Contact Information

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Professional Positions

4/2017 --	Coordinator of the certificate program titled “Nutrition, Non-coding RNAs and Extracellular Vesicles (N2V)”
8/2014 --	Director of the Nebraska Center for Obesity Prevention at the University of Nebraska-Lincoln, Department of Nutrition and Health Sciences
8/2011 –	Willa Cather Professor of Molecular Nutrition at the University of Nebraska-Lincoln, Department of Nutrition and Health Sciences
7/2010 –	Professor of Molecular Nutrition at the University of Nebraska-Lincoln, Department of Nutrition and Health Sciences
8/2006 – 6/2010	Associate Professor of Molecular Nutrition at the University of Nebraska-Lincoln, Department of Nutrition and Health Sciences
4/2001 - 7/2006	Assistant Professor of Molecular Nutrition at the University of Nebraska-Lincoln, Department of Nutrition and Health Sciences
2000 - 2001	Research Assistant Professor at The University of Arkansas for Medical Sciences, Little Rock, Dept. of Biochemistry & Molecular Biology
1999 - 2000	Assistant Research Professor at the Arkansas Children’s Hospital Research Institute and the University of Arkansas for Medical Sciences, Little Rock, Dept. of Pediatrics (Gastroenterology)
1998 - 1999	Instructor at the Arkansas Children’s Hospital Research Institute at the University of Arkansas for Medical Sciences, Little Rock, Dept. of Pediatrics (Gastroenterology)

Consulting

2/2017 --	Stewart Weltman, Attorney, Spirut Law Firm, Chicago (Rosa Alvarez versus Nature’s Bounty); class action lawsuit; expert witness for the plaintiff
2/2017 --	Scientific Advisory Board, PureTech Health, Boston, MA
4/2019 --	Consulting, Baxter Healthcare, Inc., Deerfield, IL

Education/Training

1995 - 1998	Postdoctoral Fellow at Arkansas Children’s Hospital Research Institute and the University of Arkansas for Medical Sciences, Little

	Rock, Dept. of Pediatrics, Division of Gastroenterology, Hepatology, and Nutrition (Donald M. Mock, M.D., Ph.D., mentor)
1994 - 1995	Postdoctoral Fellow at Emory University School of Medicine, Atlanta, Dept. of Biochemistry (Donald B. McCormick, Ph.D., mentor)
1993 - 1994	Postdoctoral Fellow at Innsbruck University School of Medicine, Dept. of Pediatrics (Innsbruck, Austria) (Burkhard Mangold, M.D., mentor)
1988 - 1992	Ph.D., graduation date: December 21, 1992; Dept. of Nutrition Sciences, University of Giessen, Germany (Werner Kübler, M.D., Ph.D., advisor)
1984 - 1988	B.S., Dept. of Nutrition Sciences, University of Giessen, Germany

Professional Development

1. Title IX training, University of Nebraska-Lincoln (2018)

2. REACH Suicide Prevention training, University of Nebraska-Lincoln (2019)

3. University of Nebraska-Lincoln, Media training (2019)

4. Search Committee training, University of Nebraska-Lincoln (2019)

5. Search Committee Inclusion training, Insititute of Agricultural and Natural Resources, University of Nebraska-Lincoln (1/14/2020)

Research Interests

My research focuses on the regulation of genes by nutrients, bioactive food compounds, non-coding RNAs and extracellular vesicles; the primary focus is on genes implicated in human metabolic health and disease.

Memberships

American Association for the Advancement of Science (AAAS)
The American Physiological Society (APS)
American Society for Cell Biology (ASCB)
The American Society for Nutrition (ASN)
American Society for Exosomes and Microvesicles (ASEMV)
Gamma Sigma Delta
International Society for Extracellular Vesicles (ISEV)
Sigma Xi
Academic Society for Functional Foods and Bioactive Compounds

Manuscript Peer Review (anywhere between 1 and >100 reviews for each of the journals)

Advances in Nutrition
American Journal of Clinical Nutrition
American Journal of Physiology – Endocrinology and Metabolism
American Journal of Physiology – Gastrointestinal and Liver Physiology

Analytical Biochemistry
Annals of Nutrition and Metabolism
Archives of Biochemistry and Biophysics
Archives of Medical Research
Biochimica et Biophysica Acta
Biochimica et Biophysica Acta — Biomembranes
BMC Bioinformatics
BMC Gastroenterology
BMC Genomics
British Journal of Nutrition
CABI Publishing (review of book proposals)
Cellular and Molecular Biology
Cellular Physiology and Biochemistry
CRC Press (review of book proposals)
Current Opinion in Investigational Drugs
Epigenetics
European Journal of Nutrition
European Journal of Pediatrics
FASEB J
FEBS Journal (European Journal of Biochemistry)
FEBS Letters
Food and Chemical Toxicology
Food and Function
Free Radical Biology and Medicine
Functional Foods in Health and Disease
Gastroenterology
Gene
Genes & Nutrition
Human Mutation
Industrial & Engineering Chemistry Research
International Journal of Molecular Sciences
International Journal for Vitamin and Nutrition Research
iScience
IUBMB Life
Journal of Agricultural and Food Chemistry
Journal of the American College of Nutrition
Journal of Dairy Science
Journal of Extracellular Vesicles
Journal of Food Composition and Analysis
Journal of Gerontology: Biological Sciences
Journal of Hepatology
Journal of Leukocyte Biology
Journal of Lipid Research
Journal of Nutrition
Journal of Nutritional Biochemistry
Molecular Biology Reports
Molecular Genetics and Metabolism
National Institutes of Health, Office of Dietary Supplements, Fact Sheets (Biotin)
Nutrients (Open Access Journal)
Nutrition
Nutrition Journal (Open Access Journal)
Nutrition & Metabolism
Nutrition Reviews
Oncotarget

Oxidative Medicine and Cellular Longevity
Pediatric Research
Photochemistry and Photobiology
PLoS One
Proceedings of the National Academy of Sciences USA
Recent Patents on Food, Nutrition & Agriculture
Scientific Reports
Steroids
Taylor & Francis (review of book proposals)

Reviewer for Funding Agencies

American Institute for Cancer Research (panel member 8/2004, 3/2005, 8/2005, 3/2006, 8/2006, 3/2007, 8/2007, 3/2008, 5/2010)
Alberta Heritage Foundation for Medical Research (Canada, 2004, 2010)
German State Secretary for Science and Education (BMBF), Member of the Review Panel for Nutrition Research (panel meeting February 12 and 13, 2007, Berlin, Germany)
German State Secretary for Science and Education (BMBF), ad hoc reviewer Biomedical Nutrition Research (Biomedizinische Ernährungsforschung), Research Center Jülich, Germany, June 2008
German State Secretary for Science and Education (BMBF), Chair of the Review Panel "Innovation and New Ideas in Nutrition Research" (panel meeting May 25-29, 2009, Berlin, Germany)
German State Secretary for Science and Education (BMBF), Chair of the Review Panel "Innovation and New Ideas in Nutrition Research" (panel meeting October 26/27, 2009, Berlin, Germany)
German State Secretary for Science and Education (BMBF), Chair of the Review Panel "Innovation and New Ideas in Nutrition Research," status seminar (February 23, 2010, Bonn, Germany)
German State Secretary for Science and Education (BMBF), Chair of the Review Panel "Innovation and New Ideas in Nutrition Research," status seminar (May 16-18, 2011, Berlin, Germany)
Hungarian Scientific Research Fund, ad-hoc reviewer (OTKA) (Hungary, 2007)
National Science Foundation, ad-hoc reviewer (2003)
NIH, Special Emphasis Panel of the NIH Center for Scientific Review for the evaluation of applications concerning Chronic Fatigue Syndrome, Fibromyalgia Syndrome and Temporomandibular Dysfunction by telephone conference, August 7, 2007
NIH, Integrative Physiology of Obesity and Diabetes Study Section [IPOD], Endocrinology, Metabolism, Nutrition and Reproductive Sciences IRG, [EMNR] Division of Biologic Basis of Disease, by telephone conference, August 2, 2007
NIH, Regular Member of the Integrative Nutrition and Metabolic Processes (INMP) Study Section, 6/2010 – 6/2013
United States Department of Agriculture, National Research Initiative Competitive Grants Program, ad-hoc reviewer (2001, 2002, 2003, 2004, 2008)
United States Department of Agriculture, Office of Scientific Quality Review: Review of Agricultural Research Station Project Plans in National Program 107 Human Nutrition (web-based review panel, December 2005)
University of Florida-Gainesville Innovation Grants Competition, August 2008
Nebraska "Experimental Program to Stimulate Competitive Research" (EPSCoR) First Award pre-proposal review, Lincoln, NE, December 2008.

Chair of the internal grant competition for the Nebraska Gateway to Nutrigenomics, University of Nebraska Lincoln, November 2009.
Panel member (phone conference), USDA ARS Research Projects NP107 panel 14 Epigenetics, January 2014
NIH special emphasis panel ZRG1 EMNR-Q (50) "Nutrigenetics and Nutrigenomics Approaches for Nutrition Research (R01)," panel member, PAR-13-375, July 9, 2014
NIH Nutrition Obesity Research Centers (P30) applications (NORC Program Announcement), Washington DC, November 18, 2015.
NIH "Training and Education" review meeting held by the National Center for Complementary and Integrative Health (NCCIH / NIH) on March 17, 2016
Israel Science Foundation, proposal "Expression and biological function of miRNA in breast milk" by Shimon Reif, March 24, 2016 (ad-hoc)
Israeli Ministry of Health, proposal "Expression and biological function of miRNA in breast milk" by Shimon Reif, April 20, 2016 (ad-hoc)
Dairy Farmers of Canada, Nutrition Research Funding Program, proposal "Quantifying the Effects of Milk MicorRNAs on Cancer Genes" by Igor Jurisica, April 20, 2016 (ad-hoc)
NIH Special Emphasis Panel/Scientific Review Group 2017/01 ZGM1 RCB-3 (C3) meeting (COBRE Phase III applications), November 2nd, 2016, Washington DC
Deutsche Forschungsgemeinschaft (German Science Society) "Verborgene bioaktive Moleküle: miRNAs in extrazellulären Vesikeln könnten bioaktive Wirkstoffe in der Europäischen Mistel sein (eBer-17-7618)" ("Hidden bioactive molecules: miRNAs in in extracellulkar vesicles in mistle toe" 3/15/2017
Dairy Farmers of Canada, Nutrition Research Funding Program, proposal "Do the bioactive miRNAs in colostrum and milk exosomes from high immune responder cows promote health and disease resistance in calves and consumers?" by Bonnie Mallard, July 6, 2017 (ad-hoc)
Israeli Ministry of Health, proposal "The biological effect of milk-derived miRNA against infant's obesity" by Shimon Reif, June 26, 2017 (ad-hoc)
Israeli Ministry of Health, proposal "The biological effect of milk-derived miRNA against infant's obesity" by Shimon Reif, July 3, 2017 (ad-hoc)
NIH special emphasis panel ZRG1 EMNR-V 55 (201801) "Food Specific Molecular Profiles and Biomarkers of Food and Nutrient Intake, and Dietary Exposure (R01)," panel member, PAR-15-024, November 2, 2017
Netherlands Organisation for Scientific Research (NWO), domain Applied and Engineering Sciences (TTW), Utrecht, Holland, November 13, 2017
NIH Special Emphasis Panel/Scientific Review Group 2018/05 ZGM1 RCB-3 (2A) meeting (COBRE Phase II applications), March 1/2, 2018, Bethesda, VA
NIH Special Emphasis Panel/Scientific Review Group Special 2019/10 ZGM1 RCB-3 (C1) meeting (COBRE Phase I applications), July 11/12, 2019, Bethesda, VA
NIH Special Emphasis Panel/Scientific Review Group 2020/05 ZDK1 GRB-2 (M3) 1. NORC applications. March 9/10, 2020, Bethesda, VA

Awards/Honors

- Courtesy appointment in the Depts. of Biochemistry (since 9/2001) and Animal Science (since 2/2003), University of Nebraska-Lincoln
- Visiting Professor at the Institute for Biomedical Research at the National Autonomous University of Mexico, Mexico City (March 13-16, 2002)

- *Recognition of Junior Faculty for Excellence in Research Award* by the Agricultural Research Division at the University of Nebraska-Lincoln (September 13, 2002).
- One of six finalists for the "Future Leader Award" by the International Life Sciences Institute, USA, in the 2004 and 2005 competitions.
- Winner of the Mead Johnson Award 2006 by the American Society for Nutrition (April 2, 2006).
- Member of the Microbiology Initiative, University of Nebraska (since 9/2006).
- Winner of the Gamma Sigma Delta Research Award 2007 by the Nebraska Chapter of Gamma Sigma Delta (October 28, 2007).
- My paper entitled “K4, K9, and K18 in human histone H3 are targets for biotinylation by biotinidase” (by Kobza K et al. FEBS J 272:4249-4259, 2005) was selected by *Faculty of 1000 Biology* for the significant contributions it makes to the chromatin field.
- Listed in Marquis Who’s Who in America, 2009 --.
- Distinguished Research/Creative Activity Award by the College of Education and Human Sciences (March 23, 2009).
- Member of the Center for Molecular and Cellular Pharmaceutics and Biophysics at the University of Nebraska Medical Center (since June, 2009).
- Member of the Micronutrients Genomics Project (www.micronutrientgenomics.org) since 2/2010, The European Nutrigenomics Organisation (NuGO).
- Associate Member in the Molecular Biochemical Etiology Program at the Eppley Cancer Center since 9/2010, University of Nebraska Medical Center.
- Nutrient-Gene Interactions Research Interest Section (American Society for Nutrition) Outstanding Investigator Award 2012.
- Nominator for the MacArthur Foundation’s MacArthur Fellows Program (10/16/2013 – 12/16/2013).
- Vitamin and Mineral Research Interest Section (American Society for Nutrition) Outstanding Investigator Award 2014.
- 2015 Omtvedt Innovation Award, Institute of Agricultural and Natural Resources, UNL, September 10, 2015.
- 11/2015 - Fellow of the American Association for the Advancement of Sciences.
- Faculty Student Mentoring Award by the College of Education and Human Sciences (April 22, 2016).
- Session Chair (September 13) at the 6th International Conference of Genomics and Pharmacogenomics, September 12-14, 2016, Berlin, Germany; organized by *omics International*
- Session Chair: Dietary Exosomes and their Cargos” 21. International Conference. Functional Foods Center, San Diego, CA, March 25/26, 2017.
- Session Chair: Dietary Exosomes and their Cargos” 22. International Conference. Functional Foods Center, September 22-23, 2017, Harvard Medical Center, Boston, MA.
- Best Session Award “Dietary Exosomes and their Cargos” 22. International Conference. Functional Foods Center, September 22-23, 2017, Harvard Medical Center, Boston, MA.
- Opening ceremony speaker at the meeting of the American Society for Exosomes and Microvesicles. Zempleni J, Zhou F, Wu D, Upadhyaya B, Shu J, Paz H, Fernando S, Cui J. Delivery and alterations of microbial signals by bovine milk exosomes in non-bovine species. Asilomar Conference Center, Pacific Beach, CA, October 8-12, 2017
- Invited expert at the NIH-sponsored workshop titled “Workshop on Human Milk Composition-Biological, Environmental, Nutritional, and Methodological Considerations Meeting.” Bethesda, MD, November 16-17, 2017

