

# VITA

## I. NAME OF FACULTY MEMBER

Donald C. Beitz

## DEPARTMENT AFFILIATIONS

Animal Science and  
Biochemistry, Biophysics and  
Molecular Biology

## II. RANK

Distinguished Professor of Agriculture

## III. EDUCATION

B.S. Agricultural Science, University of Illinois, 1962

M.S. Dairy Science, University of Illinois, 1963

Ph.D. Dairy Nutrition & Biochemistry, Michigan State Univ., 1967

## IV. PROFESSIONAL ACADEMIC EXPERIENCE

1967-present Conducting research (66.7% of time) and teaching biochemistry classes (33.3% of time) in the Departments of Animal Science and of Biochemistry, Biophysics and Molecular Biology at Iowa State University

1963-67 Conducted research and assisted with teaching of dairy science classes in a Ph.D. degree program in the Departments of Dairy Science and of Biochemistry at Michigan State University

1962-63 Conducted research toward M.S. degree in Dairy Science Department at University of Illinois-Urbana

## V. ISU PERSONNEL RECORD

1989-present Charles F. Curtiss Distinguished Professor of Agriculture

1977-present Professor of Animal Science and Biochemistry, Departments of Animal Science and Biochemistry-Biophysics, College of Agriculture, Iowa State University

1973-1977 Associate Professor of Animal Science and Biochemistry, Departments of Animal Science and of Biochemistry-Biophysics, College of Agriculture, Iowa State University

1967-1973 Assistant Professor of Animal Science and Biochemistry, Departments of Animal Science and of Biochemistry-Biophysics, College of Agriculture, Iowa State University

## VI. PROFESSIONAL ACTIVITIES

### Alpha Zeta

Member (1960- )  
Faculty Advisor (1983-86; 2016- )

### American Association for Advancement of Science

Member (1965- )  
Member of Electorate Nominating Committee (2002-05; Chair, 2004)  
Representative from American Dairy Science Association (2005- )

### American Dairy Science Association

Member (1964- )  
Member of the ADSA Foundation (1992- )  
Membership Chairman of Iowa (1973-75)  
Chairman of Women's Program for annual meeting at Iowa State Univ. (1977)  
Selection Committee for American Cyanamid Award (1988-91)  
Member of Resolution Committee of Production Division (1989-92)  
Judge at Regional Undergraduate Paper Presentation Contest (1990)  
Judge at National Undergraduate Paper Presentation Contest (1988, 1990, 1991)  
Council Member of Production Division (1990-93; Chair 1993)  
Member of Research Committee (1990-93, Chair 1992-93)  
Member of Ad Hoc Committee for Special Program at 1994 annual meeting  
Organizer of the ISU Social at annual meeting (1984- )  
Chair of National Needs for Dairy Committee (1993-95)  
Representative to CAST Board of Directors (1995-99)  
Member of Steering Committee of FAIR 2002 (1996-00)  
Member of Nomination Committee of Production Division (1997-00)  
Member of Steering Committee of Discover Conferences (1997-98)  
Member of Planning and Budget Committee of ADSA Centennial (2001-06)  
Member of International Dairy Production Award Committee (2000-02; Chair 2003)  
Chair of Symposium on Companion Animal Nutrition at annual meeting (2003)  
Member of Board of Directors (2004-07)  
Member of Pioneers Committee of Board of Directors (2005-06)  
Member of Fellows Award Committee (2006-07; Chair, 2008)  
Member of Animal Physiology Award Committee (2008; Chair, 2009)  
Member AFIA Award Committee (2009)  
Member of Internal Affairs Committee (2006-07; Chair, 2007-08)  
Member of Finance Committee (2007-11)  
Vice President (2007-08)  
President (2008-09)  
Past President (2009-10)  
Past Past President (2010-11)  
Chair of JAM Opening and Closing Sessions ad hoc committee (2009-12)  
Member of Elanco Award for Excellence Committee (2014; Chair, 2015, 2017)

Member of Award of Honor Committee (2014; Chair, 2015-17)  
Member of Distinguished Service Award Committee (Chair, 2015-17)  
Member of Zoetis Physiology Award Committee (2017-18)  
Organized Symposium on Milk and Human Health at annual meeting (2017)  
Organized Symposium on New Views on Milk and Human Health at annual meeting (2018)  
Member of Zinpro Award for Excellence in Dairy Science Selection Committee (2018-20)

American Diabetes Association - Iowa Affiliate

Member (1983-89)

American Heart Association - Iowa Affiliate

Member (1975-1995)  
Board of Directors (1979-81)  
Board of Directors of Story County Chapter (1982-83)  
Research Proposal Review Committee (1975-83)

American Society for Nutrition (formerly American Institute of Nutrition and American Society for Nutritional Science)

Member (1974- )  
Editorial Board for J. Nutrition (1983-88)  
Chairman of Technical Sessions at Annual Meeting (1975, 1982, 1985, 1987)  
Iowa State University Reporter to *News and Notes* (1978-2016)  
Organized the 1980 Ruminant Nutrition Conference  
Experimental Animal Nutrition Committee (1980-83; Chair, 1982-83)  
Member of Nominating Committee (1984; 1993)  
Review Committee of Foremost-McKesson Awardees (1983)  
Chairman of minisymposium (1989; 2000)  
Editor for proceedings of Ruminant Nutrition Symposium (1991)  
Representative to FAIR 95 (1991-92)  
Member of Graduate Education Committee (1991-94; chair, 1994-95)  
Organizer of ISU Nutritionists' Social at annual meeting (1974- )  
Councilor (1994-96)  
Editor, Supplement to Journal of Nutrition (1996)  
Member of Conrad Elvehjem Award Jury (1997)  
Member of Graduate Student Research Awards Committee (1997-98; 2002-03; 2004-05; 2006-07; 2009)  
Treasurer (1998-02)  
Member of Mead Johnson Award Jury (1998)  
Member of LSRO Advisory Committee (2000-01)  
Member of the Publication Management Committee (1999-02)  
Chair of the Financial Committee (1999-02)  
Chair of Bio Serv Award Committee (2002)  
Juror on Bio Serv Award Committee (2004)  
Member of the Dannon Mentorship Award Committee (2005-06, 2017, 2018; Chair 2006)  
Chair of the Excellence in Nutrition Education Award (2005)  
Member of Strategic Planning Oversight Committee (2007-11)

Member of History Committee (2010-11; Chair 2010-14, Past Chair 2015)  
Member of Senior Investigator—Educator & Mentor Awards nominating panel (2014)  
Representative to CAST (2012-13)

American Meat Science Association

Member (1991-2017)  
Member of Meat Biochemistry Committee (1992-95)  
Member of Program Committee (Muscle Growth Biology) (1995-96)  
Member of Achievement Award Selection Committee (2002-05)  
Member of Research Needs Assessment Committee (2005-08)

American Oil Chemists' Society

Co-Chaired a Scientific Session on Dietary Proteins in Health and  
Disease at Annual Meeting (1990)

American Poultry Science Association

Chairman of Spouses' program for annual meeting at Iowa State University (1985)

American Society of Animal Science

Member (1971- )  
Member of the ASAS Foundation (1993- )  
Editorial Board of Journal of Animal Science (1980-83; 1987-90)  
Development and Conduct of Academic Quadrathlon (1976-82)  
Committee on Teaching and Extension (1977-78; Chaired symposium at  
1978 joint mtg. w/ADSA)  
Ad Hoc Committee on Video Production (1989-91)  
Chair of Spouse's Program for annual meeting at Iowa State University (1990)  
Organizer of ISU Social at annual meeting (1984-2017)  
Member of Resolutions Committee (1996-99; Chair 1997-98)  
Member of Nomination Committee (2000-02)  
Task Force for Companion Animals (2003-05)  
Chaired Symposium on Companion Animal Nutrition at annual meeting (2003)  
Member of Heritage Luncheon Committee (2013)  
Member of Review Committee of Animal Science Image Gallery (2014-18)

American Society of Biochemistry and Molecular Biology

Member (1988- )

Ames Community School District

Member of the Science Cabinet (1999-03)

Beta Beta Beta

Honorary Member of ISU Chapter (1998- )  
Member of Research Grants Committee (2004-08)  
Faculty Advisor (1997-2003)

Business Council of Iowa

Member of Health, Safety, and Product Quality Committee (1989-91)

Comparative Nutrition Society

Member (1996-09)

Council for Agricultural Science and Technology

Member (1977- )

Life Member (2007- )

Chair of Task Force to publish book on “Food Fats and Health” (1989-92)

Chair of Task Force to publish book on “Contribution of Animal Products to Healthful Diets (1991-97)

Member of Board of Directors, ADSA representative (1995-99)

Member of Editorial Committee (1995-00)

Member of Conversations on Change team (1997-00)

Member of Animal Science Work Group (1995-05; chair 1998-99)

Member of Executive Committee (1999-07)

Member of Membership Committee (2001-03)

Member of Education Committee (2003-04)

President Elect (2004-05)

President (2005-06)

Past President (2006-07)

Chair of CAST Alumni Program (2007-11)

Chair of Task Force to publish Special Publication on “Omega-3 Fatty Acids” (2011-18)

Member of Board of Representatives (2012-14)

Member of Video Evaluation Committee (2013-17)

Member of Food Science and Nutrition Committee (2012- )

Member of Board of Representatives (2012-13): ASN representative (2012-13)

Member of Board of Directors (2013-18)

Chair of Membership Committee (2014-2016)

Member of Borlaug CAST Communication Award Committee (2013-17)

Member of Past Presidents Advisory Council (2019- )

Member of Finance Subcommittee of Strategic Plan Committee (2021- )

Council of Scientific Societies Presidents

Member of Executive Committee (2010-11)

Dairy Shrine

Member (1979- )

Federation of American Societies for Food Animal Sciences (FASFAS)

Member (1990-97)

Response Team Member for Diet and Health (1991-97)

Federation of Animal Science Societies (FASS)

Member of Board of Directors (2007-12)  
Member of Finance Committee (2007-09)  
President Elect (2009-10)  
Chair of FASS-AFIA Award Committee (2010)  
President (2010-11)  
Past President (2011-12)

Intersociety Council

(ADSA, AMSA, ASAS, and PSA)  
Chair of Task Force on Diet/Health Issues (1988-90)

Iowa Academy of Science

Member (1984- )  
Member of Research Proposal Review Committee of Iowa Science  
Foundation (1993-96; 2017- )  
Member of Recognition and Awards Committee (2000-05; Chair 2006-08)  
Member of Membership Committee (2016- ; Chair 2017-18)

Life Sciences Research Office, Inc. (LSRO)

Member and Treasurer of Board of Directors (2001)  
Chair of Board of Directors (2002)  
Past Chair of Board of Directors (2003)

Midland United Dairy Industry Association

Judge of Iowa Dairy Princess Contest (1979-80)

Midwest Section, American Chemical Society

Juror for the Spencer Award (1985-89)

Midwest Section of ADSA/ASAS

Member of Teaching Award Committee (2004-08)  
Academic Quadrathlon Lab Practical (1986-02)  
Member of Teaching Committee (1980-82; Chair 1981-82)

National Academy of Sciences

National Associate Member (2001- )  
Member of Research Briefing Panel on Biotechnology in Agriculture  
Board on Agriculture (1985)  
Member of Committee on Animal Nutrition of Board on Agriculture  
(1990-93; chair 1995-98)  
Chair of Committee on Nutrient Requirements of Dogs and Cats (2000-06)

North American Limousine Association

Judge for Quadrathlon at the Junior National Limousine Show (1988)

### Sigma Xi

Member (1967- )  
Executive Committee (1982-92; 2015- )  
President (1992-93)  
Secretary-Treasurer (2015- )

### State FFA Foundation

Judge for Dairy Production Awards (1987)

### USDA

NC-91 and later NCR-97 (NCCC210) USDA Regional Technical Committee (1969-90;  
1995- ; Secretary 2004, 2015; Chair 1975, 1984, 2005)  
Research Grants Peer Review Committee for Human Nutrition (1978-79,  
1986-88)  
Member of USDA/CSRS Review Team for Univ. of Georgia Dept. of Foods  
and Nutrition (1980, 1985)  
Research Grants Peer Review Committee for SBIR Program (1988;  
Program Director, 1989)  
Member of USDA/CSRS Review Team for Cornell Univ. Dept. of Animal Science (1994)  
Member of W-181 USDA Regional Technical Committee (1999-09; secretary, 2002;  
Chair, 2003)  
Member of CSREES/USDA Review Team for Oregon State Univ. Dept. of  
Animal Science (2000)  
Member of CSREES/USDA Research Review Panel for Animal Growth Program of  
NRICGP (2000-02)  
Member of NC-185 (NC-1009; NC-1040) USDA Regional Technical Committee (2000- ;  
secretary, 2001; chair, 2002)  
Member of CSREES/USDA Review Team for West Virginia Univ. Dept. of Animal and  
Veterinary Science (2003)  
Member of CSREES/USDA Review Team for Univ. of Minnesota Dept. of Animal  
Science (2004)  
Member of CSREE/USDA Review Team for Kansas State University Dept. of Animal  
Science (2006)  
Member of National Animal Nutrition Program, NRSP-9 (2012- )  
Administrative Advisor of NCCC42 Committee on Swine Nutrition (2018- )

### Other

Consultant Editor for *Nutrition Research* (1997- )  
Search Committee for Editor-in-Chief of *Nutrition Research* (2004)  
Member of Advisory Board for *Nutrition Research* (2005-06)  
Chair of Editorial Advisory Board for *Nutrition Research* (2006- )  
Member of Iowa Cattlemen's Association (1988- )  
Member of research proposal team for Targeted Excellence at Kansas State University (2008)  
Member of the Executive Provisional Advisory Committee of the Diet and Health Initiative

at the University of Connecticut (2011-14)  
Member of University of Illinois Alumni Association (1962- )  
Member of Round Barn Society at University of Illinois (2012- )  
Member of Michigan State University Alumni Association (1967- )  
Member of Iowa State University Alumni Association (1967- )  
Member of site visit review team for Industrial Research Chair at the University of Guelph (2016)  
Member of Science Dialogue Mapping Session (Dairy and CV Disease; 2017)

## VII. AWARDS AND HONORS

### Undergraduate:

Phi Eta Sigma (1959)  
Alpha Zeta (1960)  
Gamma Sigma Delta (1961)  
Outstanding Senior in College of Agriculture (1962)

### Graduate:

Sigma Xi (1964)  
Ralston Purina Fellowship (1963-65)  
NIH Fellowship (1965-67)

### Professional:

Phi Kappa Phi (1972)  
Walnut Grove Award for Excellence (1980)  
Kiwanian of the Year (1983-84; 1993-94)  
Nutrition Research Award, American Feed Industry Association  
American Dairy Science Association (1985)  
Academic Advising Award by Iowa State University Student Alumni Association (1988)  
Margaret Ellen White Faculty Award at Iowa State University (1989)  
Charles F. Curtiss Distinguished Professorship in Agriculture at Iowa State University (1989)  
Veishea Professor of the Year (1989)  
Cardinal Key, Iowa State University (1990)  
Fellow of American Association of the Advancement of Science (1990)  
Outstanding Advisor in College of Agriculture by Alpha Zeta Agriculture Honor Society at ISU (1990)  
Award of Merit from College of Agriculture Alumni Association, University of Illinois (1990)  
Iowa Legislative Award for Teaching Excellence (1990)  
Outstanding Teacher in College of Agriculture at ISU (1990)  
Honorary Member of Phi Zeta, Honor Society of Veterinary Medicine (1991)  
Iowa State Board of Regents Award for Faculty Excellence (1992)  
American Cyanamid Award, American Dairy Science Association (1992)  
Alumni Award of Merit of ISU Chapter of Gamma Sigma Delta (1995)  
Outstanding Alumnus Award, Stewardson-Strasburg High School (1995)



Mentoring and Advising Award for Honors Program at Iowa State University (1996)  
 College of Agriculture Outstanding Advisor Award (1997)  
 Distinguished Achievement in Agriculture Award of Merit of Gamma Sigma Delta (1999)  
 VEISHEA Professor of the Year in College of Agriculture (2001)  
 Fellow, American Dairy Science Association (2001)  
 Fellow, American Society of Animal Science (2001)  
 National Associate Member in National Academy of Sciences (2001)  
 College of Agriculture Outstanding Achievement in Research Award (2002)  
 Otto and Opal Hill Lecturer, Penn State University (2003)  
 William P. Switzer Award of College of Veterinary Medicine, Iowa State University (2003)  
 Team Award of College of Agriculture, Iowa State University (2004)  
 Award for Excellence in Honors Teaching, Iowa State University (2004)  
 The Dannon Institute Mentorship Award of American Society for Nutritional Science (2005)  
 Robert W. Parks Honors Program Award (2005)  
 Fellow, American Society for Nutrition (2006)  
 Champion Award of ISU Program for Women in Science and Engineering (2007)  
 Pfizer Animal Health Physiology Award of American Dairy Science Association (2007)  
 Distance Education Award (10+ semesters), College of Agriculture and Life Sciences, Iowa State University (2008)  
 Distance Education Award (20+ semesters), College of Agriculture and Life Sciences, Iowa State University (2009)  
 Good Nabor Alumnus Award, Nabor House Fraternity (2010)  
 Morrison Award of American Society of Animal Science (2010)  
 Most Cited Paper in *Animal Genetics* in 2008 (2010)  
 Fellow, Iowa Academy of Science (2011)  
 Award of Honor of American Dairy Science Association (2011)  
 Elanco Award for Excellence in Dairy Science (2012)  
 Distinguished Scientist of Iowa Academy of Science (2014)  
 Iowa State University Pomerantz Award (2015)  
 Hall of Fame Award, Department of Animal Science (2017)  
 Inspiration Award, ISU Alumni Association (2017)  
 CAST President's Award (2017)  
 50-Year Award at 25-Year Club at Iowa State University (2018)  
 Distinguished Fellow of Iowa Academy of Sciences (2019)  
 Dean's Citation for Extraordinary Contributions to the College of Agriculture and Life Sciences at Iowa State University (2019)

## VIII. RESPONSIBILITIES

### A. TEACHING AND ACADEMIC ADVISING

Term	Year	Course No.	Course Title	Enrollment
Winter	1968	BB 305	Physiological Chemistry	94
Spring	1968	BB 301	Survey of Biochemistry	111
Winter	1969	BB 305	Physiological Chemistry	86
Spring	1969	BB 490	Biochemistry	49
Winter	1970	BB 305	Physiological Chemistry	98

Spring	1970	BB 406	Biochemistry	66
Winter	1971	BB 305	Physiological Biochemistry	98
Spring	1971	BB 406	Biochemistry	87
Winter	1972	BB 305	Physiological Chemistry	89
Spring	1972	BB 406	Biochemistry	86
Winter	1973	BB 305	Physiological Chemistry	115
Spring	1973	BB 406	Biochemistry	79
Spring	1973*	BB 590	Special Topics (BB 610; 1/2 of Course)	27
Winter	1974	BB 305	Physiological Chemistry	113
Spring	1974	BB 406	Biochemistry	70
Fall	1974	BB 601X	Biochemistry of Hormone Action (1/2 of Course)	14
Winter	1975	BB 305	Physiological Chemistry	127
Winter	1975	AN SCI 603	Seminar in Animal Nutrition (grader)	~25
Spring	1975	BB 406	Biochemistry	106
Summer	1975	FN 590C	Gastro. Micro. and Mamm. Nutr.	66
Winter	1976	BB 305	Physiological Chemistry	141
Winter	1976	AN SCI 603	Seminar in Animal Nutrition (grader)	25
Spring	1976	BB 406	Biochemistry	98
Fall	1976	BB 610	Biochemistry of Hormones (½ of Course)	28
Fall	1976	BB 681B	Advanced Seminar	25
Winter	1977	BB 305	Physiological Chemistry	160
Winter	1977	AN SCI 603	Seminar in Animal Nutrition (grader)	25
Spring	1977	BB 406	Biochemistry	104
Spring	1977	AN SCI 519	Advanced Ruminant Nutrition (1 lecture)	20
Winter	1978	BB 305	Physiological Chemistry	153
Winter	1978	AN SCI 603	Seminar in Animal Nutrition (grader)	25
Spring	1978	AN SCI 519	Advanced Ruminant Nutrition (1 lecture)	20
Spring	1978	BB 406	Biochemistry	98
Fall	1978	BB 610	Biochemistry of Hormones (1/2 of Course)	23
Fall	1978	BB 490	Evaluation of Grant Proposals	6
Winter	1979	BB 305	Physiological Chemistry	144
Winter	1979	AN SCI 603	Seminar in Animal Nutrition (grader)	25
Spring	1979	BB 406	Biochemistry	84
Spring	1979	BB 503	General Biochemistry (4 lectures)	20
Summer	1979	FN 590C	Prot. Met. in Health and Disease	128
Winter	1980	BB 681B	Advanced Seminar (1/2 of Course)	25
Winter	1980	BB 305	Physiological Chemistry	134
Spring	1980	AN SCI 603	Seminar in Animal Nutrition (grader)	25
Spring	1980	BB 503	General Biochemistry (4 lectures)	20
Spring	1980	BB 406	Biochemistry	114
Summer	1980	FN 590C	Animal Products in Human Nutrition	100
Fall	1980	BB 610	Biochemistry of Hormones (1/2 of course)	33
Winter	1981	BB 305	Physiological Chemistry	135
Spring	1981	BB 406	Biochemistry	118
Spring	1981	BB 503	General Biochemistry (4 lectures)	20
Fall	1981	BB 420	Physiological Chemistry (1/2 of course)	130
Spring	1982	BB 503	General Biochemistry (4 lectures)	20
Spring	1982	BB 406	Biochemistry	133
Fall	1982	BB 420	Physiological Chemistry (1/2 of course)	141
Fall	1982	AN SCI 618	Vitamin and Hormones (5 lectures)	10
Spring	1983	BB 502	General Biochemistry (4 lectures)	15
Spring	1983	BB 645	Metabolic Reg. and Hormone Action (1/3 of course)	20
Fall	1983	BB 682	Advanced Seminar (1/2 of course)	25
Fall	1983	BB 420	Physiological Chemistry (1/2 of course)	151

