

HELEN B. EVERTS

Department of Human Nutrition
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PROFESSIONAL EDUCATION

Ph.D. in Foods and Nutrition, The University of Georgia, Athens GA, August 2000
Dissertation: *The effects of vitamin A on mitochondrial function and gene expression in diabetes-prone BHE/Cdb rats.*

Committee Chair: Carolyn D. Berdanier

Relevant Coursework:

- Metabolic Control
- Biochemistry
- Advanced Molecular Genetics
- Cell Biology
- Post-transcriptional Regulation
- Advanced Endocrinology

M.S. in Foods and Nutrition, The University of Georgia, Athens GA, December 1995
Thesis: *A compartmental analysis of the effects of dietary potassium on the turnover of lithium in rats.*

Committee Chair: Nancy L. Canolty

Dietetic AP4 program:

- Observed and conducted patient counseling at the Georgia diabetes camp, St. Joseph's and Scottish Rites hospitals in Atlanta, GA and at the Joslin Diabetes Center in Princeton, NJ.
- Became a registered dietitian September 1996.

B.S. in Premedicine, The Pennsylvania State University, University Park, PA, May 1990

RESEARCH EXPERIENCE

Assistant Professor:

Department of Human Nutrition, The Ohio State University, March 2008-present

- Studying the role of vitamin A in cutaneous biology

Research Instructor:

Department of Biochemistry, Vanderbilt University Medical Center, June 2005- February 29, 2008.

- Studying the role of endogenous retinoic acid in hair and skin function.

Postdoctoral Fellow:

Department of Biochemistry, Vanderbilt University Medical Center, September 2001- June 2005.

Mentor: David E. Ong

- Determined the localization of retinoic acid synthesis in various vitamin A sensitive cells/tissues.

Postdoctoral Fellow:

Department of Medicine, The University of California at San Diego, September 2000-2001.

Mentor: Sylvia Evans in Kenneth Chien's group

- Studied the role of wnt signaling in heart development in *Xenopus*.

Research Assistant:

Department of Foods and Nutrition, The University of Georgia, Winter-Summer 1996, Fall 1997-August 2000.

- Identified a role for dietary vitamin A in mitochondrial function and gene expression.

Research Assistant:

Department of Foods and Nutrition, The University of Georgia, Fall 1993, Academic Year 1994-1995.

- Designed computer model of lithium metabolism.

RESEARCH SUPPORT

1 K01 AR052009-01A1, NIH/NIAMS, 7/01/05-4/30/10 \$111,875 direct costs per year
 "Endogenous retinoids in mammalian skin and hair function" – The major goal of this project is to determine the localization, regulation, and function of endogenous retinoic acid synthesis during the mouse hair cycle, Role: PI

National Alopecia Areata Foundation, 3/01/08-2/28/09 \$50,000 direct costs
 "Role of dietary vitamin A in alopecia areata disease progression" – The major goal of this project is to test the hypothesis that alterations in dietary vitamin A will alter the progression of alopecia areata. Role: PI

P30 AR 041943, NIH/NIAMS, 5/1/2005-4/31/2008 \$20,000 direct costs per year
Skin Diseases Research Center Pilot and Feasibility Study – "Endogenous retinoids in mammalian skin and hair function"- The major goal of this project is to examine the localization and regulation of endogenous retinoic acid metabolism during the mouse hair cycle, Role: Co-Investigator

1 R21 AR052710-01A1, NIH/NIAMS, 04/01/06-03/31/08 \$12,828 our subcontract per year
 "Alopecia and Ulcerative Dermatitis in B6 Mice"- The goal of this project is to correlate phenotypes between B6 mouse alopecia and human central centrifugal cicatricial alopecia and to test the hypothesis that reduced function of enzymes involved with degrading vitamin A in these mice makes them susceptible to vitamin A toxicity, Role: Co-Investigator of subcontract with John P. Sundberg

North American Hair Research Society Pilot Grant, 2/01/04-1/31/07 \$15,000 directs costs total
 "Retinoid metabolism in human cicatricial alopecia" – The major goal of this project is to examine the regulation of retinoic acid synthesis in humans with cicatricial alopecia, Role: PI
 (Note: I also received \$12,000 in mentorship and travel grants from the NAHRS for me and my students)

