

**Martha Ann Belury, Ph.D., R.D.**

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**Education**

1987- 1992 Ph.D., Biological Sciences  
University of Texas, Austin, Texas

1985-1987 Dietetic Internship and Credential of Registered Dietitian (RD)  
Coordinated Program, University of Texas, Austin, Texas

1983-1987 B.S., Nutrition  
University of Texas, Austin, Texas

**Appointments**

2004 – present Associate Adjunct Professor, Medicine  
Division of Endocrinology, Department of Internal Medicine  
The Ohio State University, Columbus, OH

2002 – present Associate Professor with Tenure, Human Nutrition, The Ohio State  
University, Columbus, OH

2002- present Carol S. Kennedy Professor in Human Nutrition,  
The Ohio State University, Columbus, OH

2000 –2002 Associate Member, Department of Molecular Medicine  
Northwest Hospital, Seattle, WA

1998 - 2000 Associate Professor with Tenure, Department of Foods and  
Nutrition, Purdue University, West Lafayette, Indiana

1996-2000 Committee Member, Admissions, Graduate Programs  
Department of Foods and Nutrition, Purdue University

1994 - 1998 Assistant Professor, Department of Foods and Nutrition  
Purdue University, West Lafayette, Indiana

1992 - 1994 Assistant Professor, Department of Health and Human  
Development, Montana State University, Bozeman, Montana

1988 - 1992 Graduate Research Assistant, University of Texas, Austin, Texas

**Awards/Honors/Activities**

2007 – present	Subcommittee for Research, Center for Women's Health, The Ohio State University, Columbus, OH
2006 – present	Editorial Board, <i>Lipids</i> journal, American Oil Chemists' Society, Campaign, IL
1999 - present	Scientific Advisor, Council for Women's Nutrition Solutions (CWNS), National Cattleman's Beef Association, Denver, CO
1998 - present	Speaker's Bureau, National Cattleman's Beef Association for Continuing Education Units for American Dietetic Association, American Medical Association
2004	Dean's Award for Research, College of Human Ecology The Ohio State University, Columbus, OH
2003	Hot Paper, ISI Essential Scientific Indicators, Most Cited Paper for Agricultural Sciences for Third Quarter, 2003
2000	E.L.R Stokstad Award for Outstanding Research, American Society for Nutritional Sciences (ASNS), Presented at Experimental Biology, April 16, 2000, San Diego, CA
1999	Outstanding Young Professional Award for 1999, Texas Exes in Human Ecology, University of Texas, Austin, TX
1999	Chair, Search Committee for Molecular Biologist Department of Foods and Nutrition Purdue University, West Lafayette, IN
1993	Most Influential Teacher, College of Education, Health and Human Development, Montana State University, Bozeman, MT
1990-1992	Pre-Doctoral NIH Training Grant in Toxicology University of Texas, Austin, TX
1991	Society of Toxicologists of the Southwest Ted Reynolds Graduate Student Award, M. D. Anderson - Science Park Cancer Research Center

## Teaching

Since joining the faculty of OSU (2002), I have been able to create two completely new courses (HN 694 and HN 830) as well as re-design a course, HN 506. The creation of these in-depth advanced levels has allowed for me to develop a group of courses designed to teach students how to approach research areas using a variety of tools and research questions. The courses utilize current literature so that students are exposed to **currently accepted theories** as well as **emerging concepts** in each area.

Course Name	Graduate Course	Term(s) Taught	Credit Hours	Location	Approximate Enrollment
Nutrition in the Life Span		Sp 05 Au 05 Au 06 Au 07	3 Q hrs	OSU	140 - 180
Diet-endocrine Interactions and Women's Health	X	Wi 05	4 Q hrs	OSU	12
Advanced Lipids & Energy	X	Sp 04 Wi 07	5 Q hrs (team-taught My role ~40%)	OSU	12
Graduate Seminar	X	Fa 03 Sp 04 Wi 06	2 Q hrs	OSU	10
Nutrition Methods	X	Fa Qu 03	3 Q hrs	OSU	23
Nutrition: Issues and Controversies		Sp 03 Au 04 Sp 06 Sp 07	3 Q hrs	OSU	80
Nutritional Endocrinology of Women's Health	X	Fall 1999	2	Purdue University	10
Graduate Seminar	X	Fall 1999	1	Purdue University	18
Introductory Nutrition		Summer 1998 Spring 1999	3	Purdue University	450
Nutritional Biochemistry of Lipids	X	Spring 1995 Spring 1996 Spring 1997 Spring 1999	1.5	Purdue University	10-15
Laboratory Assessment of Human Nutrition		Fall 1994 Fall 1995 Fall 1996 Fall 1997	2	Purdue University	45-60
Human Nutrition		Spring 1993 Spring 1994	3	MSU**	180
Nutrient Metabolism-I		Fall 1993 Fall 1994	3	MSU	24

Nutrient Metabolism-II		Fall 1993 Fall 1994	2	MSU	24
Advanced Food Science		Spring 1993 Spring 1994	2	MSU	15
Advanced Food Science Lab		Spring 1993 Spring 1994	1	MSU	15
Introductory Food Science		Fall 1992 Fall 1993	3	MSU	22
Introductory Food Science-Lab		Fall 1992 Fall 1993	1	MSU	22

\*\* Montana State University

## **Research Mentor**

### **Mentor for Visiting Scientist**

Sept., 2006 – Sept., 2007 Kazunori Koba, Ph.D.  
Associate Professor  
Nagasaki, Japan

### **Chairperson, Graduate Committees**

### **Students, Doctorate of Philosophy**

- A. Min Tian, MS, Anticipated Completion, August 2010  
Relationship of mitochondrial biogenesis with muscle wasting
- B. Michelle Asp, MS, Anticipated Completion, August 2010  
Role of Insulin Resistance in Muscle Atrophy
- C. Li-Fen Liu, Completed June 2007  
Role of conjugated linoleate in hepatic lipid metabolism  
Current Position: Post-Doctoral Researcher at Stanford University
- D. Angie Wendel, Completed June 2007  
Role of PPARs in modulating lipid metabolism in liver and muscle  
Current Position: Post-Doctoral Researcher at The Ohio State University
- E. Aparna Purushotham, Completed March 2007  
Bioactive compounds that regulate hepatic insulin sensitivity  
Current Position: Post-Doctoral Researcher at the NIEHS / NIH
- F. Ming Lu, Ph.D. Completed: December, 2000  
*Awarded Ismail Outstanding Graduate Student Award, Purdue University, 1999*  
Modulation of PPAR- $\alpha$  by conjugated linoleic acid  
Current Position: Senior Scientist, University of California San Francisco, CA
- G. Claudine Kavanaugh, Ph.D., Completed June, 1999,  
*Awarded Distinguished Pre-Doctoral Research Award by the American Association for Cancer Research, 1998*  
Conjugated dienoic linoleate modulation of PPAR-responsive genes  
Current Position: Scientist, Food and Drug Administration, Washington, DC