• Zempleni J. Cross-kingdom communication: bovine milk exosomes talk to the gut microbiome talk to the host. Invited seminar in the Interdepartmental Nutrition seminar series. Speaker chosen by the Nutrition Science Graduate Student Organization as Spring Seminar 2018 Speaker. Purdue University, Lafayette, IN, March 9, 2018
• Invited speaker at the Grand Challenges Meeting, sponsored by the Gates Foundation, Berlin, Germany, October 15-18, 2018
• Visiting Professor in Jakarta, Indonesia,delivering the following lectures: 1) Dietary exosomes and their RNA cargos as novel bioactive food compounds. (11/5/20187) 2) biotin metabolism (11/2/2018). 3) Pursuing a graduate education in US (11/2/2018). 4) Obesity research in the United States (11/3/2018).
• Winner of the Osborne and Mendel Award 2019 by the American Society for Nutrition (June 8-11, 2019).
• Listed in Marquis Who's Who in the World, 2019 --.
• Marquis Who's Who 2018 Albert Nelson Marquis Lifetime Achievement Award.
• Nominator for the Inamori Foundation's 2020 Kyoto Prize in Basic Sciences in "Life Sciences (Molecular Biology, Cell Biology, Neurobiology)." (6/27/2019).
• Invited speaker and session chair in the session "Exosomes & microRNA" at the 7th International Conference on Food Factors, Kobe, Japan, December 4th, 2019. The Japanese Society for Food Factors. Presenting "Bioavailability, distribution and biological function of milk exosomes and their RNA cargos"
• Delivering Concluding Remarks in the session "Exosomes & microRNA" at the 7th International Conference on Food Factors, Kobe, Japan, December 4th, 2019. The Japanese Society for Food Factors.
• Zempleni J. Biological activities of milk exosomes and their RNA cargos within and across species boundaries. Laureate Institute for Bran Researchh, Tulsa, OK, January 22, 2020

Service

University level
• Compilation of "News from the University of Nebraska-Lincoln" for the ASN Newsletter, 2001 - present
• Coordinator for an International Study Program of the Universities of Nebraska-Lincoln and Giessen (Germany), 2001 - present
• Graduate Student Recruitment and Program Enhancement Committee (Dept. of Biochemistry, University of Nebraska-Lincoln), 2005
• Admissions Committee for the Life Science Interdisciplinary Graduate Recruitment Program, University of Nebraska-Lincoln, 2005 - 2007
• Member of the Genomics Core Facility Advisory Board, University of Nebraska-Lincoln, 2005 - present
• Facilitator of the "Epigenetics" break-out group in the Nebraska Biomedical Research Retreat, November 16, 2006
• Search Committee for an Assistant Professor of "Epigenetics" (School of Biological Sciences & Plant Sciences Initiative), 2007-2008
• Admissions Committee for the Nebraska Life Science Recruitment Program (Interdisciplinary Research Area "Bioengineering, Biomolecular Nutrition, and Biomedical Sciences"), University of Nebraska-Lincoln, 2008
• Reviewer of pilot grant proposals for the Redox Biology Center, University of Nebraska-Lincoln, Research Award Committee 2009

- Gamma Sigma Delta, University of Nebraska-Lincoln, Research Award Committee 2009
- Committee of faculty from the Institute of Agricultural and Natural Resources (IANR) to respond to a report by an external committee on the state of molecular biology in IANR (appointed by Chancellor Harvey Perlman) 2010
- Nebraska Innovation Campus Planning Committee 2010
- Host of the Nebraska Gateway to Nutrigenomics seminar series, Fall 2009
- Search Committee for the Molecular Genetics and Biological Chemistry position in the Department of Biochemistry, University of Nebraska-Lincoln, Fall 2009
- Nebraska Innovation Campus Life Sciences Building Laboratories committee, University of Nebraska-Lincoln, 03/27/2012
- Host of the Nebraska Obesity Prevention Center's Spring Research Retreat, Sheldon Museum, Lincoln, NE, 4/2015
- Host of the Nebraska Obesity Prevention Center's Student Recognition Picnic, Dr. Adamec's Acreage, Lincoln, NE, 9/2015
- Host of the Nebraska Obesity Prevention Center's Fall Research Symposium, Sheldon Museum, Lincoln, NE, 9/2015
- Host of the Nebraska Obesity Prevention Center's Student Recognition Reception, Van Brunt Visitor Center, Lincoln, NE, 12/2015
- Host of the Nebraska Obesity Prevention Center's Spring Research Retreat, Sheldon Museum, Lincoln, NE, 4/2016
- Host of the Nebraska Obesity Prevention Center's Student Recognition Picnic, Dr. Adamec's Acreage, Lincoln, NE, 9/2016
- Host of the Nebraska Obesity Prevention Center's Fall Research Symposium, Sheldon Museum, Lincoln, NE, 9/2016
- Host of the Nebraska Obesity Prevention Center's Student Recognition Reception, Van Brunt Visitor Center, Lincoln, NE, 12/2016
- Host of the Nebraska Obesity Prevention Center's Spring Research Retreat, Sheldon Museum, Lincoln, NE, 4/2017
- Host of the Nebraska Obesity Prevention Center's Student Recognition Picnic, Antelope Park, Lincoln, NE, 9/2017
- Host of the Nebraska Obesity Prevention Center's Fall Research Symposium, Sheldon Museum, Lincoln, NE, 9/2017
- Host of the Nebraska Obesity Prevention Center's Student Recognition Reception, Van Brunt Visitor Center, Lincoln, NE, 12/2017
- Member of the Nebraska Center for Molecular Target Discovery and Development at the University of Nebraska Medical Center; Internal AdvisoryCommittee, 08/2017 -
- F&A distribution and Research Start-up Package Task Force, Office of the Vice Chancellor for Research and Economic Development, University of Nebraska-Lincoln, 09/27/2017 -
- Discussion facilitator "Obesity" at the UNL System Science retreat, Office of Nebraska University President, University of Nebraska-Lincoln, November 3rd, 2017
- Host of the Nebraska Obesity Prevention Center's Spring Research Retreat, Sheldon Museum, Lincoln, NE, 4/2018
- Host of the Nebraska Obesity Prevention Center's Student Recognition Picnic, Antelope Park, Lincoln, NE, 9/2018
- Host of the Nebraska Obesity Prevention Center's Fall Research Symposium, Sheldon Museum, Lincoln, NE, 9/2018
- Host of the Nebraska Obesity Prevention Center's Student Recognition Reception, Van Brunt Visitor Center, Lincoln, NE, 12/2018

- Member of the Nebraska Center for Integrated Biomolecular Communication (NCIBC) Internal Mentoring and Advising Committee, 08/2019 -
- Host of the Nebraska Obesity Prevention Center's Spring Research Retreat, Sheldon Museum, Lincoln, NE, 4/2019
- Host of the Nebraska Obesity Prevention Center's Student Recognition Picnic, Antelope Park, Lincoln, NE, 9/2019
- Host of the Nebraska Obesity Prevention Center's Fall Research Symposium, Sheldon Museum, Lincoln, NE, 9/2019
- Host of the Nebraska Obesity Prevention Center's Student Recognition Reception, Van Brunt Visitor Center, Lincoln, NE, 12/2019

Institute of Agricultural and Natural Resources (IANR)
- Review of Hatch proposal "Effect of maternal metabolic profile on developmental programming of the embryo" by Jennifer Wood (Animal Science), 1-2/2010
- Panel member, IANR AFRI grant writing workshop, Lincoln, NE, 12/14/2010
- Hatch proposal review for Ji-Young Lee (2006), Julie Albrecht (2009), Jennifer Wood (2010), Regis Moreau (2012), Joel Cramer (2013), Qiaozhu Su (2013), Soonkyu Chung (2014).
- Search Committee for an Assistant Professor of Lipids in the Department of Food Science and Technology, University of Nebraska-Lincoln, Fall 2013/Spring 2014.
- Search Committee for an Assistant Professor of Gut Microbiota in Health and Disease in the Department of Food Science and Technology, University of Nebraska-Lincoln, Fall 2013/Spring 2014.
- Department of Nutrition and Health Sciences/Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules, University of Nebraska-Lincoln, Chair search committee Core Facilities Director, September 2014 – March 2015
- Department of Nutrition and Health Sciences/Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules, University of Nebraska-Lincoln, Chair search committee Assistant Professor Fetal Programming, September 2014 – September 2015
- Department of Nutrition and Health Sciences/Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules, University of Nebraska-Lincoln, Chair search committee Assistant Professor Genetics, September 2014 – March 2016
- Department of Biochemistry/Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules, University of Nebraska-Lincoln, Co-chair search committee Assistant Professor Biomarkers of Metabolic Disease, September 2015 – April 2016
- Member of the search committee for the Vice Chancellor for IANR, May 2016 – December 2016
- Hatch proposal pre-review for Jiujiu Yu (12/2017)
- IANR Directors Leadership Council, March 2018 –

College of Education and Human Sciences
- Institutional Review Board (IRB), 2002 - 2005
- Co-chair of the thematic group "Basic Science and Theory Development" to facilitate the merger of two colleges (College of Family Science & Human Resources and Teacher's College, Univ. of Nebraska-Lincoln), 2004
- Search Committee for the Research Liaison, College of Education and Human Sciences, 2005
- Search Committee for an Assistant/Associate Professor of "Immigrant/Refugee Studies" (Dept. of Family and Consumer Sciences), 2005

- Search Committee for a Grants Specialist in the Research Office of the College of Education and Human Sciences, 2006
- Dean's Research Advisory Committee, College of Education and Human Sciences, 2005 – 5/2013
- Reviewer for Layman Award applications, College of Education and Human Sciences, 2006, 2007, 2008, 2009, 2010, 2011, 2012
- College of Education and Human Sciences Pre-Professorial Research/Creative Award Selection Committee 2009/2010
- College of Education and Human Sciences Distinguished Research/Creative Career Award Selection Committee 2009/2010
- Member of the "Technologies" committee, College of Education and Human Sciences, 8/2010 – 9/30/2011
- Member of the Search Committee for a Grants Specialist, College of Education and Human Sciences, 2011
- Member of the Promotion and Tenure Committee, College of Education and Human Sciences, 8/2017-
- Member of the Apportionment Appeals Committee, College of Education and Human Sciences, 4/2019

Department level

- By-laws committee for Dept. of Nutrition and Health Sciences, 2003 - 2004
- IANR Research Day Committee, 2002
- NHS (UNL) Graduate Admissions Committee, 2004 - 2008
- INP (UNL) Graduate Admissions Committee, 2005 -
- Interdepartmental Nutrition Program Chair Nomination Committee, 2004
- Chair of the Search Committee for an Assistant Professor of "Molecular Nutrition/Nutritional Genomics," 2004 – 2005
- Search Committee for a Research Technologist in the Department of Nutrition and Health Sciences (Tim Carr's lab), UNL, 2006
- Chair's Advisory Council (Dept. of Nutrition and Health Science, Univ. of Nebraska-Lincoln); 2005 - 2007
- Chair, By-laws Committee for Dept. of Nutrition and Health Sciences, 2007 - 2008
- Graduate By-laws Review Committee for Dept. of Nutrition and Health Sciences, 2007 - 2008
- Promotion & Tenure Committee for Dept. of Nutrition and Health Sciences, 2008 –
- Chair of the Search Committee for an Assistant Professor of "Nutritional Genomics," 2010 – 2011
- NHS (UNL) Graduate Admissions Committee, 2010 - 2012
- Chair of the Search Committee for an Assistant Professor of "Molecular Genetics," 2011 – 2012
- NHS (UNL) Chair Promotion and Tenure Committee, 8/2011 – 7/2016
- NHS (UNL) Member Promotion and Tenure Committee, 8/2016 – 7/2017
- NHS (UNL) Strategic Planning Committee, 1/2012 – 5/2012
- Member of the Search Committee for an Assistant/Associate Professor in "Obesity Prevention and Intervention," 2012 – 2013
- Chair of the Search Committee for an Assistant Professor of "Lipid metabolism," 2013 – 2014
- Planning committee, positions in Sports Nutrition and Health Messaging, 12/2013 – 1/2014

- Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules, University of Nebraska-Lincoln, Chair search committee Research Technologist I, September-December 2014
- Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules, University of Nebraska-Lincoln, Chair search committee NPOD Administrative Coordinator, December 2015 – January 2016
- Chair's Advisory Council, 8/2015 – 7/2017
- Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules, University of Nebraska-Lincoln, Chair search committee NPOD Research Cores Director, December 2016 – February 2017
- NHS Academic Program Review - Steering Committee (preparation of NHS Academic Program Review), July 2017 – August 2018
- Chair of the Search Committee for an Assistant Professor of Molecular Genetics, 8/2018 – 8/2019
- Chair of the Search Committee for Research Technologist II, 7/2019 – 9/2019
- Chair of the Search Committee for an Administrative Coordinator, 9/2019 – 11/2019
- Chair of the Search Committee for an Assistant Professor with expertise in Extracellular Vesicles, 10/2019 –
- Chair of the Search Committee for Research Technologist II, 10/2019 –
- Chair of the Search Committee for a Senior Research Associate, 11/2019 –

<u>Service to the profession</u>

- Judge at the Student/Postdoctoral Fellow Poster Award Competition by the Vitamin and Mineral Research Interest Section, American Society for Nutrition (2003, 2004, 2006, 2007)
- Reviewer "Habilitationsgesuch" for Dr. Uwe Wenzel (Technical University Munich, Germany); comparable to reviewing a tenure file; 2005
- University of Manitoba, Office of Research Services: review of an animal care protocol; 2005
- Secretary and Treasurer for the Vitamin and Mineral Research Interest Section of ASNS (April 2004 to April 2005)
- Mini-Symposium Chair "Nutrient-Gene Interactions", Experimental Biology Meeting (April 2006, San Francisco)
- Additional services as editor and reviewer as described in "List of Publications", "Manuscript Peer Review" and "Reviewer for Funding Agencies."
- Chair-elect for the Nutrient-Gene Interactions Research Interest Section of ASN (May 2006 to April 2007)
- Chair for the Nutrient-Gene Interactions Research Interest Section of ASN (June 2007 to May 2008)
- Past Chair for the Nutrient-Gene Interactions Research Interest Section of ASN (June 2008 to May 2009)
- Advisory Board member, Nutrient-Gene Interactions Research Interest Section of ASN (June 2008 to May 2009)
- Mini-Symposium Chair "Vitamins and Minerals: Water-soluble Vitamins", Experimental Biology Meeting (April 2007, Washington, DC)
- Journal of Nutrition Ad Hoc Committee on the reporting of "omic" data (2007 – 2008)
- Chair of the Symposium entitled Nutrients and Epigenetic Regulation of Gene Expression at the Experimental Biology meeting (April 2009)
- Member of the Nutritional Science Council, American Society for Nutrition, Theme Group II "Enhancing communication to bring added value for members, promote scientific excellence in nutritional science and public impact" (6/2008)

- Ad-hoc reviewer for a Molecular Nutrition faculty search committee (Assistant Professor level), Christian Albrechts University Kiel, Germany (6/2009)
- Chair of a conference section entitled “Innovation and New Ideas in Nutrition Research” hosted by the German State Secretary for Science and Education (BMBF), Bonn, Germany (February 23, 2010)
- Chair of the minisymposium entitled Epigenetics at the Experimental Biology meeting (April 2010)
- External reviewer for the P&T committee, Justus–Liebig University Giessen, Department of Nutrition Sciences, Giessen, Germany (file: Silvia Rudloff), March 2010
- Consultant for an NIH T32 training grant proposal team, University of Birmingham, Alabama, April 21/22, 2010
- Participant in the American Institute for Cancer Research Directions meeting, May 15, 2010, Washington, DC.
- Treasurer, Nutrition Sciences Council at the American Society for Nutrition, 6/2010 – 5/2012
- Chair, Gamma Sigma Delta Research Award Committee (Nebraska Chapter), 2010
- Reviewer of the Nutrition Sciences Council (American Society for Nutrition) Graduate Student Award Competition, 12/2010 – 04/2011
- Chair of the session Epigenetics and Complex Diseases (3/30/2011) at the Keystone Symposium Environmental Epigenomics and Disease Susceptibility, 3/27/2011 – 4/1/2011 in Asheville, North Carolina
- Chair of a conference section entitled “Innovation and New Ideas in Nutrition Research” hosted by the German State Secretary for Science and Education (BMBF), Berlin, Germany (May 17, 2011)
- Chair of the minisymposium entitled Epigenetics at the Experimental Biology meeting, Washington, DC (April 2011)
- Chair of the minisymposium entitled Epigenetics and Nutrition at the Experimental Biology meeting, San Diego, CA (April 2012)
- Chair of the minisymposium entitled Nutrition and Cell Differentiation at the Experimental Biology meeting, Boston, MA (April 2013)
- Member of the search committee for the new Editor-in-Chief, The Journal of Nutrition (6/2012 – 2/2013)
- Member of the joint postdoctoral and doctoral student Mentoring Board for the American Society for Nutrition Research Interest Sections Dietary Bioactive Components, Nutrient-Gene Interactions, and Vitamins and Minerals (2/2013 –)
- Reviewer promotion and tenure file (promotion to associate professo), Dr. Stephen Clarke, Oklahoma State University, Stillwater, OK, 3/2013
- External Advisor to the Search Committee for a Professor and Director, Molecular Nutrition, University of Vienna, Austria, 6/2013 – 12/1/2013
- Member of the Site Visit Team for the 10-year evaluation of the Institute for Nutrition and Food Research (“Zentralinstituts für Ernährung- und Lebensmittelforschung“) at the Technical University Munich, Germany (7/15/2013 – 1/10/2014)
- Member of the Site Visit Team for the 5-year strategic plan development, Department of Nutritional Sciences, Pennsylvania State University, College Park, PA (11/11/2013)
- External reviewer, promotion file to Full Professor, Dr. Sandeep Prabhu, Department of Veterinary and Biomedical Sciences, Penn State (September/October 2013)
- Chair of the minisymposium entitled Nutrition and the Genome at the Experimental Biology meeting, San Diego, CA (April 2014)
- Panelist on the American Society for Nutrition Award Nominating Panel, category Young Investigators (Group I): Bio-Serv Award in Experimental Animal Nutrition,

E.L.R. Stokstad Award, Mead Johnson Award, Vernon Young International Award for Amino Acid Research (9/2013)
- External reviewer, search committee for Professor of Nutritional Physiology and Molecular Nutrition, University of Vienna, Austria (December 2013)
- Nominator for the MacArthur Fellows Program (10/2013 – 11/2013)
- Voting member of a Steering Committee to organize the future National IDeA Symposium of Biomedical Research Excellence (NISBRE) Conferences
- Chair of the minisymposium entitled Genomics, Proteomics, and Metabolomics at the Experimental Biology meeting, Boston, MA (March 2015)
- Vice Chair on the Reviews, Papers and Guidelines Committee, American Society for Nutrition, June 1, 2015 – May 31, 2018.
- Member (Comparative and Animal Nutrition) of the Nutrition Science Council Governing Committee, American Society for Nutrition, June 1, 2015 – May 31, 2017.
- Phone consultation for the Environmental Protection Agency regarding the metabolism and safety of dietary microRNAs and siRNAs (Drs. Chris Wozniak, John Kough, and Judy Facey), June 30, 2015.
- Chair of the symposium titled "Nutrition, microRNAs and human health" (co-chair: Sharon A. Ross) at Experimental Biology 2016, sponsored by ASN, San Diego, CA, April 5th, 2016.
- Reviewer "Habilitationsgesuch" for Dr. Anika Wagner (Christian-Albrechts University Kiel, Germany); comparable to reviewing a tenure file; February 4, 2016
- Reviewer promotion and tenure file, Dr. Beiyan Zhou, University of Connecticut School of Medicine, Department of Immunology, 3/2016
- Member of the Student Travel Award Selection Committee for the National conference of IDeA states, 5/2016
- Reviewer promotion and tenure file, Dr. Harmeet Malhi, Mayo Clinic College of Medicine, Rochester, MN, 8/2016
- Reviewer promotion and tenure file (promotion to full professor), Dr. Stephen Clarke, Oklahoma State University, Stillwater, OK, 11/2016
- Reviewer of abstracts (entries) for ASN Student Graduate Award Competition for the Experimental Biology meeting 2017, 1/19/2017
- Judge at the Dupont Postdoctoral Research Award competition, American Societry for Nutrition, Experimental Biology 2017 conference, 4/22/2017
- Chair of the session Dietary Exosomes and their Cargos, 21st International Conference by the Functional Foods Center, San Diego, CA, March 25/26, 2017
- Member of the Scientific Program Committee for Nutrition 2019, American Society for Nutrition, 8/2018 – 5/2019
- Chair of the symposium titled "Nutrition, Extracellular Vesicles and RNA Cargos" Nutrition 2019, American Society for Nutrition, June 9, 2019
- Chair of the symposium titled "OMICS in Nutrition" Nutrition 2019, American Society for Nutrition, June 10, 2019
- Selection Committee Osborne and Mendel Award, American Society for Nutrition, 11/2019
- Member of the Scientific Program Committee for Nutrition 2020, American Society for Nutrition, 10/2019 –

<u>Editorial Boards</u>
- Editorial Board, Journal of Nutritional Biochemistry (since January 2004)
- Editorial Board, Current Nutrition Reviews (since June 2004)

- Guest Editor “Biotin Symposium, Ixtapa, Mexico” for the Journal of Nutritional Biochemistry, 2004 - 2005
- Assistant Editor, Journal of Nutrition (5/1/2007 – 5/31/2020)
- Contributing Editor, Nutrition Reviews (since March 2008)
- Editorial Board, Recent Patents on Food, Nutrition & Agriculture (7/9/2008 – 12/2014)
- Editorial Board, Annals of Nutrition and Metabolism (8/14/2008 –)
- Editorial Board member (5/24/2010 –), Advances in Nutrition
- Member of the editorial board of ISRN Obesity [open access journal] (ISRN = International Scholarly Research Network; February 2012 – 12/2014)
- Academic Editor (10/31/2012 –), PeerJ (open access journal)
- Editorial Board, Functional Foods in Health and Disease (10/22/2015 – 04/2019)
- Editorial Board, ScienceMatters (11/1/2015 –)
- Guest editor (Dakshinamurti, K, Zempleni J), Can J Physiol Pharmacol. Nutrients/natural product (nutraceutical) control of metabolic pathways in relation to the Metabolic Syndrome, 2015.
- Academic Editor, Current Developments in Nutrition (11/17/2016 -)
- Editorial Board, BioMed Central ExRNA (9/19/2018 -)
- Editorial Board member (6/6/2019 –), Scientific Reports

Awards/Honors for my Advisees

1. Undergraduate Honor's Thesis Research Award ($2,000) to Elizabeth E. Shubert (6/18/2002), Agricultural Research Division, University of Nebraska-Lincoln
2. Othmer Fellowship (stipend of $7,500/year for three years for doctoral studies) to Gabriela Camporeale (8/2003), University of Nebraska-Lincoln
3. Winner of the Postdoctoral Poster Award Competition ($300), sponsored by the Vitamin and Mineral Research Interest Section of ASN: Rocio Rodriguez-Melendez (April 2004)
4. The Spacht Family Memorial Scholarship ($1,600) by “International Affairs” (University of Nebraska-Lincoln) for Jia Tse “Michelle” Hoi (February 2005)
5. Agricultural Research Division Travel Grant ($500) for Nagarama Kothapalli (April 2005)
6. Agricultural Research Division Travel Grant ($500) for Gabriela Camporeale (April 2005)
7. College of Education and Human Sciences Travel Grant ($200) for Gabriela Camporeale (April 2005)
8. Winner of the Student Poster Award Competition ($300), sponsored by the Nutrient-Gene Interaction Research Interest Section of ASN: Nagarama Kothapalli (April 2005)
9. Centennial Fellowship ($1,500) to Yousef Hassan (June 2005), University of Nebraska-Lincoln
10. Widaman Award ($2,000) to Yap Ching Chew (July 2005), University of Nebraska-Lincoln
11. Widaman Award ($2,000) to Nagarama Kothapalli (July 2005), University of Nebraska-Lincoln
12. INBRE scholarship (one-year stipend, $21,000) to Keyna Kobza (July 2005), University of Nebraska-Lincoln
13. American Association for Cancer Research (AACR) “Brigi G. Leventhal Scholar in Cancer Research Award” for attending the AACR meeting in Baltimore, MD, 10/30 – 11/2, 2005 ($1,000 travel award) to Nagarama Kothapalli (September 2005).