Fall	1983	AN SCI 603	Seminar in Animal Nutrition (grader)	25
Spring	1984	BB 502	General Biochemistry (1/3 of course)	15
Fall	1984	BB 420	Physiological Chemistry (1/2 of course)	144
Spring	1985	BB 502	General Biochemistry (1/3 of course)	17
Spring	1985	BB 645	Metabolic Reg. and Hormone Action (1/3 of course)	15
Summer	1985	FN 500C	Lipid Metabolism in Health and Disease	50
Fall	1985	BB 420	Physiological Chemistry (1/2 of course)	127
Spring	1986	BB 502	General Biochemistry (1/3 of course)	23
Spring	1986*	AG ST 112X	Agricultural Biotechnology Colloquium	10
Summer	1986	FN 590A	Dietary Fiber in Human and Animal Nutrition	85
Fall	1986*	UST 321F	Animals as Food	15
Fall	1986	BB 420	Physiological Chemistry (2/3 of course)	115
Fall	1986	AN SCI 603	Seminar in Animal Nutrition (grader)	33
Spring	1987	AG ST 112X	Agricultural Biotechnology Colloquium	11
Spring	1987	BB 502	General Biochemistry (1/3 of course)	17
Spring	1987	BB 645	Met. Reg. and Hormone Action (1/3 of course)	12
Fall	1987	BB 420	Physiological Chemistry (2/3 of course)	104
Fall	1987	UST 321H	Animals as Food	11
Spring	1988	BB 502	General Biochemistry (1/3 of course)	23
Spring	1988	AG ST 112	Agricultural Biotechnology Colloquium	10
Spring	1988	AN SCI 603	Seminar in Animal Nutrition (grader)	41
Fall	1988	BB 420	Physiological Chemistry (2/3 of Course)	73
Fall	1988	AN SCI 318	Fundamentals of Nutrition (2 lectures)	40
Spring	1989	BB 502	General Biochemistry (1/3 of Course)	11
Spring	1989	AG ST 112	Agricultural Biotechnology Colloquium	9
Spring	1989	BB 645	Met. Reg. and Hormone Action (1/3 of course)	16
Spring	1989	BB 490	Evaluation of Grant Proposals	9
Summer	1989	FN 593D	Molecular Biology and Nutrition: Metabolic Patterning	65
Fall	1989	BB 420	Physiological Chemistry (2/3 of course)	79
Fall	1989	AN SCI 603	Seminar in Animal Nutrition (grader)	41
Spring	1990	BB 502	General Biochemistry (1/3 of course)	22
Spring	1990	AG ST 112	Agricultural Biotechnology Colloquium	10
Spring	1990	AN SCI 603	Seminar in Animal Nutrition (grader)	3
Spring	1990	AG ST 112	Agricultural Biotechnology Colloquium	10
Summer	1990	FN 593D	Mitochondria	96
Fall	1990	BB 420	Physiological Chemistry	89
Spring	1991	AG ST 112	Agricultural Biotechnology Colloquium	
Spring	1991	BB 645	Metabolic Regulation and Hormone Action (1/3 of course)	17
Spring	1991	BB 405	Biochemistry (2/3 of course)	132
Spring	1991	AN SCI 318	Fundamentals of Nutrition (1 lecture)	50
Spring	1991	VPP 350	Comparative Veterinary Physiology (2 lectures)	105
Summer	1991	FN 590D	Diet and Cancer	84
Fall	1991	BB 420	Physiological Chemistry	113
Fall	1991*	U ST 321C	Genetic Manipulation of Animals	18
Fall	1991	AN SCI 603	Animal Nutrition Seminar (Coordinator)	48
Spring	1992	AG ST 112	Agricultural Biotechnology Colloquium	12
Spring	1992	BB 405	Biochemistry	152
Spring	1992	AN SCI 603	Animal Nutrition Seminar (Grader)	48
Spring	1992	VPP 350	Comparative Veterinary Physiology (1 lecture)	102
Summer	1992	FN 593D	Nutrient Metabolism	72
Fall	1992	BB 420	Physiological Chemistry	113
Fall	1992	U ST 321K	Genetic Manipulation of Animals	15
Spring	1993	BB 405	Biochemistry	123
Spring	1993	AGEDS 112	Agricultural Biotechnology Colloquium	10

Spring	1993	VPP 350	Comparative Veterinary Physiology (1 lecture)	104
Fall	1993	BB 420	Physiological Chemistry (2/3 of course)	100
Fall	1993	U ST 321G	Genetic Manipulation of Animals	9
Fall	1993	AN SCI 318	Fundamentals of Nutrition (1 lecture)	35
Fall	1993	AN SCI 508	Biotechnology in Agriculture (1 lecture)	30
Spring	1994	BB 405	Biochemistry (2/3 of course)	117
Spring	1994	AGEDS 112	Agricultural Biotechnology Colloquium	11
Spring	1994	AN SCI 603	Animal Nutrition Seminar (Grader)	33
Fall	1994	BB 420	Physiological Chemistry (2/3 of course)	108
Spring	1995	BB 645	Hormones and Growth Factors (1/3 of course)	12
Spring	1995	BB 405	Biochemistry (2/3 of course)	114
Spring	1995	AGEDS 112	Agricultural Biotechnology Colloquium	13
Summer	1995	FSHN 500C	Use of Metabolic Modifiers (coordinator)	35
Fall	1995	BB 420	Physiological Chemistry (2/3 of course)	126
Fall	1995	U ST 321F	Genetic Manipulation of Animals	13
Fall	1995	AN SCI 603	Animal Nutrition Seminar	32
Spring	1996	AN SCI 500	Animal Science Orientation (1 lecture)	31
Spring	1996	AGEDS 112	Agricultural Biotechnology Colloquium	14
Spring	1996	BB 405	Biochemistry (2/3 of course)	114
Summer	1996	FSHN 500D	Alcohol and Human Health	48
Summer	1996	BB 405	Biochemistry (via Distance Learning)	12
Fall	1996	AN SCI 603	Animal Nutrition Seminar (Grader)	28
Fall	1996	BB 420	Physiological Chemistry (2/3 of course)	130
Spring	1997	BB 405	Biochemistry (2/3 of course)	141
Spring	1997	BB 405	Biochemistry (via Distance Learning)	4
Spring	1997	AGEDS 112	Agricultural Biotechnology Colloquium	8
Spring	1997	AN SCI 500	Animal Science Orientation (1 lecture)	17
Spring	1997	AN SCI 493	Dairy Nutrition Workshop (1 lecture)	35
Summer	1997	FSHN 500E	Energy Regulation	37
Fall	1997	U ST 321E	Genetic Manipulation of Animals	15
Fall	1997	AN SCI 603	Animal Nutrition Seminar (Grader)	34
Fall	1997	BB 420	Physiological Chemistry (2/3 of course)	124
Spring	1998	BB 405	Biochemistry (2/3 of course)	131
Spring	1998	AGEDS 112	Agricultural Biotechnology Colloquium	10
Spring	1998	AN SCI 500	Animal Science Orientation (1 lecture)	15
Spring	1998	BBMB 405DL	Biochemistry II	8
Summer	1998	FSHN 500F	Nutrition and Immunity	55
Fall	1998	BB 420	Physiological Chemistry (2/3 of course)	134
Fall	1998	U ST 321D	Spicy Topics in Nutrition	15
Spring	1999	AN SCI 603	Animal Nutrition Seminar (coordinator)	33
Spring	1999	AGEDS 112	Agricultural Biotechnology Colloquium	12
Spring	1999	BBMB 405	Biochemistry (2/3 of course)	119
Spring	1999	BBMB 405DL	Biochemistry II (2/3 of course)	6
Spring	1999	AN SCI 500	Animal Science Orientation (1 lecture)	23
Summer	1999	FSHN 500G	Regulation of Gene Expression	38
Fall	1999	BBMB 420	Physiological Chemistry (2/3 of course)	109
Spring	2000	AGEDS 112	Agricultural Biotechnology Colloquium	8
Spring	2000	BBMB 405	Biochemistry (2/3 of course)	134
Spring	2000	BBMB 405DL	Biochemistry II (2/3 of course)	9
Spring	2000	AN SCI 500	Animal Science Orientation (1 lecture)	18
Fall	2000	BBMB 420	Physiological Chemistry (2/3 of course)	114
Fall	2000	U ST 321V	Does Your Body Care What You Eat?	16
Spring	2001	BBMB 405	Biochemistry II (2/3 of course)	129
Spring	2001	AGEDS 112	Agricultural Biotechnology Colloquium	11

Spring	2001	AN SCI 603	Animal Nutrition Seminar (coordinator)	20
Spring	2001	BBMB 405DL	Biochemistry II (2/3 of course)	7
Summer	2001	BBMB 593	Retinoids/Carotenoids	13
Fall	2001	BBMB 420	Physiological Chemistry (2/3 of course)	115
Fall	2001	U St 321Q	Does Your Body Care What You Eat?	12
Spring	2002	BBMB 405	Biochemistry II	109
Spring	2002	AGEDS 112	Agricultural Biotechnology Colloquium	12
Spring	2002	BBMB 405DL	Biochemistry II (2/3 of course)	8
Summer	2002	FSHN 500M	Oxidative Stress	49
Fall	2002	HON 321L	Does Your Body Care What You Eat?	14
Fall	2002	BBMB 420	Physiological Chemistry (2/3 of course)	119
Fall	2002	BBMB 405DL	Biochemistry II	5
Spring	2003	BBMB 405	Biochemistry II	129
Spring	2003	BBMB 405DL	Biochemistry II	6
Spring	2003	AGEDS 112	Agriculture Biotechnology Colloquium	8
Summer	2003	FSHN 500N	Molecular Nutrition of Trace Elements	27
Fall	2003	HON 321D	Does Your Body Care What You Eat?	14
Fall	2003	ANS 603	Animal Nutrition Seminar	18
Fall	2003	BBMB 420	Physiological Chemistry	119
Fall	2003	BBMB 405DL	Biochemistry II	6
Spring	2004	BBMB 405	Biochemistry II	121
Spring	2004	BBMB 405DL	Biochemistry II	10
Spring	2004	AGEDS 112	Agricultural Biotechnology Colloquium	8
Summer	2004	FSHN 500O	Global Food Needs	49
Fall	2004	HON 321C	Does Your Body Care What You Eat?	13
Fall	2004	BBMB 420	Physiological Chemistry	121
Fall	2004	BBMB 405DL	Biochemistry II	16
Spring	2005	BBMB 405	Biochemistry II	119
Spring	2005	BBMB 405DL	Biochemistry II	9
Spring	2005	AGEDS 112	Agricultural Biotechnology Colloquium	7
Summer	2005	FSHN 500 P	Nutrigenomics	35
Summer	2005	BBMB 405DL	Biochemistry II	5
Fall	2005	BBMB 420	Physiological Chemistry	136
Fall	2005	HON 323C	Does Your Body Care What You Eat?	12
Fall	2005	ANS 603	Animal Nutrition Seminar (coordinator)	21
Fall	2005	BBMB 405DL	Biochemistry II	7
Spring	2006	BBMB 405	Biochemistry II (2/3 of course)	109
Spring	2006	BBMB 405DL	Biochemistry II	5
Spring	2006	AGEDS 112	Agricultural Biotechnology Colloquium	7
Summer	2006	BBMB 405DL	Biochemistry II	5
Fall	2006	BBMB 420	Physiological Chemistry	129
Fall	2006	BBMB 405DL	Biochemistry II	12
Fall	2006	HON 321T	Does Your Body Care What You Eat?	15
Spring	2007	BBMB 405	Biochemistry II	115
Spring	2007	BBMB 405DL	Biochemistry II	8
Spring	2007	AGEDS 112	Agricultural Biotechnology Colloquium	8
Summer	2007	FSHN 500R	Nutrition and Cardiovascular Disease	35
Summer	2007	BBMB 405XC	Biochemistry II	18
Fall	2007	BBMB 420	Physiological Chemistry	132
Fall	2007	BBMB 405XC	Biochemistry II	18
Fall	2007	HON 321V	Does Your Body Care What You Eat?	13
Spring	2008	BBMB 405	Biochemistry II	98
Spring	2008	BBMB 405XC	Biochemistry II	7
Spring	2008	AGEDS 112	Agricultural Biotechnology Colloquium	13

Summer 2008	BBMB 405XC	Biochemistry II	27
Fall 2008	BBMB 405XC	Biochemistry II	6
Fall 2008	NUTRS 505	Diet and Human Health Issues	28
Fall 2008	BBMB 420	Physiological Chemistry	134
Fall 2008	HON 321B	Does Your Body Care What You Eat?	15
Fall 2008	ANS 603	Animal Nutrition Seminar	12
Spring 2009	BBMB 405	Biochemistry II	99
Spring 2009	BBMB 405XC	Biochemistry II	21
Spring 2009	AGEDS 112	Agricultural Biotechnology Colloquium	21
Summer 2009	NUTRS 505	Protein Metabolism	35
Summer 2009	BBMB 405XC	Biochemistry II	11
Fall 2009	BBMB 420	Physiological Chemistry	27
Fall 2009	BBMB 405XC	Biochemistry II	21
Fall 2009	HON 321B	Does Your Body Care What You Eat?	15
Fall 2009	ANS 603	Animal Nutrition Seminar	20
Spring 2010	AGEDS 112	Agricultural Biotechnology Colloquium	11
Spring 2010	BBMB 405	Biochemistry II	85
Spring 2010	BBMB 405XC	Biochemistry II	26
Summer 2010	BBMB 405XC	Biochemistry II	21
Summer 2010	NUTRS 505	Nutrition, Microbiota, and Inflammatory States	31
Fall 2010	BBMB 405XC	Biochemistry II	24
Fall 2010	BBMB 420	Physiological Chemistry	20
Fall 2010	HON 321B	Does Your Body Care What You Eat?	17
Spring 2011	BBMB 420XW	Physiological Chemistry	7
Spring 2011	AGEDS 112	Agricultural Biotechnology Colloquium	12
Spring 2011	BBMB 405	Biochemistry II	85
Spring 2011	BBMB 405XW	Biochemistry II	25
Summer 2011	BBMB 420XW	Physiological Chemistry	1
Summer 2011	BBMB 405XW	Biochemistry II	17
Summer 2011	NUTRS 505	Molecular Endocrinology	35
Fall 2011	BBMB 420	Physiological Chemistry	15
Fall 2011	BBMB 405XW	Biochemistry II	12
Fall 2011	HON 321B	Does Your Body Care What You Eat?	15
Spring 2012	BBMB 405	Biochemistry II	116
Spring 2012	BBMB 405XW	Biochemistry II	25
Spring 2012	AGEDS 112	Agricultural Biotechnology Colloquium	15
Spring 2012	BBMB 420XW	Physiological Chemistry	8
Summer 2012	BBMB 405XW	Biochemistry II	13
Fall 2012	BBMB 420	Physiological Chemistry	7
Fall 2012	BBMB 405XW	Biochemistry II	20
Fall 2012	HON 321D	Does Your Body Care What You Eat?	15
Fall 2012	ANS 603	Animal Nutrition Seminar	17
Spring 2013	BBMB 405	Biochemistry II	96
Spring 2013	BBMB 405XW	Biochemistry II	24
Spring 2013	BBMB 420XW	Physiological Chemistry	3
Spring 2013	AGEDS 112	Agricultural Biotechnology Colloquium	13
Summer 2013	BBMB 405XW	Biochemistry II	22
Summer 2013	NUTRS 505	Proteins in Health and Performance	35
Fall 2013	BBMB 405XW	Biochemistry II	21
Fall 2013	BBMB 420	Physiological Chemistry	9
Fall 2013	HON 321B	Does Your Body Care What You Eat?	15
Spring 2014	BBMB 405	Biochemistry II	99
Spring 2014	BBMB 405XW	Biochemistry II	27
Spring 2014	BBMB 420XW	Physiological Chemistry	10

Spring	2014	AGEDS 112	Agricultural Biotechnology Colloquium	14
Summer	2014	BBMB 405XW	Biochemistry II	26
Summer	2014	NUTRS 505B	The Microbiome in Nutrition, Health, and Disease	33
Fall	2014	BBMB 420	Physiological Chemistry	5
Fall	2014	BBMB 405XW	Biochemistry II	28
Fall	2014	HON 321A	Does Your Body Care What You Eat?	16
Spring	2015	BBMB 405	Biochemistry II	109
Spring	2015	AGEDS 112	Agricultural Biotechnology Colloquium	11
Spring	2015	BBMB 405XW	Biochemistry II	44
Spring	2015	BBMB 420XW	Physiological Chemistry	9
Summer	2015	NUTRS 505	Dietary Fiber	23
Summer	2015	BBMB 405XW	Biochemistry II	27
Fall	2015	BBMB 420	Physiological Chemistry	7
Fall	2015	BBMB 405XW	Biochemistry II	29
Fall	2015	HON 321A	Does Your Body Care What You Eat?	16
Spring	2016	BBMB 405	Biochemistry II	106
Spring	2016	BBMB 405XW	Biochemistry II	32
Spring	2016	AGEDS 112	Agricultural Biotechnology Colloquium	10
Spring	2016	BBMB 420XW	Mammalian Biochemistry	3
Summer	2016	BBMB 405XW	Biochemistry II	16
Fall	2016	ANS 603	Animal Nutrition Seminar	23
Fall	2016	BBMB 420	Mammalian Biochemistry	10
Fall	2016	BBMB 405XW	Biochemistry II	30
Fall	2016	HON 321A	Does Your Body Care What You Eat?	16
Spring	2017	BBMB 405XW	Biochemistry II	37
Spring	2017	BBMB 420XW	Mammalian Biochemistry	12
Spring	2017	BBMB 405	Biochemistry II	118
Spring	2017	AGEDS 112	Agricultural Biotechnology Colloquium	15
Summer	2017	BBMB 405XW	Biochemistry II	35
Fall	2017	BBMB 405XW	Biochemistry II	29
Fall	2017	BBMB 420	Mammalian Biochemistry	10
Fall	2017	HON 321A	Does Your Body Care What You Eat?	16
Spring	2018	BBMB 405XW	Biochemistry II	34
Spring	2018	BBMB 420XW	Mammalian Biochemistry	6
Spring	2018	BBMB 405	Biochemistry II	117
Spring	2018	AGEDS 112	Agricultural Biotechnology Colloquium	8
Summer	2018	BBMB 405XW	Biochemistry II	37
Summer	2018	NUTRS 505	Science Policy in an Age of Public Conflict	22
Fall	2018	BBMB 405XW	Biochemistry II	40
Fall	2018	BBMB 420	Mammalian Biochemistry	12
Fall	2018	HON 321A	Does Your Body Care What You Eat?	16
Spring	2019	BBMB 405XW	Biochemistry II	41
Spring	2019	BBMB 420XW	Mammalian Biochemistry	11
Spring	2019	BBMB 405	Biochemistry II	116
Spring	2019	AGEDS 112	Agricultural Biotechnology Colloquium	8
Summer	2019	BBMB 405XW	Biochemistry II	26
Fall	2019	BBMB 405XW	Biochemistry II	18
Fall	2019	BBMB 420	Mammalian Biochemistry	16
Fall	2019	HON 321C	Does Your Body Care What You Eat?	17
Fall	2019	AGRON 498	Cooperative Education	1
Spring	2020	BBMB 405XW	Biochemistry II	22
Spring	2020	BBMB 420XW	Mammalian Biochemistry	5
Spring	2020	BBMB 405	Biochemistry II	110
Spring	2020	AGEDS 112	Agricultural Biotechnology Colloquium	10

Summer	2020	BBMB 405XW	Biochemistry II	31
Fall	2020	BBMB 405XW	Biochemistry II	19
Fall	2020	HON 321	Does Your Body Care What You Eat?	17

*\* New courses that I developed.*

In addition to these formal courses, at least 50 students have completed credits in BB 499, which is Undergraduate Research and 63 students have completed credit in U ST 290H, which is Freshman Mentor Programs for Freshman Honor Students.

I am currently the coordinator for the Biochemistry-CALS (formerly Agricultural Biochemistry) Curriculum for undergraduates. One hundred sixty six students have received B.S. degrees, the first being awarded in 1982. As of September 1, 2020, I am advisor for 31 undergraduate students who will graduate with a major in biochemistry-CALS or agricultural biochemistry.

I serve as faculty advisor for Beta Sigma Psi social fraternity (1994- ).

I serve as faculty advisor for Alpha Zeta Agricultural Honor Soc. (1983-86; 2016- ).

I served as faculty advisor for Lutheran Student Fellowship (1992-08).

I served as faculty advisor for Beta Beta Beta, biology honor society (1997-03).

I serve as faculty advisor for Pre-Vet Club (2005-10; 2015- ).