- H. Kai-Li Liu, Ph.D., Completed December, 1999  
Conjugated linoleic acid modulation of fatty acid metabolism via PPARs  
Current Position: Associate Professor, Department of Nutrition, Chung Shan Medical University, Taipei, Taiwan
- I. Silvia Moya-Camarena, Ph.D., Completed September, 1998  
Conjugated dienoic linoleate modulation of liver carcinogenesis  
Current Position: Associate Professor and Director, CIAD, Sonora, Mexico

### **Students, Masters of Science**

- A. Kai-Li Liu, MS, Completed December, 1996  
Conjugated Dienoic Linoleate Modulation of Skin Carcinogenesis
- B. Rachna Singh, MS, Completion, 2004  
Role of Dairy in Gestational Diabetes
- C. Celeste Koster, MS, Completion, 2005  
Conjugated linoleic acid activated PPAR delta
- D. SaeBom Won, MS, Completed June 2006  
PUFA and liver fatty acid composition
- E. Beth Combs, Completion December 2006  
Rosiglitazone decelerates muscle loss in cachexia
- F. Gayle Shrode, Anticipated May 2008  
Fermented soy reduces body fat in mice
- G. Rachel Cole, Anticipated May 2008  
Soy products modulate adipocyte gene expression

### **Mentor for Undergraduate Students in Research**

- A. Kathleen Nemer, Honors Student, 2007 - present  
Dietary Punicic Acid Changes Lipid Composition of Muscle in Mice  
Awards: Ruth Howell Undergraduate Research Award
- B. Ashley Allie, Honors Student, 2004-2006  
Ability of CLA to alter body composition in post-menopausal women
- C. Rachel Cole, Honors Student, 2004-2006  
Dietary CLA alters fatty acid composition of pancreas and kidney through reducing level of stearyl-CoA desaturase
- D. Emily Jones, Honors Student, 2002- 2004  
Role of Dairy in the Management of Weight Gain During Pregnancy
- E. Jerri Sutton, 2002 -2003  
Non-esterified fatty acid composition in gestational diabetes
- F. Tracy Rausch, 1995-1998  
Hydroponic growth of sustainable vegetable for bone growth

### **Other Roles as Research Mentor**

- 2005 – present      Faculty Advisor, Graduate Student Nutrition Society, The Ohio State University
- 1992 - present      Member of research thesis and dissertation committees for over 30 graduate students, The Ohio State University

2002-present Academic advisor for up to twenty five undergraduate students per year, The Ohio State University  
 1998-1999 Graduate student journal club organizer, Purdue University  
 1994-1997 Faculty advisor, Purdue Foods and Nutrition Undergraduate Society

### **Grant Review Panels**

#### **International and National**

2007 – present Vice Chair, Extramural Grants for American Cancer Society National Atlanta, GA, Panel: Carcinogenesis, Nutrition, and Environment  
 CNE Panel Meets twice Yearly with Awards  
 2004 – present Study Section Member, American Cancer Society National Atlanta, GA, Panel: Carcinogenesis, Nutrition, and Environment  
 CNE Panel Meets twice Yearly with awards up to 4 years  
 2006-present Study Section Ad Hoc Member for Panel II, Review once annually  
 American Institute for Cancer Research, Washington, D.C.  
 1997 – 2001 Study Section Member for Panel I, Review twice annually  
 American Institute for Cancer Research, Washington, D.C.  
 2002-2004 Ad Hoc Reviewer, United States Department of Agriculture  
 2004 Ad Hoc Reviewer, Metabolic Pathology, National Institutes of Health, Washington, D.C.  
 2000 Ad Hoc Reviewer, U.S. Army Breast Cancer Grants, Department of Defense, Army  
 2000- present Ad Hoc Reviewer for Various International Research Organizations  
 - Dairy Farmers of Canada, National Cattleman's Beef Association, Health Research Board, Dublin, Ireland, NIH MBRS Grant Proposal, International Food Society, Europe

#### **Institutional**

1996-1999 American Cancer Society Institutional Grants and Indiana Elks Cancer Research Grant Program, Purdue Cancer Center, West Lafayette, IN, US

### **Symposia Chair / Organizer**

Co-Chair, Bioactive Lipids Session, Annual Meeting of American Oil Chemists Society, Quebec City, Canada, May 15, 2007  
 Plenary Speaker and Session Chair: Symposium entitled, "Conjugated linoleic acid as a dietary supplement." International Congress of Nutrition, Phuket, Thailand, Nov 30 – Dec 3, 2004.  
 Chair: Symposium entitled, "Conjugated Linoleic Acid." ASNS, Experimental Biology '03; San Diego, CA, April 11-14, 2003.

Chair. Symposium entitled, "Conjugated Linoleic Acid: Recent Advances in Breast Cancer Prevention and Diabetes Management." American Dietetic Association Annual Meeting, St. Louis, MO October 21, 2001.

Chair. FASEB Summer Conference Session entitled, "Steroid Hormone Receptors and Nutrient Modulation of Gene Expression." For Nutrient and Gene Expression Summer Conference; Experimental Biology-ASNS, Saxtons River, VT, August 18-23, 2001.

Co-Chair. Mini-Symposium entitled, "Nuclear Receptors and Gene Expression." ASNS, Experimental Biology 2000; San Diego, CA; April 15-19, 2000.

Co- Organizer. Symposium entitled, "Steroid Hormone Receptor and Nutrient Interactions: Implications for Cancer Prevention." ASNS, Experimental Biology '98; San Francisco, CA; April 18-22, 1998.