14. Undergraduate Research Stipend ($1,250) for Kanae Watanabe by the Agricultural Research Division, University of Nebraska-Lincoln (October 2005)
15. The Spacht Family Memorial Scholarship ($2,400) by “International Affairs” (University of Nebraska-Lincoln) for Jia Tse “Michelle” Hoi (January 2006)
16. The Spacht Family Memorial Scholarship ($2,400) by “International Affairs” (University of Nebraska-Lincoln) for Kanae Watanabe (January 2006)
17. David H. & Annie E. Larrick Student Travel Award by the Agricultural Research Division, University of Nebraska-Lincoln ($500) for Gabriela Camporeale (April 2006)
18. David H. & Annie E. Larrick Student Travel Award by the Agricultural Research Division, University of Nebraska-Lincoln ($500) for Yap Ching Chew (April 2006)
19. College of Education and Human Sciences Travel Grant ($250) for Gabriela Camporeale (April 2006)
20. College of Education and Human Sciences Travel Grant ($250) for Yap Ching Chew (April 2006)
21. Widaman Award by the Agricultural Research Division, University of Nebraska-Lincoln ($2,000) to Yousef Hassan (July 2006)
22. Agricultural Research Division Travel Grant ($500) for Yap Ching Chew (April 2007)
23. Agricultural Research Division Travel Grant ($500) for Yousef Hassan (April 2007)
24. College of Education and Human Sciences Travel Grant ($250) for Yap Ching Chew (April 2007)
25. College of Education and Human Sciences Travel Grant ($250) for Yousef Hassan (April 2007)
26. Shear-Miles Award by the Agricultural Research Division, University of Nebraska-Lincoln ($2,000) to Yousef Hassan (August 2007 – May 2008)
27. Travel Grant ($1250) for Yousef Hassan to attend the AICR/WCRF International Research Conference on Food, Nutrition and Cancer in Washington, DC (November 1 and 2, 2007)
28. Agricultural Research Division Travel Grant ($500) for Yap Ching Chew (April 2008), University of Nebraska-Lincoln
29. Agricultural Research Division Travel Grant ($500) for Yousef Hassan (April 2008), University of Nebraska-Lincoln
30. College of Education and Human Sciences Travel Grant ($250) for Yap Ching Chew (April 2008)
31. College of Education and Human Sciences Travel Grant ($250) for Yousef Hassan (April 2008)
32. First Prize in the Nutrient-Gene Interactions RIS Student/Postdoc Poster Award Competition ($500) for Yap Ching Chew for her poster entitled “Histone biotinylation represses retrotransposons in whole organisms, decreasing production of viral particles and retrotranspositions” (April 2008)
33. Agricultural Research Division Travel Grant ($500) for Valerie Pestinger (April 2009), University of Nebraska-Lincoln
34. Agricultural Research Division Travel Grant ($500) for Gaganpreet Kaur Mall (April 2009), University of Nebraska-Lincoln
35. College of Education and Human Sciences Travel Grant ($250) for Valerie Pestinger (April 2009)
36. College of Education and Human Sciences Travel Grant ($250) for Gaganpreet Kaur Mall (April 2009)
37. Widaman Award ($2,000) to Luisa Rios-Avila (August 2009), University of Nebraska-Lincoln

38. College of Education and Human Sciences Travel Grant ($250) for Luisa Rios-Avila (April 2010)
39. Third place in the Nutrient-Gene Interactions RIS Student/Postdoc Poster Award Competition ($250) for Subhashinee S. K. Wijeratne for her poster entitled “Histone biotinylation is a naturally occurring phenomenon” (April 2010)
40. Othmer Fellowship (stipend of $8,000/year for three years for doctoral studies) to Dandan Liu (8/2010), University of Nebraska-Lincoln
41. Widaman Award by the Agricultural Research Division, University of Nebraska-Lincoln ($2,000) to Jing Xue (August 2010)
42. College of Education and Human Sciences Travel Grant ($250) for Jing Xue (April 2011)
43. College of Education and Human Sciences Travel Grant ($250) for Shingo Esaki (April 2011)
44. Agricultural Research Division Travel Grant ($500) for Shingo Esaki (April 2011), University of Nebraska-Lincoln
45. Nebraska Gateway to Nutrigenomics Graduate Student/Postdoc Award ($150) for Jing Xue (February 2011), University of Nebraska-Lincoln
46. Agricultural Research Division Travel Grant ($500) for Dandan Liu (April 2012), University of Nebraska-Lincoln
47. Agricultural Research Division Travel Grant ($500) for Wei Kay Eng (April 2012), University of Nebraska-Lincoln
48. gricultural Research Division Travel Grant ($500) for Elizabeth Cordonier (April 2012), University of Nebraska-Lincoln
49. College of Education and Human Sciences Travel Grant ($250) for Dandan Liu (April 2012)
50. College of Education and Human Sciences Travel Grant ($250) for Wei Kay Eng (April 2012)
51. College of Education and Human Sciences Travel Grant ($250) for Elizabeth Cordonier (April 2012)
52. Nebraska Gateway to Nutrigenomics Graduate Student/Postdoc Award ($250) for Jing Xue (May 14, 2012), University of Nebraska-Lincoln
53. Nebraska Gateway to Nutrigenomics Graduate Student/Postdoc Award ($250) for Wei Kay Eng (May 14, 2012), University of Nebraska-Lincoln
54. Elizabeth Cordonier, Member of the Advisory Board for the Nutrient Gene Interactions Research Interest Group at the American Society for Nutrition, 6/1/2012 – 5/31/2013
55. Widaman Award by the Agricultural Research Division, University of Nebraska-Lincoln ($2,000) to Scott Baier (August 2012)
56. Jeanne Vierke Yeutter Fellowship by the College of Education and Human Sciences, University of Nebraska-Lincoln ($2,000) to Daniel Camara Teixeira (December 2012)
57. Jeanne Vierke Yeutter Fellowship by the College of Education and Human Sciences, University of Nebraska-Lincoln ($2,000) to Elizabeth Cordonier (December 2012)
58. Beatrice E. Donaldson David Fellowship by the College of Education and Human Sciences, University of Nebraska-Lincoln ($2,000) to Scott Baier (December 2012)
59. Agricultural Research Division Travel Grant ($500) for Scott Baier (April 2013), University of Nebraska-Lincoln
60. Agricultural Research Division Travel Grant ($500) for Daniel Camara Teixeira (April 2013), University of Nebraska-Lincoln

61. College of Education and Human Sciences Travel Grant ($250) for Scott Baier (April 2013)
62. College of Education and Human Sciences Travel Grant ($250) for Elizabeth Cordonier (April 2013)

- College of Education and Human Sciences Travel Grant ($250) for Jing Xue (April 2013)
- College of Education and Human Sciences Travel Grant ($250) for Daniel Camara Teixeira (April 2013)
- College of Education and Human Sciences Travel Grant ($250) for Jie Zhou (April 2013)
- Jing Xue, Finalist in the American Society for Nutrition's (ASN) Nutritional Sciences Council (NSC) 2013 Graduate Student Research Awards Competition and $750 travel award.
- Kat Howard, Beatrice E. Donaldson David Fellowship and the Colonel LaVon & Ruby Linn Fellowship Fund ($3,000)
- College of Education and Human Sciences Travel Grant ($250) for Scott Baier (April 2014)
- College of Education and Human Sciences Travel Grant ($250) for Elizabeth Cordonier (April 2014)
- College of Education and Human Sciences Travel Grant ($250) for Daniel Camara Teixeira (April 2014)
- Scott Baier, Winner of the American Society for Nutrition's (ASN) Nutritional Sciences Council (NSC) 2014 Graduate Student Research Awards Competition (Experimental Biology meeting 2014 in San Diego, CA) and $1,250 award.
- Scott Baier, $337.50 travel award from UNL's Office of Graduate Studies for attending the Experimental Biology meeting 2014 in San Diego, CA.
- Elizabeth L. Cordonier, $337.50 travel award from UNL's Office of Graduate Studies for attending the Experimental Biology meeting 2014 in San Diego, CA.
- Daniel Camara Teixeira, $337.50 travel award from UNL's Office of Graduate Studies for attending the Experimental Biology meeting 2014 in San Diego, CA.
- Scott Baier, 2nd place in the graduate student poster competition sponsored by the American Society for Nutrition's (ASN) Aging and Chronic Disease Research Interest Section 2014 Graduate Student Research Awards Competition (Experimental Biology meeting 2014 in San Diego, CA) and $200 award.
- Nebraska Gateway to Nutrigenomics Graduate Student/Postdoc Award ($150) for Daniel Camara Teixeira (June 9, 2014), University of Nebraska-Lincoln
- Beatrice E. Donaldson David Fellowship by the College of Education and Human Sciences, University of Nebraska-Lincoln ($2,500) to Tovah Wolf (December 2014)
- Beatrice E. Donaldson David Fellowship by the College of Education and Human Sciences, University of Nebraska-Lincoln ($2,500) to Katherine Howard (December 2014)
- Indonesian Ambassador Award 2014 to Rio Jati Kusuma
- College of Education and Human Sciences Travel Grant ($250) for Elizabeth Cordonier (March 2015)
- College of Education and Human Sciences Travel Grant ($250) for Scott Baier (March 2015)
- College of Education and Human Sciences Travel Grant ($250) for Rio Jati Kusuma (March 2015)
- College of Education and Human Sciences Travel Grant ($250) for Tovah Wolf (March 2015)
- Agricultural Research Division *David H. & Anne E. Larrick Memorial Travel Fund* grant ($500) for Tovah Wolf (March 2015), University of Nebraska-Lincoln

- Tovah Wolf, winner of the graduate student and postdoctoral poster competition sponsored by the Nebraska Gateway to Nutrigenomics and Nebraska Center for Obesity Prevention, Lincoln, NE, March 13th, $150 award.
- Scott Baier, $250 travel award from UNL's Office of Graduate Studies for attending the Experimental Biology meeting 2015 in Boston, MA.
- Elizabeth Cordonier, $250 travel award from UNL's Office of Graduate Studies for attending the Experimental Biology meeting 2015 in Boston, MA.
- Teresa A. Davis, Editor-in-Chief of The Journal of Nutrition, has selected the following paper as the Editor's Pick for Volume 145 Issue 10 of the journal. The article was featured on the journal website at http://jn.nutrition.org, and in the member newsletter: Wolf T, Baier SR, Zempleni J. The Intestinal Transport of bovine milk exosomes is mediated by endocytosis in human colon carcinoma Caco-2 cells and rat small intestinal IEC-6 cells. J Nutr 145:2201-2206, 2015
- College of Education and Human Sciences Travel Grant ($250) for Mahrou Sadri (March 2016)
- College of Education and Human Sciences Travel Grant ($250) for Sonal Sukreet (March 2016)
- College of Education and Human Sciences Travel Grant ($250) for Ana Aguilar (March 2016)
- Ana Aguilar's abstract entitled "Depletion of Dietary microRNAs from Cow's Milk Causes an Increase of Purine Metabolites in Human Body Fluids and Mouse Livers" was selected for one of two short talk presentations in the dual society (APS/Physiologic Genomic Group and ASN) sponsored symposium on "Omics Applications to Understand Metabolic Physiology" at Experimental Biology 2016, chaired by Drs. Sean Adams and Mark Olfert, April 3, 2016, San Diego, CA.
- Ana Aguilar's abstract entitled "Depletion of Dietary microRNAs from Cow's Milk Causes an Increase of Purine Metabolites in Human Body Fluids and Mouse Livers" was selected for the Emerging Leaders in Nutrition Science Competition at Experimental Biology 2016, April 2, 2016, San Diego, CA.
- Agricultural Research Division *David H. & Anne E. Larrick Memorial Travel Fund* grant ($500) for Ana Aguilar (March 2016), University of Nebraska-Lincoln
- Graduate Student Conference Travel grant from UNL Graduate Studies ($730) for Mahrou Sadri (March 2016), University of Nebraska-Lincoln
- Ana Aguilar-Lozano, 1st place in the graduate student poster competition sponsored by the American Society for Nutrition's (ASN) Nutrient Gene Interactions Research Interest Section 2016 Graduate Student Research Awards Competition (Experimental Biology meeting 2016 in San Diego, CA) and $300 award.
- Ana Aguilar-Lozano, Finalist of the American Society for Nutrition's (ASN) Nutritional Sciences Council (NSC) 2016 Graduate Student Research Awards Competition (Experimental Biology meeting 2016 in San Diego, CA) and $750 award.
- Graduate Student and Postdoctoral Associate Poster Competition, Nebraska Center for the Prevention of Obesity Disease through Dietary Molecules ($150) for Sonal Sukreet (April 18, 2016), University of Nebraska-Lincoln
- Ana Aguilar-Lozano, participant and travel stipend recipient ($1000) in the metabolomics workshop at the University of Alabama at Birmingham, July, 2016.
- Ana Aguilar-Lozano, invited participant in the Second International Symposium in Systems Biology of the National Instittute of Genomic Medicine (Mexico), Mexio City, August 2-4, 2016.
- Widaman Award by the Agricultural Research Division, University of Nebraska-Lincoln ($2,000) to Ana Aguilar-Lozano (August 2016)
- College of Education and Human Sciences Travel Grant ($250) for Sonal Sukreet (April 2017)