I have participated in these special educational programs:

#### **FRESHMAN MENTOR PROGRAM OF HONORS PROGRAM**

Student	Year	Major	Project
Michelle Wells	1990	Ag. Bio.	Mitochondria
Tara Woods	1990	Ag. Bio.	Mitochondria
Andrea Falk	1991	Ag. Bio.	Mitochondria
Nupur Ghoshal	1992	Gen.	Mitochondria
Elizabeth Jennings	1992	Ag. Micro	Reductase
Jennifer Puls	1993	Dy. Sci.	Mitochondria
Kersten McDaniel	1993	Gen.	PSS
Betsy Swanson	1994	Biol.	Mitochondria
Tammy Haselkorn	1995	Ag. Bio.	Desaturase
Angela Hvitved	1996	Biochem.	Mitochondria
Timothy Baker	1996	Ag. Bio.	Desaturase
Abby Reida	1997	Biochem.	Desaturase
Angela McCleary	1998	Ag. Bio.	Milk Protein
Sara Orley	1998	P. Eng.	Milk Protein
Susan Dienen	2001	El. Ed.	Bile Acids
Abby Guard	2001	Ag. Bio.	Fatty Liver
Brian Steussy	2002	Bioch.	Fat Deposition
Erin Brown	2002	Gen.	Fat Deposition
Kathlene Kennedy	2003	Biochem.	Fatty Acid Composition
Chris Groth	2004	Ag. Bio.	Ghrelin



Caleb Grote	2004	Ag. Bio.	Ghrelin
Renae Lensing	2004	Ag. Bio.	Phytase
Katie Korn	2004	Gen.	Fat Deposition
Leigh Cumpston	2005	Engr.	Ghrelin
Lee Beck	2005	Ag. Bio.	Vitamin D/tenderness
Clark Richardson	2005	Ag. Bio.	Fatty Acid Composition
Gabe Johnson	2005	Biochem.	Fatty Acyl Desaturase
Sarah Graham	2006	An. Sci.	Tenderness
Jeffrey Messerly	2006	Bioch.	Ghrelin
Trisha Grevengoed	2006	An. Sci.	Lactation
Tara Miller	2006	An. Sci.	Johne's Disease
Mallory Breuker	2006	An. Sci.	CLA for Humans
Chelsy Kemmet	2006	Biol.	Lipid Analysis
Maria Fabiosa	2007	Chem. Eng.	CLA for Humans
Dane Goede	2007	Biochem.	Fatty Liver in Rats
Michelle Johnson	2007	Biochem.	Fatty Acid Composition/Beef
Sara Linn	2007	Ag. Bio.	Fatty Acid Composition/Dairy
Elizabeth Yugo	2008	An. Sci.	Fatty Liver
Allison Doll	2008	Ag. Bio.	Obesity
Kari Naaktgeboren	2008	An. Sci.	Fatty Acid
Yasi Rodriguez	2008	An. Sci.	Vitamin D
Senyo Whyte	2009	Biol.	Oxidative Stress
Eric Parrott	2009	Ag. Bio.	Vitamin D
Lauren Ingebrand	2009	Food Sci.	Healthy Beef
Anne Pralle	2009	Biochem.	Johne's Disease
Celene Oglesbee	2009	An. Sci.	Healthy Beef
Stephanie Blaser	2010	Food Sci.	Fatty Yeast
Courtney Blomme	2010	Nutr. Sci.	Vitamin D Metabolism
Jared Graham	2010	An. Sci.	Hydrogen Sulfide Synthesis
Adam Guenther	2011	An. Sci.	Milk Fatty Acids
Sarah Van Tol	2011	An. Ecol.	Hydrogen Sulfide Synthesis
Carolyn Clark	2012	Ag. Bio.	Dairy Feed Efficiency
Andrienne Freeman	2012	Ag. Bio.	Milk Stability
Michelle Ries	2013	Diet.	Pork Composition
Kimberly Strait	2013	An. Sci.	Feed Efficiency
Neil Vezeau	2013	An. Sci.	Adipose Cellularity
Jayne Wiarda	2014	Genetics	Calf Nutrition
Lily Cooper	2014	An. Sci.	Vitamin D Metabolism
Rebecca Lair	2015	Biol.	Vitamin D Metabolism
Thadeus Beekman	2015	Food Sci.	DDGS and Cheese Quality
Evan McCoy	2015	Food Sci.	DDGS and Cheese Quality
Emily Manthei	2016	Biol.	DDGS and Cheese Quality
Cole Wesselman	2016	Biol.	Gut Health
Alyssa Dougherty	2017	Dietetics	Vitamin D
Grace Cline	2017	Biochem.	Pork Composition

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**INTERNS IN WOMEN IN SCIENCE AND ENGINEERING PROGRAM**

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Name	Address/Major	Year	Project
Leah Whigham	Ames H.S.	1988	Mitochondria
Andrea Falk	St. Ansgar H.S.	1989	Mitochondria
Lisa Molin	Ag Bio/Agron 3 at ISU	1989	Cholesterol Reductase
Kim Moore	Council Bluffs H.S.	1990	Mitochondria
Jennifer Belyea	Univ. of MO-Columbia	1990	Mitochondria
Sylvia Jiminez-Talavera	Zool 3 at ISU	1992	Redesigning Milk Fat
Anne Shoemaker	An Sci 1 at ISU	1992	Redesigning Pork
Melody Brown	Biol 3 at Taylor Univ.	1996	Leptin
Anne Lewis	Biol 2 at U. of N. Iowa	2001	Fatty Liver
Elizabeth Dunham	GMG H.S., Garwin	2002	CLA
Ashley Roper	PreVet at Penn State Univ.	2003	Beef Fatty Acids; Ghrelin
Amanda Kreuder	An Sci 3	2003	Beef Fatty Acids; Ghrelin
Alana McNutt	An Sci 3	2004	Beef Fatty Acids
Laura Baseler	An Sci 3	2005	Beef Tenderness
Gayle Johnson	Chem 2	2005	Fatty Liver
Kristine Onken	Nutr Sci	2006	Sweetener
Kristin Noack	Bioch	2006	Beef Fatty Acids
Emily Frandson	An Sci 4	2007	Milk Fatty Acids
Amanda Elsbernd	An Sci 3	2008	Beef Fatty Acids

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**CY-TAG MENTORSHIP FOR SUMMER (3-wk period)**

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Name	Address	Year	Project
Sara Wolke		1990	Pork Chop
Erica Dahl		1990	Ketosis
April Franklin	Nesco High School	1992	Ketosis
Neil Vasan	PA	1998	Milk Fat
Bill Stark	IA	1999	Pork Chop

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**McNAIR INTERN**

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Name	Address	Year	Project
Christy Brewer	U. Wisc.-River Falls	2001	Fatty Liver

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**NSF SUMMER INTERNS**

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Name	Address	Year	Project
Keith Seidel	Graceland College, IA	1990	Milk Fever
Tyrell Carr	Elizabeth City St. U., NC	1999	CLA
Anita Johnson	Marshall Univ., MN	2000	Ketosis/Fatty Liver

### HOWARD HUGHES INTERNS

Name	Status	Year	Project
Stacy Goodman	Stanwood, IA	1993	Redesigning Milk Fat
Elizabeth A. Swanson	Biol 1	1994	Mitochondrial DNA
Jessica L. Adam	Biol 2	1995	Pork Composition
Mary Kinner	H.S. Sr, Des Moines, IA	1995	Pork Chop
Todd Sleep	Gen 3	1996	Leptin
Allison Hakes	Biol 4	1997	Cholesterol Reductase

### COLLEGE OF AGRICULTURE INTERNS

Name	Status	Year	Project
Marat Ibatullin	Ag. Econ. Agr. U., Kiev	2003	Meat Exposition
Liz Edwards	An Sci, Purdue U.	2003	Fatty Liver

### MINORITY STUDENT INTERNS/George Washington Carver Scholars

Name	Address	Year	Project
Robert Warren	Kenwood Academy Chicago, IL	1993	Cholesterol Reductase
Jason Campbell	Boone, IA	1995	Bile Acids
Karen Kendrick	Normal, AL	1997	Emu Oil and Meat
Jennifer Hart	Tuskegee Univ.	2001	Fatty Liver
Raheema Kamal	Tuskegee Univ.	2002	Ghrelin and Growth
Ramona Dickey	Ft. Valley State Univ.	2002	Fatty Acids in Beef
Kevin Loo	Duke Univ.	2004	Cholesterol Reductase
Chris Baudy*	Tuskegee Univ.	2006	CLA in Foods
Shante Mathes*	N. Carolina A&T	2008	Obesity
Joshlyn Bryant**	Prairie View A&M	2008	Johne's Disease
Shante Mathes*	N. Carolina A&T	2009	Healthfulness of Beef
Shante Mathes*	N. Carolina A&T	2010	Glutathione and H <sub>2</sub> S
Kalyanna Williams*	Tuskegee Univ.	2012	Adipose Tissue Cellularity
Jacinda Dunn*	Univ. of Tenn.	2013	Pork Composition
Jonathan Howard*	Ala. A&M Univ.	2014	Pork Composition
Elisha Graham*	N. Carolina A&T	2015	Pork Composition

\*George Washington Carver Intern

\*\*AGEP (Alliance for Graduate Education and Professoriate) Intern

### WORK-STUDY ASSISTANTSHIPS FOR UNDERGRADUATES

Name	Status	Year	Project
Lisa Molin	Ag Bio/Agron 4	1989-90	Cholesterol Reductase
Arlie Penner	An Sci 4	1990-91	Cholesterol
Susan Batt	An Sci 2-4	1992-94	Cholesterol
Jeffery Hunter	Chem Eng 4	1994-95	Bypass Fat
Jessica Adam	Zool 4	1994-95	Lipids

Nancy Belsley	An Sci 3	1996-97	Pork Chop
Seth Kirchner	An Sci 3	1998-00	Pork Chop
Corie England	An Sci 4	1998-99	Pork Chop
Jessica Loucks	An Sci 4	1999	Pork Chop
Barry Bradford	An Sci/Ag Bio	2000-02	Fatty Liver/Ketosis
Erik Wayne	Ch E 3, 4	2001-03	Fatty Liver/Ketosis
Nathan Meyer	Dy Sci 4	2002-03	Fatty Liver/Ketosis
Pamela Knake	An Sci 2	2003-04	Fatty Acids in Beef
Adam Krull	Dy Sci 2	2003	Fatty Liver/Ketosis
Caleb Grote	Ag Bio 3	2005-07	Pork Chop
Katie Korn	An Sci 2	2005-08	Beef Tenderness/Milk Fat
Trisha Grevengoed	An Sci 3	2007	Beef Composition
Katie Majerus	An Sci 3	2008-10	Beef Healthfulness
Danielle Alexander	Dietetics 3	2009-10	Carnitine
Angela Reth-Pokorney	An Sci 4	2009-10	Beef Composition
Melissa Lind	An Sci 3	2009-10	Pork Chop
Elizabeth Yugo	An Sci 3	2009-10	Pork Chop
Kari Naaktgeboren	An Sci 3	2010	Beef Composition
Brenna Gorton	An Sci 4	2011-13	Food Composition
Norah Nguyen	Bioch 4	2011-12	Food Composition
Carmen Bustos	Bioch 4	2012-13	Pork Composition

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### MERCK VETERINARY SCHOLARS

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Name	Status	Year	Project
Lisa A. Hingtgen	VM II	1993	Cholesterol Reductase
Bryan K. Wulfekuhle	VM II	1994	Mitochondrial DNA
Kendra Kimberley	VM II	1995	Mitochondrial DNA
Rita Brown	VM II	1996	Mitochondrial DNA
Julie Hahn	VM II	2000	Fatty Liver
Jed Overmann	VM II	2001	Fatty Liver
Jennifer Dykstra	VM III	2002	Fatty Liver

### HONORS STUDENTS\*

Name	Major	Year Completed	Project
Steven Fehr	Ag Bio	1989	Porcine Stress Syndrome
Travis Knight	Ag Bio	1989	Lipoprotein
Stephen Johnston	Ag Bio	1990	mtDNA
Megan Raffety	Ag Bio	1990	Cholesterol Reductase
Kim Buhman	Ag Bio	1992	Cholesterol Reductase
Kevin Fehr	Ag Bio	1992	Cholesterol Reductase
Shawn Dawson	Ag Bio	1993	Lipoprotein
Susan Batt	An Sci	1994	Cholesterol Reductase
Andrea Falk	Ag Bio	1994	mtDNA

Nupur Ghoshal	Gen	1995	mtDNA
Amy Eldridge	Biol/Span	1997	Cholesterol Reductase
Betsy Kabele	Zool	1997	Cholesterol Reductase
Betsy Swanson	Biol/Mus	1997	mtDNA
Allison Hakes	Biol	1998	Cholesterol Reductase
Tim Baker	Ag Bio	1999	Mayo Clinic
Jason Cogdill	Ag Bio	2000	Milk Calcium
Angela McCleary	Ag Bio	2001	Conjugated Linoleic Acid
Barry Bradford	Ag Bio	2002	Acute Phase Proteins
Alissa Ross	Ag Bio	2002	Bone Strength
Amanda Crabtree	Ag Bio	2002	Horse Health
Julie Riggert	Biol	2002	Leptin
Arlene Lee	Ag Bio	2003	Plant Breeding
Amanda Kreuder	An Sci	2004	Ghrelin/Growth
Marisa McClure	Bioch	2005	Product from Wagyu Fat
Melissa Fox	Nutr. Sci.	2005	World Food Prize
Bryan Steussy	Bioch	2005	Cholesterol Reductase
Chris Groth	Ag Bio	2005	Cardiac Cell Phosphorylation
Andy Brown	Ag Bio	2006	TNF- $\alpha$ and Lipolysis
Caleb Grote	Ag Bio	2007	Ghrelin and Related Hormones
Emily Arentson	Ag Bio	2007	Nutrition in Ghana
Katie Korn	Micro	2008	Beef Composition
Allison Hannen	Ag Bio	2009	Prion Diseases
Alyona Avdonina	An Sci	2010	Fatty Liver
Jackie Fertig	Biol	2010-11	Johne's Disease
Kayla Hultquist	An Sci	2013	Beef Composition
Jane Wiarda	An Sci	2015	Immunobiology
Minden Huntrods	An Sci	2018	Food Composition

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#### CDFIN Interns

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Name	Major	Year Completed	Project
Emily Arentson	Ag Bio 2	2005	Ghrelin/Growth
Portia Allen	An Sci 4	2006	Diet/Health
Amy Rohlring (U of IA)	Bioch 4	2007	Milk Fatty Acids

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\*Record begins in 1989.

## B. RESEARCH AND ARTISTIC CREATIVITY

### 1. Summary of Recent Research:

Dr. Beitz's recent research activities include the etiology and prevention of ketosis in dairy cows, role of animal-derived foods, other dietary ingredients, and a cholesterol reductase-containing microbe on cholesterol homeostasis in animals and humans, and nutritional and genetic control of milk and meat animal composition. Dr. Beitz's research program is related to the biochemistry and

physiology of nutrition and is conducted partly as a joint effort with animal and human nutritionists.

Study of the etiology and prevention of fatty liver and ketosis has been a major emphasis of Beitz's research program. The technology to use glucagon to treat and prevent fatty liver and ketosis in peripartal dairy cattle was developed.

A second project involved studies of using a probiotic to prevent and treat Johne's disease.

A third major project is designed to evaluate the role of specific regulators of fat deposition in beef cattle and of milk fat synthesis by dairy cattle. Nutritional and genetic impacts on milk and meat composition with emphasis on fatty acids and the subsequent eating qualities of dairy and meat products were evaluated. Role of oxidative stress in fat deposition of animals was studied.

A fourth major project is the technology to use a cholesterol reductase-containing microbe to decrease blood cholesterol. Role of bile acids and lecithins on absorption of lipids was studied.

A fifth project is a study of dietary and chemical control of production of greenhouse gases (*e.g.*, CH<sub>4</sub> and H<sub>2</sub>S) by livestock and the feeding of distillers dried grains with solubles on flavor and stability of milk and its products.

Dr. Beitz had collaborative projects with scientists at the National Animal Disease Center and the College of Veterinary Medicine on milk fever, vitamin D metabolism, nutritional immunology, and etiology and prevention of Johne's disease.

## 2. Graduate Students Whom I Have Advised:

Name	Thesis Title	Year Graduated	Degree Granted
J. W. Peters	Glycolic acid metabolism in lactating and nonlactating goats	1970	M.S.
N. M. Al-Shathir	Lipogenesis in adipose tissue and liver of beef and dairy cattle	1971	M.S.
R. O. McCracken*	Glucose absorption and metabolism in <i>Haematoloechus medioplexus</i> (Trematoda: Haematoloechiidae)	1972	Ph.D.
M. A. Pothoven	Lipogenesis in adipose tissue of cattle at different weights and its adaptation to fasting	1972	M.S.
J. R. Thompson	Ultrastructural and biochemical characteristics of milk protein synthesis	1972	M.S.
M. E. Phillips	A nephelometric procedure for the determination of total milk fat and	1973	M.S.

	protein concentrations		
K. A. Dougherty	The effect of dietary cholesterol on the lipid composition of plasma lipoproteins in goats	1973	M.S.
M. A. Pothoven	Effects of diet, age, fasting, and refeeding on lipogenesis in bovine adipose tissue	1974	Ph.D.
A. J. Wheeler	Animal acupuncture: mapping and anesthesia	1975	M.S.
N. M. Evans-DiMarco	Gluconeogenesis from lactate in liver of stress-susceptible and stress-resistant pigs	1975	M.S.
G. U. Liepa	Cholesterol and fatty acid synthesis in ruminating and nonruminating goats	1976	Ph.D.
S. A. Meyer/Wuerzberger*	The effect of dietary selenium on the subcellular distribution of glutathione peroxidase in the liver and some accessory sex organs of the rat	1977	M.S.
T. J. Lintner*	Physiological and dietary factors that influence calcium homeostasis during the peripartal period in dairy cattle	1977	M.S.
D. L. Crandall*	Effect of exercise and dietary poly-unsaturated fat upon prevention of L-isoproterenol-induced myocardial infarction	1979	Ph.D.
N. M. E. DiMarco	Hormonal and dietary regulation of lipolysis in bovine adipose tissue	1979	Ph.D.
M. L. Trankina*	The effects of an organophosphate, ronnel, on growth in male weaning rats	1979	M.S.
K. G. Custer	Effect of feeding ronnel to lactating rats on pup growth	1979	M.S.
G. W. Whitehurst	Lipogenesis in adipose tissue of cattle	1980	Ph.D.
J. W. Carter*	Studies on purification and characterization of surface tubules of Fowlpox virus	1980	M.S.
H. B. Green*	Vitamin D metabolite concentrations	1980	M.S.

	in plasma of Jersey cows fed a prepartum low-calcium diet		
G. L. Baldner*	Lipogenesis in the liver and adipose tissue of the prairie vole, <i>Microtus ochrogaster</i>	1981	M.S.
T. S. Kichura*	Relationships between dietary phosphorus and calcium in vitamin D metabolism and incidence of parturient paresis in Jersey cows	1981	M.S.
M. L. Trankina	Effects of organophosphate pesticides on lipogenesis in adipose tissue and skeletal muscle of steers	1982	Ph.D.
J.L. Sommerfeldt*	Vitamin D <sub>2</sub> and vitamin D <sub>3</sub> metabolism in ruminants and by rumen microbes	1982	Ph.D.
E. D. Torok*	Effects of substrates and hormones on fatty acid synthesis by the ruminant mammary gland	1982	M.S.
C. M. McDermott*	Effects of dietary vitamin D <sub>3</sub> on concentrations of vitamin D <sub>3</sub> and its metabolites and associated minerals in plasma and milk of dairy cows	1982	M.S.
D. C. Rule	Use of full-fat soybeans as a source of rumen bypass polyunsaturated fatty acids	1984	Ph.D.
L. S. Walsh*	Mechanisms of cholesterol transport, uptake and tissue distribution in miniature pigs fed two proteins and two fats	1984	Ph.D.
M. G. Erlander	Brain amine concentrations in stress-susceptible and stress-resistant pigs: strain and brain regional differences and effects of levodopa supplementation	1984	M.S.
M. J. VandeHaar*	Effect of dietary calcium and phosphorus on vitamin D metabolism in pregnant and lactating rats	1984	M.S.
B. B. Shank*	Relationship of mitochondrial functions	1985	M.S.



	to milk production in lines of mice genetically divergent for milk production		
Y. H. Ko	Effects of dietary soybean and beef proteins on blood plasma lipid composition and plasma low-density lipoprotein clearance	1985	M.S.
L. A. Woollett*	Effects of dietary beef tallow and soy oil on glucose and cholesterol homeostasis	1986	Ph.D.
G. B. Shank*	Effect of type of dietary fat and protein on cholesterol and lipid metabolism of pigs	1986	Ph.D.
D. P. Malone	Neurochemical aspects of the porcine stress syndrome	1986	M.S.
M. J. Woltanski*	Effect of beef vs. soy protein on LDL-cholesterol uptake and tissue composition in young pigs	1986	M.S.
D. A. Hoy*	Comparative kinetics of the turnover rates of vitamin D <sub>2</sub> and vitamin D <sub>3</sub> and their metabolites in chick plasma	1986	M.S.
J. A. Johnson	Effects of dietary beef and soy proteins on blood plasma lipid composition, LDL-cholesterol clearance and uptake, and tissue deposition in young pigs	1987	M.S.
N. J. Koszewski*	Identification of vitamin D <sub>2</sub> metabolites and age-related differences in the 1,25-dihydroxyvitamin D <sub>3</sub> receptor in male Fischer 344 rats	1988	Ph.D.
F.G.E. Hustmeyer*	Effects of 1,25-dihydroxyvitamin D <sub>3</sub> and parathyroid hormone on bovine monocyte-mediated bone degradation and mitogen-induced lymphocyte DNA synthesis	1988	Ph.D.
M. J. VandeHaar*	Milk production and energy metabolism in ruminants fed 2-ketoisocaproate	1988	Ph.D.
M. K. Foley	Influence of dietary calcium and vitamin D <sub>3</sub> on composition of	1988	M.S.

	plasma lipids in young pigs		
S. T. Galloway	Influence of dietary calcium and vitamin D <sub>3</sub> on cholesterol deposition in tissues and conversion into biliary bile acids in young pigs	1989	Ph.D.
G. L. Lindberg	Nucleotide sequence heterogeneity in bovine mitochondrial DNA	1989	Ph.D.
M. J. Beckman*	The effect of hypervitaminosis D <sub>2</sub> and D <sub>3</sub> on the metabolism and receptor regulation of vitamin D	1989	M.S.
R. Banisadr*	Oxidative stress and porcine stress syndrome	1989	M.S.
C. M. Koehler	Nucleotide sequence heterogeneity among and within maternal lineages of Holstein mitochondrial DNA	1989	M.S.
H. Chou	Influence of dietary calcium and vitamin D <sub>3</sub> on plasma cholesterol clearance in young pigs	1989	M.S.
T. D. Faidley*	Effect of dietary fat source on lipoprotein composition and plasma lipid concentration	1989	M.S.
X. Chen	Fecal bile acid excretion and plasma cholesterol uptake by tissue in growing pigs as affected by dietary calcium and vitamin D <sub>3</sub>	1990	M.S.
C. M. Luhman*	Lipid composition of bile, tissues, and postprandial lipoproteins in pigs as affected by dietary fat source	1990	Ph.D.
S. D. Johnston	Sequence heterogeneity of bovine mitochondrial ribosomal RNA genes	1991	M.S.
D. Ren*	Mechanism of cholesterol reduction to coprostanol by cholesterol reductase	1991	M.S.
K. B. Atkins*	Effect of 1,10-phenanthroline on DNA binding of 1,25-dihydroxyvitamin D receptors and characterization and	1991	Ph.D.

	regulation of retinoic acid receptors in rat osteosarcoma cells		
S. Moorthi*	Studies on the role of expression of phosphoenolpyruvate carboxykinase gene in the development of bovine lactation ketosis	1992	Ph.D.
T.D. Faidley	Kinetics of the disappearance of lipoprotein cholesteryl esters in pigs as affected by dietary fat source	1993	Ph.D.
J.A. Johnson*	Age, gender and diet effects on genes regulated by 1,25-dihydroxyvitamin D <sub>3</sub>	1993	Ph.D.
J.D. Baumover*	Influence of diet composition and training on energy utilization by greyhound skeletal muscle	1993	Ph.D.
M.J. Beckman*	Tissue-specific regulation of 1,25- dihydroxyvitamin D action in the target tissues of rats	1993	Ph.D.
R.K. Smith	Nucleotide sequence variations in the displacement-loop region of bovine mitochondrial DNA	1993	M.S.
U.A. Madden*	Use of <i>Eubacterium coprostanoligenes</i> to decrease plasma cholesterol concentration in hypercholesterolemic rabbits and the cholesterol content of fermented meats	1995	Ph.D.
L. Li	Characterization and application of a novel cholesterol-reducing anaerobe, <i>Eubacterium coprostanoligenes</i> ATCC 51222	1995	Ph.D.
J. Wu*	Sequence variation characteristics of D-loop rRNA, tRNA, and polypeptide coding regions of bovine mitochondrial DNA	1995	Ph.D.
A.R. Hippen*	Influence of saturation of dietary fat supplements on production and composition of milk from dairy cows	1996	M.S.
M. Cao*	Cloning and sequencing of bovine Ca <sup>2+</sup> -dependent adenosine triphosphatase	1996	M.S.