### **Ad Hoc Journal Reviewer**

Various national and international peer-reviewed journals including:

*Journal of Lipid Research*

*Prostaglandins, Leukotrienes and Essential Fatty Acids*

*Prostate*

*International Journal of Obesity*

*Cancer Research*

*Cancer Letters*

*American Journal of Physiology*

*Lipids*

*Journal of Nutrition*

*Journal of Nutritional Biochemistry*

*Nutrition and Cancer*

*American Journal of Clinical Nutrition*

*Journal of Food Science*

*Journal of the American Dietetic Association*

### **Professional and Pedagogical Memberships**

American Diabetes Association

American Dietetic Association

American Society of Nutrition

American Oil Chemists' Society

Davis Heart & Lung Research Institution, OSU

Ohio State University Nutrition (OSUN) Interdepartmental Nutrition Program

### **Service and Professional Association Committees**

2005 – present      Chair, Graduate Studies Committee, Human Nutrition, OSU

2006 – present      Presidents Scholarship Committee, The Graduate School, OSU

2004 – present      Committee for Krauss Director's Award for Excellence in Research, Ohio Agriculture Research and Development, OSU

2002 – 2005      Member, Graduate Studies Committee, Human Nutrition

2003 - 2004 Chair, Search for Metabolomics/Proteomics Professor  
Department of Human Nutrition, OSU

2003 – 2006 Critical Difference for Women, University Scholarship Review Panel  
OSU

American Society of Nutrition (Formerly American Society for Nutritional Sciences)  
Federation of American of Society of Experimental Biology (FASEB)

- Predoctoral Awards Committee, May, 2003- May, 2006
- E.L.R. Stokstad Award Nominating Committee, May, 2002 - June, 2005 (Chair, 2005)
- Research Interest Section (RIS) Energy and Macronutrient Metabolism RIS Steering Committee, January, 2002 – January, 2005
- Research Interest Section (RIS) Diet & cancer Steering Committee, April, 1999 – March, 2000
- Research Interest Section (RIS) Nutrition and Gene Expression RIS Steering Committee, April, 1999 – March, 2000
- Program Planning Committee At-Large Member, Appointment May, 1998 - June, 2001

## **Research Support**

### **Funded**

#### **Principal Investigator**

#### ***Conjugated linoleic acid as complementary therapy for women with type 2 diabetes***

Belury (PI, 5%)

Agency: Cognis, Corp. Type: Unrestricted Gift  
Amount: \$420,000 Period: Nov 2004 – Dec 2007

The specific aims of this study are to determine the ability of CLA or placebo to aid in the management of type 2 diabetes in post-menopausal women. The primary endpoints include measuring changes in fasting and post-challenge glucose tolerance, hemoglobin<sub>A1c</sub>, body composition and fasting insulin after 16 or 32 weeks of supplementation.

#### ***Dietary components to modify adiposity in rats***

Belury (PI, 5%)

Agency: Ajinomoto, Incorporated, Tokyo, Japan,  
Type: Competitive Grant  
Amount: \$120,000 Period: Oct 2004 – Sept 2007

The objective of this proposal is to determine the ability of fermented soy, soy or casein based diets to support body weight adipose mass gain in rodent models for obesity. There is no overlap with the presently proposed study.

#### ***Role of conjugated linoleic acid in muscle steatosis and insulin resistance***

Belury (PI, 5%)

Agency: OARDC Type: Competitive Period: April 2005 – Dec 2007  
Amount: \$100,000

The objective of this proposal is to determine the ability of conjugated linoleic acid to reduce steatosis and increase insulin mediated glucose uptake in muscle of Zucker diabetic fatty (fa/fa) rats via activation of peroxisome proliferator-activated receptor-alpha.

***Inhibition of muscle atrophy by dietary conjugated linoleic acid***

Belury (PI, 5%), Guttridge (Co-I)

Agencies: Ohio Agriculture Research & Development Center & Matching Grant with Cognis Corporation Type: Internal

Amount: \$ 110,000

Period: May 2007 – April 2008

The objective of this proposal is to determine the ability of conjugated linoleic acid to reduce muscle atrophy in a murine model for colon cancer-induced cachexia.

***Role of Punicic Acid in Adiposity in Mice***

Belury (PI, 5%) Koba (Co-I)

Type: Invited

Period April 2007 – Mar 2008

Amount: \$36,000

The objective of this proposal is to determine the dose dependent effect of punicic acid (18:3, c9c11t13) on changes in adiposity during an 8 week feeding study in C57Bl mice.

***Fatty acid supplementation in management of type 2 diabetes***

Belury (PI, 10%) Osei (Co-I) Hsu (Co-I)

Agency: NCCAM / NIH Period: Aug 2007 – Jul 2010

Amount: \$600,000 The aim of this grant is to determine the safety and efficacy of CLA as a weight suppressive supplement to complement rosiglitazone therapy in subjects with type 2 diabetes.

**Co-Investigator**

***Ohio family farm project***

Moeller (PI) Belury (Co-I, 5%)

Agency: USDA Coop State Res Educ & Extension Service

Amount: \$120,000

Period: July 2004 – July 2007

The objective of this study is to determine the extent that consumption of ruminant beef products correlates to indices of health in Ohio-ans. There is no overlap with this present proposal.

***HER-2/neu and dietary fat: Gene-nutrient interactions in breast cancer***

Yee (PI) Belury (Co-I, 5%)

Agency: NCI / NIH R21 Period: Jan 2005 – Jan 2007  
Amount: \$150,000

The objective of this proposal is to determine the role of omega three fatty acids in modulating Her-2/neu mediated breast cancer.

***Stress, fatty acids, and pro-inflammatory cytokine production***

Kiecolt-Glaser (PI), Belury (Co-I, 10%), Glaser (Co-I), Lemeshow (Co-I), Malarkey (Co-I)

Agency: NIA / NIH RO1 Period: July 2007 – June 2012

Amount: \$ 3,100,000

This proposal will evaluate the function of supplementing older people with n3 polyunsaturated fatty acids for improving immune responses to mild immune challenges.

***Stress and pro-inflammatory cytokines: an omega-3 intervention***

Kiecolt-Glaser (PI) Belury (Co-I, 5%)

Agency: NCCAM / NIH R21 Period: July 2007 – June 2010

Amount: \$600,000

This proposal will evaluate the function of supplementing medical students with n3 polyunsaturated fatty acids for improving immune responses to mild immune challenges.