- College of Education and Human Sciences Travel Grant ($250) for Ezra Mutai (April 2017)
- College of Education and Human Sciences Travel Grant ($250) for Fang Zhou (April 2017)
- College of Education and Human Sciences Travel Grant ($250) for Amy Leiferman (April 2017)
- Agricultural Research Division *David H. & Anne E. Larrick Memorial Travel Fund* grant ($400) for Sonal Sukreet (March 2017), University of Nebraska-Lincoln
- Agricultural Research Division *David H. & Anne E. Larrick Memorial Travel Fund* grant ($400) for Amy Leiferman (March 2017), University of Nebraska-Lincoln
- Agricultural Research Division *David H. & Anne E. Larrick Memorial Travel Fund* grant ($400) for Ezra Mutai (March 2017), University of Nebraska-Lincoln
- Amy Leiferman, Finalist of the American Society for Nutrition's (ASN) Nutritional Sciences Council (NSC) 2017 Graduate Student Research Awards Competition (Experimental Biology meeting 2017 in Chicago, IL) and $750 award.
- Graduate Student and Postdoctoral Associate Poster Competition, Nebraska Center for the Prevention of Obesity Disease through Dietary Molecules ($150) for Ezra Mutai (April 12, 2017), University of Nebraska-Lincoln
- 1st Prize for Sonia Manca, Emerging Leaders Postdoctoral Award Competition by the American Society for Nutrition, "The bioavailability and distribution of bovine milk exosomes is distinct from that of their cargos in mice," Experimental Biology Meeting; Chicago, IL, April 22-26, 2017
- Postdoctoral travel grant award from the University of Nebraska-Lincoln's Office of Postdoctoral Studies and the Postdoc Advisory Council ($725) to Bijaya Upadhyaya (March 16, 2018) to attend the Keystone symposium titled "Exosomes/Microvesicles: Heterogeneity, Biogenesis, Function and Therapeutic Developments," June 4-8, 2018, Beaver Run Resort, Breckenridge, CO
- Graduate Student and Postdoctoral Associate Poster Competition, Nebraska Center for the Prevention of Obesity Disease through Dietary Molecules ($150) for Di Wu (April 11, 2018), University of Nebraska-Lincoln
- Student travel grant award from the College of Education and Human Sciences ($250) to Di Wu (March 29, 2018) to attend the Keystone symposium titled "Exosomes/Microvesicles: Heterogeneity, Biogenesis, Function and Therapeutic Developments," June 4-8, 2018, Beaver Run Resort, Breckenridge, CO
- Student travel grant award from the College of Education and Human Sciences ($250) to Mahrou Sadri (March 29, 2018) to attend the Nutrition 2018 Meeting, June 9-12, 2018 in Boston, MA.
- Mahrou Sadri, Finalist of the American Society for Nutrition's (ASN) Nutritional Sciences Council (NSC) 2018 Graduate Student Research Awards Competition (Nutrition 2018 Conference, American Society for Nutrition; Boston, MA, June 10, 2018) and $750 award.
- Mahrou Sadri, winner of the Emerging Leaders in Nutrition Science Competition (Bioactive Food Compounds Research Interest Section) at the Nutrition 2018 Conference, "Bovine milk exosomes and their miR-30d cargo cross the placenta and contribute toward embryo development in C57BL/6 mice" American Society for Nutrition; Boston, MA, June 9, 2018
- Beatrice E. Donaldson David Fellowship by the College of Education and Human Sciences, University of Nebraska-Lincoln ($1,000) to Sonal Sukreet (August 2018)
- Agricultural Research Division *David H. & Anne E. Larrick Memorial Travel Fund* grant ($400) for Ezra Mutai (June 2018), University of Nebraska-Lincoln
- Widaman Award by the Agricultural Research Division, University of Nebraska-Lincoln ($2,000) to Di Wu (August 2018)

- Graduate Student and Postdoctoral Associate Poster Competition, Nebraska Center for the Prevention of Obesity Disease through Dietary Molecules ($150) for Sonal Sukreet (September 12, 2018), University of Nebraska-Lincoln
- Agricultural Research Division *David H. & Anne E. Larrick Memorial Travel Fund* grant ($400) for Fang Zhou (June 2019), University of Nebraska-Lincoln
- Student travel grant award from the College of Education and Human Sciences ($200) to Sonal Sukreet (April 17, 2019) to attend the "Nutrition 2019" meeting by the American Society for Nutrition, June 8-11, 2019, Baltimore, MD
- Graduate Student and Postdoctoral Associate Poster Competition, Nebraska Center for the Prevention of Obesity Disease through Dietary Molecules ($150) for Mahrou Sadri and Fang Zhou (April 17, 2019), University of Nebraska-Lincoln
- Graduate Studies travel grant ($500) for Sonal Sukreet (June 2019), University of Nebraska-Lincoln
- Agricultural Research Division *David H. & Anne E. Larrick Memorial Travel Fund* grant ($400) for Di Wu (June 2019), University of Nebraska-Lincoln
- Student travel grant award from the College of Education and Human Sciences ($200) to Fang Zhou (May 20, 2019) to attend the "Nutrition 2019" meeting by the American Society for Nutrition, June 8-11, 2019, Baltimore, MD
- Twila Herman Claybaugh NHS Fellowship ($1,500) to Sonal Sukreet (May 21, 2019)
- Winner of the Emerging Leaders Poster Competition, American Society for Nutrition, Nutritional Immunology and Inflammation Research Interest Section, Di Wu, Nutrition 2019 Meeting (June 10, 2019)
- Widaman Award by the Agricultural Research Division, University of Nebraska-Lincoln ($2,000) to Sonal Sukreet (August 2019)
- Widaman Award by the Agricultural Research Division, University of Nebraska-Lincoln ($2,000) to Fang Zhou (August 2019)
- John and Louise Skala Fellowship by the Agricultural Research Division, University of Nebraska-Lincoln ($5,000) to Ngu "Alice" Kah Hui (August 2019)
- Graduate Student and Postdoctoral Associate Poster Competition, Nebraska Center for the Prevention of Obesity Disease through Dietary Molecules ($150) for Di Wu (September 11, 2019), University of Nebraska-Lincoln

Funding

Active

NIFA/USDA (TBD) "Milk exosome-driven evolution of antibiotic-resistant gut pathogens" PI: Janos Zempleni (0.25 months calendar). Co-Investigator: Jennifer Auchtung (University of Nebraska-Lincoln, Dept. of Food Science and Technology). Aims: (1) Assess the selection of polymorphisms in *C. difficile*, and Vancomycin-resistant *Enterococcus faecalis* (VRE) in milk exosome-defined cultures. (2) Assess whether milk exosomes cause changes in the host microbiome that alter the colonization with *C. difficile* and VRE not selected in exosome cultures in mice. (3) Assess the pathogenicity of *in vitro*-selected polymorphisms in mice fed a regular AIN-93G diet. $350,000 direct costs ($150,000 F&A costs). 2/01/2020 – 01/31/2024.

NIH (P20GM104320). "Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules (NPOD), Phase 2" PI: Janos Zempleni (3 person months calendar). 8/15/2019 – 5/31/2024. $11,498,029 ($7,838,625 direct costs, $3,659,404 F&A). Aims: (1) Increase NPOD's critical mass of researchers. (2) Acquire additional research equipment for NPOD's Research Core and support bioinformatics and experimental design services offered through its Administrative

Core. (3) Enhance the collaborative NPOD environment by mentoring junior investigators to success. (4) Expand integration of fundamental nutrition and obesity research with translational, clinical and community-based research.

NIH & USDA/NIFA (1 R01 DK107264/NIFA 2016-67001-25301) “Molecular signatures of new bioactive compounds in humans: cow’s milk microRNAs.” PI: Janos Zempleni (0.75 month summer). Co-Investigators: Jiri Adamec (Dept. of Biochemistry, UNL; 0.75 month calendar) and Juan Cui (Dept. of Computer Science and Engineering, UNL; 0.75 month calendar). Aims: (1) Assess direct markers of milk microRNA intake and status in humans. (2) Assess indirect markers of milk microRNA intake and status in humans. (3) Assess functional markers of milk microRNA intake and status in humans. $1,250,000 direct costs ($550,095 F&A costs). 08/01/2016 – 07/31/2021.

PureTech Health, Inc. (N/A). Bioavailability and distribution of bovine milk exosomes and their RNA and protein cargos in mice. Aims: 1) Assess the bioavailability and distribution of bovine milk exosomes in mice. 2) Assess the bioavailability of RNAs in bovine milk exosomes in mice. 3) Assess the bioavailability of proteins in bovine milk exosomes in mice. PI: J. Zempleni (0.5 months). $347,185 total costs ($236,986 direct costs and $110,199 F&A costs). 03/12/2018 – 06/30/2019.

Gates Foundation (OPP1200494). Milk exosomes and RNA for optimal growth and immune function (Phase I). PI: J. Zempleni (0.50 months in Year 1 and 0.25 months in Year 2; note this is an 18-month proposal). Aim: Assess the activation of interferon-beta signaling by microbial mRNAs in milk exosomes. $100,000 total costs ($100,000 direct costs, no F&A costs allowed). GCE Phase 21, topic “Nutrition”, 11/01/2018 – 04/30/2020.

Land O’Lakes, Inc. (Purina). Characterization and health benefits of Land O’Lakes exosomes. PI: J. Zempleni (0.60 months); co-Is: Jiri Adamec (0.50 months), Juan Cui (0.25 months). Aims: 1) Conduct a comparative characterization of bovine milk exosomes purified by Land O’Lakes technologies and exosomes purified by ultracentrifugation. 2) Conduct a comparative assessment of health benefits of bovine milk exosomes purified by Land O’Lakes’ technologies and exosomes purified by ultracentrifugation in mice. $257,886 total costs ($205,838 direct costs, $51,460 F&A costs). 03/01/2019 – 02/28/2020.

ARS W-4002 Regional Research Project. “Nutrient bioavailability – phytonutrients and beyond.” Fifteen investigators from ARS, including J. Zempleni (5% effort = 0.45 person months, academic year). Objective 1: Determine the bioavailability (absorption, distribution, metabolism, elimination) of nutrients and other food components and ascertain the environmental and genetic determinants; Objective 2. Evaluate the bioactivity of nutrients and other food components and elucidate their underlying protective mechanisms. 10/2018 – 9/2023.

UNL Chancellor & Vice Chancellor “Incentive for directing the NPOD P20 Center.” PI: Janos Zempleni. Aim: Unrestricted research funds – no strings attached. $215,000 (no F&A). 07/01/2015-06/30/2020

ARD Strategic Priorities Funding program (Form ID 1936) “Postdoctoral Associate for NPOD Director.” PI: Janos Zempleni (0.4 months calendar, no salary support). Aim: Ease the teaching burden of the NPOD director through providing salary support for a postdoctoral associate. $158,208 direct costs (no F&A costs). 06/01/2019 – 05/31/2024.

Pending

NIH (1 R21 OD026610) “Development of an exosome and cargo tracking mouse.” PI: Janos Zempleni (1.00 months academic). Aim: Develop an exosome and cargo

tracking mouse (ECT mouse) to assess the origin, destination, and cargo of endogenous exosomes. $275,000 direct costs ($133,375 F&A costs). 04/01/2020 – 03/31/2022. **This application has received a highly competitive socre that would have resulted in an award last year. NIH's funding decision for this application is imminent.**

NIH/NIDDK (TBD). Roles of milk exosomes and their microRNA cargos in gastrointestinal development and barrier function in early life stages. PI: J. Zempleni (1.50 months), co-Is: Jennifer Auchtung (UNL), Sarah Blutt (Baylor College of Medicine), Juan Cui (UNL). Aims: 1) Assess miR profile in murine MEs and the tissue in which murine MEs originate. 2) Assess pathways through which MEs and miR-30d regulate the growth and function of the intestinal epithelium. 3) Assess whether maternal loss of let-7 biogenesis increases the susceptibility to the gut pathogen*, Enterococcus faecalis*, in neonate pups. $3,670,466 total costs ($2,752,513 direct costs and $917,953 F&A costs). 09/01/2020 – 08/31/2025.

NIH/NICHD TBD). NIH/NICHD (HD098240). Roles of milk exosomes and their microRNA cargos in cognitive performance in early life stages. PI: J. Zempleni (0.50 months), co-Is: Rick Bevins (UNL), Peng Ji (UC-Davis), Denise Ramirez (UT Southwestern). Aims: 1) Assess the transport of milk exosomes across the BBB and the distribution of BME in distinct regions of the brain in murine and bovine cell cultures and in suckling mouse pups. 2) Assess whether milk exosomes and their miR cargos contribute to optimal neurocognitive development during perinatal stages of life in mice. $419,382 total costs ($275,000 direct costs and $144,3822 F&A costs). 09/01/2020 – 08/31/2022.

University of Nebraska President's Office and University of Nebraska Foundation. "Transformation of the Nebraska Center for the Prevention of Obesity Diseases into a Nutrition and Obesity Research Center" in response to the Big Ideas Request for Applications. The tentative budget request is for a $25 million endowment and a tentative start date for withdrawing income from the endowment in 2023.

Completed

NIH (1P20GM104320-A1). "Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules (NPOD)" PI: Janos Zempleni (3.5 person months calendar). 8/15/2014 – 5/31/2019. $7,791,596 direct costs ($3,752,275 F&A). Aims: (1) Establish an Administrative Core and programs to support and enhance NPOD research. (2) Develop a critical mass of faculty through the support of five thematically linked primary research projects, a vigorous mentoring program for Project Leaders, a pilot grant program, a Molecular Biology, Bioinformatics and Biostatistics Core (MB3C) facility, and research to develop new tools in the Core. (3) Increase research capacity through targeted recruitment of researchers in areas key to Center success.

ARS W-3002 Regional Research Project. "Nutrient bioavailability – phytonutrients and beyond." Fifteen investigators from ARS, including J. Zempleni (5% effort = 0.45 person months, academic year). Objective 1: Determine the bioavailability (absorption, distribution, metabolism, elimination) of nutrients and other food components and ascertain the environmental and genetic determinants; Objective 2. Evaluate the bioactivity of nutrients and other food components and elucidate their underlying protective mechanisms. 10/2013 – 9/2018.

ARD Strategic Priorities Funding program (Form ID 1936) "Postdoctoral Associate for NPOD Director." PI: Janos Zempleni (0.4 months calendar, no salary support). Aim: Ease the teaching burden of the NPOD director through providing salary support for a postdoctoral associate. $158,208 direct costs (no F&A costs). 07/01/2016 – 06/30/2019.

Service contract with the University of Auburn (Dr. Michael Roberts) for preparing exosome-defined rodent diets. $3,966 direct costs (and a $209 service fee to UNL). 12/2/2016 – 1/31/2019.

ARD Strategic Priorities Funding program (Form ID 14605) “Salary savings returned for creating preliminary data for NIH contracts and grant applications.” PI: Janos Zempleni (0.2 months calendar, no salary support). Aim: Create preliminary data for NIH contracts and grant applications. $18,305 direct costs (no F&A costs). 07/01/2018 – 06/30/2019.

NIFA/USDA (2015-67017-23181) “Roles of milk-borne microRNAs in the regulation of gut inflammation.” PI: Janos Zempleni (0.5 months calendar). Co-Investigator: Amanda Ramer-Tait (University of Nebraska-Lincoln, Dept. of Food Science and Technology). Aims: (1) Assess the bioavailability of milk-borne microRNAs in humans. (2) Characterize the delivery of milk-borne microRNAs by endothelial cells to immune cells and assess effects on the expression of immune related genes. (3) Assess markers of intestinal inflammation in Mdr1a$^{-/-}$ mice fed a microRNA-defined diet. $362,231 direct costs ($137,582 F&A costs). 11/07/2014 – 11/06/2018.