X. Wang	Effect of age and feeding on cholesterol 27-hydroxylase in pigs	1996	M.S.
C.P. Nizzi	Effect of stress condition, gender, and dietary dl- $\alpha$ -tocopheryl acetate on fatty acid composition and catecholamines in five selected brain regions of pigs	1997	M.S.
A.D. Penner	Redesigning pork by type and amount of dietary fat for better human nutrition	1997	M.S.
A.R. Hippen*	Metabolic responses of dairy cows with fatty liver to treatment with glucagon	1997	Ph.D.
L. M. Beckerbauer	Influence of two different dietary fats on the composition of emu oil and meat	1998	M.S.
T.J. Knight	Fatty acid modification of cells in culture by overexpression of exogenous desaturases	1998	Ph.D.
J.W. Stewart*	Lipid metabolism in women fed pork that contains a high content of polyunsaturated fat	1998	M.S.
B.N. Ametaj*	Study of immune response and uptake of lipid-soluble vitamins by dairy cattle	1999	Ph.D.
D.R. Zimmerman*	1,25-Dihydroxyvitamin D <sub>2</sub> catabolism	1999	M.S.
Y. Huang	Feeding to increase availability of CLA 2000 for absorption from the intestine of sheep and to increase CLA content in milk	2000	M.S.
S. Prapong*	Expression of bovine mammary gland Ca <sup>2+</sup> ATPases	2000	Ph.D.
I. Karantzeni	Effects of dietary CLA on fatty acid composition of egg yolks and $\Delta^9$ -, $\Delta^6$ -, and $\Delta^5$ - desaturase activities of liver of laying hens	2000	M.S.
F. Liu	Hypocholesterolemic effect of orally administered <i>Eubacterium coprostanoligenes</i> in cynomolgus monkeys	2000	M.S.
M. Foote	The use of vitamin D <sub>3</sub> and its metabolites to improve beef tenderness	2001	M.S.

W. Zhang*	Hypocholesterolemic effect of Shea nut oil extract in hamsters	2002	M.S.
G. Bobe*	Metabolic responses of lactating dairy cows to exogenous glucagon	2002	Ph.D.
K.M. Carnagey*	Dietary triacylglycerol digestion and absorption and bile acid status in neonatal piglets: A model for preterm human infants	2003	M.S.
R.A. Nafikov	Prevention of fatty liver development in transition dairy cows by subcutaneous glucagon injections	2004	M.S.
M.R. Foote*	Effects of age and feeding rate on immune responses in neonatal dairy calves	2005	Ph.D.
K.M. Carnagey	Use of 25-hydroxyvitamin D <sub>3</sub> and vitamin E and manipulation of dietary calcium to improve tenderness of beef	2006	Ph.D.
L.J. Gereszek*	Effects of dietary conjugated linoleic acid on European corn borer survival, growth, fatty acid composition, and fecundity	2007	M.S.
A. Qu*	Implications of the interactions between genetic background and dietary phosphorus on porcine muscle	2007	Ph.D.
M.A. Osman	Acute and chronic metabolic responses of transition dairy cows with fatty liver disease to subcutaneous glucagon injections, oral glycerol, or both	2007	M.S.
E.W. Karcher*	Evaluation of the host immune response to <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> in naturally infected periparturient dairy cows	2007	Ph.D.
S.M. Moore, Jr.*	The effects of corn hybrid kernel traits on performance in broiler chickens, laying hens, and pigs	2007	M.S.
S. Zhang	Genetic regulation of healthfulness of beef fatty acid composition	2007	Ph.D.
W.L. Thomas	Use of Fourier transform infrared (FTIR) spectroscopy to determine the health-promoting index (HPI) of cow's milk	2008	M.S.

A.W. Brown	A diet naturally enriched with conjugated linoleic acid from beef and dairy products from pasture-fed cattle resulted in no measured health benefits when compared with a similar commercial diet in healthy women	2008	M.S.
G. Mao	Effect of mitochondrially targeted vitamin E on oxidative stress and obesity development in C57BL/6 mice	2009	M.S.
P.S. Allen	The effect of drugs and nutraceuticals on the prevention and treatment of nonalcoholic fatty liver disease using rats as a model for humans	2010	M.S.
M.M. Bohan-Brown	Effects of macronutrients and caloric content of the diet on circulating concentrations of ghrelin and other hormones involved in energy metabolism	2010	Ph.D.
Q. (Grace) Duan	Genetic polymorphisms in bovine ferroportin are associated with beef iron content	2010	M.S.
R.A. Nafikov	Genetic regulation of bovine milk fatty acid composition: Improving the healthfulness of milk through selection	2010	Ph.D.
C.D. Nelson*	Vitamin D signaling in the bovine immune system	2010	Ph.D.
A.A. Abuzaid	Variation of carnitine concentration in Angus beef	2010	M.S.
N. Mehyar	Effects of glucagon, glycerol, and glucagon plus glycerol on gluconeogenesis, lipogenesis, and lipolysis in periparturient Holstein cows	2011	M.S.
Q. Liu	Concentrations of creatine, creatinine, carnosine, and anserine in bovine longissimus muscle and their correlations with carcass and palatability traits	2011	M.S.
M. Osman	Modification of the animal immune system by feeding probiotics	2011	Ph.D.
L. Bradner	Optimization of methods for culturing <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> from bovine milk and colostrum and application to samples collected from naturally infected dairy cows	2012	M.S.
L. Krueger	A characterization of health, immunity, and intestinal	2015	M.S.

microbial colonization in neonate Holstein calves fed pasteurized whole milk and challenged with *Mycobacterium avium* subsp. *Paratuberculosis*

E. Testroet	Impact of nutrition of food animals on quality of animal products	2017	Ph.D.
C. Reynolds*	Vitamin D metabolites and their intestinal responses	2019	Ph.D.

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\**Co-major professor*

### C. EXTENSION (no budgeted time)

My extension activities are in the form of invitations to make oral presentations at a variety of on- and off-campus activities.

### D. INTERNATIONAL ACTIVITIES

#### 1988 - Korea

Gave these presentations:

“Application of biotechnology in plant and animal sciences” to Dept. of Food and Nutrition at Yonsei University, Seoul, Korea.

“Ketosis and milk fever in dairy cows and applications of biotechnology to animal agriculture” to Dept. of Animal Science, Seoul National University, Suwon, Korea.

“Does type of dietary protein influence cholesterolemia?” at a symposium on diet composition, lipid metabolism, and heart disease sponsored by Korea Soybean Society, Seoul, Korea.

#### 1989 - Italy

Gave this presentation:

“Fatty acids in ruminants” to an animal nutrition conference in Florence, Italy.

#### 1989 - France

Gave this presentation:

“Fatty acids in ruminants” to an animal nutrition conference in Paris, France.

#### 1990 - Soviet Union

Gave this presentation:

“Use of biotechnology in the food industry” to Soviet-American Symposium with title of Agrarian Reform in the USSR and Problems of the Transition to the Market Economy in Suzdal, USSR.

Visited research institutes in Kiev and Yalta. Visited collective farm in Vladimir. Participated in market economy discussions in Moscow and Suzdal.

#### 1990 - The Netherlands

Gave this presentation:

“The use of cholesterol reductase in the food industry” at Gist-Brocades in Delft, The Netherlands.

#### 1991 - Japan

Gave this presentation:

“Current developments in transgenic research in domestic farm animals” at symposium with title of Recent Development of Agricultural Biotechnology in the World in Tokyo, Japan.

#### 1991 - Ireland

Gave these presentations:

“Bovine mitochondrial DNA research at Iowa State University” to Dept. of Genetics, Trinity College, Dublin, Ireland.

“Research program of the Nutritional Physiology Group at Iowa State University” to the Grange Research and Development Centre, Dunsany, Ireland.

“An enzymatic method to decrease the cholesterol content of animal products” to the National Food Centre, Castleknock, Dublin, Ireland.

Visited with scientists at Moorepark Research and Development Division, Fermoy, Ireland.

#### 1993 - Australia

Gave an invited presentation on “Impact of biotechnology on production of raw food materials” at the International Congress of Nutrition in Adelaide, Australia.

#### 1994 - Ukraine

Toured research facilities, discussed ongoing research, and presented seminars on “Graduate education at Iowa State University” and “Dietary fats and human health” at Institute for Livestock Breeding in Kharkov. Visited Institute for Pig Breeding in Poltava, Ukrainian State Agricultural University in Kiev, and president of Ukrainian Academy of Agricultural Science in Kiev.

#### 1996 - Japan

Chaired a scientific session and gave this presentation: “Lipogenesis and lipolysis in bovine adipose tissue” at Satellite Symposium of the 8<sup>th</sup> Animal Science Congress of the Asian-Australasian Association of Animal Production.

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#### 2001 - Denmark



Attended the 11<sup>th</sup> International Conference on Production Animal Diseases in Frederiksen, Denmark. Coauthor of a presentation.

2003 - Thailand

Chaired and presented a talk at an NRC symposium on dog and cat nutrition at the 2003 Waltham Nutrition Symposium in Bangkok, Thailand.

2004 - Serbia

Visited Ivan Jovanovic and his colleagues in the Faculty of Veterinary Medicine in Belgrade and made these two presentations:

“Use of glucagon to prevent fatty liver in dairy cattle” and “Use of stem cells in clinical medicine”.

2004 - Bulgaria

Visited with Albert Krastanov and his colleagues in the University of Food Technologies in Plovdiv and made these two presentations: “Use of a probiotic to decrease blood cholesterol concentrations” and “Use of stem cells in clinical medicine”.

2007 - Germany

Attended the 13<sup>th</sup> International Conference on Production Animal Diseases in Leipzig, Germany. Author of a presentation.

2012 - China

Taught in a biochemistry class (8 lectures) at China Agricultural University in Beijing, China.

2012 - France

Attended the 8<sup>th</sup> INRA-Rowett Symposium on Gut Microbiology (Gut microbiology: friend or foe?) in Clermont-Ferrand, France

2018 – Belgium

Invited to speak at Omega-3 Summit 2018, Global Summit on Nutrition, Health, and Human Behaviour – Science, Market, and Policy Update in Brussels, Belgium

Hosting of Visiting Scientists from other countries is listed in Section XII.

**E. SERVICE**

Animal Science Department

Laboratory Animal Science Committee (1977-82; Chair 1977-79, 1981-82)

Animal Science Quadrathlon Committee (1978-86; Chair 1978-82, 1985-86, 1995-08)

Seminar Committee (1978-80; 1984-85; Chair 1978-81; 1987-88)

Social Committee (1970-71; 1976-77; 1980-82; 1984-85; Chair 1982-83)

Meat Laboratory Use Committee (1981-86)

Distinguished Alumnus Award Committee (Chair 1983)  
Faculty Bowling Team (1968-95)  
Chuck Wagon Breakfast Committee (1979, 1985, 1986, 1989, 1991)  
Local Committee for Midwest ASAS Quadrathlon (1986-02)  
Member of Committee on Burroughs Memorial Endowment for Research in  
Animal Growth (1988-07)  
Committee for Faculty Evaluation (1989-90)  
Master of Ceremonies of Banquet for Professional Dairy Management  
Seminar (1990)  
National Symposium on the Nutrient Requirements of Swine Local Committee (1997-98)  
Representative to the Life Science Symposium Committee (1985-92)  
Coordinator for weekly meetings for Nutritional Physiology Group  
(1974-75, 1976-77, 1982-83, 1984-85, 1986-87, 1988-89, 1990-91, 1993-95, 1996-10)  
Personnel Affairs Committee (1991-94)  
Member of Animal Molecular Biology Committee (1990-93)  
Awards - Recognition Committee (1993-02; Chair 2002- )  
Graduate Curriculum Committee (1993-10)  
Editor for Nutritional Physiology Group Newsletter (1986-2007)  
Member of Steering Committee for USDA Animal Genetics and Biotechnology  
Graduate Training Grant (1998-00)  
Member of Committee to Evaluate Graduate Curriculum (1998-99)  
Member of Art Committee of Dairy Farm (2003-08)  
Co-Chair for Think Tank in Animal Agriculture (1999- )  
Member of Committee for Building New Dairy Farm (2003-07)  
Co-Mentor for Ken Stalder (2005-08)  
Kildee Hall Animal Facility (2006-12)  
Faculty Advisory Committee (2006- )  
Co-Mentor for Howard Tyler (2010-13)  
Co-Mentor for Ted Huiatt (2010-15)  
Coordinator for Animal Nutrition section (2006- )  
Initiated Installation of Defibrillators in Kildee Hall (2011-12)  
Chair of Art Committee (2012- )  
Member of Farm User Committee (2012-15)  
Chair of Dairy Users Group (2012- )

#### Biochemistry, Biophysics, and Molecular Biology Department

Diagnostic Exams and Graduate Student Evaluation Committee (1976-78)  
Faculty Grievance Committee (1976-77; 1983-84)  
Courses for Vet. Med. Students Committee (1976-08)  
Graduate Student Recruiting Committee (Chair 1979-81)  
Department Seminar (1976-77, 1979-80, 1983-84)  
Seminar Fund Committee (1981-83)  
Committee for USDA Review (1974; Chair 1987)  
West-Central States Biochemical Conference Host Committee (Co-Chair  
1976, 1983)

Diamond Jubilee Committee (1984-85)  
Cumulative Examination Committee (1973-76, 1985; Chair 1975-76; 1987-88)  
Chair of Committee for Departmental Retreat (1987)  
Member of Steering Committee (1987-89)  
Biochemistry-CALS (formerly Agricultural Biochemistry) Curriculum Coordinator (1988- )  
Undergraduate Awards Committee (1988-89; Chair 1989-90; 1991-93); Chair (1994-96)  
Partnership in Prominence Campaign Liaison (1990)  
Graduate Student Evaluation and Teaching and Research Awards (1993-96)  
Faculty Awards Committee (Chair 1996-97)  
Teaching Development Committee (1996-97)  
Awards Committee (faculty and student; Chair 1997- )  
Faculty Evaluation Advisory Committee (1997-98)  
External Advisory Council Committee (1997-98)  
Committee on Private Fund Raising/Alumni Communications (Chair 1998-00)  
Member of Biology Curriculum Committee (2002)  
Co-Master of Ceremonies of Gala of 50<sup>th</sup> Anniversary Celebration (2010)  
Scholarship Committee (Chair 2005-2011; 2014- )  
Executive Committee (2014- )  
Distance Learning Certificate Committee (2013-18)  
Member of Gary Roewe Faculty Research Award Committee (2016- )

#### College of Agriculture

Academic Advising Committee (1979-85)  
Honors Program Committee (1983-89; Chair 1989-91)  
Awards and Scholarships (1985-88)  
Biotechnology Scholars Advising Committee (1984-92)  
Academic Affairs Committee (1989-02)  
Faculty Campaign Committee for Partners in Prominence (1989-91)  
University Research Grants Committee (1990)  
Station and University Research Grants Reviewer (1990, 1991, almost yearly thereafter)  
Distinguished Professor Selection Committee (1990, 2000, 2006, 2007, 2019)  
Scholarship for Excellence Committee (1992-00)  
Chair of Committee to rank University Professor and Distinguished Professor nominees (1992-94; 1999-02)  
Chair of Committee to rank Distinguished Professor nominees (1991, 2005-07; 2013, 2014, 2015, 2018)  
Graduate Certificate Program Committee (2009-18)  
Advising Academy (2011- )  
Assisted with hosting two Ukrainian scientists (2019)

#### College of Veterinary Medicine

Dean's Advisory Committee (1993-95)  
Development of a Department of Production Animal Medicine and Services Committee (Chair, 1996-97)  
Case Study Course Committee (1998-99)

Ramsey Chair Review Committee (1999)  
Healthy Livestock Initiatives Grant Proposal Review Team (1999)  
Salsbury Chair Review Committee (2001)

College of Family and Consumer Sciences

Internal Advisory Committee of Center for Designing Foods to Improve Nutrition (1996-97; Chair, 1997)

Faculty Senate

Chair of Committee on Welfare and Development (1998-01)  
Member of Faculty Development and Administrative Relations Council (1998-01)  
Member of Faculty Senate from BBMB Department (2016- )  
Member of CALS Caucus (2016- )  
Member of Academic Affairs Committee (2017- )

Graduate College

Biological Science Sub-Committee (1972-75; Chair, 1974-75)  
Graduate Research Advisory Committee (1973-76)  
College Cabinet (1975-76; 1977-78)  
Graduate Council (1976-78; Chair 1977-78)  
Margaret Ellen White Advising Awards Committee (1990-91)  
PACE Awards Committee (1997-00)  
Committee to Review Carver Grants (1999)  
Graduate Admissions Committee for Alliance for Graduate Education in the Professoriate (AGEP) and George Washington Carver programs (2004-18)  
Diversity Council (2011-15)  
Interdisciplinary Graduate Studies Admission Committee (2012-15)

Office of the Registrar

Passport to Success Facilitator for Destination Iowa State (2015- )  
Faculty Panel during Orientation (2017- )

Health and Human Performance (now Kinesiology) Department

Committee to Develop a Ph.D. Degree Program (1997)  
Promotion and Tenure Committee for Two Candidates (1999; 2001-02)

Interdepartmental Graduate Program for Nutritional Sciences

Advisory Committee (2006- )  
Graduate Student Admissions Committee (2006- )

MCDB Interdepartmental Graduate Program

College Faculty Liaison Committee for the Life Sciences Symposium (1988-92)  
Faculty Membership Committee (1988-89)  
Research Fellowship Committee (1989; Chair, 1990)

Local Arrangements Committee for Life Sciences Symposium (1987-89)  
Fund Raising Committee for Life Sciences Symposium (Chair 1989-91)  
Graduate Applications Committee (Chair 1991-92)  
Graduate Admissions Committee (Chair 2000-01)  
Nutrition and Wellness Research Center Member of Operations Committee (Chair 2010-13)

#### Nutritional Sciences Council

Member (1968- )  
Chair (1983-86; 1998-02; 2010- )  
Modern Views of Nutrition Seminar (1969-72; Chair 1971-72)  
Advisory Committee (1972-78; 1997-00)  
Secretary of Council and Advisory Committee (1972-78)  
Symposium Committee (Chair 1978-80; 1981-83)  
Summer Lectureship Coordinator(1976, 1979, 1985, 1986, 1989-92; 1995-99; 2001-05; 2007-16; 2018)  
Historian (1986- )  
Committee for Interdepartmental Major in Nutrition (Chair 1987-92; 1996-97)  
Committee for Current Issues in Nutrition (1995-98)  
Borlaug Lecture Committee (2001- )  
Reporter to *Nutrition* Notes of American Society for Nutrition (1995-16)  
Chair of Committee for N.L. Jacobson Symposium (2008)  
Co-Chair of Committee for Nissen Symposium (2012-13)

#### Physiology Council

Member (1973-88; 1991-00)  
Advisory Committee (1973-76) (1991-95)  
Mini-Symposium Committee (Chair 1979-83)  
Coordinator of H. Dukes Club (1992-93)