***Fatigue, depression, and inflammation in cancer survivors: A prospective study***

Kiecolt-Glaser (PI), Alfano (Co-I) Glaser (Co-I), Belury (Co-I), Lemeshow (Co-I), Paskett (Co-I), Shapiro (Co-I) Bekaii-Saab (Co-I)

Agency: NCI / NIH

Amount: \$5,205,744 Period: Oct 2007 – Sept 2012

The objective of this study is to determine the correlation of depression with inflammation as predictive markers for survival of therapy and prevention of recurrence in women recovering from breast cancer.

**Pending**

***Dys-regulated AMP-kinase in cancer cachexia muscle atrophy***

Belury (PI, 10%) Guttridge (Co-I)

Agency: NIAMS / NIH Type: R03 Period: 3 years

Amount: \$ 225,000 (**Scored 222**)

The aims of this proposal are to 1) determine the relationship of reduced adipose derived adiponectin with muscle atrophy induced by cancer cachexia; 2) determine the ability of rosiglitazone to reduce markers of protein degradation; and 3) determine the extent that rosiglitazone reduces markers of inflammation through changes in adipokines.

***Omega 3 fatty acids in the prevention of breast cancer***

Yee (PI) Belury (Co-I, 5%)

Agency: NCI / NIH Type: R01 Period: 5 years

Under Review

The objectives of this proposal are to determine the role of omega three fatty acids in 1) accumulating in breast adipose and plasma of women taking supplements in a time-dependent manner; 2) determine the extent that omega three fatty acids modulate markers of inflammation in breast tissue.

### **Previous Funding**

#### ***Ohio family farm project***

Fluharty (PI) Belury (Co-I, 5%)

Agency: USDA Coop State Res Educ & Extension Service

Amount: \$225,000 Period: July 2003– July 2006

The objective of this study is to determine the extent that consumption of ruminant beef products correlates to indices of health in Ohio-ans. There is no overlap with this present proposal.

#### ***Role of Metabolites of Conjugated Linoleic Acid in Modulating Gene Expression***

Belury (PI)

Agency: National Cattleman's Beef Association,

Amount: \$ 142,000; 6/31/00 – 9/31/02

#### ***Role of CLA in the Management of Type 2 Diabetes Mellitus***

Belury (PI)

Agency: Private Foundation

Amount: \$ 35,000, 9/1/98 - 12/31/02

#### ***Patterns of Dietary Fat Intake in the DPP***

Belury, Reentry Candidate; S. Kahn (PI)

Agency: National Institutes of Health (NIDDK)

Amount: \$ 350,000; Approved for Funding for three years; Score: 143

#### ***Dietary Fatty Acid Modulation of Cancer via PPAR $\gamma$***

Belury (PI)

Agency: American Cancer Society (ACS RPG -98-038-01-CNE)

Amount: \$ 362,600; 1/1/98 - 12/31/01

#### ***Modulation of Peroxisome Proliferation and Hepatocarcinogenesis by Dietary Conjugated Linoleate***

Belury (PI)

Agency: American Institute of Cancer Research (96B071)

Amount: \$165,000; 1/1/97-12/31/00.

#### ***Role of Conjugated Dienoic Linoleate in Tumor Promotion***

Belury (PI)

Agency: American Institute of Cancer Research (95B080)

Amount: \$ 165,000; 1/1/96 - 6/30/98

***Role of CLA in the Management of Diabetes***

Belury (Co-PI) Vanden Heuvel (PI)  
Agency: National Cattleman's Beef Association,  
Amount: \$ 50,000; 7/97 - 12/98

***Inhibitory Effect of Inositol Hexaphosphate on TPA-Induced Events in a Murine Epidermal Cell Line***

Belury (PI)  
Agency: Indiana Elks Institutional Grant,;  
\$10,000; 1/96 - 12/96

***Dietary Conjugated Dienoic Linoleate Modulation of Skin Tumor Promotion in Mice***

Belury (PI)  
Agency: National Livestock and Meat Board  
Amount: \$42,630; 12/1/93- 5/30/95

***Conjugated Dienoic Linoleate Modulation of UV-Induced Events in Mouse Keratinocytes***

Belury (PI)  
Agency: American Cancer Society Institutional Grant (ACS IRG-17-35)  
Amount: \$13,000; 1/1/95 -12/31/95

***Biomass Productivity and Sustainability of a Bioregenerative Life Support System***

Belury (Co-I) Mitchell (PI)  
Agency: National Aeronautics and Space Administration Center Grant - NSCORT  
Amount: \$80,000 / yr from \$5,000,000; 1/15/94-11/14/95

***Modulation of Phorbol Ester Induced Events by Conjugated Dienoic Linoleate in Cultured Epidermal Cells***

Belury (PI)  
Agency: National Science Foundation- Montana EPSCOR Award  
Amount: \$68,430; 01/94 -12/94

***Montana American Indian Biomedical Research (AIRO) Program***

Belury (AI) Young (PI)  
Agency: National Institutes of Health Center Grant, Institutional Grant  
Amount: \$56,610 (from \$2,000,000)

***Conjugated Dienoic Linoleate Modulation of Phorbol Ester-Associated Events in Mouse Skin***

Belury (PI)  
American Cancer Society Institutional Grant (ACS IRG 172D)  
\$10,000; 10/1/92 -5/31/94