Nebraska University, President’s Office (number TBD) “Prevention of human disease by food-borne microRNAs.” PIs: Audrey Atkin and Janos Zempleni (0.25 months, no salary); Co-Is: Juan Cui, Guoqing Lu (UNO), Tara Nordgren (UNMC), Debra Romberger (UNMC). Aims: 1) Assess the bioavailability and distribution of milk exosomes in mice. 2) The molecular mechanisms for the dietary miRNA effects on human gene expression. 3) Determine the actions of food-borne miRNAs on immune cell function. $297,367 (no F&A). 4/15/2016 – 4/30/2018.

Egg Nutrition Center (N/A). Identification of mechanisms through which exosomes and their RNA cargos in chicken eggs improve spatial learning and memory in mice. Aims: 1) Assess gene networks in the cerebellum of mice fed exosome and microRNA-defined diets. 2) Assess the bioavailability and distribution of microRNAs, encapsulated in chicken egg exosomes, in mice. PI: J. Zempleni (0.25 months). $57,434 total costs ($52,213 direct costs and $5,221 F&A costs). 10/15/2017 – 10/14/2018.

ARD Strategic Priorities Funding program (Form ID 2017) “Salary savings used to create preliminary data for NIH grant applications.” PI: Janos Zempleni (0.2 months calendar, no salary support). Aim: Create preliminary data for NIH grant applications. $19,603 direct costs (no F&A costs). 07/01/2017 – 06/30/2018.

Gerber Foundation “Assessment of the role of microRNAs in infant formulas for bone health.” PI: Janos Zempleni (1 month summer). Aims: (1) Assess the effects of dietary miR-29b intake on miR-29b status and bone mineralization in infants. (2) Assess the bioavailability of miR-29b in fortified formulas in healthy adults. $310,080 ($31,008 F&A costs). 1/01/2015 – 11/21/2017

Egg Nutrition Center (N/A) “Egg-borne microRNAs regulate gene networks and contribute toward reproductive success in humans and mice.” PI: Janos Zempleni (0.2 months summer). Co-I: Juan Cui (University of Nebraska-Lincoln, Dept. of Computer Science and Engineering). Aims: 1) Characterize gene networks that depend on the dietary intake of egg miRNAs in humans and mice. 2) Assess whether egg miRNAs are important for reproductive success in mice. 1) Assess whether dietary depletion of egg exosomes causes a loss of spatial learning and memory in C57BL/6 mice without utilizing an aversive stimulus (stress) or food deprivation. 2) Assess whether dietary depletion of egg exosomes causes a loss of spatial learning and memory in C57BL/6 mice with utilizing an aversive stimulus (stress) and food deprivation. $90,903 direct costs ($82,639 direct costs and $8,264 F&A costs). 10/12/2016 – 10/11/2017.

Egg Nutrition Center “Pilot project: Novel roles of egg-borne microRNAs in human gene regulation, contributing to metabolic health.” PI: Janos Zempleni (0.5 months calendar). Aims: (1) Assess the content of microRNAs in egg yolk, egg white, and spray-dried egg white. (2) Assess the bioavailability of egg-borne microRNAs in humans and the effects of egg-borne microRNAs on human gene expression. $45,435 direct costs ($4,544 F&A costs). 9/15/2014-3/31/2016.

ARD Strategic Priorities Funding program (TBD) “Assessment of novel nutrient signaling pathways.” PI: Janos Zempleni (0.5 months calendar). Aims: Discover novel nutrient signaling pathways. $120,000 direct costs (no F&A costs). 01/01/2015 – 12/31/2016 (no-cost extension until 12/31/2017).

UNL Nebraska Center for Obesity Prevention through Dietary Molecules’ pilot grant program “Identification of surface protein that mediate the uptake of milk exosomes.” $100,000. PI: Jiri Adamec, Co-Is: Janos Zempleni and Juan Cui. Aim 1: Assess the role of glycans in surface glycoproteins from cow’s milk exosomes in the exosome uptake by human PBMC. Aim 2: Identify surface glycoproteins/proteins that mediate the uptake of milk exosome by PBMC. 1/1/2015 – 12/31/2016.

ARD Strategic Funds. “Purchase of a chemiluminescence plate reader.” $15,000. 4/2014.

National Institutes of Health (R01DK077816). “Biotin sensing and chromatin remodeling by holocarboxylase synthetase.” PI: Janos Zempleni (30% effort = 2.7 person months, academic year); $540,000 direct costs ($242,460 F&A costs); 2/1/09 - 1/31/13. Aim: Identify mechanisms of biotin-dependent nuclear translocation of holocarboxylase synthetase (HCS), and to characterize HCS-dependent chromatin remodeling events that affect gene transcription at biotin transporter loci.

National Institutes of Health (2R01DK063945). “Biotin deficiency impairs silencing of repeat regions and retrotransposons.” PI: Janos Zempleni (25% effort = 2.25 person months, academic year); $932,986 direct costs ($300,102 F&A costs); subcontracts: Craig Cooney, University of Arkansas for Medical Sciences ($58,614 total costs, year 1), and John West, University of Oklahoma Health Sciences Center ($251,897 total costs, years 2-4). 07/01/08 - 06/30/13. Goals: (1) Discover histone biotinylation marks at repeat elements and retrotransposons in mammalian chromatin. (2) Determine whether biotinylation of histones at retrotransposons depends on nutritionally acquired biotin. (3) Determine whether biotin deficiency increases the incidence of retrotransposition events.

Vice Chancellor for Research, UNL “Nebraska Gateway to Nutrigenomics.” Multiple PIs: Janos Zempleni, Tim Carr. $100,000 per year for two years. Tobacco Settlement Funds. Objective: Seed money for the Nebraska Gateway to Nutrigenomics group. 03/30/2009 – 06/30/2013.

UNL ARD Big Idea program “Computational science meets nutrigenomics” $3,600 from ARD plus matching funds from the Office for Research and Economic Development ($2,520), Department of Computer Science and Engineering ($1,000), and Nutrition and Health Sciences ($1,000). PI: Janos Zempleni; Co-PI: Stephen Scott. Goal: Hold a workshop that raises the awareness of the capabilities of computational scientists among biologists, and the awareness of needs of biologists among computational scientists. Objectives: use the retreat as a jumping board for preparing an NIH P01 Program Project grant and a T32 pre-doctoral training grant and to initiate new collaborations among UNL faculty. April 14, 2014.

FY2010 IANR Strategic Investments “Enhancing Interdisciplinary Teams” Grant Program. “Genetic predisposition to human disease and dietary interventions.” Goals (Zempleni): (1) Identify the promoter in the human *holocarboxylase synthetase* gene. (2) Assess the effects of single nucleotide polymorphisms in HCS and HCS promoter with regard to HCS catalysis and regulation. PI: Janos Zempleni

(effort = 0.6 person months cal year); Co-PIs: Paul Black, Tim Carr, Larry Harshman, Ji-Young Lee, Angela Pannier, Vicki Schlegel, Dong Wang (effort = 0.6 person months cal year). $375,000 direct costs (no F&A costs). 06/01/2010 – 05/31/2013.

UNL Life Sciences Competitive Grants Program "Mechanisms of micronutrient control of epigenetic marks in stem cells." Goals: 1) Identify mechanisms by which biotin supply in culture media regulates the *proliferation* of adult human mesenchymal stem cells (MSCs). 2) Identify mechanisms by which biotin supply in culture media regulates the *differentiation* of adult human mesenchymal stem cells. PI: Angela Pannier; Co-Is: Dong Wang, Janos Zempleni (5% effort; 0.056 FTE; 0.5 person months/academic year). $100,000 direct costs (no F&A costs). 07/01/2011 – 06/30/2013.

UNL Research Council Interdisciplinary Grant "Generating additional preliminary data for revising a grant application to the National Institutes of Health." PI: Janos Zempleni (0.5 month effort), Co-I: Vicki Schlegel (0.5 month effort). 01/01/2013 – 12/31/2013. $19,980 (no F&A costs).

UNL Hatch Equipment Purchase (ID1377) "Equipment request for an epMotion liquid handler to boost ongoing research increase, and generate preliminary data". PI: Samodha Fernando; Co-I: Janos Zempleni and five other investigators from UNL; $43,264 (no F&A). 5/15/2013

ARS W-2002 Regional Research Project. "Nutrient bioavailability – phytonutrients and beyond." Fifteen investigators from ARS, including J. Zempleni (5% effort = 0.45 person months, academic year). Objective 1: Determine the bioavailability (absorption, distribution, metabolism, elimination) of nutrients and other food components and ascertain the environmental and genetic determinants; Objective 2. Evaluate the bioactivity of nutrients and other food components and elucidate their underlying protective mechanisms. 2008 – 2013 (current funding period: 10/1/08-09/30/09).

National Institutes of Health (DK079892). "The Role of Biotin in Birth Defects." PI: Donald M. Mock; Co-Investigator: Janos Zempleni [4.2% effort calendar year (0.5 summer months)]. $750,000 direct costs (~$345,000 F&A costs). Zempleni subcontract = $105,423 ($28,881 F&A costs), total support for three years. Objective 1: To test the hypothesis that biotin status is significantly reduced in early pregnancy as assessed by decreased activity of the biotin-dependent enzyme propionyl CoA carboxylase in peripheral blood lymphocytes. Objective 2: To test the hypothesis that reduced propionyl CoA carboxylase activity identified in women does indeed reflect biotin deficiency by conducting a placebo-controlled, double blind biotin supplementation study. 07/01/09 – 06/30/12.

National Institutes of Health (R21DK082476). "Novel histone biotinylation sites and relationships to other genetic marks." Contact PI (Multiple PI Mechanism): Janos Zempleni (1 person month, calendar year); $256,339 total direct costs ($81,339 F&A costs); subcontracts to Saint Louis University School of Medicine: Yie-Hwa Chang ($85,739 direct costs and $54,826 F&A costs, years 1 and 2) and Joel Eissenberg ($114,216 direct costs and $52,566 F&A costs, years 1 and 2). 07/20/09 - 06/30/11. Goals: (1) Catalog all biotinylation sites in all histones and histone variants. (2) Identify modifications that co-exist with biotinylation on histones. (3) Determine whether knockdown of HCS and K9-methyl transferases affects other epigenetic marks.

University of Nebraska-Lincoln, Agricultural Research Division. "Development of software programs for making in silico predictions for nutrient metabolism and requirements in humans." PIs: Dong Wang, Vicki Schlegel, and Janos Zempleni (no salary support for PIs); 07/1/08 - 06/30/10; $40,000 direct costs (no indirect costs).

United States Department of Agriculture, National Research Initiative Competitive Grants Program. “Biotin affects cytokine metabolism.” Grant number 2006-35200-17138. PI: Janos Zempleni (25% effort = 2.25 person months, academic year); 9/1/06 - 8/31/10; $327,668 direct costs ($81,918 F&A costs). Goals: (1) Determine whether biotin affects secretion and receptor-mediated endocytosis of IL-2 in immune cells. (2) Identify biotin-responsive elements in genes coding for IL-2 and IL-2 receptor gamma. (3) Determine whether biotin affects chromatin remodeling at IL-2 and IL-2 receptor loci in immune cells.

Revised application (“administrative supplement”) to National Institutes of Health (R01DK077816). Administrative supplement “Purchase of an AKTA system for protein purification” to parent grant “Biotin sensing and chromatin remodeling by holocarboxylase synthetase.” PI: Janos Zempleni; 10/01/09 – 01/31/10. $60,000 (no % effort; no F&A costs), American Reinvestment and Recovery Act funds. Goal: to purchase an AKTA 10 system for protein purification.

ARD/IANR Equipment grant (no number assigned). “Assessing adipocyte and osteoblast differentiation using the iBox Scientia imaging system.” PI: Janos Zempleni (no % effort). 06/01/2012 – 08/30/2012. $50,722 ($40,577.60 requested from ARD/IANR, $10,144.40 as matching funds from J. Zempleni).

National Science Foundation (NSF MCB 0615831) “Genetic role of histone biotinylation.” PI: Joel Eissenberg (St. Louis University School of Medicine, 50% effort) Subcontract to Janos Zempleni (Co-PI, 4% effort = 0.36 person months, academic year); $38,037 direct costs ($17,497 F & A costs); (total award: $357,534 direct costs, $164,466 F & A costs); 08/01/06 – 07/31/09 (no-cost extension until 07/31/2010). Goals: (1) Determine the mechanism by which HCS is targeted to chromosomes. (2) Test the role of HCS and BTD in gene expression. (3) Identify biotinylated histone binding proteins from nuclear extracts.

National Science Foundation (EPSCoR EPS-0701892) “NSF EPSCoR Research Infrastructure Improvement (RII) Grant (Nano-enhanced epigenetics research).” PI: Fred Choobineh [Co-PIs: Ten faculty from UNL, Creighton, and UNMC, including Janos Zempleni (no salary support, but 2.5% effort dedicated to this project = 0.23 person months, academic year)]; $9,000,000 total costs; direct costs in sub-award for the Zempleni lab: $216,792; F&A cost: $114,056); 7/1/07 – 6/30/10. Goal: Build research infrastructure in nanotechnology and epigenetics.

Institute of Agricultural and Natural Resources Action Plan Project “Reproductive Genetics and Epigenetics.” PI: Andrea Cupp; Co-PIs: Kathy Hanford, Angela Pannier, Brett White, Jennifer Wood, Janos Zempleni (0% effort). $12,280 (no F&A costs). Objective: Arrange for a site visit by outside consultants to establish a research cluster in reproductive genetics and epigenetics. 2009.