#### University

Member of the Order of the Knoll (1991- )  
Laboratory Animal Facilities Committee (1973-83; Chair 1980-83)  
Biotechnology Council (1984-88)  
Planning Committee for USDA Nutrition Center (1987-89)  
ISU Research Foundation Review Committee (1989)  
Committee for Evaluation of Reviews of Life Science Departments (1989)  
Committee for Evaluation of University Honors Program (1992-93)  
Committee for Diversity at Iowa State University (1993-95)  
Chair of Committee for Evaluation of Distinguished Professor nominees (1993-94)  
University Strategic Planning Committee (1994)  
University Extension Strategic Planning Committee (1995)  
Committee for Evaluation of Vice Provost for Extension (1995)  
Committee for Evaluation of Biomedical Engineering Program (1996)  
Committee for Promotion and Tenure (1996-97)  
Committee for Advising and Mentoring (1996-97)

University Honors Committee (1989-91; 1996-97; (Chair 1997-04; 2004- )  
Member of Honors Semester Committee of Honors Program (2003-04)  
Ad Hoc Grievance Committee (1998)  
Committee for Evaluation of Dean of College of Vet. Med. (Chair 1997-98)  
Planning Committee for Proposed Honors Building (1999-00)  
Advisory Committee for Dean of Agriculture Search (2001)  
Member of Task Force on Strategic Effectiveness and Budget Priorities (2001-02)  
Member of Review Panel for Faculty Conduct (2003-06; 2007-10)  
Member of 150<sup>th</sup> Anniversary of Iowa State University Planning Committee (2004-05)  
Member of Committee to select Undergraduate Employee of the Year (2002-05)  
Member of AGEF Faculty Council (2006-10)  
Member of National Cyclone Club (1975- )  
Member of Committee to Review McDonnell Foundation Preproposal (2008)  
Member of Conflict of Interest Committee (2009-11)  
Member of Faculty Review Committee (2011- )  
Senior Teaching Partner in CELT Teaching Partner Program (2015-16)  
Member of Faculty Research Excellence Award Committee (2017- )  
Member of Gridiron Club (2017- )

#### Search Committees

Assistant Professor in Zoology Department (1975)  
Head/Chairman of Department of Food and Nutrition (1977-78)  
Assistant Professor in Animal Science Department (1980)  
Head of Laboratory Animal Resources in College of Vet. Med. (1984)  
Assistant Professor in Muscle Biology Section, Dept. of Animal Science (1985)  
Assistant Professor in Veterinary Microbiology and Preventive Medicine (1986-87)  
Four Assistant Professors in Chemistry (1987-88)  
Assistant Professor in Nutritional Physiology Section, Dept. of Animal Science (1988-90)  
Head, Department of Food Nutrition (1988-89)  
Dean, College of Veterinary Medicine (1988-89; Chair 1992-93)  
Assistant Professor of Dairy Nutrition and Management and Dairy and Livestock Mgmt. (1990-91)  
Assistant Professor of Systems in Extension and Teaching in Dept. of Animal Science (1990-91)  
Assistant Professor of Molecular Biology/Gene Mapping and Identification in  
Dept. of Animal Science (1990)  
President, Iowa State University (1990-91)  
Assistant Professor Dairy Product Research (1991)  
Research Chemist at NADC (1992)  
Associate Professor of Swine Genetics (1994-97)  
Program Assistant II in Honors Program (1997)  
Professor, Dept. of Health and Human Performance (1998)  
Assistant Professor of Animal Nutrition (1999-01)  
Director of Center for Designing Foods to Improve Nutrition (2001-02)  
DEO for Department of Animal Science (2001)  
Dean for College of Agriculture (2001)  
Assistant Director of Honors Program (2002)

Assistant Professor of Poultry Nutrition (2002)  
Research Leader of Periparturient Diseases of Dairy Cows Group at NADC (2003)  
Dean of College of Family and Consumer Sciences (2003)  
Interim Director of Honors Program (2004)  
Dean for College of Human Sciences (2005)  
Assistant Director of Honors Program (2005)  
Dean for College of Agriculture (2005)  
Lecturer in Biochemistry (2006)  
Assistant Director of Honors Program (2006)  
Director of ISU Wellness Center (2006-07)  
Assistant Professor of Animal Science (2007-08)  
Assistant/Associate Professor of Animal Science (Chair, 2007-08)  
Assistant Professor of Human Nutrition (2013-14)  
Associate Professor/Professor of Human Nutrition (2013-14)  
Associate Professor/Professor of Metagenomics (Animal Science); (2014-15)  
Assistant Professor of Ruminant Nutrition (2016)  
Chair of Department of Biochemistry, Biophysics, and Molecular Biology (2017)  
Faculty Awards Hub Coordinator for Iowa State University (2018)  
Chair of Department of Animal Science (2019)

World Food Prize Iowa Youth Institute

Judge of oral presentations (2015- )

Osborn Research Club

Member (1976- )  
Steering Committee (1979-83)  
Chairman (1988)

Gamma Sigma Delta

Member (1963- )  
Liaison Committee (1979- )  
Program Committee for the Gamma Sigma Delta Conclave (1988-90)  
Chair of Committee for Distinguished Achievement in Agriculture Award (2000-02)  
Chair of Awards Committee (2006- )

Phi Kappa Phi

Member (1970- )  
Nominating Committee (1976-79)  
Ad Hoc Centennial Committee (1996)  
Centennial Medallion Recipient (1997)  
Representative of College of Agriculture (2002)  
At Large Representative (2003)  
President Elect (2003-04)  
President (2004-05)  
Fellowship Committee of National Society (2004-07)

Alpha Zeta

Member (1960- )

Faculty Advisor (1983-86; 2016- )

Army ROTC

Scholarship Committee (1981-85)

Sigma Xi

Member (1964- )

Executive Committee (1989-92)

President Elect (1991-92)

President (1992-93)

Secretary/Treasurer (2014- )

Phi Eta Sigma

Member (1959- )

Phi Zeta

Named Honorary Member (1991)

Member (1991- )

Cardinal Key

Member (1990- )

Beta Beta Beta (Biological Honor Society)

Faculty Advisor (1997-03)

Regional Grants Review Team (2004-08)

Beta Sigma Psi social fraternity

Faculty Advisor (1994- )

Honorary Member (1999)

Lutheran Fellowship of Christian Students

Faculty Advisor (1992-08)

Pre-Vet Club

Faculty Advisor (2006-10; 2014- )

25-Year Club

Secretary (2006-07)

Vice President (2007-08)

President (2008-09)

Past President (2009-10)



### Honors Program

Member of College of Agriculture Honors Committee (1970-76; Chair 1977-80)  
Member of University Honors Committee (1977-80; Chair 1980-86; At-Large member 1986- )  
Member of Awards and Grants Committees (several times)  
Liaison for Agricultural Biochemistry/Biochemistry-CALS major (2000- )

### Miscellaneous

Chair of Formal Hearing Committee for dismissal of an ISU faculty member (1988-89)  
Member of committee to evaluate organization of the ISU Research Foundation (1989)  
Member of task force to evaluate responses of life science departments to report on Long-Range Strategic Planning Committee (1989)  
Member of a University Grievance Committee (2004, 2005, 2008, 2011, 2013, 2017, 2018-19)  
Member/Chair of several committees for post-tenure review of faculty in Departments of Animal Science and of Biochemistry, Biophysics, and Molecular Biology

### **F. OTHER**

None.

## **IX. PUBLICATIONS**

### **A. Refereed Journal Articles**

Beitz, D. C. and C. L. Davis. 1964. Relationship of certain milk fat depressing diets to changes in the proportions of the volatile fatty acids produced in the rumen. *J. Dairy Sci.* 47:1213-1216.

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Saladino, C. F., D. C. Beitz, and R. Getty. 1971. RNA/protein ratios of canine pancreatic microsomes and their subfractions as a function of age. *Exptl. Geront.* 6:359-364.

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- Pothoven, M. A. and D. C. Beitz. 1973. Effect of adipose tissue site, animal weight, and long-term fasting on lipogenesis in the bovine. *J. Nutr.* 103:468-475.
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- Beitz, D. C., D. J. Burkhart, and N. L. Jacobson. 1974. Effects of calcium to phosphorus ratio in the diet of dairy cows on incidence of parturient paresis. *J. Dairy Sci.* 57:49-55.
- Pothoven, M. A. and D. C. Beitz. 1975. Changes in fatty acid synthesis and lipogenic enzymes in adipose tissue from fasted and fasted-refed steers. *J. Nutr.* 105:1055-1061.
- Pothoven, M. A., D. C. Beitz, and J. H. Thornton. 1975. Lipogenesis and lipolysis in adipose tissue of ad libitum and restricted-fed beef cattle during growth. *J. Animal Sci.* 40:957-962.
- DiMarco, N. M., D. C. Beitz, J. W. Young, D. G. Topel, and L. L. Christian. 1976. Gluconeogenesis from lactate in liver of stress-susceptible and stress-resistant pigs. *J. Nutr.* 106:710-716.
- Wheeler, A. J., D. C. Beitz, and C. S. Swift. 1976. Mapping of acupuncture points of the goat. *Amer. J. Acupuncture* 4:57-65.
- Thompson, J. R., D. C. Beitz, and N. L. Jacobson. 1977. Effect of dietary cholesterol and tallow on cholesterol synthesis in the castrated goat. *J. Nutr.* 107:1632-1639.
- Beitz, D. C., M. E. Phillips, and S. H. Eklund. 1977. A nephelometric procedure for determination of fat and protein in milk. *J. Dairy Sci.* 60:701-705.
- Whitehurst, G. B., D. C. Beitz, M. A. Pothoven, W. R. Ellison, and M. H. Crump. 1978. Lactate as a precursor of fatty acids in bovine adipose tissue. *J. Nutr.* 108:1806-1811.
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- Darrah, P. S., N. M. DiMarco, D. C. Beitz, and D. G. Topel. 1979. Conversion of alanine, aspartate and lactate to glucose and CO<sub>2</sub> in liver from stress-susceptible and stress-resistant pigs. *J. Nutr.* 109:1464-1468.
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- Reinhardt, T. A., J. L. Napoli, R. L. Horst, E. T. Littledike, and D. C. Beitz. 1981. 1,25,26-Trihydroxyvitamin D<sub>3</sub>: An in vivo and in vitro metabolite of vitamin D<sub>3</sub>. *Biochemistry* 20:6230-6235.
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Reinhardt, T. A. J. L. Napoli, D. C. Beitz, E. T. Littledike, and R. L. Horst. 1982. 1,24,25-Trihydroxy-vitamin D3: A circulating metabolite in vitamin D3-treated bovine. *Arch. Bioch. Biophys.* 213:163-168.

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Baldner, G. L., R. E. Flatt, R. N. Shaw, and D. C. Beitz. 1985. Fatty acid biosynthesis in liver and adipose tissue from dogs. *Comp. Biochem. Physiol.* 82B:153-156.

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None.

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*Streptococcus uberis*. A.S. Leaflet R2432.

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O'Neil, M., G. Kraus, N. Gabler, S. Lonergan, and D. Beitz. 2014. Impact of mitochondrially targeted novel antioxidant on pig feed efficiency. ISU Animal Industry Report A.S. Leaflet R2934.

Dehghan-Banadaky, M., L. Krueger, J. Stabel, and D. Beitz. 2015. Effects of complete vitamin and mineral supplementation in full potential all-milk diets on growth and health of Holstein bull calves. ISU Animal Industry Report, A.S. Leaflet R2968.

Krueger, L.A., D.C. Beitz, R.L. Stuart, and J.R. Stabel. 2015. Early inflammation disorder in neonatal calves. ISU Animal Industry Report, A.S. Leaflet R2969.

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## **H. Non-print educational materials**

Numerous overhead transparencies, slides, and posters have been prepared for presentations at scientific and seminar presentations.

## **I. Other contributions to print, broadcast, and electronic media**

1986 I made a televised uplinked presentation on "Diet and Lipoprotein Metabolism" as part of Current Issues in Nutrition of the ISU Nutritional Sciences Council.

- 1992 I made two presentations on basics and uses of biotechnology as part of a nationally telecast live satellite videoconference with title of “Techniques and Applications of Biotechnology-- Implications for Industry”, which was ISU's entry into the National Technological University Market.
- 1993 “Applications of transgenic organisms to agriculture and human medicine” in a 2-hour movie on biotechnology that is coordinated by Purdue University.
- 1998 Described essentials of molecular biology in a one-hour show called “Plants, Animals, and Transgenics: A “Tomato by Any Other Name” that was part of nine hour series called “The DNA Files” that was aired nationwide by National Public Radio.
- 2003 Participated in about 9 radio interviews and 6 magazine/newspaper interviews regarding release of 2004 NRC publication on Dog and Cat Nutrition.

I have not kept record of many interviews that have been broadcast on radio and television and printed in magazines.

## **X. PATENTS**

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- ◆ Beitz, D. C., J. W. Young, and S. S. Dehal. 1990. Method of converting cholesterol in food to coprostanol. U.S. Patent #4,921,710
- ◆ Beitz, D.C., A.E. Freeman, M.M. Schultz, and G.L. Lindberg. 1994. Association of bovine mitochondrial DNA with traits of economic importance. U.S. Patent #5,292,639
- ◆ Beitz, D.C. 1995. Administration of cholesterol reductase to humans. U.S. Patent #5,436,004
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- ◆ Young, J.W., D.C. Beitz, and A.R. Hippen. 1999. Use of glucagon as a metabolic conditioner for dairy cows and other ruminants. U.S. Patent #6,004,932
- ◆ Beitz, D.C., A.H. Trenkle, F.C. Parrish, Jr., J.L. Montgomery, and R.L. Horst. 2000. Use

of vitamin D and its metabolites and analogs to improve tenderness of meat and meat products. U.S. Patent #6,042,855

- ◆ Zhang, S., T. Knight, J.M. Reecy, and D. Beitz. 2011. Genetic markers in fatty acid synthase for identification of meat product fatty acid content in cattle. U.S. Patent #7,910,308B1

## XI. GRANTS AND CONTRACTS (as PI)\*

Title	Grantor	Year Rec'd.	Year Term.	Amount of Award
Milk protein synthesis	ISU Res. Fdn.	1968	1969	\$2,500
Milk analysis by nephelometry	Hach Chem., Ames, IA	1970	1974	3,910
Dietary cholesterol and brain development	ISU Res. Fdn.	1974	1975	1,994
Role of prostaglandins in fat deposition in cattle	ISU Res. Fdn.	1976	1977	1,940
Organophosphates as growth promotants	Dow Chemical, Midland, MI	1978	1982	31,433
Why are fat cells of cattle unable to synthesize fatty acids from glucose?	W. S. Martin--ISU Nutr. Sci. Council	1979	1980	1,300
Lipogenesis from lactate in cattle	ISU Res. Fdn.	1979	1980	2,112
Factors influencing the incidence of milk fever, prevention of milk fever, and vitamin D metabolism of several domestic species	USDA, Wash. D.C.	1979	1983	128,395
Concentrations of vitamins D <sub>2</sub> and D <sub>3</sub> and their metabolites in bovine milk as influenced by diet, breed, and stage of lactation	Midland UDIA, Ankeny, IA	1980	1981	4,400
Calcium homeostasis during total parenteral nutrition	NIH-UCLA Contract, Wash., D. C.	1980	1983	30,024
Cellularity of bovine adipose tissue	Merck & Co., Inc., Rahway, NJ	1981	1982	5,000
Dopamine and the porcine stress syndrome	ISU Res. Fdn.	1981	1982	5,433
Use of <i>Lactobacillus acidophilus</i> as a dietary ingredient for growing calves	Fermented Feeds, Inc., Mason City, IA	1981	1982	8,600
Prevention of milk fever by low-calcium diet	Iowa Limestone Co., Altoona, IA	1981	1983	6,000
The stress-susceptible pig as a model animal for Parkinson's disease	Amer. Parkinson's Dis. Assoc., New York, NY	1982	1983	19,400
Mineral imbalance: Responses to treatment	USDA--U. of PA.	1983	1984	7,000

with active metabolites of vitamin D	Contract, Wash., D.C.			
Dietary recommendations for the diabetic: saturated or unsaturated fat	Iowa Beef Industry Council, Ames, IA	1983	1984	11,838
Evaluation of 24(F)-1,25 dihydroxyvitamin D <sub>3</sub> and 24,24(F) <sub>3</sub> -1,25 dihydroxyvitamin D <sub>3</sub> as possible preventatives of parturient paresis in the dairy cow	Hoffmann-LaRoche, Inc., Nutley, NY	1983	1984	15,000
Mechanism of control by dietary protein of cholesterol uptake by tissues	National Live Stock and Meat Board, Chicago, IL	1983	1984	15,544
Use of full-fat soybeans in beef cattle finishing diets as a source of rumen-bypass of polyunsaturated fatty acids	Iowa Soybean Promo. Bd. St. Louis, MO	1983	1984	19,390
Relationships of mitochondrial efficiency to varying rates of milk synthesis	W. S. Martin--ISU Nutr. Sci. Council	1984	1985	2,550
Dietary recommendations for the diabetic: saturated or unsaturated fat	Iowa Beef Industry Council, Ames, IA	1984	1985	10,800
Influence of type of dietary fat on hormonal regulation of glucose homeostasis	Amer. Diabetes Assoc.--Iowa Affiliate, Iowa City, IA	1984	1985	11,000
Evaluation of a series of vitamin D analogs in animal models of bone	Hoffmann-LaRoche, Inc., Nutley, NJ	1986	1987	25,000
Thymus receptor preparation	Smith Kline Clin. Lab., Inc. Creve Coeur, MO	1984	1986	7,400
Mitochondrial energy metabolism in mammary glands with differing milk production potential	National Assoc. of Animal Breeders, Columbia, MO	1985	1986	7,500
Influence of dried skim milk and butter on cholesterol uptake by tissues	Midland UDIA, Ankeny, IA	1984	1987	82,000
Mechanism of calcium and vitamin D <sub>3</sub> in regulation of cholesterol homeostasis	National Dairy Promotion and Research Board, Arlington, VA	1986	1988	102,544
Evaluation of a series of vitamin D analogs in standard models of bone metabolism	Hoffmann-LaRoche, Inc., Nutley, NJ	1986	1987	20,000
Effect of amount of beef tallow and/or soy oil in the diet on regulation of plasma cholesterol concentration	Iowa Beef Industry Council, Ames, IA	1986	1987	15,000
Mitochondrial genotype differences in mammary glands with differing milk production potentials	National Assoc. of Animal Breeders, Columbus, MO	1986	1987	3,500
Use of enzymes to decrease cholesterol	Wisc. Milk Marketing Bd.,	1986	1989	148,450

content of dairy products	Madison, WI			
Mechanism of cholesterol uptake by tissues	Amer. Heart Assoc.--IA Affiliate, Des Moines, IA	1986	1988	24,500
Mechanism of calcium and vitamin D <sub>3</sub> in regulation of cholesterol homeostasis	USDA, Wash. D. C.	1986	1988	80,000
Evaluation of composition and eating qualities of beef from different lines of cattle	N. Amer. Limousin Fdn., Denver, CO	1986	1987	3,750
Evaluation of composition and eating qualities of beef from different lines of cattle	N. Amer. Limousine Fdn., Denver, CO	1987	1988	850
Effect of amount of beef tallow and/or soy oil in the diet on regulation of plasma cholesterol concentration	IA. Beef Industry Council, Ames, IA	1987	1988	15,000
Oxidative stress in a naturally occurring animal model of Parkinson's disease	W. S. Martin Fund of Nutr. Sci. Council	1987	1988	3,060
Interaction of mitochondrial and nuclear DNA in regulation of milk production	State of Iowa through ISU Biotechnology Council	1986	1988	120,000
A molecular study of cytoplasmic inheritance in dairy cattle	Holstein Association, Brattleboro, VT	1988	1990	34,853
In vivo method for decreasing cholesterol content of meat	W. S. Martin Fund of Nutr. Sci. Council	1988	1989	2,000
Effects of glucose-insulin-potassium prior to cardioplegia for myocardial presentation in ischemic damaged hearts and hypertrophied hearts	Iowa Methodist Hospital, Des Moines, IA	1988	1989	15,000
Decreasing cholesterol content of lamb by using cholesterol reductase	Iowa Sheep and Wool Promotion Board, Des Moines, IA	1988	1989	5,000
Mechanism of control of plasma cholesterol concentration by type and amount of dietary fat	Iowa Beef Industry Council, Ames, IA	1989	1990	20,000
Mitochondrial molecular genetics and milk production	Binational Agricultural Research and Development Fund, Wash., D.C.	1989	1992	107,750
Mechanism of control of cholesterol homeostasis by dietary fat	Amer. Heart Assoc.--Iowa Affiliate, Des Moines, IA	1989	1991	27,000
Use of enzymes to decrease the cholesterol content of dairy products	Wisconsin Milk Marketing Board, Madison, WI	1990	1991	29,500
Effect of redesigned pork on cholesterol metabolism	National Live Stock and Meat Board, Chicago, IL	1990	1992	72,900
Mechanism of control of plasma cholesterol	Iowa Beef Industry	1990	1991	18,500