**Patent** 7,015249 (*Published March 21, 2006*)  
Methods and Compositions for Treating Diabetes

## Publications

### Peer-Reviewed Research Articles:

1. **Belury, MA**, Patrick, KE, Locniskar, M, and Fischer, SM. Eicosapentaenoic and arachidonic acids: Comparison of metabolism and activity in murine epidermal cells. *Lipids* 24: 423-429, 1989.
2. Locniskar, M, **Belury, MA**, Cumberland, AG, Patrick, KE, and Fischer, SM. Lack of a protective effect of dietary fish and vegetable oils on skin tumor promotion by 12-O-tetradecanoylphorbol-13-acetate (TPA). *Carcinogenesis (Lond.)* 11: 1641-1645, 1990.
3. **Belury, MA**, Leyton, J, Patrick, KE, Cumberland, AG, Locniskar, M, and Fischer, SM. Modulation of phorbol ester-elicited events in mouse epidermis by dietary n-3 and n-6 fatty acids. *Prostaglandins, Leukotrienes and Essential Fatty Acids* 44: 19-26, 1991.
4. Leyton, J, Lee, ML, Locniskar, M, **Belury, MA**, Slaga, TJ, Bechtel, D, and Fischer, SM. Effects of dietary fat on phorbol ester-elicited tumor promotion and other events in mouse skin. *Cancer Res.* 51: 907-915, 1991.
5. Locniskar, M, **Belury, MA**, Cumberland, AG, Patrick, KE, and Fischer, SM. The effect of dietary lipid on skin tumor promotion by benzoyl peroxide: comparison of fish, coconut, and corn oil. *Carcinogenesis (Lond.)* 12: 1023-1028, 1991.
6. Locniskar, M, **Belury, MA**, Cumberland, AG, Patrick, KE, and Fischer, SM. The effect of various dietary fats on skin tumor initiation. *Nutr. Cancer* 16: 189-196, 1991.
7. Locniskar, M, **Belury, MA**, Cumberland, AG, Patrick, KE, and Fischer, SM. The effect of the level of dietary corn oil on mouse skin carcinogenesis. *Nutr. Cancer* 16: 1-11, 1991.
8. Fischer, SM, Conti, CJ, Locniskar, M, **Belury, MA**, Maldve, RE, Lee, ML, Leyton, J, Slaga, TJ, and Bechtel, DH. Rapid development of mammary tumors induced by 7,12-dimethylbenz(a)anthracene in SENCAR mice: effect of dietary fat. *Cancer Res.* 52, 661-666, 1992.
9. Fischer, SM, Leyton, JL, Lee, ML, Locniskar, M, **Belury, MA**, Maldve, RE, Slaga, TJ, and Bechtel, DH. Differential effects of dietary linoleic acid on mouse skin tumor promotion and mammary carcinogenesis. *Cancer Res.* 52, 2049s-2054s, 1992.
10. **Belury, MA**, Locniskar, M, and Fischer, SM. Modulation of phorbol ester-associated events in cultured epidermal cells by linoleate and archidonate. *Lipids* 28: 407-423, 1993.
11. **Belury, MA**, Lee, WY, Lo, H-H, Locniskar, M, and Fischer, SM. Dietary fatty acid modulation of events associated with mouse skin tumor promotion. *Nutr. Cancer* 19: 307-319, 1993.
12. **Belury, MA**, Bird, C, Nickel, KP, Wu, B. Inhibition of mouse skin tumor promotion by dietary conjugated linoleate, *Nutr Cancer*, 26: 149-157, 1996.
13. Fischer, SM, Hagerman, R, Li-Stiles, B, Lo, H-H, Maldve, R, **Belury, MA**, and Locniskar, MF. The pro-tumor promoting action of arachidonic acid and anti-promoting action of linoleic acid in mouse skin carcinogenesis. *J Nutr.* 126: 1099s-1104s, 1996.
14. **Belury, MA**, Moya-Camarena, SY, Liu, K-L, Vanden Heuvel, JP. Conjugated linoleic acid induces peroxisome proliferator-associated enzyme expression and ornithine decarboxylase activity in mouse liver. *J. Nutr. Biochem.* 8: 579-584, 1997.
15. Liu, K-L, **Belury, MA**. Incorporation and biological activity of conjugated linoleic acid in mouse keratinocytes. *Lipids* 32:725-730, 1997.

16. **Belury, MA**, Kempa-Steczko, A. Dietary conjugated linoleic acid modulates hepatic lipid composition in mice. *Lipids*, 32: 199-204, 1997.
17. Nickel, KP, Nielsen, SS, Smart, D, Mitchell, CA, **Belury, MA**. Calcium bioavailability of vegan diets for a bioregenerative life support system. *J. Food Sci.*, 62: 619-621, 1997.
18. Houseknecht, KL, Vanden Heuvel, JP, Portorcarrero, CP, Peck, LW, Nickel, KP, **Belury, MA**. Dietary conjugated linoleic acid normalizes impaired glucose tolerance in the Zucker fatty rat. *Biochem Biophys Res Comm.*, 244: 678-682, 1998.
19. Liu, K-L, **Belury, MA**. Effect of linoleic and conjugated linoleic acids on arachidonate-derived PGE<sub>2</sub> and biological activity in mouse keratinocytes. *Cancer Lett.* 127: 15-22, 1998.
20. **Belury, MA**, Moya-Camarena, SY, Sun, H, Snyder, E, Davis, II, JW, Cunningham, ML, Vanden Heuvel, JP. Peroxisome proliferator-dependent gene regulation: examination of dose response relationships by quantitative reverse transcriptase -polymerase chain reaction. *Toxicol. Appl. Pharmacol* 151:254-261, 1998.
21. Moya-Camarena, SY, Vanden Heuvel, JP, **Belury, MA**. Conjugated linoleic acid activates peroxisome proliferator-activated receptor  $\alpha$  and  $\beta$  subtypes but does not induce peroxisome proliferation in Sprague Dawley rats. *Biochim Biophys Acta*, 1436: 331-342, 1999.
22. Kavanaugh, CJ, Liu, K-L, **Belury, MA**. Effect of dietary conjugated linoleic acid on phorbol ester induced PGE<sub>2</sub> production and hyperplasia. *Nutr Cancer* 33: 132-138, 1999.
23. Nickel, KP, **Belury, MA**. Inositol hexaphosphate reduces 12-O-tetradecanoylphorbol-13-acetate-induced ornithine decarboxylase independent of protein kinase C isoform expression in keratinocytes. *Cancer Lett.* 140: 105-111, 1999.
24. Moya-Camarena, SY, Vanden Heuvel, JP, Blanchard, SG, Leesnitzer, LM, **Belury, MA**. Conjugated linoleic acid is a high affinity, naturally occurring ligand that activates PPAR $\alpha$ . *J Lipid Res.* 40: 1426-1433, 1999.
25. Thuiller, P, Anchiraco, GJ, Nickel, KP, Maldve RE, Gimenez-Conti, I, Muga, SJ, Liu, K-L, Fischer, SM, **Belury, MA**. Peroxisome proliferator-activated receptor (PPAR) alpha activators inhibit mouse skin tumor promotion. *Mol Carcinogenesis* 29: 134-142, 2000.
26. Eggert, JM, **Belury, MA**, Kempa-Steczko, A, Mills, SE, Schinckel, AP. Effects of conjugated linoleic acid on belly firmness and fatty acid composition of genetically lean pigs. *J Animal Sci.* 79: 2866-2872, 2001.
27. **Belury, MA**, Moya-Camarena, SY, Shi, LL, Lu, M, Leesnitzer, LM, Blanchard, SM. Conjugated linoleic acid activates peroxisome proliferator activated receptor (PPAR) gamma ( $\gamma$ ). *Nutrition Res* 22: 817-824, 2002. (ISI 0.772)
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33. Wendel AA, **Belury MA**. Effects of Conjugated Linoleic Acid and Troglitazone on Lipid Accumulation and Composition in Lean and Zucker Diabetic Fatty (*fa/fa*) Rats. *Lipids* 41: 241-247, 2006. (*ISI 1.905*)
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38. Purushotham A, Liu, L-F, Wendel AA, Shrode G, **Belury MA**. Lack of adipose lowering effect of CLA suppresses hepatic steatosis and stearyl-CoA desaturase in Wistar rat liver. *J Nutr Biochem* 18: 676-684, 2007 (*ISI 2.459*)
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40. Liu LF, Purushotham A, Wendel AA, **Belury, MA**. Rosiglitazone induces adiponectin but not leptin and restores insulin sensitivity in CLA-mediated suppression of adipokines in C57Bl6J mice. *Am J Phys* 292: G1671-1682, 2007 (*ISI 3.472*)
41. Wendel AA, Liu, LF, Purushotham A, **Belury MA**. Conjugated linoleic acid fails to worsen insulin resistance but induces hepatic steatosis in the presence of leptin in *ob/ob* mice. *J Lipid Res*, in press(*ISI 3.909*)