HONORS AND AWARDS

Awards:

- North American Hair Research Society Award to mentor the medical student Amy Valet, 2007.
- North American Hair Research Society Award to mentor the medical student Paula Shah, 2006.
- North American Hair Research Society Award to mentor the medical student Adriana Schmidt, 2005.
- Travel grant to attend the 4th annual Timberline Symposium, “Keratinocyte Stem Cells: Tissue Regeneration, Wound Healing and Environmental Responses”, 2005.
- Travel grant to present research at the 4th Intercontinental Meeting of Hair Research Societies, 2004.
- North American Hair Research Society Mentorship Award to be mentored by John P. Sundberg, 2004.
- University Systems of Georgia Research Symposium Poster Award, 2000.
- Endsley-Peifer Student Research Award: Physical/Biological division, The University of Georgia, 1999.
- Travel grant to present research at the American Diabetes Association’s 59th Scientific Sessions, 1999.
- Young Investigator’s travel grant to attend Mathematical Modeling in Experimental Nutrition V conference, 1994.

Scholarships/Fellowships:

- Reproductive Biology Training Fellowship, Vanderbilt University, 2001-2003.
- Developmental Biology Training Fellowship, University of California at San Diego, 2000-2001.
- Graduate School Dissertation Fellowship, The University of Georgia, 1999-2000.
- June and Bill Flatt Nutrition Excellence Graduate Scholarship, The University of Georgia, 1998-1999.
- Gwendolyn Brooks O’Connell Scholarship, honoring excellence as a teaching assistant, The University of Georgia, 1997-1998.
- Hazel and Gene Franklin Scholarship, honoring academic performance, The University of Georgia, 1996-1997.

Honor Societies:

- Sigma Xi, Full member (based on achievements in research)
- Gamma Sigma Delta (College of Agriculture)
- Phi Upsilon Omicron (College of Family and Consumer Sciences)

PUBLICATIONS

Research Papers:

- **Everts, H.B., Sundberg, J.P., King, L.E., and D.E. Ong (2007)** Immunolocalization of enzymes, binding proteins, and receptors sufficient for retinoic acid synthesis and signaling during the hair cycle. *J. Invest. Dermatol.* 127:1593-1604.
- **Everts, H.B., Sundberg, J.P., and D.E. Ong (2005)** Immunolocalization of retinoic acid biosynthesis in selected sites in rat. *Exp. Cell Res.* 308:309-319.
- **Everts, H.B., King, L.E., Sundberg, J.P., and D.E. Ong (2004)** Hair cycle specific immunolocalization of retinoic acid synthesizing enzymes Aldh1a2 and Aldh1a3 indicate complex regulation. *J. Invest. Dermatol.* 123:258-263.
- **Everts, H.B., and C.D. Berdanier (2002)** Nutrient-gene interactions in mitochondrial function: vitamin A needs are increased in BHE/Cdb rats. *IUBMB Life* 53:289-294.
- **Everts, H.B., D.O. Claassen, C.L. Hermoyian, and C.D. Berdanier (2002)** Nutrient-gene interactions in mitochondrial function: dietary vitamin A and mitochondrial gene expression. *IUBMB Life* 53:295-301.
- **Lee J., H.B. Everts, C.D. Berdanier, and R.R. Eitenmiller (2001)** Comparison of HPLC and spectrofluorimetric assays of all *trans*-retinol in hepatic tissue. *Food Sci. Biotechnol.* 10: 682-685.
- **Everts, H.B., H.-K. Jang, R.C. Boston and N.L. Canolty (1996)** A compartmental model predicts that dietary potassium affects lithium dynamics in rats. *J. Nutr.* 126: 1445-1454.
- **Canolty, N.L., H.S. Ibrahim, H.-K. Jang, H.B. Everts, R.C. Boston (1996)** Reversibility of lithium-induced changes in adult rats. Lithium in the tropic chain: soil-plant-animal-man. *Proceedings of International Lithium Conference*, September 13-14, 1995, Warsaw, Poland. Ed., T. Ko'sla. pp. 107-111.