	Council, Ames, IA			
Decreasing cholesterol content of lamb by using cholesterol reductase	Iowa Sheep and Wool Promotion Board, Des Moines, IA	1990	1991	5,000
Evaluation of a series of vitamin D analogs in animal models of bone	Hoffmann-LaRoche, Inc., Nutley, NJ	1990	1991	5,000
Molecular biology and phenotypic relationships of bovine mitochondrial DNA	USDA, Wash., D.C.	1990	1993	210,000
Redesigning milk fat from dairy cows	Biotechnology Research and Development Corp., Peoria, IL	1991	1992	36,000
Mechanism of control of plasma cholesterol	Iowa Beef Industry Council, Ames, IA	1991	1992	20,000
Use of enzymes to decrease cholesterol content of foods	ISU Human Nutrition Ctr.	1991	1993	60,000
Can the cDNA for human LDL receptor be used to detect and quantify mRNA for the porcine LDL receptor	W. S. Martin Fund of ISU Nutr. Sci. Council	1991	1992	1,800
Modified pork fats for better human nutrition	ISU Human Nutrition Ctr.	1991	1993	22,000
The relationship between antioxidants in foods and human health maintenance	ISU Human Nutrition Ctr.	1991	1993	15,000
Mechanism of control of blood cholesterol	Iowa Beef Industry Council	1992	1993	10,000
Decreasing cholesterol in dairy products	Iowa Dairy Products Assoc.	1992	1993	2,500
Evaluating the incorporation of <i>Eubacterium coprostanoligenes</i> into dairy products	Anderson Erickson Dairy Co.	1992	1993	7,500
Increasing desaturase activity of animal cells	Iowa Beef Industry Council	1993	1994	10,000
Addition of <i>Eubacterium coprostanoligenes</i> to pork products to decrease cholesterol content	Iowa Pork Producers Assoc.	1993	1994	15,000
Mitochondrial genetic differences between swine breeds and their relation production trait differences	Iowa Pork Producers Assoc.	1993	1994	15,000
Addition of <i>Eubacterium coprostanoligenes</i> to lamb products to decrease cholesterol content	Iowa Sheep and Wool Promotion Board	1993	1994	5,000
Effect of enrichment of the intestine with <i>Eubacterium coprostanoligenes</i> on blood cholesterol contents	Merck Co.	1993	1994	5,000

Mitochondrial DNA mutation in naturally occurring cardiomyopathies	Merck Co.	1994	1994	6,000
Modifying animal cells to produce a greater ratio of monounsaturated fatty acids	USDA Human Nutrition Center at ISU	1994	1995	23,740
Vitamins A, D, E, and K concentrations in bison and beef livers	American Bison Assoc.	1994	1995	5,000
Modifying animal cells to produce a greater ratio of monounsaturated fatty acids	ISU Center for Designing Foods to Improve Nutrition	1994	1995	23,740
Cloning of cholesterol reductase gene from <i>Eubacterium coprostanoligenes</i>	ISU W.S. Martin Fund	1995	1996	2,500
Relation of mitochondrial genetic differences to production trait differences	Iowa Pork Producers Assoc.	1995	1996	17,000
Manipulating mammary cells to synthesize the “ideal” milk fat	ISU Biotechnology Program	1995	1996	15,000
Molecular cloning and functional expression of the cholesterol reductase gene from <i>Eubacterium coprostanoligenes</i> ATCC 51222	ISU Center for Designing Foods to Improve Nutrition	1996	1997	25,650
Increasing the ratio of monounsaturated to saturated fatty acids in animal cells by genetic manipulation	ISU Center for Designing Foods to Improve Nutrition	1996	1997	22,050
Influence of type of dietary fat on composition of emu oil and meat	American Emu Association	1996	1998	24,000
Use of vitamin D and its metabolites to improve tenderness of beef	Iowa Beef Industry Council	1996	1998	15,831
Increasing the ratio of monounsaturated to saturated fatty acids in animal cells by genetic manipulation	ISU Center for Designing Foods to Improve Nutrition	1997	1998	23,500
Use of vitamin D and its metabolites to improve tenderness of pork	National Pork Producers Council	1997	1998	23,800
Improvement of health benefits of milk by increasing its content of conjugated linoleic acid	ISU Center for Designing Foods to Improve Nutrition	1998	1999	24,600
Use of vitamin D and its metabolites to improve beef tenderness	Iowa Beef Industry Council	1999	2000	35,000
Use of a cholesterol reducing bacterium to decrease blood cholesterol	S. J. Biologics, Inc.	1998	1999	160,000
Why does conjugated linoleic acid (CLA) increase saturated fatty acid content of	W. S. Martin Fund	1998	1999	4,000



animal tissues

Identification of genes affecting meat quality in the pig (M.F. Rothschild is P.I.)	Pig Improvement Company	1998	2000	240,000
Preparation of active cholesterol reductase	W. S. Martin Fund	1998	1999	5,000
Using milks of divergent fat compositions for production of more healthful dairy foods	Land O' Lakes/Center for Advanced Technology Development	1999	2002	130,000
Use of vitamin D and its metabolites to improve tenderness of beef	Iowa Beef Industry Council	1999	2000	15,500
Use of vitamin D and its metabolites to improve tenderness of beef	National Cattlemen's Beef Association	1999	2000	20,000
Travel grant for Ovidiu Popescu of Romania	Coll. of Agr. Int'l. Program	2000	2000	2,000
A novel approach to prevention and treatment of fatty liver	W.S. Martin Fund	2000	2001	8,000
Use of 25-hydroxyvitamin D <sub>3</sub> to improve tenderness of beef	Iowa Beef Industry Council	2001	2002	25,000
Assessing and enhancing conjugated linoleic acid concentrations in foods from pastured dairy and beef cattle	NRC SARE	2001	2003	66,500
Producing milk with greater health benefits	Iowa Dairy Association	2001	2002	2,000
Support of dairy research	Bioproducts, Inc.	2001	2002	9,000
Treatment of fatty liver by leptin	W.S. Martin Fund	2002	2003	7,250
Prevention of fatty liver in dairy cows by glucagon and glycerol	NRI/USDA	2002	2004	289,593
Redesigning beef cattle to have a more healthful fatty acid composition	CDFIN	2002	2004	57,133
Using a combination of 25-hydroxyvitamin D <sub>3</sub> and vitamin E to improve beef tenderness	Iowa Beef Industry Council	2003	2004	22,863
Evaluation of health benefits of conjugated linoleic acid (CLA)-enriched dairy and beef foods	NCR SARE	2004	2006	150,000
A survey of native Iowa and agronomic plants for cholesterol reductase: A potential therapeutic agent for high blood cholesterol	Iowa Science Foundation	2004	2005	4,850
Novel strategies to improve tenderness of underutilized round muscles from cows	National Cattlemen's Beef Association	2004	2005	73,202

Fractionation of tallow from Wagyu fat	Yama Beef Inc.	2004	2004	15,000
Effect of egg yolk lecithin on absorption of dietary cholesterol (T. Wang is P.I.)	CDFIN	2004	2005	38,832
Nutrient regulation of plasma ghrelin concentration in lean and overweight female humans	CDFIN	2004	2005	47,866
Evaluation of the nutritional value of different corn hybrid traits on performance of pigs, broilers, and layers (K. Bregendahl is P.I.)	J. C. Robinson Seeds	2004	2006	99,073
Genetic analysis of fatty acid composition of beef and milk—developing tools for use in selection	USDA	2005	2008	300,000
Improving the healthfulness of milk fatty acid composition by identifying markers for selection	CDFIN	2005	2006	39,388
Nutrient regulation of plasma ghrelin concentration in lean and overweight male humans	CDFIN	2005	2006	48,567
Evaluation of health benefits of conjugated linoleic acid (CLA)-enriched dairy and beef foods	NCR SARE	2005	2006	125,000
Evaluation of nutritional regime and drug/nutraceutical treatments for prevention of nonalcoholic fatty liver disease in rats as models for humans	CDFIN	2006	2008	60,690
A novel approach to improving tenderness of underutilized muscles from the round from pasture-fed cattle	National Cattlemen’s Beef Association	2006	2007	86,018
Finding the “soft butter” cow	Midwest Dairy Association	2005	2006	25,000
A preliminary study on variation in healthfulness of beef from different breeds (J. M. Reecy is P.I.)	National Cattlemen’s Beef Association	2006	2006	37,750
Evaluation of sustained release formulations of vitamin D for use in animal and human nutrition	Cytochroma, Inc. Markham, Ontario, Canada	2006	2007	9,917
Effect of dietary conjugated linoleic acid as a novel and safe inhibitor of growth and development of the European corn borer (J. Coats is Co-P.I.)	ISU Research Foundation	2006	2007	17,316
Effect of feeding ethanol by-products on marbling and fatty acid composition of beef	Iowa Beef Industry Council	2006	2007	20,000

Effect of feeding ethanol by-products on marbling and fatty acid composition of beef	Iowa Beef Center	2006	2007	5,000
Effect of feeding ethanol by-products on marbling and fatty acid composition of beef	Iowa Beef Industry Council	2007	2008	15,000
Selection for increased intramuscular fat and its effect on other quality traits and the fatty acid composition of pork (T. Baas is P.I.)	National Pork Board	2007	2008	31,988
Dietary regulation of oxidative stress and obesity (T. Stahly, G. Kraus are P.I.s)	CDFIN	2007	2008	39,350
Enhancing the healthfulness of milk fat	Midwest Dairy Association	2008	2009	45,000
Prevention and treatment of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> (MAP) infection in mice by <i>Lactobacillus acidophilus</i> NP 51	Nutrition Physiology	2007	2009	180,000
Utilization of natural genetic variation to improve healthfulness of beef (J. Reecy is P.I.)	Pfizer Animal Genomics	2008	2010	1,444,868
Dietary regulation of oxidative stress and obesity	NWRC	2008	2009	30,000
Effect of feeding corn genetically modified to contain amylase on body weight gain, feed intake, and feed efficiency of feedlot cattle	Syngenta Corp.	2009	2009	36,634
Enhancing the healthfulness of milk from Jersey cattle	Iowa Science Foundation	2009	2009	5,000
Increasing the use of distillers grains in livestock diets (D. Loy is P.I.)	Iowa Power Fund	2009	2011	172,994
Infrastructure support of ISU Beef Breeding herd	ISU Center for Integrated Animal Genomics	2009	2010	8,000
Enhancing the healthfulness and marketability of milk from Jersey cattle	American Jersey Cattle Association	2009	2010	7,900
Effects of long-term supplementation of laying hen diets with high concentrations of cholecalciferol on egg yolk vitamin D concentration, egg quality, hen performances, and hen health (M. Persia is P.I.)	American Egg Board/ Iowa Egg Council	2010	2012	119,104
Modification of immune response and digestive system microbiota by Bovamine® in lactating cows	Nutrition Physiology Corp.	2010	2011	72,000
Infrastructure support of ISU Beef Breeding herd	ISU Center for Integrated Animal Genomics	2010	2011	6,000

Prevention of oxidative off-flavors to maximize quality and shelf life of fluid milk (S. Clark is P.I.)	Dairy Management Inc.	2011	2013	87,000
Increasing the inclusion rate of distillers grains in beef cattle diets through mitigation of sulfate toxicity (S. Hansen is P.I.)	Alliance Nutrition/ADM	2010	2011	117,979
Infrastructure support of ISU Beef Breeding herd	ISU Center for Integrated Animal Genomics	2011	2012	6,000
Bovamine and feed efficiency of dairy cows	Nutrition Physiology Corp.	2011	2013	145,000
Impact of mitochondrially targeted novel antioxidant on feed efficiency	National Pork Board	2011	2013	59,949
Free-radical generation differential scanning calorimetry (FRG-DSC): A novel and reliable method for assessing oxidative stability and predicting shelf life of milk	Iowa Science Foundation	2012	2013	5,000
Evaluation of fungal biomass as a feed source to assist low-performing nursery pigs achieve viable production outcomes (J. Van Leeuwen is P.I.)	Iowa Attorney General: Innovative Swine Industry Enhancement Grant Program	2013	2014	87,819
Vitamin E and dairy calf growth and health	Robert Stuart Products	2012	2013	7,500
Fat-soluble vitamins and Johne's disease development	Robert Stuart Products	2013	2014	7,500
Relationship of fat quality to meat and eating quality traits of pork (T. Baas is P.I.)	National Pork Board	2013	2014	68,250
Milk composition and cheese quality: investigating the impact of dried distillers grains with solubles (DDGS)	Midwest Dairy Association	2013	2014	74,464
Effects of complete vitamin and mineral supplementation in full-potential all-milk diets on growth and health of Holstein bulls	Animix and DSM	2014	2014	12,591
Reduced fat DDGS feeding: Investigating impact on milk composition and cheese quality	Minnesota Corn Research	2015	2016	79,146
Micro RNAs: A novel nutraceutical in milk	Midwest Dairy Association	2015	2015	24,132
Micro RNA in infant formula: A novel nutraceutical	Iowa Academy of Science	2015	2016	591
Value of quizzes in teaching biochemistry	ISU Center for Excellence In Learning and Teaching	2015	2017	2,500
Unrestricted gift	Tech Mix	2015	2016	5,000

Unrestricted gift	Tech Mix	2016	2017	40,000
Training Graduate Students and Future Leaders in Animal Nutritional Physiology And Metabolism	USDA	2016	2019	220,500
A novel therapeutic to address fatty liver In post-parturient dairy cows (with U. VT)	USDA/SBIR	2020	2022	115,000

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\*Have received financial support for one to three graduate students per year from the National Animal Disease Center of the ARS/USDA.

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## XII. MENTOR FOR VISITING SCIENTISTS AND POSTDOCTORAL STUDENTS

### VISITING SCIENTISTS

Name	Address	Appt. Year	Period	Position
H. N. Munro	MIT	1979	1 week	Wellcome Visiting Professor
R. L. Hood	CSIRO, Sydney, Australia	1980-81	1 year	ISU World Food Inst. Foreign Scholar
K. Hove	Agr. Univ. of Norway	1980-81	1 year	Fogarty Fellow
R.A. Leng	Univ. New England, Armidale, N.S.W., Australia	1982	4 weeks	MASUA, Distinguished Foreign Scholar
S. A. Aprahamian	Jordan, Saudi Arabia	1982-83	1.5 yrs	World Food Inst. Foreign Scholar
A.D. Care	Leeds Univ. Leeds, England	1985	4 weeks	MASUA Distinguished Foreign Scholar
J. M. Dietschy	Univ. of Texas, Dallas, TX	1985	1 week	Wellcome Visiting Professor
P. J. Van Soest	Cornell Univ., Ithaca, NY	1986	1 week	Visiting Lecturer
P.B. Lazarow	Rockefeller Univ., New York, NY	1987	1 week	Wellcome Visiting Professor
A. Borman	Univ. Gdansk, Gdansk, Poland	1987	3 months	Visiting Scientist
J. P. Tritschler	Univ. of Massachusetts Amherst, MA	1988-89	1 year	Visiting Scientist
R.W. Hanson	Case-Western Reserve Univ., Cleveland, OH	1989	1 week	Visiting Lecturer

A.A. Tzagoloff	Columbia Univ., New York, NY	1990	1 week	Visiting Lecturer
D.F. Birt	Eppley Cancer Research Institute	1991	1 week	Visiting Lecturer
J.B. Yang	Dongnan Health Junior College, Suwon, S. Korea	1991	1 year	Visiting Scientist
C.-S. Yoon	Korea Food Research Institute, Seoul, S. Korea	1991-92	1 year	Visiting Scientist
A. C. Beynen	State Univ., Utrecht, The Netherlands	1992	1 week	Visiting Lecturer
B.N. Ametaj	Univ. of Agriculture Tirana, Albania	1994	12 months	Visiting Scientist
S. Maak	Martin Luther Univ. Halle, Germany	1994	12 months	Visiting Scientist
K.A. Hartman	Ames High School Ames, IA	1995	10 weeks	ASBMB Fellow
D. H. Beermann	Cornell Univ.	1995	1 week	Visiting Lecturer
C. S. Lieber	Mt. Sinai Sch. of Med.	1996	1 week	Wellcome Visiting Professor
R. J. Martin	Univ. of Georgia Athens, GA	1997	1 week	Visiting Lecturer
S. Meydani	Tufts Univ. Boston, MA	1998	3 days	Wellcome Visiting Professor
D.B. Jump	Michigan State Univ. E. Lansing, MI	1999	3 days	Visiting Lecturer
O. Popescu	Fac. of Vet. Med. Iasi, Romania	2000	2 weeks	Visiting Scientist
R. Sonon	Visayas St. Coll. Agr. Baybay, Philippines	2000	4 years	Visiting Scientist
H. Sies	Heinrich Heine Univ. Dusseldorf, Germany	2002	2 days	Visiting Lecturer
R. Sunde	Univ. of Missouri	2003	5 days	Visiting Lecturer
A. Krastanov	Univ. Food Tech., Plovdiv, Bulgaria	2003	4 months	Visiting Scientist
I. Jovanovic	Fac. Vet. Med., Belgrade, Serbia	2003	4 months	Visiting Scientist

H. Koknaroglu	Suleyman Demirel Univ. Isparta, Turkey	2004	2 months	Visiting Scientist
J. Kaput	NutraGenetics Co., Chicago, IL	2005	3 days	Visiting Lecturer
D. Kirovski	Fac. Vet. Med., Belgrade, Serbia	2005	1 month	Visiting Scientist
T. Carr	Univ. Nebr.-Lincoln	2007	5 days	Visiting Lecturer
G. Wu	Texas A&M Univ.	2009	5 days	Visiting Lecturer
S. Saha	Indian Vet. Res. Inst. Izatnagar, India	2010	3 months	Visiting Scientist
B. Ametaj	Univ. of Alberta Edmonton, Alberta, Canada	2010	1 week	Visiting Lecturer
H. Onda	Azabu Univ. School of Vet. Med. Kanagawa, Japan	2010	2 years	Visiting Scientist
F. Wattoo	PMAS-Arid Agriculture Univ., Rawalpindi, Pakistan	2012	7 months	Visiting Scientist
M. Dehghan-Banadaky	Univ. of Tehran, Tehran, Iran	2014	7 months	Visiting Scientist
M. White	Univ. of Illinois-UC	2014	1 week	Visiting Lecturer
C. Yeoman	Montana State Univ.	2014	1 week	Visiting Lecturer
G. Fahey	Univ. of Illinois-UC	2015	1 week	Visiting Lecturer
C. Woteki	Formerly USDA	2018	1 week	Visiting Lecturer

#### POSTDOCTORAL ASSOCIATES

Name	Appointment Period	Research
T. A. Reinhardt	1980 to 1982	Milk Fever
S. S. Dehal	May 1987 to February 26, 1991	Cholesterol Reductase
D. R. Brown	June 1987 to December 31, 1988	Mitochondria
S. Sadiev	January 1991 to January 31, 1993	Mitochondria
B. Ametaj	September 1999 to December 31, 2001	Fatty Liver
A. Wertz	January 2001 to August 23, 2003	Growth of Beef Cattle
T. Knight	March 2001 to May 2005	Growth of Beef Cattle

J. Schoonmaker	August 2006 to July 2009	Beef and Milk Fatty Acids
M. Drewnoski	August 2009 to June 2011	Beef Fatty Acids/Sulfate Reduction to H <sub>2</sub> S

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### **XIII. SIGNIFICANT PRESENTATIONS**

#### **a. on-campus**

- 1968 “Milk protein biosynthesis” to Modern Views of Nutrition Seminar
- 1970 “Prostaglandins” to Modern Views of Nutrition Seminar
- 1972 “Regulation of conversion of feed carbon to animal protein” to Nutritional Science Council Symposium
- 1976 “Dietary cholesterol and atherosclerosis” to Iowa Science Teachers Short Course
- 1977 “Fat deposition in cattle” to Department of Food Technology
- 1977 “Can we control our blood cholesterol?” at Iowa Science Teachers Short Course
- 1979 “Growth patterns of different types of cattle as related to fat deposition and marketing alternatives” to Iowa Cattle Feeders Day
- 1980 “Lipogenesis in ruminants” to Veterinary Pharmacology and Physiology Department
- 1980 “Animal products in human nutrition” to Iowa Dairy Products Association meeting
- 1981 “Milk fever in dairy cows” at the 1981 Large Dairy Herd Management Seminar
- 1982 “The process of fattening: Why do some cattle get fatter than others” to ISU 1982 Cattle Producers Day
- 1982 “Physiological and metabolic aspects of animal growth” to Veterinary Pharmacology and Physiology Department
- 1982 “The porcine stress syndrome” to Biochemistry-Biophysics Department
- 1984 “Differences among mitochondria for energy transfer in mice and dairy cattle” to Colloquium in Agricultural Biotechnology
- 1984 “Animal products and cholesterol metabolism” to Iowa Food and Nutrition Seminar
- 1984 “Cholesterol and you” to Kildeettes group
- 1984 “Does diet composition alter low-density lipoprotein metabolism?” to MCDB 698 Seminar Program



- 1985 “Growth hormone” to Iowa Dairy Management Seminar
- 1985 “Diet and cholesterol metabolism” to Biochemistry-Biophysics Department
- 1985 “Basic metabolism—How end products are metabolized and species differences” to Veterinary Pharmacology and Physiology Department
- 1985 “Cholesterol and you” to Area Production Livestock Specialists
- 1986 “Diet and lipoprotein metabolism” to Current Issues in Nutrition of Nutritional Sciences Council
- 1986 “Biotechnology and Animal Agriculture” to Iowa State University Annual Extension Conference
- 1987 “Agricultural biotechnology” to ISU Dairy Science Club
- 1987 “Biotechnology Council Sponsored Activities at ISU” to Department of Animal Sciences
- 1987 “Biotechnology in Iowa--Emphasis on Animal Production” to College Week at ISU
- 1987 “Biotechnology and Iowa” to 4-H Conference Workshop
- 1988 “Application of biotechnology to plant and animal agriculture” to Upper Midwest Honors Conference
- 1988 “Application of biotechnology to animal agriculture” to College Days '88
- 1988 “Application of biotechnology to animal biotechnology” to Presidents of local chapters of Iowa Cattleman's Association
- 1988 “Use of growth hormone in the dairy industry” to ten-week course to visiting Pakistani students
- 1988 “Use of growth hormone by the dairy industry” to Department of Animal Science
- 1989 “Hormonal control of carbohydrate, lipid, and protein metabolism”. Two hours of lecture to freshmen veterinary students in VIP 349
- 1989 “Research in nutritional physiology.” One hour lecture to An. Sci. 318 class
- 1989 “Eat to your heart's content” to Department of Physiology and Pharmacology
- 1989 “Application of biotechnology to animal agriculture” to Science in Agriculture Awareness