#### Invited Reviews and Chapters; Letters to the Editor:

1. Fischer, SM, Cameron, GS, Baldwin, JK, Jasheway, DW, Patrick, KE, and **Belury, MA**. Arachidonic acid cascade and multistage carcinogenesis in mouse skin. In *Skin Carcinogenesis: Mechanisms and Human Relevance*. Slaga, T.J., Klein-Szanto, A.J.P., Boutwell, R.K., Spitzer, H.L., and D'Motto, B. eds. Alan R. Liss, Inc., New York, NY, 1989.
2. **Belury, MA**. Conjugated dienoic linoleate: A unique chemoprotective polyunsaturated fatty acid. *Nutr. Rev.*53: 83-89, 1995.

3. Mitchell, C, Dougher, T, Nielsen, S, **Belury, M**, and Wheeler, R. Costs of providing edible biomass for a balanced vegetarian diet in a controlled ecological life support system. *In: Plants in Space Biology*, Ed: H. Suge. Tohoku University Press, Sendai, Japan, pp 245-254, 1996.
4. Nielsen, SS, **Belury, MA**, Nickel, KP, and Mitchell, CA. Environmental manipulation of plant nutrient composition for vegetarian diets in space. *In: Proceedings of Third Congress for Advances in New Crops*, Eds: J Janeck, J Simons. 1996.
5. **Belury, MA**, Vanden Heuvel, JP. Protection against cancer and heart disease by the dietary fat, conjugated linoleic acid: potential mechanisms of action. *Nutr. Disease Update Journal* 1: 58-63, 1997.
6. **Belury, MA**. Introduction for Symposium, Steroid Hormone Receptor and Nutrient Interactions: Implications for Cancer Prevention. *J. Nutr* 129: 569s-570s, 1999.
7. Moya-Camarena, SY, **Belury, MA**. Conjugated linoleic acids modulate hepatic lipid metabolism and gene expression in rodents. *Nutr Rev* 57: 337-341, 1999.
8. Moya-Camarena, SY, **Belury, MA**. Letter to the Editor. *J. Nutr*, 129: 1999.
9. **Belury, MA** and Vanden Heuvel, JP. Modulation of Diabetes by Conjugated Linoleic Acid. *In: "Conjugated linoleic acid: Biochemical, nutritional, clinical and methodological aspects,"* eds: Yurawecz, MP, Mossoba, MM, Kramer, JKG, Nelson, G and Pariza, MW. Am Oil Chem Soc Press, Campaign IL; pp. 404-411; 1999.
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11. **Belury, MA**. Dietary conjugated linoleic acid in health: Physiological effects and mechanisms of action. *Annu Rev Nutr* 22: 505-531, 2002.
12. **Belury, MA**. Inhibition of carcinogenesis by conjugated linoleic acid: Potential mechanisms of action. *J Nutr*, 132: 2995-2998, 2002.
13. **Belury, MA**. Not all trans fatty acids are alike: What dietitians lose when we oversimplify our message. *J Am Diet Assoc* 102: 287-288 2002.
14. **Belury, MA**. Conjugated linoleic acid supplementation modulates glucose and lipid homeostasis in subjects with type 2 diabetes mellitus. Invited chapter in: *Conjugated linoleic acid, Volume II: Review and Physiological Mechanisms of Action*. Ed: J-L Sebedio, AOCS Press, Champaign, IL, 2003.
15. Koster, C, **Belury, MA**. Conjugated linoleic acid as an ergogenic aid. *In: Nutritional Ergogenic Aids*, CRC Press, 2004.
16. Goldberg, JP, **Belury, MA**, Elam, P, Finn, SC, Hayes, D, Lyle, R, St. Jeor, S, Warren, M, Hellwig, JP. The obesity crisis: don't blame it on the pyramid. *J Am Diet Assn*, 104: 1141-1147, 2004.
17. Banni, S, Petroni, A, Blasevich, M, Carta, G, Cordeddu, L, Murru, E, Melis, MP, Mahon, A, **Belury, MA**. Conjugated linoleic acids (CLA) as precursors of a new family of polyunsaturated fatty acids: *Lipids* 39: 1143-1146, 2005.
18. **Belury, MA**, Asp, ML, Collene, AL, Koster, CG, Liu, L-F, Purushotham, A, Shrode, G, Wendel A. Is There a Role for Conjugated Linoleic Acid to Aid in the Prevention of Type 2 Diabetes? *In Dietary Fats and Risk of Chronic Disease* , eds: Y-S Huang, T Yanagita, H Knapp, 2006, 263-273.
19. Koster, C, **Belury, MA**. Conjugated linoleic acid as an ergogenic aid. *In: Sports Nutrition: Fats and Proteins*, J Driskell, Ed CRC Press, 2007, pp 89-98.

