), recipient of Department of Defense Summer Teachers Fellowship, summer 2002.  
 Yifan Ma, M.D., Ph.D., (Ph.D., Penn State, 2005) Postdoctoral fellow, 2005-2006.  
 Sandhya Sankaranarayanan, (Ph.D. Penn State, 2005), Laboratory Technologist and Postdoctoral Research Associate, 2005-2007.  
 Tongkun Pai, Ph.D., Visiting Associate Professor from Anhui University, Korea, Dec. 2005-2010.  
 Linxi Qian, (M.D., Ph.D., Fudan University, Shanghai, China), Postdoctoral, 2006-2007.  
 Nivedita Nagachar (PhD., University of Hull), Postdoc 2010-2011.  
 Kyoko Ito (M.D., Nagasaki University, Ph.D., Jikei University), Postdoctoral (Baxter Fellowship), 2009-2012.  
 Qianyi Ma (Ph.D., Nutritional Sciences, Penn State 2012). Postdoctoral volunteer, October-December, 2012.  
 Katherine H. Restori (Ph.D, Immunology and Infectious Disease Graduate Program, 2012), Postdoc January 1-August 10, 2013.  
 Libo Tan (Ph.D., Nutritional Sciences, Penn State 2013), Postdoc, July 2013-July 2014.  
 Lei Hao, M.D. (Ph.D., Nutritional Sciences, Penn State 2013), Postdoc, August 2013-June 2014.  
 Sarah A. Owusu, Ph.D. (Physiology, Penn State, 2015), Postdoc, January-March, 2016.  
 Kuan-Hsun (Neil) Huang, M.S.; (Ph.D., Nutritional Sciences, Penn State, 2016), Postdoc, January-December 2017.  
 Yaqi Li, Ph.D. (Nutritional Sciences, Penn State, 2018), Postdoc, March 2019-February 2021.  
 Ayasa Tajima, Ph.D. (Department of Molecular Biology, Jikei University School of Medicine, Japan, 2016), Postdoc, October 2019-January 2021.  
 Zhi Chai, Ph.D. (Physiology, Penn State 2019), Postdoc, Jan 2020-May 2020.