Program of College of Agriculture

- 1989 “Eat to your heart’s content” as Honor Lecture of ISU Sigma Xi Chapter
- 1989 “A novel method to produce low cholesterol foods” to Department of Animal Science
- 1989 “Current research on diet and blood cholesterol concentration” to Olmsted County, Minnesota 4-H'ers visit to Iowa State University
- 1989 “Application of biotechnology to plant and animal agriculture” to alumni of Iowa State University Chapter of Alpha Gamma Rho fraternity
- 1989 “Biotechnology at Iowa State University” to ISU Cyclone Aides
- 1989 “A novel method to produce low cholesterol foods” to Iowa Poultry Symposium
- 1989 “Biotechnology at Iowa State University” to Iowa high school vocational agriculture teachers attending a continuing education program
- 1989 “Application of biotechnology to animal agriculture” to College Days '89
- 1989 “Gender issues relative to advising” as a panel member during ISU Women's Week Program
- 1990 “Agricultural biotechnology” to Alpha Zeta Honorary Fraternity
- 1990 “Designing animal-derived foods at Annual Initiation Banquet of Gamma Chapter of Phi Zeta (Honor Society of Veterinary Medicine)
- 1990 “Application of biotechnology to agriculture” at Agriculture Career Day at ISU
- 1990 “Changing animals and animal products to meet dietary guidelines” to Current Issues in Nutrition program
- 1990 “Application of biotechnology to animal agriculture” as part of Summer Scene 1990 at Iowa State University (In Maintenance Shop of Memorial Union)
- 1990 “Application of biotechnology to animal agriculture” to Vocational Agriculture teachers attending conference at Iowa State University
- 1990 “Modification of animal products” to Seminar Series of ISU Parents Weekend 1990
- 1990 “Application of biotechnology in agriculture” to Iowa Talent Search, Fall Career Days for Gifted 7<sup>th</sup> and 8<sup>th</sup> Graders
- 1991 Nutritional Physiology Research to Iowa Farm Bureau Federation Dairy Advisory Committee

## Meeting

- 1991 “Potential biotechnologies for livestock production” to conference on Animal Agriculture in Iowa, sponsored by Iowa Business Council
- 1991 “Agriculture biotechnology” to ISU Summer Ag Biotechnology Workshop
- 1991 “Undergraduate research” to Pres. Jischke's leadership class of outstanding freshman scholars
- 1991 “Agricultural biotechnology” to ISU students attending a program for Talented and Gifted
- 1992 “Why your mother is most important” to Department of Veterinary Pharmacology and Physiology
- 1992 “Biotechnology and animal agriculture” to Biology 102 class
- 1992 “Removal of cholesterol from food” to Assembly of Iowa Heart Association
- 1992 “What is DNA?” to gifted Iowa students attending Investigations Series Conference of OPTAG at Iowa State University
- 1992 “Basics of biotechnology” and “Applications of biotechnology to animal agriculture and human medicine” to a nationally televised live satellite videoconference as ISU's entry into the National Technological University program market
- 1993 “Strategies for cholesterol reduction” in Toxicology Seminar Series at Iowa State University
- 1993 “Removing cholesterol from foods” to Initiation Banquet of local Chapter of Sigma Xi at Iowa State University
- 1993 “Agricultural biotechnology” to high school students visiting science in Agriculture Day at Iowa State University
- 1993 “Biotechnology in agriculture” to youth from O'Brien county in ISU Meats Laboratory
- 1993 “Why your mother is most important” H. Hughes Dukes Club at Iowa State University
- 1994 “Exploring fats and cholesterol in foods” to 8<sup>th</sup> and 9<sup>th</sup> graders in OPTAG program at Iowa State University
- 1994 “Current research on dietary cholesterol and dietary fat” to ISU Extension Annual Conference
- 1994 “Food nutrients and their functions,” “Digestion of nutrients”, and “Interrelationships of nutrients and diseases” to College for Seniors at Scheman Continuing Education Building

- 1995 “Seeking excellence in your degree program” to Beta Sigma Psi fraternity
- 1995 “Does your blood cholesterol care what you eat?” to Modern Views of Nutrition seminar program of ISU Nutritional Sciences Council
- 1995 “Use of cholesterol reductase by the dairy industry” to Iowa Dairy Products Association
- 1995 “Use of cholesterol reductase by the sheep industry” to the Iowa Sheep and Wool Promotion Board
- 1995 “Exploring fats and cholesterol in foods” to 8<sup>th</sup> and 9<sup>th</sup> graders in OPTAG program at Iowa State University
- 1995 “Current research activities with dairy products” to representatives of Dairy Management Inc.
- 1996 “Does your cholesterol care what you eat?” to Osborn Club at Iowa State University
- 1996 “Does your cholesterol care what you eat?” to annual meeting of American Heart Association-Iowa Affiliate
- 1997 “Can cholesterol reductase be used to decrease your blood cholesterol?” to Dept. of Biochemistry-Biophysics
- 1997 “Using fats in dairy rations” and “Effects of feeding on milk fat” to Dairy Nutrition Workshop
- 1997 “Application of biotechnology to agriculture” to Science in Agriculture Program of College of Agriculture
- 1997 “Three popular molecules in animal agriculture” to Dept. of Veterinary Physiology and Pharmacology
- 1998 “To be the best that you can be” to Beta Sigma Psi social fraternity
- 1998 “The cholesterol reductase story” to Animal Genetics and Biotechnology Group at ISU
- 1998 Introduction to National Symposium on the Nutrient Requirements of Swine
- 1998 “Exciting developments about use of conjugated linoleic acid in human medicine and animal agriculture” to Dukes Club of ISU
- 1998 “Food nutrients and their functions” to College for Seniors, Scheman Building (4.5 hours)
- 1998 “Remarks” to Fall Commencement of ISU graduate students

- 1999 “Ongoing CLA research in the Animal Science Department” to Dept. of Animal Science
- 1999 “Increasing conjugated linoleic acid in animal products” to Iowa Food Industry Day, which was hosted by Dept. of Food Science and Human Nutrition
- 1999 “Setting research priorities in animal agriculture” to Animal Genetics and Biotechnology Group at ISU
- 1999 “Improving the healthfulness of milk” at the Third ISU Annual Conference on CLA
- 2000 “Improving the healthfulness of milk” at the Third ISU Annual Conference on CLA
- 2000 “My current research activities” to Department of Biochemistry, Biophysics and Molecular Biology
- 2000 “Conjugated linoleic acid: A component of animal fat with human health benefit” to ISU Sigma Xi as Honor Lecturer
- 2001 “On being a Christian and a Scientist” to group of SCAVMA members
- 2001 “Exciting developments in cholesterol reductase and CLA research” to Beta Beta Beta Honor Society
- 2002 “Update on vitamin D<sub>3</sub> and beef tenderness” to Meat Science Group
- 2002 “Potential use of *Eubacterium coprostanoligenes* to decrease plasma cholesterol” to Dept. of Veterinary Microbiology and Preventative Medicine
- 2003 “Clinical use of stem cells” at ISU Chapter of Beta Beta Beta
- 2004 “The excitement of research” at ISU Chapter of Beta Beta Beta
- 2004 “My visions for our department” to faculty of Department of Biochemistry, Biophysics, and Molecular Biology
- 2004 “Academic excellence” to Beta Sigma Psi fraternity
- 2004 “Turning points in my professional career” to new assistant professors at Iowa State University
- 2004 “Importance of your scholarship” at All-Greek Academic Recognition Ceremony of Collegiate Panhellenic Council/Interfraternity Council, Memorial Union
- 2005 “DNA and the human genome” and “Clinical uses of stem cells” to College for Seniors at ISU (2 classes)

- 2005 “Pork and cholesterol issues” to Mexican journalists visiting Iowa State University
- 2005 “Food nutrients and their functions” to College for Seniors at ISU (2 classes)
- 2005 “Clinical use of stem cells” at symposium sponsored by ISU Microbiology Club, Ames, IA
- 2007 “Clinical use of stem cells” to ISU Osborn Club
- 2007 “Research program of Nutritional Physiology Group” to ISU Biochemistry Club
- 2007 “Research program of Nutritional Physiology Group” to ISU Iota Nu Chapter of Beta Beta Beta
- 2007 “Fatty liver/ketosis in dairy cattle” to Iowa Feed and Nutrition Seminar, Ames, IA
- 2010 “Conducting nutritional biochemistry research” to ISU undergraduate Biochemistry Club
- 2011 “My research during the past decade” to ISU Genetics Club, Ames, IA
- 2011 “My research during the past decade” to ISU Biology Club, Ames, IA
- 2012 “My current research activities” to ISU Biochemistry Club
- 2013 “Preparing for your future” to Graduate Student Club in Animal Science Department
- 2014 “Intentional strategies for increasing faculty recognition at the departmental level” to Workshop on Enhancing Faculty Recognition, Ames, IA
- 2014 “You too could become a professor” to ISU Biochemistry Club
- 2014 “Etiology and prevention of fatty liver and ketosis in dairy cattle” to Dept. of Biomedical Sciences, ISU
- 2015 “What it takes to get that first faculty position” to ISU Post-doctorate Association
- 2016 “Where did all the time go” to ISU Biochemistry Club
- 2017 “Revisiting vitamin D and beef tenderness” to 2017 NSC Summer Lectureship
- 2018 “M.E. Ensminger and the Ensminger Room in Kildee Hall” to ISU Chapter of Alpha Zeta
- 2019 “Highlights of My Research Program” to ISU Biochemistry Club

**b. off-campus**

- 1971 “Lipogenesis in beef cattle” at Univ. of IL., Urbana, IL
- 1971 “Lipogenesis in beef cattle” at Luther College, Decorah, IA
- 1972 “Dietary cholesterol and atherosclerosis” at Univ. of Wis., Oshkosh, WI
- 1972 “Dietary cholesterol and atherosclerosis” at Lawrence Univ., Appleton, WI
- 1974 “Dietary cholesterol and atherosclerosis” at Grinnell College, Grinnell, IA
- 1974 “Diet, cholesterol, and heart disease” to National Feed Ingredients Association Convention, Lake Geneva, WI
- 1976 “Etiology and prevention of ketosis and milk fever in dairy cows” to Minnesota Nutrition Conference, St. Paul, MN
- 1976 “Megavitamins” at Osteopathic Medicine College, Des Moines, IA
- 1976 “Dietary cholesterol and atherosclerosis” at William Penn College, Oskaloosa, IA
- 1976 “Hormones and hormone action” at annual meeting of American Dairy Science Association
- 1977 “Role of prostaglandins in control of lipolysis in bovine adipose tissue” and “Control of incidence of milk fever with low-calcium diet” to Upjohn Co., Kalamazoo, MI
- 1977 “Diet, cholesterol, and atherosclerosis” to Monmouth College, Monmouth, IL
- 1977 “Diet, cholesterol, and atherosclerosis” to Clarke College, Dubuque, IA
- 1977 “Diet, cholesterol, and atherosclerosis” to Marycrest College, Davenport, IA
- 1977 “Fatty acid synthesis in ruminants” and “Diet, cholesterol and atherosclerosis” at Wartburg College, Waverly, IA
- 1979 “Academic Quadrathlon” at annual meeting of American Association of Animal Science
- 1979 “Growth patterns of different types of cattle as related to fat deposition and marketing alternatives” to Iowa Cattle Feeder's Day at Sheldon, IA
- 1981 “Neuronal mechanisms involved in the porcine stress syndrome” to Pharm. Dept. at Univ. of Nebraska, Omaha, NE
- 1982 “Physiological and metabolic systems important to animal growth: An overview” at first Int. Symp. on Animal Growth in Guelph, Ontario, Canada

- 1984 “Does diet composition alter LDL metabolism?” Hormel Institute of University of Minnesota, Austin, MN
- 1985 “Cholesterol and you” at Beef Seminar of Iowa Hamilton County Beef Cattle Association, Webster City, IA
- 1985 “Cholesterol and you” at Spouses Symposium at 1985 annual meeting of American Poultry Science Association, Ames, IA
- 1985 “Cholesterol and you” at University of Tennessee, Knoxville, TN
- 1985 “An overview of physiological and metabolic systems important to animal growth” at University of Tennessee, Knoxville, TN
- 1985 “Basic metabolism - how end products are utilized and specie differences” at the 1985 Nutrition Institute of National Feed Ingredients Association, Chicago, IL
- 1985 “Diet and heart disease research in the Nutritional Physiology Section of Department of Animal Science at ISU” at Iowa Cattlemen's Association Research and Education Committee, Des Moines, IA
- 1985 “Diet/health” at Youth Beef Industry Congress, Omaha, NE
- 1986 “Cholesterol and you” at Golden K Kiwanis Club of Ames, IA
- 1986 “Agricultural biotechnology--Emphasis on animal biotechnology” to Iowa Organization of Women for Agriculture Conference in Des Moines, IA
- 1987 “Biotechnology, what it means for animal science” to Iowa Pork Congress, Des Moines, IA
- 1987 “Animal models used in the study of diet effects on serum, lipoproteins and lipids” at annual meeting of Federation of American Societies for Experimental Biology in Washington, D.C.
- 1987 “Agricultural biotechnology” to CAL Young Farmers at Latimer, IA
- 1987 “Biotechnology, what it means for animal science” to Radcliffe Kiwanis Club, Radcliffe, IA
- 1987 “Application of biotechnology to plant and animal science” to Multi-County Biotech Meeting, Nora Springs, IA
- 1987 “Biotechnology, what's ahead in pork production” to 6<sup>th</sup> Annual North Iowa Pork Industry Day, Mason City, IA
- 1988 “How will advances in biotechnology affect animal agriculture in Iowa?” at Rotary Club,



- Fort Dodge, IA
- 1988 “How will advances in biotechnology affect your livestock operation?” at Beef Cow Day in Ottumwa, IA
- 1988 “How 'bout that protein in today's lunch?” at annual meeting of American Oil Chemists' Society, Phoenix, AZ
- 1988 “Use of growth hormone in the dairy industry” to Dept. of Animal Science at Korea University, Seoul, Korea
- 1988 “A novel method to produce low-cholesterol meat” to Ames Kiwanis Club of Ames, IA
- 1988 “A novel method to produce low-cholesterol and animal products” to Nutritional Sciences Program Seminar at University of Arizona, Tucson, AZ
- 1988 “Lipid metabolism in growing farm animals” to Dept. of Animal Science at University of Arizona, Tucson, AZ
- 1988 “Application of biotechnology to plant and animal agriculture” to Rep. Tom Tauke's Farm Policy Council Meeting in Cedar Rapids, IA
- 1988 “Use of cholesterol reductase to decrease cholesterol content on animal products used as food” to Miles, Inc., Elkhart, IN
- 1988 “Dietary protein and cholesterol homeostasis” to General Foods USA in Cranbury, NJ
- 1988 “Production of low cholesterol meat” to Ames Town and Country Kiwanis Club of Ames, IA
- 1988 “Use of cholesterol reductase to produce low-cholesterol foods” to G. D. Searle Co., Skokie, IL
- 1989 “Eat to your heart's content” to Ames Association of Retired Persons, Ames, IA
- 1989 “A novel method to produce low-cholesterol foods” to Ames Noon Lions Club, Ames, IA
- 1989 “Eat to your heart's content” to Iowa Section of the American Institute of Chemical Engineers, Cedar Rapids, IA
- 1989 “mtDNA genotypes and milk production” and “Biotechnology and the dairy industry” to annual meeting of Board of Directors of Holstein Association, Minneapolis, MN
- 1989 “A novel method to produce low-cholesterol foods” to Genetics Institute in Cambridge, MA
- 1989 “The impact of biotechnology on food raw materials” to Midwest Food Processing Conference in LaCrosse, WI

- 1989 “Use of cholesterol reductase to decrease cholesterol content of animal products used as food” to Food and Dairy Expo Conference on Preparing for the '90's in Chicago, IL
- 1989 “A description of beta-agonists, PST, and other repartitioning agents” to Conference on New Swine Growth Enhancers in Ames, IA
- 1989 “A novel method to decrease cholesterol content of foods” at ISU Extension Conference at Storm Lake and Sheldon, IA
- 1989 “A novel method to decrease cholesterol content of foods” to Iowa State University Retirees Association at Ames, IA
- 1990 “Use of growth hormone in the dairy industry” to joint meeting of Iowa Dairy Products Association and Iowa Dairy Foods Association in Ankeny, IA
- 1990 “Growth hormone in the dairy industry” to a public hearing on Synthetic Bovine Somatotropin in Dairy Products of the Committee on Agriculture of the Iowa Legislature in Des Moines, IA
- 1990 “Making low-cholesterol foods” to Lions Club of Atlantic, IA
- 1990 “Cholesterol: friend or foe?” to Southwest Iowa Area Cattlefeeder's Day in Oakland, IA
- 1990 “Use of growth hormone in the dairy industry” at Extension Meeting with title of Milk Production in the “90's” in Calmar, IA
- 1990 “Use of growth hormone in the dairy industry” at Extension Meeting with title of Milk Production in the “90's” in Manchester, IA
- 1990 “The use of cholesterol reductase” at conference with title of Fat and Cholesterol Reduced Foods: Technologies and Strategies that was sponsored by International Business Communications and Food Engineering in New Orleans, LA
- 1990 “The use of growth hormone by the dairy industry” to Golden K Kiwanis Club of Ames, IA
- 1990 “Dietary protein and cholesterolemia” at the annual meeting of American Oil Chemists' Society in Baltimore, MD
- 1990 “Use of growth hormone by the dairy industry” to a meeting of the Iowa Dairy Products Association in Ames, IA
- 1990 “Research in Nutritional Physiology Group at ISU” to Iowa Feed and Nutrition Seminar meeting in Ames, IA

- 1990 “Nutritional physiology research program” to extension and national agriculture personnel in Ames, IA
- 1990 “Application of biotechnology to animal agriculture” to Roland Kiwanis Club of Roland, IA
- 1990 “Biotechnology and Agriculture” to biology and chemistry classes at Dunlap High School, Dunlap, IA
- 1990 “Use of an enzyme to decrease the cholesterol content of foods” to Department of Biology and Chemistry, University of Wisconsin - La Crosse, La Crosse, WI
- 1991 “Biotechnology in Agriculture” to Dairy Youth Expo of Iowa Cooperative Extension Service, West Union, IA
- 1991 “New technologies for livestock production” to Agriculture in a Global Economy at Charles City, IA
- 1991 “Being a faculty member at ISU” to Iowa State University--A Combination that Works in West Des Moines, IA
- 1991 “Use of cholesterol reductase” to Ames Home Economists and Homemakers Association in Ames, IA
- 1991 “An enzymatic method to decrease the cholesterol content of animal-derived foods” in symposium at annual meeting of American Oil Chemists Society, Chicago, IL
- 1991 “Association of bovine mitochondrial DNA to milk production traits” to Dekalb Genetics Corp., DeKalb, IL
- 1991 “A novel method to decrease the cholesterol content of animal products” to Dept. of Animal Sciences, Purdue University, West Lafayette, IN
- 1991 “Why is your mother most important?” to ISU Retirees, Ames, IA
- 1991 “Biotechnology and the Christian ethic” to Sunday School class at Memorial Lutheran Church, Ames, IA
- 1992 “Applications of biotechnology to animal and plant agriculture” to 4 biology classes at Cedar Falls High School, Cedar Falls, IA
- 1992 “What happens after your high school years are over?” to annual FFA Parent and Member Banquet of Dunkerton-Jesup FFA Chapter, Jesup, IA
- 1992 “Application of biotechnology to animal and plant agriculture” to science classes at Jesup High School, Jesup, IA

- 1992 “Observations from a tour of the former Soviet Union” to Ames Women's Club of Ames, IA
- 1992 “Use of growth hormone in the dairy industry” to farmers and agribusiness people in Jesup, IA
- 1992 “Application of biotechnology in animal agriculture and use of recombinant growth hormone in the swine industry” to Iowa Grain and Feed Association Conference in Ames, IA
- 1992 “Food fats and health” to Department of Animal Science and Food Science and Human Nutrition, Michigan State University, E. Lansing, MI
- 1992 “Role of mitochondrial DNA in the dairy industry” to Department of Animal Science, Michigan State University, E. Lansing, MI
- 1992 “Regulation of lipid metabolism in meat animals” at Growth Symposium VI, Pittsburgh, PA
- 1992 “The relationship of mitochondrial DNA and milk production” to Department of Animal Sciences, Oregon State University, Corvallis, OR
- 1992 “Use of cholesterol reductase to decrease the cholesterol content of foods and human blood” to Interdepartmental Nutrition Program at Oregon State University, Corvallis, OR
- 1992 “Basic science of biotechnology” and “Applications of Biotechnology in Animal Agriculture and Medicine” in a nationally telecast live satellite videoconference produced by Iowa State University for the National Technological University non-credit program market
- 1992 “Use of a microorganism to decrease your blood cholesterol concentration” to Golden Kiwanis Club of Ames, IA
- 1993 “Use of bacteria to decrease cholesterol content of food and blood” to Kiwanis Club of Nevada, IA
- 1993 “Food fats and cholesterol reduction” to Salmon Memorial Lecture of Department of Animal and Dairy Sciences at Auburn University of Auburn, AL
- 1993 “Use of cholesterol reductase to decrease cholesterol content of foods and blood” to Department of Chemistry at St. Cloud State University, St. Cloud, MN
- 1993 “Use of growth hormone in the dairy industry” to Vocational Agriculture Class at Van Horne, IA
- 1993 “What is biotechnology?” to biology class at Van Horne, IA
- 1993 “Decreasing contents of cholesterol in food and blood” to Wapello County Heart Assoc. in