20. Koba, K, **Belury, MA**, Sugano M. Potential health benefits of conjugated trienoic acids. *Lipid Technology* 19: 200-2003 2007

### Submitted:

1. Begum R, Burgess J, **Belury MA**, Peck L. Effect of n-3 and n-6 pufa supplementation on maintenance of hematocrit in hemodialysis patients.
2. Liu LF, Koba K, Purushotham A, Wendel AA, Lee K, Deluliis J, **Belury MA**. Regulation of Adipose Triglyceride Lipase by Rosiglitazone.

### In Preparation:

1. Purushotham A, **Belury MA**. Citrus fruit flavonoid naringenin suppresses hepatic glucose output from Fao hepatoma cells.
2. Asp ML, Collene AL, Richardson JR, Droll KR, **Belury MA**. Dietary patterns that predict for measurements of strength and muscle area in older adults. *Nutr Journal*
3. Wendel AA, Liu, LF, Purushotham A, **Belury MA**. Conjugated linoleic acid induces uncoupling in white adipose tissue of mice.
4. Banni, S, Lu, M, **Belury, MA**. Effects of long-term feeding of dietary conjugated linoleic acid on hepatic gene expression and fatty acid composition in mice.
5. Lu, M, Gu, Y, Shi, LL, **Belury, MA**. Dietary conjugated linoleic acid induces apoptosis and PPAR-responsive genes in liver of male and female rats.
6. Liu, LF, Purushotham A, Wendel AA, **Belury, MA**. Protein kinase C potentiates ability of CLA to activate PPAR $\alpha$ .
7. Mahon AK, Holloman CH, Banni S, **Belury MA**. Conjugated linoleic acid reduces body mass index and elevates conjugated dienoic metabolites in subjects with type 2 diabetes mellitus. *Lipids* (ISI **1.905**)
8. Shrode, G, Cole, R, **Belury MA**. Soy and fermented soy reduces rate of weight gain and adiposity in Zucker rats.
9. **Belury, MA**, Collene AL, Norris LS, Liu LF, Hsu J, Dongmei Li. Complementation of rosiglitazone therapy with weight suppressive dietary oil, conjugated linoleic acid, suppresses weight gain in women with type 2 diabetes.

### Abstracts Presented at National Meetings Since 2002

1. Wendel AA, Nickel K, **Belury MA**. Modulation of triglyceride levels by conjugated linoleic acid and troglitazone: effects in oplkasma muscle and liver of Zukcer diabetic fatty (fa/fa) and leab rats. FASEB J 2004.
2. Moya-Camarena, SY, Castellanos-Tapia L, Ayala J, Yepiz-Placencia GM, **Belury, MA**. Dietary conjugated linoleic acid modulates lipoprotein lipase and apoprotein CIII mRNA accumulation in muscle and adipose tissue in mice. FASEB 2004.
3. Koster CG, Kniss DA, and **Belury MA**. An Inhibitor of Cyclooxygenase-2, SC-236, Partially Rescues Inhibition of Adipogenesis Induced by t10c12-Conjugated Linoleic Acid. *Obesity Res* 12 (suppl): A178, 2004.

4. Liu LF and **Belury MA**. Activation of Peroxisome Proliferator-activated Receptor (PPAR)  $\alpha$  by Fenofibrate Is Modulated by Insulin and Dexamethasone. *Obesity Res* 12 (suppl): A 181, 2004.
5. Purushotham A, Vanden Heuvel JP, **Belury MA**. Role of Peroxisome Proliferator-Activated Receptor (PPAR)- $\alpha$  in the Regulation of Hepatic Glucose Output in Isolated Rat Hepatocytes. *Obesity Res* 12 (suppl): A179, 2004.
6. Purushotham A, **Belury MA**. Mechanisms of Regulation of Hepatic Gluconeogenesis by the Citrus Fruit Flavanoid Naringenin. *Obesity Res* 12 (suppl): A178, 2004.
7. Wendel AA, **Belury MA**. Modulation of the Fatty Acid Composition of Muscle and Liver Tissues of Zucker Diabetic Fatty (fa/fa) Rats by Conjugated Linoleic Acid and Troglitazone. *Obesity Res* 12 (suppl) : A 135, 2004.
8. Wendel, AA, Purushotham, A, Liu, LF, and **Belury MA**. Leptin Prevents Insulin Resistance Induced by Conjugated Linoleic Acid in Obese Mice. *FASEB J*. 20(4): A574, 2006.
9. Purushotham, A, Shrode, G, Wendel, AA, Liu, LF, and **Belury MA**. Dietary Conjugated Linoleic Acid (CLA) Attenuates Hepatic Steatosis by Modifying Stearoyl-CoA Desaturase (SCD-1) mRNA and Activity in High-Fat-Fed Rats, *FASEB J* 20(4): 2006.
10. Hatton JL, Zhou W, Nye K, Shrode G, Belury MA, Oberzsyn TM, Van Buskirk AM, Yee LD. Dietary fish oil increases uvB induced neutrophil infiltration and activation in the skin but inhibits edema. *Proc Am Assoc Cancer Res* 2006: 47, 3170.
11. Huo T, Feruzzi MG, Belury MA, Shwartz SJ, Failla MJ. Impact of amount and triglyceride structure on micellarization of dietary carotenoids during simulated digestion. *FASEB J* 2006; 20(4)
12. Liu, L-F, Wendel, A, Purushotham, A, **Belury MA**. Effect of Conjugated Linoleic Acid supplementation on Rosglitazone Treatment in *Ob/Ob* mice. *FASEB J* 20(4) 2006.
13. Liu, L-F, Wendel, A, Purushotham, A, **Belury MA**. Activation of Peroxisome Proliferator-activated Receptor (PPAR)  $\alpha$  by Conjugated Linoleic Acid is Modulated by Protein Kinase C $\epsilon$ . *FASEB J* 20(4) 2006.