Reviews:

- **Everts, H.B., and C.D. Berdanier (2002)** Regulation of mitochondrial gene expression by retinoids. *IUBMB Life* 54:45-49.
- **Everts, H.B. and C.D. Berdanier (2001)** Vitamin A and mitochondrial gene expression. In: Nutrient-Gene Interactions in Health and Disease (N.M. Moussa and C.D. Berdanier, eds) CRC Press, Boca Raton Fl. pp. 321-348.
- **Berdanier, C.D., H.B. Everts, C.L. Hermoyian, and C.E. Mathews (2001)** Role of vitamin A in mitochondrial gene expression. *Diab. Res. & Clin. Prac.* 54:511-527.
- **Berdanier, C.D., and H.B. Everts (2001)** The role of mitochondrial DNA in aging and degenerative disease. *Mutation Research* 45:169-184.
- **Everts, H.B., and C. D. Berdanier (1997)** Animal models for the study of non-insulin-dependent diabetes in the absence of obesity. *Int. J. Diabetes* 5: 1-12.

Oral Presentations:

- **Everts, H.B., Sun, J., Benjamin King, B., Szatkiewicz, J.P., King, L.E. Jr., and J.P. Sundberg (2007)** Retinoic acid synthesis and degradation enzymes and binding proteins are altered in Alopecia Areata. *5th International Congress of Hair Research*, Vancouver, BC.
- **Everts, H.B., Valet, A.S., Shah, P.P., Ong, D.E., King, L.E. Jr., and J.P. Sundberg (2007)** Retinoic acid synthesis enzymes and binding proteins are increased in central centrifugal cicatricial alopecia. *5th International Congress of Hair Research*, Vancouver, BC.
- **Everts, H.B., Sundberg, J.P., King, L.E. Jr., and D.E. Ong (2006)** A novel observation about Crabp2 localization *in vivo*. *FASEB Summer Research Conference on Retinoids*, Indian Wells, CA.

- **Everts, H.B., King, L.E. Jr., Sundberg, J.P., and D.E. Ong (2004)** Hair cycle specific immunolocalization of retinoic acid synthesis markers. *4th Intercontinental Meeting of Hair Research Societies*, Berlin, Germany.
- **Everts, H.B., and C.D. Berdanier (June 1999)** Optimal mitochondrial function in mitochondrial diabetes depends on a three fold increase in dietary vitamin A. *American Diabetes Association's 59th Scientific Sessions*, San Diego, CA.

TEACHING EXPERIENCE

Assistant Professor:

Department of Human Nutrition, The Ohio State University, Fall 2008 and 2009

- Taught advanced nutrition to 150-175 undergraduate major students per quarter.

Adjunct Professor:

Department of Biology, Belmont University, Fall 2004, Spring 2005

- Taught introductory biology to 22-25 undergraduate non-major students per semester.

Tutor:

Department of Medicine, Vanderbilt University Medical Center, Fall 2002, 2003.

- Tutored medical students in biochemistry.

Guest Lecturer:

Department of Foods and Nutrition, The University of Georgia, September 1998, August 2000.

- Developed and presented lectures on nutrition and gene expression for Advanced Macronutrients class of 8-12 graduate students.

Teaching Assistant:

Department of Foods and Nutrition, The University of Georgia, Spring 1997.

- Instructed one lab section of Sensory Foods course to 8 upper-class students.

Teaching Assistant:

Department of Foods and Nutrition, The University of Georgia, Fall 1996, Winter 1997.

- Instructed one lab section of Introductory Foods course for 24 undergraduate and graduate students per quarter.

Teaching Assistant:

Department of Foods and Nutrition, The University of Georgia, Spring 1994.

- Developed and graded course exams for 150 undergraduate students in Introductory Nutrition course.
- Developed and presented four lectures.
- Provide one-on-one assistance during office hours.

PROFESSIONAL ORGANIZATIONS and ACTIVITIES

American Society for Nutrition (since 2007)

Society for Investigative Dermatology (since 2003)

Reviewer for Journal of Investigative Dermatology (since 2007)

North American Hair Research Society (since 2004)

Editor for the Vanderbilt Editor's club (since 2006)

Ad Hoc Reviewer for Science (2001)

American Dietetic Association (since 1996)

The Society for Experimental Biology and Medicine (since 1998)