Institute of Agricultural and Natural Resources Action Plan Project “Nebraska Gateway to Nutrigenomics.” PI: Janos Zempleni; Co-PIs: Tim Carr, Judy Driskell, Concetta DiRusso, Vicki Schlegel (0% effort). $9,700 (no F&A costs). Objective: Arrange for a site visit by outside consultants to establish the Nebraska Gateway to Nutrigenomics group at UNL. 2009.

NSF Major Research Instrumentation Program. “Bruker Daltonics *Maxis* Ultra-High-Resolution-Time-Of -Flight (UHR-TOF) mass spectrometer.” PIs: Ronald Cerny, Sally Mackenzie; Co-investigators: 19 investigators from UNL, including Janos Zempleni (0% effort). ~$700,000 direct costs (no F&A costs). Objective: Acquire a mass spectrometer. 2009.

National Institutes of Health. (1R21ES015206) “Epigenetic effects of biotin on activation of endogenous retroviral sequences.” PI: Janos Zempleni (5% effort = 0.45 person months, academic year) [Co-PIs: Judy Christman (5% effort, but only 2.2% salary support), Bhavana Dave (5% effort, but no salary support), and John West (10%

effort); $275,000 direct costs ($105,420 F&A costs); 09/22/06 - 8/31/08 (no-cost extension until 8/31/09).

NSF Major Research Instrumentation Program. “High throughput DNA sequencing for genomics research.” PI: Michael E. Fromm (8.4% effort = 1 calendar month); Co-PIs: Heriberto Cerutti, Janos Zempleni, Zoya Avramova (each at 4.2% effort = 0.38 person months, academic year). $714,750 direct costs (no F&A costs). Objective: Acquire a high-throughput sequencing machine. 09/01/2008 - 08/31/2011.

University of Nebraska-Lincoln - Office of the Vice Chancellor for Research: Research Cluster Grant. "Center for chromatin biology and gene regulation." PI: M. Fromm; Co-PIs: Z. Avramova, H. Cerutti, S. Kachman, S. Ladunga, J. Zempleni 07/01/06 - 06/30/08; $50,000.

Office for Academic Affairs, University of Nebraska at Lincoln. “Big 12 Faculty Fellowship Award [for visiting the Department of Microbiology and Immunology at the University of Oklahoma].” Janos Zempleni; $2,500; 06/01/08 – 08/15/08.

Institute of Agricultural and Natural Resources Equipment grant request “Odyssey Infrared Imaging System (Li-Cor, Inc.)” J. Zempleni, February 2008; $51,950.

University of Nebraska-Lincoln, Agricultural Research Division. "Impact of biotin supplementation on early embryonic development." PIs: Janos Zempleni and Brett White (no salary support for PIs); 7/1/05 - 6/30/08; $40,000 direct costs (no indirect costs).

National Institutes of Health. 1 R01 DK063945. "Vitamin-dependent modifications of histones" PI: Janos Zempleni (20% effort); $752,000 total direct costs ($314,505 indirect costs); 1/1/04 - 12/31/07.

National Science Foundation. "Nutritional Genomics Center." PI: Michael Fromm; Co-PIs: Janos Zempleni and 10 faculty members at the University of Nebraska-Lincoln, the University of Nebraska Medical Center, and the University of Nebraska-Creighton. $4,200,000 total costs plus $2,100,000 in matching funds from the University of Nebraska-Lincoln.

University of Nebraska-Lincoln - Office of the Vice Chancellor for Research: Research Cluster Grant. "Development of interventions against bioterrorism agents using Drosophila as a model system." PIs: A. Benson, L. Harshman, J. Zempleni; 7/1/04 - 6/30/06; $50,000.

National Institutes of Health 1 R01 DK60447. “The essential role of biotin in cell proliferation.” PI: Janos Zempleni (35% effort); $425,000 direct costs ($180,000 indirect costs); 5/1/01 - 12/31/04.

University of Nebraska-Lincoln, Agricultural Research Division. "Regulation of biotinylation of histones in *Saccharomyces cerevisiae*." PIs: Janos Zempleni and Xin Bi (no salary support for PIs); 7/1/02 - 6/30/04; $40,000 direct costs (no indirect costs).

Nebraska Universities Foundation. "Purchase of a photodiode array detector and a fraction collector for the analysis of biotinylated histones." PI: Janos Zempleni; Co-PI: Gautam Sarath; $20,835

University of Nebraska-Lincoln - Office of the Vice Chancellor for Research: Research Cluster Planning Grant. "Molecular basis of epigenetic regulation: novel histone modifications." PIs: Z. Avramova, X. Bi, G. Sarath, J. Zempleni; 7/1/02 - 6/30/04; $10,000.

United States Department of Agriculture, National Research Initiative Competitive Grants Program. “Variations of biotin metabolism during the cell cycle.” PI: Janos Zempleni (25% effort); 11/1/00 - 10/31/02; $142,856 direct costs ($32,144 indirect costs).

The Dean’s/CUMG Research Development Fund at The University of Arkansas for Medical Sciences; acct. number 117-3403075. “Mitogen-stimulated lymphocytes specifically increase biotin uptake.” PI: Janos Zempleni (no salary support for PI); 7/1/99 - 12/31/00; $18,053 total direct costs.

Roche Vitamins Inc. “Beneficial effects of biotin on the human immune system.” PI: Janos Zempleni (no salary support for PI); Co-PI: Donald M. Mock, Ricki M. Helm; 11/1/99 - 7/30/00; $15,000 total direct costs.

Requested but not funded

NIH/NICHD (HD098240). Roles of milk exosomes and their microRNA cargos in cognitive performance in early life stages. PI: J. Zempleni (0.75 months), co-Is: Rick Bevins (UNL), Peng Ji (UC-Davis). Aims: 1) Assess the transport of milk exosomes across the BBB and the distribution of BME in distinct regions of the brain in murine and bovine cell cultures and in suckling mouse pups. 2) Assess whether milk exosomes and their miR cargos contribute to optimal brain function during perinatal stages of life in mice. $402,875 total costs ($275,000 direct costs and $145,020 F&A costs). 04/01/2020 – 03/31/2022.

National Dairy Council (N/A). Transformation of dairy waste into a paste that promotes postnatal growth and anti-viral resistance of toddlers in developing countries (pre-proposal). Aims: 1) Assess the amount and purity of exosomes in waste from cottage cheese making and characterize their RNA cargos. 2) Prepare a milk exosome-rich paste for use as nutritional supplement. 3) Assess the stability of RNAs, encapsulated in exosomes, in the paste. 4) Assess the palatability of the paste and compliance with paste consumption in Indonesia. PI: J. Zempleni (1.00 months). Co-Is: Tony Arjuna (University of Yogyakarta, Indonesia), Juan Cui (UNL), Rafael Jimenez-Flores (Ohio State). $500,000 total costs ($454,545 direct costs and $45,455 F&A costs). 01/01/2020 – 12/31/2021.

Egg Nutrition Center (N/A). Accumulation of egg exosomes and their microRNA cargos in distinct regions of the mouse brain (pre-proposal). Aims: 1) Assess the distribution of egg exosomes in the murine brain. 2) Assess the distribution of miR-9 and miR-29a, encapsulated in egg exosomes, in the murine brain. PI: J. Zempleni (0.50 months). $189,070 total costs ($171,882 direct costs and $17,188 F&A costs). 11/01/2019 – 04/30/2021.

NIFA Biological Risk Assessment Group (TBD). Assessment of non-target effects of small interfering RNA in genetically engineered corn in chickens. PI: J. Zempleni (0.50 months), co-investigator: Jiujiu Yu (0.25 months). Aims: (1) Assess the bioavailability and distribution of siRNA in GE corn in chickens. (2) Assess the effects of siRNA in GE corn on the expression of siRNA reporter genes in chicken cell cultures. $350,000 direct costs ($150,000 F&A costs, no F&A costs). 11/01/2018 – 04/30/2020. 07/01/2019 – 06/30/2023.

NIFA/USDA (TBD) “Roles of milk-borne microRNAs in the regulation of gut inflammation.” PI: Janos Zempleni (0.4 months calendar). Co-Investigator: Juan Cui (University of Nebraska-Lincoln, Dept. of Computer Science and Engineering). Aims: (1) Assess the bioavailability and distribution of microbial mRNAs in bovine milk exosomes in C57BL/6 mice. (2) Assess the effects of microbial mRNAs in milk exosomes on the response to an influenza A challenge in mice. Sub-objective 2.1 will assess whether the binding of microbial mRNAs in milk exosomes to TLRs activates anti-viral defense mechanisms through NF-κB signaling, IFNB signaling, or both. Sub-objective 2.2 will assess whether specific features in microbial mRNAs (e.g., nucleotide sequence, length) are essential for triggering antiviral responses or whether any mRNA from any microbial species may trigger antiviral responses. $415,223 direct costs ($157,767 F&A costs). 10/01/2018 – 09/30/2018.

Gates Foundation (TBD). Nutrition and milk quality studies under adverse conditions. PI: J. Zempleni (0.4 months total in Years 1 and 2 combined; note this is an 18-month proposal). Aim: Assess whether plasma collection cards allow collecting biological

samples under adverse field conditions, and whther impoverished mothers in Indonesia have an impaired nutritional and metabolic status and produce microRNA-deficient milk compared to affluent mothers. $100,000 total costs ($90,909 direct costs, 9,091 F&A). 07/01/2019 – 01/31/2021.

NIH (1 R21 OD026610) “Development of an exosome and cargo tracking mouse.” PI: Janos Zempleni (1.00 months academic). Aim: Develop an exosome and cargo tracking mouse (ECT mouse) to assess the origin, destination, and cargo of endogenous exosomes. $275,000 direct costs ($127,875 F&A costs). 07/01/2019 – 06/30/2021.

NIH (1 R21 HD098240) “Roles of milk exosomes and their microRNA cargos in cognitive performance in early life stages.” PI: Janos Zempleni (1.00 months academic). Aims: (1) Assess the accumulation of milk exosomes and distinct microRNA cargos in select regions of the brain in suckling mouse pups. (2) Assess whether milk exosomes and their microRNA cargos are essential for optimal spatial learning and memory in mouse pups. $275,000 direct costs ($127,875 F&A costs). 10/01/2018 – 09/30/2020.

NIH (1 R01 DK117814) “Bioavailability and delivery of RNA cargos by dietary exosomes among mammals.” Janos Zempleni (Co-PI, contact), Juan Cui (Co-PI), Brett White (Co-I), University of Nebraska-Lincoln. Aims: 1) Assess the bioavailability and distribution of cow’s milk exosomes in mice. 2) Assess sequence features in bovine milk miRNAs that regulate the bioavailability and distribution of dietary miRNAs in mice. 3) Assess the roles of *bta*-miR-34a from bovine milk in spatial learning and memory in mice. $1,250,000 direct costs ($559,405 F&A costs). 7/1/2018 - 6/30/2023.

NIH R01 (TBD) “The milk exosome-microbiome axis.” Janos Zempleni (PI), Jiri Adamec (Co-I), Juan Cui (Co-I), Samodha Fernando (Co-I), Luwen Zhang (Co-I), University of Nebraska-Lincoln. Aims: (1) Assess the selection of polymorphisms and genome structures by milk exosomes in the human gut microbiome and the effect on purine metabolism in the host. This aim has the following two major sub-aims. Aim 1.1 will test the hypothesis that an environment defined by its content of bovine milk exosomes selects polymorphisms and changes in genome structures in the human gut microbiome. Aim 1.2 will test the hypothesis that selection of polymorphisms and genome structures in gut microbes alter the purine metabolism in the human host. (2) Assess the biological activity of microbial mRNAs in bovine milk exosomes in mice and humans. This aim has the following three major sub-aims. Aim 2.1 will test the hypothesis that microbial mRNAs in bovine milk exosomes are bioavailable. Aim 2.2 will test the hypothesis that microbial mRNAs encapsulated in bovine milk exosomes alter gene expression and metabolic pathways in mice. Aim 2.3 will test the hypothesis that microbial mRNAs encapsulated in bovine milk exosomes activate antiviral response mechanisms through activation of interferon-β (IFNβ) in mice. Tentative budget: ~3.75million (~$2.5 million direct costs and $1.25 F&A costs), 07/01/2019 – 06/30/2024.

Egg Nutrition Center (N/A). Temporal and dosage effects of dietary egg exosome and RNA cargo intake during the perinatal period on optimal cognitive function in mice. Aims: 1) Assess temporal effects of egg exosomes on SLM in the perinatal period in mice. 2) Assess dose-response effects of egg exosomes on SLM in the perinatal period in mice. PI: J. Zempleni (0.33 months). $200,000 total costs ($181,818 direct costs and $18,182 F&A costs). 10/15/2018 – 10/14/2020.

NIH (1 R21 TBD) “Development of an exosome and cargo tracking mouse.” PI: Janos Zempleni (1.00 months academic). Aim: Develop an exosome and cargo tracking

mouse (ECT mouse) to assess the origin, destination, and cargo of endogenous exosomes. $275,000 direct costs ($127,875 F&A costs). 12/01/2018 – 11/30/2020.

NIH (1 RM1 TBD) “Dietary exosomes and brain health.” Co-PIs: Jiri Adamec (contact), Jyothi Arrikath, Juan Cui, Janos Zempleni (3.00 months academic). Aims: 1) Identify sequence features in dietary RNAs that cause secretion and accumulation of exosomal RNAs in distinct regions of the brain in mice. 2) Assess the effects of ERD and ERS on SLM at various life stages and in different sexes in mice and establish gene networks regulated by dietary microRNAs. 3) : Identify exosome and microRNA-dependent purinergic receptor and metabolic regulatory pathways that impair SLM and increase susceptibility to kainic acid-induced seizures in mice fed the ERD diet compared with ERS controls. 4) Identify lines of research within the programmatic focus to broaden the project scope in Phase II and add studies of dietary exosomes from sources other than milk and non-dietary exosomes and brain biology in national health priorities. $5,494,798 direct costs ($1,981,731 F&A costs). 12/01/2018 – 11/30/2023.