### **Invited Research Lectures (Since 2000)**

1. Role of Conjugated Linoleic Acid in the Management of Tupe 2 Diabetes. Annual Meeting of the American Chemical Society, Washington, DC, August 21, 2000.
2. Role of Conjugated Linoleic Acid in Hepatic Gene Expression. European Oil Chemists' Society, Helsinki, Finland, June 19, 2000.
3. Role of Conjugated Linoleic Acid in the Management of Type 2 Diabetes. Symposium entitled, *Conjugated Linoleic Acid: Recent Advances in Breast Cancer Prevention and Diabetes Management* American Dietetic Association Annual Meeting, St. Louis, MO, October, 21, 2001.
4. Role of Metabolites of Conjugated Linoleic Acid to Induce PPAR-Responsive Gene Expression. National Cattlemen's Beef Association, Chicago, IL, September 6, 2001.
5. Role of PPARs in Mediating the Health Effects of Conjugated Linoleic Acid. FASEB Summer Coference Session entitled, *Steroid Hormone Receptors and Nutrient*

- Modulation of Gene Expression* Experimental Biology-American Society for Nutritional Sciences, Saxton Woods, VT, August 18, 2001.
6. Role of Conjugated Linoleic Acid in Cancer: Evidence for a Receptor-Mediated Mechanism. Depts. Molecular Medicine, Northwest Hospital & Northwest Biotherapeutics Inc., Seattle, WA, June 5, 2001.
  7. Role of Conjugated Linoleic Acid in Cancer: Evidence for a Receptor-Mediated Mechanism. Department of Pathophysiology, University of Washington, Seattle, WA, May 24, 2001.
  8. Molecular Mechanisms of Conjugated Linoleic Acid: A Dietary Fatty Acid with Unique Properties. Department of Microbiology, Montana State University, Bozeman, MT, May 4, 2001.
  9. Regulation of Body Weight and Serum Leptin by Conjugated Linoleic Acid: Implications for the Management of Type 2 Diabetes Mellitus. University of Kansas, Fourth Annual Conference on the Prevention and Treatment of Obesity, September 6-7, 2002.
  10. Dietary Conjugated Linoleic Acid in Type 2 Diabetes and Obesity. National Institutes of Health, Bethesda, MD, May 15-16, 2002
  11. Dietary Conjugated Linoleic Acid in Type 2 Diabetes and Obesity: Evidence for Regulation by PPAR $\gamma$ . Clinical Nutrition Research Unit, University of Washington, Seattle, WA, April 26, 2002
  12. Dietary Conjugated Linoleic Acid: Effects on Body Composition of Subjects with Type 2 Diabetes. Invited Symposium Speaker for FASEB Annual Meeting, New Orleans, LA, April 21, 2002.
  13. Role of conjugated linoleic acid in hepatic insulin sensitivity. Case Western Reserve University, Cleveland, OH, December 5, 2003.
  14. Modulation of type 2 diabetes by conjugated linoleic acid: Clinical relevance and molecular mechanisms. Science Park - M.D. Anderson Cancer Research Center, Smithville, TX, September 28, 2003.
  15. Conjugated linoleic acid reduces hepatic levels of phospho-Akt in diabetic, but not lean, ZDF rats. Experimental Biology, San Diego, CA, April 14, 2003.
  16. Role of conjugated linoleic acid in obesity and type 2 diabetes. International Congress of Nutrition, Phuket, Thailand, December 2, 2004.
  17. Conjugated linoleic acid and obesity. American Heart Association Meeting, San Francisco, CA, May 7, 2004.
  18. Conjugated linoleic acid in type 2 diabetes. American Oil Chemists' Society Annual Meeting, Cincinnati, OH, May 10, 2004.
  19. Third Annual Meeting of the US CLA Network, Westin- Airport, Detroit, MI Dec 7-8, 2006.
  20. Cellular and Molecular Mechanisms of CLA" University of Manitoba, Canadian Institutes of Health Research, Winnipeg, Canada, March 14, 2003. Attenuation of muscle atrophy in mice with cachexia. A role for lipid mobilization into muscle from adipose. Invited presenter, Sardinia, Italy, September 20, 2007.
  21. Insulin Resistance induced by Conjugated Linoleic Acid (CLA) Is Attenuated by Leptin or Rosiglitazone: Understanding the Role of Adipokines in Biological Activity of CLA. Keynote Speaker- CLA Summit, Kananaskis, Canada, May 8-10, 2007
  22. Emerging science for chemoprevention of cancer by conjugated linoleic acid (CLA). American Meat Institute. Washington, DC March 6, 2007



## **Outreach to Corporations and Private Industry**

Scientific Advisory Board, Council for Women's Nutrition Solutions, National Cattleman's Beef Association, Denver CO, 1999 – present  
Scientific Advisory Board, Pharmanutrients™ Inc, Lake Bluff, IL, 2000 – October 2002  
Scientific Advisor for Topics Concerning Conjugated Linoleic Acid for Various Companies since 1997

## **Presentations and Articles for Professional Audiences**

### **American Dietetic Association, Continuing Education for Registered Dietitians**

#### *Healthy Eating for Women...All Lifelong*

April 2003 Texas Dietetic Association, Houston, TX  
April 2004 Ohio Nutrition, Columbus, OH  
April 2007 Kentucky Dietetic Association, Lexington, KY  
May 2007 State of New York Extension Network, Albany, NY

#### *CLA: A Functional Food*

May 2000 Montana Dietetic Association, Bozeman, MT  
April 2000 North Carolina Dietetic Association, Raleigh, NC  
April 2003 West Virginia Dietetic Association, Charlotte, WV  
April 2002 New Mexico Dietetic Association, Albuquerque, NM  
April 2003 Wisconsin Dietetic Association, Appleton, WI  
May 2003 Michigan Dietetic Association  
April 2003 Pennsylvania Dietetic Association, Pittsburgh, PA  
April 2004 Utah Dietetic Association, Salt Lake City, UT  
April 2005 Louisiana Dietetic Association, Lafayette, LA  
April 2006 Texas Dietetic Association, Houston, TX

#### *The Future of Functional Foods*

May 2002 Connecticut Dietetic Association, Cromwell, CT

#### *Sorting the Data on Trans Fats*

April 2007 Ohio Extension

#### *Fitting Nutrition into Your Genes*

April 2007 Oregon Dietetic Association, Portland, OR  
March 2007 West Virginia Dietetic Association, Charlotte, WV

## **Publications for Lay Audiences**

### **Scientific Advisor, Popular Magazine**

*Women's Health Magazine*, Rodale Press, July 2006 – present

### **Invited Chapter for Lay Persons Book**

*How to Fit Dietary Fats into Diets for Moms and Daughters. The Professional Guide, 2001,*  
CWNS Committee for National Cattleman's Beef Association

**Author**

Monthly column on the topic of nutrition and pregnancy for *Pregnancy Magazine*®; March  
2000 - March 2001