Ottumwa, IA

- 1993 “Playing God through biotechnology” to Circuit meeting of Lutheran pastors of Central Iowa
- 1993 “Removing cholesterol from food” to Heartland Senior Citizens, Ames, IA
- 1993 “Food fats and health” to USDA National Center for Agricultural Utilization Research in Peoria, IL
- 1993 “Applications of cholesterol reductase in the food industry and in human medicine” to USDA National Center for Agricultural Utilization Research in Peoria, IL
- 1993 “What is this cholesterol?” to Ames Town and Country Kiwanis Club in Ames, IA
- 1993 “Impact of biotechnology of the production of raw food materials” at the International Congress of Nutrition in Adelaide, Australia
- 1993 “Biotechnology in agriculture” to students at Essex High School, Essex, IA
- 1993 “Cholesterol and dairy products” to annual meeting of Iowa Dairy Products Association, Ames, IA
- 1993 “Foods fats and health” to four biology classes at Mt. Pleasant High School, Mt. Pleasant, IA
- 1993 “Food fats and health” to “high school” students in the 2001 Program of Davenport Community School System, Davenport, IA
- 1994 “Overview of carnitine metabolism” to a Carnitine Conference sponsored by Lonza Company, Des Moines, IA
- 1994 “Pork in the diet--Its effect on public health” at Symposium in honor of Virgil W. Hays, Lexington, KY
- 1994 “Cholesterol in dairy products—does it matter?” to annual meeting of Iowa State Dairy Products Association, Ames, IA
- 1994 “BST use in the dairy industry” to high school students at Cedar Falls High School, Cedar Falls, IA
- 1994 “Pork in the diet--its effect on public health” to Institute of Animal Breeding in Kharkov, Ukraine
- 1994 “Graduate education in animal science at Iowa State University” to Institute of Animal Breeding in Kharkov, Ukraine
- 1994 “Regulation of your blood cholesterol concentration” to students and faculty at St. Johns

University in Collegeville, MN

- 1994 “Science and religion” (three classes) to Memorial Lutheran Church, Ames, IA
- 1995 “Food fats and health” to three classes at George-Little Rock High School, George, IA
- 1995 “Food fats and health” to two classes at Sibley-Ocheyedan High School, Sibley, IA
- 1995 “Does your cholesterol care what you eat?” to Regional American Chemical Society and Sigma Xi Banquet at Univ. of Wisconsin-LaCrosse, WI
- 1995 “Does your cholesterol care what you eat?” to Ames Morning Rotary Club, Ames, IA
- 1995 “How to interact with scientific colleagues” at symposium sponsored by Ames Area Association of Laboratory Technicians, Ames, IA
- 1995 “Use of BST in the dairy industry” to two classes at Webster City High School, Webster City, IA
- 1995 “Latest developments in cholesterol reductase research at ISU” to Iowa Dairy Products Association, Ames, IA
- 1995 “Dietary fats and human health” to extension personnel at ISU Extension Training Conference, Ames, IA
- 1996 “Does your cholesterol care what you eat?” to students at Valley High School, West Des Moines, IA
- 1996 “Does your cholesterol care what you eat?” at Department of Chemistry at St. Benedictine/St. John Universities, St. Joseph, MN
- 1996 “Does your cholesterol care what you eat?” at Department of Chemistry at St Cloud State University, St. Cloud, MN
- 1996 “Does your cholesterol care what you eat?” to Sigma XI Chapter, University of Northern Iowa, Cedar Falls, IA
- 1996 “Food fats and health” to three classes at Lenox High School, Lenox, IA
- 1996 “Does your blood cholesterol care what you eat?” to students and faculty at Wartburg College, Waverly, IA
- 1996 “Does your blood cholesterol care what you eat?” to Ames Kiwanis Club, Ames, IA
- 1996 “Use of cholesterol reductase to decrease cholesterol content of foods and blood” at

Department of Food Science, Alabama A & M University, Normal, AL

- 1996 “Lipogenesis and lipolysis in bovine adipose tissue” at Satellite Symposium of 8<sup>th</sup> Animal Science Congress of Asian-Australasian Association of Animal Production in Kyoto, Japan
- 1997 “Use of biotechnology to modify foods from animals” to Department of Biology, University of Northern Iowa, Cedar Falls, IA
- 1997 “Does your cholesterol care what you eat?” to Department of Chemistry, Augsburg College, Minneapolis, MN
- 1997 “Does your cholesterol care what you eat?” to Department of Biology, St. Catherine’s College, St. Paul, MN
- 1997 “Does your cholesterol care what you eat?” to Biology Club at Simpson College, Indianola, IA
- 1997 “Cholesterol reductions through diet manipulation” to Interdepartmental Nutrition Program, Pennsylvania State University, State College, PA
- 1997 “Can cholesterol reductase be used to decrease blood cholesterol?” to ConAgra in Omaha, NE
- 1997 “Does your cholesterol care what you eat?” to Golden K Kiwanis Club, Ames, IA
- 1997 “Does your cholesterol care what you eat?” to Men's Club, St. Andrews Lutheran Church, Ames, IA
- 1997 “Can cholesterol reductase be used to decrease blood cholesterol?” to Chr. Hansen's Co., Milwaukee, WI
- 1997 “Use of biotechnology to modify foods from animals” to four different classes at Jesup High School, Jesup, IA
- 1997 “Use of biotechnology to modify foods from animals” to four different classes at Sioux City East High School, Sioux City, IA
- 1997 “Use of biotechnology to modify foods from animals” to Department of Biology, University of Wisconsin-Stevens Point, Stevens Point, WI
- 1997 “Playing God through biotechnology” to International Students' Group, Memorial Lutheran Church, Ames, IA
- 1997 “Potential use of cholesterol-reducing bacteria in meat processing to IBC's 6<sup>th</sup> Biennial Conference on Fat and Cholesterol Reduced Foods, Orlando, FL

- 1997 “Update on conjugated linoleic acid application in animal agriculture” to Research and Development, Hormel, Inc., Austin, MN
- 1997 “Does your cholesterol care what you eat?” to Department of Chemistry, Carleton College, Northfield, MN
- 1997 “Does your cholesterol care what you eat?” to Department of Chemistry, St. Olaf College, Northfield, MN
- 1997 “Does your cholesterol care what you eat?” to Golden K Kiwanis Club, Ames, IA
- 1997 “Scholarship” and “Research/Artistic Activities” at ISU Faculty Conference, Grinnell, IA
- 1998 “Effect of vitamin D on pork quality” to Quality and Safety Summit, National Pork Producers Council, Des Moines, IA
- 1998 “Does your cholesterol care what you eat?” to Seminar Program at Valley High School, W. Des Moines, IA
- 1998 “The role of milk in human health: What is fact and what is opinion?” to National Dairy Genetics Workshop, Orlando, FL
- 1998 “Use of biotechnology to modify foods from animals” to five classes at Highland High School, Riverside, IA
- 1998 “Impact of two different dietary fats on the composition of emu oil”, annual meeting of American Oil Chemists Society, Chicago, IL
- 1998 “Application of biotechnology to food production” Laurens-Marathon High School, Laurens, IA
- 1998 “Application of biotechnology to food production”, Winterset High School, Winterset, IA
- 1998 “New technologies for livestock production”, Perry High School, Perry, IA
- 1998 “Exciting development about use of conjugated linoleic acid in human medicine and animal agriculture” Chemistry Dept. of Augsburg College at Minneapolis, MN
- 1998 “Does your cholesterol care what you eat?” (2 classes) and “Application of biotechnology to animal agriculture” (2 classes), Grinnell High School, Grinnell, IA
- 1999 “Subtherapeutic use of antibiotics in animal agriculture” at Conference on Antibiotic Use in Animals: Food Safety and Risk Assessment, Georgetown University, Washington, DC
- 1999 “Modification of the composition of animal-derived foods—Two examples” to Nutritional Science Program at North Carolina State University, Raleigh, NC



- 1999 “Application of biotechnology to agriculture and medicine” to one class at Abraham Lincoln High School, Council Bluffs, IA
- 1999 “Application of biotechnology to agriculture and medicine” to two different classes at College Springs High School, College Springs, IA
- 1999 “Does your cholesterol care what you eat?” and “Applications of biotechnology to agriculture” to four different classes at Manning High School, Manning, IA
- 1999 “Does your cholesterol care what you eat?” to five different classes at Lewis Central High School, Council Bluffs, IA
- 1999 “My research” Ames Town & Country Kiwanis Club, Ames, IA
- 2000 “Does dietary conjugated linoleic acid improve meat quality?” at Symposium on Antemortem manipulation of Meat Quality at annual meeting of Am. Soc. Anim. Sci./Am. Dairy Sci. Assoc. in Baltimore, MD
- 2000 “Careers in animal science and biochemistry” at Ackley-Geneva High School, Ackley, IA
- 2000 “Use of vitamin D<sub>3</sub> to improve beef tenderness” at annual meeting of National Cattlemen's Beef Association, Denver, CO
- 2000 “Does my cholesterol care what I eat?” to Golden K Kiwanis Club, Ames, IA
- 2001 “Cholesterol reduction by a bug?” to Golden K Kiwanis Club, Ames, IA
- 2001 “Our current research on conjugated linoleic acid, vitamin D and beef tenderness, and cholesterol reductase”; Iowa Feed and Nutrition Seminar, Ames, IA
- 2001 “Conjugated linoleic acid and homocysteine--why may they be of significance to human health” to Golden K Kiwanis Club, Ames, IA
- 2001 “Conjugated linoleic acid in animal agriculture” to DeKalb Feed Sales Group, Ames, IA
- 2001 “Natural products called nutraceuticals”, CAST and Science in the 21<sup>st</sup> Century, a Program in Honor of R.E. Stuckey and T.A. Gruber, Ames, IA
- 2001 “Nutrient requirements of dogs and cats: A new study”, Pet Food Forum, Chicago, IL
- 2001 “Faith and science” to Enabling Conference of Ministers to International Students, Ames, IA
- 2001 “Update on NRC publication on nutrient requirements of dogs and cats” Seventh Workshop in Pet Food Labeling and Regulations. AAFCO, MO Dept. of Agr., Univ. of MO, and

Ralston Purina Co., St. Louis, MO

- 2001 “Update on NRC publication on nutrient requirements of dogs and cats” Waltham Symposium on Pet Nutrition, Vancouver, British Columbia, Canada
- 2001 “Stem cells” Memorial Lutheran Church, Ames, IA
- 2001 “Does your body care what you eat?”, “Applications of biotechnology to animal agriculture (2 times), and “Use of stem cells in human medicine” to Bedford High School, Bedford, IA
- 2001 “Update on NRC publication on nutrient requirements of dogs and cats” Annual meeting of AAFCO, Austin, TX
- 2002 “Update on NRC publication on nutrient requirements of dogs and cats” Pet Food Forum, Chicago, IL
- 2002 “Revising the nutrient requirements of dogs and cats: a work in progress” Alltech 18<sup>th</sup> Annual Symposium, Lexington, KY
- 2002 “Stem cell research” Ames Kiwanis Club, Ames, IA
- 2002 “Stem cell research” Ames Town and Country Kiwanis Club, Ames, IA
- 2002 “Stem cells” St. Paul Lutheran Church, Ames, IA
- 2002 “Tribute: Scientific and education contributions of Dr. J. W. Thomas” ADSA/ASAS annual meeting, Quebec City, Quebec, Canada
- 2002 “Clinical use of stem cells” at Assoc. of Lab. Tech. Symp., Ames, IA
- 2002 “Stem cells” at Iowa District West of Lutheran Church—Missouri Synod pastoral conference, Ames, IA (2 hours)
- 2002 “Clinical use of stem cells” at Prairie High School, Cedar Rapids, IA
- 2002 “Clinical use of stem cells” at Collegiate Presbyterian Church, Ames, IA (2 hours)
- 2003 “Use of glucagon to treat and prevent fatty liver in dairy cattle” Otto and Opal Hill Lecture, Penn State University
- 2003 “A novel probiotic for cholesterol reduction” Dept. of Animal Science, Penn State University
- 2003 “Development of the NRC report on dog and cat nutrition” at annual meeting of ADSA/ASAS, Phoenix, AZ

- 2003 “Use of glucagon to prevent and treat fatty liver in transition dairy cows” at Four-State Applied Nutrition and Management Conference, LaCrosse, WI
- 2003 “Clinical use of stem cells” (2 times) and “Does your cholesterol care what you eat?” to three classes at Keosauqua High School, Keosauqua, IA
- 2003 “Homocysteine as a risk factor for heart disease” at Ames Town and Country Kiwanis Club, Ames, IA
- 2003 “Milk composition and dairy product quality” Iowa Feed and Nutrition Seminar, Ames, IA
- 2003 “Glucagon and bovine ketosis” Iowa Feed and Nutrition Seminar, Ames, IA
- 2003 “Clinical use of stem cells” at Pella High School, Pella, IA
- 2003 “Nutrient requirements of dogs and cats: A project nearing completion” at Pet Food Forum, Chicago, IL
- 2003 “Clinical use of stem cells” at Storm Lake High School (three times) Storm Lake, IA
- 2003 “Our current research activities on CLA” to meeting of Practical Farmers of Iowa, Iowa Arboretum, Luther, IA
- 2003 “Does your cholesterol care what you eat?” at Lincoln High School, Des Moines, IA
- 2003 “Clinical use of stem cells” at Carlisle High School, Carlisle, IA
- 2003 “Does your cholesterol care what you eat?” and “Clinical use of stem cells” at HLV Community Schools, Victor, IA
- 2003 “Clinical use of stem cells” Collegiate Methodist Church, Ames, IA
- 2003 “Does your cholesterol care what you eat?” to 2 classes at Baxter High School, Baxter, IA
- 2003 “Stem cells” Trinity Lutheran Church, Stewardson, IL
- 2004 “Clinical use of stem cells” at Lincoln High School, Des Moines, IA
- 2004 “Development of feeding standards for pets” to Ames Town and Country Kiwanis Club, Ames, IA
- 2004 “Development of an NRC publication on dog and cat nutrition” to Ames Kiwanis Club, Ames, IA
- 2004 “Does your cholesterol care what you eat?” to Science Bound Class at Roosevelt High

School, Des Moines, IA

- 2004 “Clinical uses of stem cells” (1 class) and “Does your cholesterol care what you eat?” (2 classes) at Pocahontas High School, Pocahontas, IA
- 2004 “Clinical use of stem cells” to joint meeting of Lions Clubs of Atlantic and Harlan, IA in Walnut, IA
- 2004 “Clinical uses of stem cells” to three different classes at Linn-Mar High School, Marion, IA
- 2004 “A scientific trip to Belgrade, Serbia and Plovdiv, Bulgaria” to Ames Town and Country Kiwanis, Ames, IA
- 2004 “Clinical uses of stem cells” to Golden K Kiwanis Club of Ames, IA
- 2004 “Clinical uses of stem cells” to two classes at Southeast Polk High School, Runnells, IA
- 2004 “Clinical uses of stem cells” (3 classes) and “Does your cholesterol care what you eat?” (2 classes) at Van Buren High School, Keosauqua, IA
- 2005 “How’s your DNA?” to Golden K Kiwanis Club of Ames, IA
- 2005 “Clinical uses of stem cells” to two classes at Storm Lake High School, Storm Lake, IA
- 2005 “Does your cholesterol care what you eat?” to four classes at Ames High School, Ames, IA
- 2005 “Contributions of animal products to healthy diets” to 2005 Cornell Nutrition Conference for Feed Manufacturers, Syracuse, NY
- 2005 “Does your cholesterol care what you eat?” to a class at Belmond-Klemme High School, Belmond, IA
- 2006 “Nutrition and the chemistry of life” to students at Dike High School, Dike, IA
- 2006 “Clinical uses of stem cells” to ISU retirees
- 2006 “Clinical use of stem cells” at Mary Greeley Hospital, Ames, IA
- 2006 “Dietary modification to enhance beef quality” at Reciprocal Meats Conference, Urbana, IL
- 2006 “Are you what you eat?” at Mariners of Collegiate Presbyterian Church, Ames, IA
- 2006 “Clinical uses of stem cells”, “Chemical basis of life”, and “Does your cholesterol care what you eat?” to students at Benton Community High School, Van Horne, IA

- 2006 “Contributions of animal products to human health” and “What is CAST?” to Department of Animal Sciences, Auburn University, Auburn, IL
- 2006 “Clinical uses of stem cells” to Ames Chapter of National Association of Federal Employees at Ames, IA
- 2006 “Contribution of animal products to human health” and “What is CAST?” to Department of Animal Science at the University of Minnesota, St. Paul, MN
- 2006 “Clinical uses of stem cells” (twice) and “Does your cholesterol care what you eat?” (twice) to four classes at Bettendorf, IA
- 2007 “Clinical uses of stem cells” to Story City Kiwanis Club, Story City, IA
- 2007 “Fatty liver and ketosis” to Iowa Feed and Nutrition Seminar, Ames, IA
- 2007 “Questions on stem cell research” to Memorial Lutheran Church, Ames, IA
- 2007 “Clinical uses of stem cells” to 5 classes at Davis County High School, Bloomfield, IA
- 2007 “Clinical uses of stem cells” to St. Paul Lutheran Church, Ames, IA
- 2007 “Clinical uses of stem cells” to Ames Town and Country Kiwanis Club, Ames, IA
- 2008 “Are you what you eat?” to retirees group at Green Hills Retirement Center of Ames, IA
- 2008 “Clinical uses of stem cells” (3 times) and “Does your body care what you eat?” (2 times) to classes at Van Buren High School in Keosauqua, IA
- 2008 “Are you what you eat?” Memorial Lutheran Church, Ames, IA
- 2008 “Clinical uses of stem cells” to 2 classes at Mt. Vernon High School, Mt. Vernon, IA
- 2008 “Significance of fatty acids in meats” to Practice Farmers of Iowa, Ames, IA
- 2009 “Clinical uses of stem cells” to 6 classes at Ottumwa High School, Ottumwa, IA
- 2009 “Clinical uses of stem cells” to American Association of Laboratory Animal Science (Iowa Brand), Ames, IA
- 2009 “Selected topics in human nutrition” to Golden K Kiwanis Club, Ames, IA
- 2009 “Selected topics in human nutrition” to Ames Town and Country Kiwanis Club, Ames, IA
- 2009 “Clinical uses of stem cells” to 6 classes at Davis County High School, Bloomfield, IA

- 2010 “Prevention and treatment of bovine fatty liver: A role for glucagon” to Interdepartmental Nutrition Program at Texas A&M University, College Station, TX
- 2010 “Clinical uses of stem cells” to Radcliffe Kiwanis Club, Radcliffe, IA
- 2011 “Fundamentals of DNA, genes, and gene expression” to Alumni Association Osher Lifelong Learning Institute (OLLI), Ames, IA
- 2012 “Evaluation of a novel technique to decrease oxidative stress for improved animal performance” at Dept. of Animal Science, Oregon State University, Corvallis, OR
- 2013 “My top ten popular nutrients” to Ames Town and Country Kiwanis Club, Ames, IA
- 2013 “Genetic regulation of bovine milk fatty acid composition: Improving the healthfulness of milk through selection” at George Liepa Sigma Xi Lecture, Eastern Michigan University, Ypsilanti, MI
- 2014 “Etiology and prevention of fatty liver and ketosis in dairy cattle” at Florida Ruminant Nutrition Symposium, Gainesville, FL
- 2014 “Where did all the time go” to Dept. of Animal Sciences, Univ. of Florida, Gainesville, FL
- 2019 “Celebration of 100 years of ‘Nutrient Requirement’ publications at Summit 2019 of National Animal Nutrition Program, Washington DC
- 2019 “My top ten list of nutrition research” at Nutritional Science Program at Ohio State University
- 2020 “In the beginning: First decade of the NC-91 regional project” at the 2020 annual meeting of NCCC210 project.

#### **XIV. REVIEW AND EDITING**

I have reviewed numerous manuscripts for colleagues, theses, dissertations, and research grant proposals of colleagues and of other off-campus investigators and have served as a member of departmental review teams and research grant review panels. I have not kept a complete record of these activities. I have served two, 3-year terms on Editorial Board of *Journal of Animal Science*, one, 3-year term on Editorial Board of *Journal of Nutrition* and one, 3-year term on Editorial Board of Veterinary Nutrition. Currently, I am on Editorial Boards of *Nutrition Research* and its Editorial Advisory Board of Recent Research Developments in Nutrition Research. During 1995, I served as Symposium Coordinator for the 1995 American Institute of Nutrition Symposium Proceedings that were published in *J. Nutr.* 126 (45):10075-13545. I coordinated three ASN/ADSA symposia a annual meetings of ADSA.

#### **XV. OTHER ACTIVITIES**

1. Determination of chemical composition of a bypass dietary fat (calcium salt of fatty acids) produced by Norel Corporation (Eiler Frederiksen), now Bioproducts, Inc., of Las Vegas, NV on a service-for-fee basis (1994-04).
2. Determination of fatty acid composition and dry matter, total lipid, and cholesterol content of pork chops from pigs of state and national genetic selection projects (NPPC) and for others in Department of Animal Science on a service-for-fee basis (1990- ).
3. Determination of lipid and carbohydrate composition of pork from Carl Hamman of Mt. Sterling, OH on a service-for-fee basis (1995-97).
4. Determination of fatty acid composition of milk samples for Land O'Lakes Answer Farm of Webster City, IA (1999-03).
5. Determination of dry matter, total liquid, and fatty acid composition of meats from several livestock producers (*e.g.*, J. Wood, J. Rismann).
6. Determined composition and tenderness of beef from feedlot and grazed cattle of R. Rosmann. Project was supported by funds awarded to Rosmann from Organic Farming Research Foundation.
7. Our laboratory continues to conduct assays of total lipid and fatty acid composition of meat and milk samples from the National Pork Board, companies, and farmers.

*Updated January 12, 2021*