NIH (1 R01 DK112891) “Regulation of milk exosome uptake and metabolism in the intestinal mucosa.” Janos Zempleni (PI, contact), Jiri Adamec (PI), Juan Cui (PI), Brett White (Co-I), University of Nebraska-Lincoln, John Hannover (collaborator), NIH. Aims: 1) Assess glycoprotein features that regulate the endocytosis of milk exosomes in the intestinal mucosa. 2) Assess pathways that regulate the cellular processing and basolateral secretion of milk exosomes in the intestinal mucosa. $1,250,000 direct costs ($559,405 F&A costs). 12/1/2017 - 11/30/2022.

National Dairy Council. “Novel bioactive compounds in milk promote spatial learning and memory.” PI: Janos Zempleni (0.5 months). Aims: 1) Assess whether dietary depletion of cow’s milk exosomes causes a loss of spatial learning and memory in C57BL/6 mice without utilizing an aversive stimulus (stress) or food deprivation. 2) Assess whether dietary depletion of cow’s milk exosomes causes a loss of spatial learning and memory in C57BL/6 mice with utilizing an aversive stimulus (stress) and food deprivation. $288,611 direct costs ($28,861 F&A costs). 1/1/2017 - 12/31/2019.

NIH (1 R01 HD092264). “Dietary exosomes regulate muscle protein accretion in pigs.” Janos Zempleni (Co-PI, contact), Brett White (Co-PI), Juan Cui (Co-I), Michael Roberts (Co-I, Auburn University). Aims: 1) Assess the bioavailability of milk exosomes in suckling piglets. 2) Assess the role of the gut microbiota in transmitting and amplifying exosome signals in suckling piglets. 3) Assess the effects of milk exosomes on muscle protein accretion in suckling piglets. $1,250,000 direct costs ($562,781 F&A costs). 7/1/2017 - 6/30/2022.

Great Plains CTR. “Exosomal RNAs in human milk for cognitive performance in formula-fed infants.” Aim: assess the microRNA profiles in human milk in white non-Hispanic and white Hispanic populations. $73,250 total costs ($50,000 direct costs and $23,250 F&A costs), 3/1/2018 – 2/28/2019.

NIH (1 R21 OD024791-A1) “Development of an exosome and cargo tracking mouse.” PI: Janos Zempleni (1.00 months academic). Aim: Develop an exosome and cargo tracking mouse (ECT mouse) to assess the origin, destination, and cargo of endogenous exosomes. $275,000 direct costs ($127,875 F&A costs). 04/01/2018 – 03/31/2020.

National Dairy Council, pre-proposal. Microbial and bovine RNAs in milk exosomes activate Toll-like receptors, thereby strengthening anti-viral responses. PI: J. Zempleni (0.50 months calendar); Co-I: Deborah Brown. Aims: 1. Assess the activation of TLRs by RNAs in exosomes from bovine milk in murine macrophage TLR reporter cells. 2. Assess the activation of TLRs by RNAs in exosomes from

bovine milk in TLR reporter mice and a murine influenza model. $218,996 ($199,087 direct costs and $19,909 F&A costs). 1/1/2018 – 12/31/2020.

Marsden Fund Preliminary Research Proposal, NZ (16-AGR-004) “Message in a bottle? Extracellular vesicles as novel carriers of meaningful biological information” PI: Mark McCann; co-Is: E.A. Rettedal, C. McNabb, C. Anderson, J. Zempleni; Award size and length: TBD.

ARD Enhanced Multistate Funding. “Exosomes and their microRNA cargos in murine milk contribute toward brain health in nursing pups.” PI: Janos Zempleni (0.5 months, no salary support). Aims: 1) Assess the accumulation of milk exosomes and their microRNA cargos in select brain regions in suckling mouse pups. 2) Assess whether milk exosomes and their microRNA cargos are essential for optimal brain development in young mouse pups. 3) Assess whether the beneficial effects of milk exosomes on SLM are perturbed in purinergic A2a receptor knockout pups. $500,000 direct costs (no F&A). 10/01/2018 – 09/30/2023

National Dairy Council “The effects of exosome-enriched versus exosome-depleted milk protein on prostate cancer prognosis in rodents.” PI: Michael Roberts (Auburn University); Co-I: Janos Zempleni (0.5 months). Aims: 1) Determine if a milk protein-based diet with (EXO+) or without exosomes (EXO-) affects prostate cancer cell growth in rats. 2) Determine if a milk protein-based diet with (EXO+) or without exosomes (EXO-) affects prostate cancer tissue transcriptomic signatures. $219,208 direct costs ($21,921 F&A costs); subcontract to UNL: $56,415 direct costs ($5,642 F&A costs). 4/1/2018 – 3/31/2019.

NIH (T32 GM118286) “Integrated predoctoral training grant in nutrition, non-coding RNAs, and extracellular vesicles (N2V).” PI: Janos Zempleni (1 month academic, release time by NHS). Co-Is: Seven and nine investigators from UNL and UNMC, respectively. Aims: 1) Formalize and expand NPOD’s stellar training environment so that 10 NIH-funded trainees, two trainees funded through institutional commitments, and 10 predoctoral associate trainees receive an outstanding education in RNA biology, bioinformatics, human nutrition, cell biology, health and disease, and research ethics and management. 2) Develop and institutionalize a suite of enrichment and camaraderie-building activities that help to build collaborations, illustrate pathways to success for trainees with an interest in pursuing careers in academia, industry or government, and create opportunities for trainees to obtain leadership roles in professional societies. 3) Instill and foster a sense of and appreciation for the importance of ethical conduct in research. $1,391,662 direct costs and $758,991 in cost share commitments ($23,968 F&A costs). 05/01/2017 – 5/31/2022.

NIH (CA204471) “Assessment of dietary microRNAs as confounders in cancer biomarker studies” Multiple PI mechanism. Co-PI (contact): Janos Zempleni (0.75 months calendar). Co-PI: Juan Cui (University of Nebraska-Lincoln, Dept. of Computer Science and Engineering). Co-I Robert Lewis (University of Nebraska Medical Center, Eppley Cancer Institute). Aims: (1) Assess the effect of diet on miRNA signatures in body fluids and devise protocols for the normalization of miRNA profiles in healthy humans. (2) Assess the effects of diet on miRNA signatures in a mouse colon cancer model. $1,250,000 direct costs ($490,300 F&A costs). 04/01/2016 – 03/31/2021.

NIH (TBD) “MicroRNAs in obesity-induced cancer.” Multiple PI mechanism: Juan Cui (University of Nebraska-Lincoln, Dept. of Computer Science and Engineering, lead PI), Janos Zempleni Co-PI, 0.75 summer). Aims: 1) Construct the obesity-associated miRNA-gene regulation networks in mice. 2) Characterize the miRNA-

dependent molecular changes in obesity-associated cancer using mouse model. $1,250,000 direct costs ($527,394 F&A costs). 8/1/2016- 7/31/2021.

NIH (1 R01 DK112359-A1) “Bioavailability and delivery of RNA cargos by dietary exosomes among mammals.” Janos Zempleni (PI), Juan Cui (Co-I), Brett White (Co-I), University of Nebraska-Lincoln. Aims: 1) Assess the bioavailability and distribution of cow’s milk exosomes in mice. 2) Assess the delivery of functional milk miRNAs in mice. 3) Assess the delivery of functional milk mRNAs in mice. $1,250,000 direct costs ($559,830 F&A costs). 12/1/2017 - 11/30/2022.

NIH (1 R21 OD024791) “Development of an exosome and cargo tracking mouse.” PI: Janos Zempleni (1.00 months academic). Aim: Develop an exosome and cargo tracking mouse (ECT mouse) to assess the origin, destination, and cargo of endogenous exosomes. $275,000 direct costs ($127,875 F&A costs). 07/01/2017 – 06/30/2019.

National Pork Board (TBD, Letter of intent/concept paper) “Identification of non-coding RNAs in pork and assessment of their bioavailability in humans.” Co-PIs: Juan Cui, Janos Zempleni (0.25 months). Aims: 1) Identify non-coding RNAs in raw and processed pork. 2) Assess the bioavailability of porcine non-coding RNAs in humans. $108,466 in year 1, $110,862 in year 2 (grand total $219,328; no F&A).

NIH (1 R01 DK112359) “Bioavailability and delivery of RNA cargos by dietary exosomes among mammals.” Janos Zempleni (PI), Juan Cui (Co-I), Brett White (Co-I), University of Nebraska-Lincoln. Aims: 1) Assess the bioavailability and distribution of cow’s milk exosomes in mice. 2) Assess the delivery of functional milk miRNAs in mice. 3) Assess the delivery of functional milk mRNAs in mice. $1,250,000 direct costs ($548,405 F&A costs). 12/1/2016 - 11/30/2021.

Foundation for Food and Agriculture Research (TBD, concept paper) “Optimization of practices in milk processing and dairy cow farming for optimal human health through milk exosomes and microRNAs.” PI: J. Zempleni; Co-Is, date and budget TBD. Aims: 1) Assess the effects of cattle feeding on the content of exosomes and their cargos in cow’s milk. This aim will test the hypothesis that the content of exosomes and their cargos depends on feeding, duration of lactation, and breed. 2) Assess the effects of homogenization on the content of exosomes and their cargos in cow’s milk. This aim will test the hypothesis that homogenization protocols (and other treatments leading to exosome shearing) alter the content of exosomes and their cargos in cow’s milk. 3) Assess the effects of dietary milk exosome consumption on the composition of the gut microbiome in mice.

NIH (TBD) “Biotin regulates oncogene expression, phenotypic plasticity, and stem cell markers.” Multiple PI: Janos Zempleni (1.5 months academic), John West (1.5 months). Aims: (1) Define the roles of biotin in regulating gene addiction, phenotypic plasticity, and expression of cancer stem cell markers in mammary tumorigenesis. (2) Investigate the biotin dependence of breast tumorigenesis in archived murine breast tumor tissues and in transplantations using fluorescently-tagged HLCS knock-out mouse breast tissues. $1,250,000 direct costs ($545,522 F&A costs). 07/01/2014 – 06/30/2019.

NIH (TBD) “Metabolism and gene regulation by dietary microRNAs in humans.” PI: Janos Zempleni (2 months calendar). Co-Investigator: Jennifer Wood (University of Nebraska-Lincoln, Dept. of Animal Sciences). Aims: (1) Determine whether miR-29b in cow’s milk crosses the intestinal barrier and affects gene expression in peripheral tissues in cell cultures and humans. (2) Assess the efficacy of miR-29b to increase osteoblast differentiation and bone mineral content in a fluorescent mouse model. $1,250,000 direct costs ($521,553 F&A costs). 12/01/2014 – 11/30/2019.

NIH (R01 DK104693-01A1) “Assessment of gene networks and phenotypes that depend on dietary non-coding RNAs.” Multiple PI mechanism. PI (contact): Janos Zempleni (1.5 months calendar). PI: Juan Cui (University of Nebraska-Lincoln, Dept. of Computer Science and Engineering); Co-Investigator: Jennifer Wood (University of Nebraska-Lincoln, Dept. of Animal Sciences). Aims: (1) Assess gene regulation networks in dietary microRNA supplementation and depletion studies in humans and mice. (2) Assess phenotypes of dietary microRNA depletion in mice. $1,250,000 direct costs ($502,521 F&A costs). 7/01/2016 – 6/30/2021.

NIH (OD021876) “Creation of a conditional microRNA knockdown reporter mouse.” Multiple PI mechanisms. PI: Janos Zempleni (0.75 months summer). Co-I: Channabasavaiah Gurumurthy. Aim: Create a conditional microRNA-29b knockdown sponge reporter mouse (iRFP-mir-29b sponge mouse) and a sponge mutant mouse (control). $275,000 direct costs ($117,280 F&A costs). 04/01/2016 – 3/31/2018.

NIH (DK108055) “Are Exogenous MicroRNAs Conditionally Essential in Mammals?” Multiple PI mechanism. PI (contact): Janos Zempleni (2 months calendar). Co-Investigators: Juan Cui (University of Nebraska-Lincoln, Dept. of Computer Science and Engineering) and Jennifer Wood (University of Nebraska-Lincoln, Dept. of Animal Sciences). Aim: (1) Determine whether milk miRNAs rescue reproductive success and appropriate developmental programming in tamoxifen-inducible conditional Drosha and Dicer mice.. $1,250,000 direct costs ($498,621 F&A costs). 7/01/2015 – 6/30/2020.

AgResearch Ltd., NZ (CONC-46321-CRFSI-AGR) “MicroRNA in milk: a new opportunity for dairy exports.” PI: Mark McCann; Co-I: J. Zempleni; NZ$1,150,000. 06/01/2016-05/31/2019.

Marsden Fund Preliminary Research Proposal, NZ (16-AGR-020) “microRNA and microbes: Is there a role for exogenous microRNA in trans-kingdom signalling in the human gut?” PI: Mark McCann; co-Is: Christina Moon, J. Zempleni; Award size and length: TBD.

Egg Nutrition Center (TBD) “Egg-borne microRNAs regulate gene networks and contribute toward reproductive success in humans and mice.” PI: Janos Zempleni (0.5 months summer). Co-I: Juan Cui (University of Nebraska-Lincoln, Dept. of Computer Science and Engineering). Aims: 1) Characterize gene networks that depend on the dietary intake of egg miRNAs in humans and mice. 2) Assess whether egg miRNAs are important for reproductive success in mice. $181,818 direct costs ($18,182 F&A costs). 11/1/2015 – 10/31/2017.

NIFA/USDA Exploratory Research priority area A1801 (2014-06526) “Discovery of food-borne regulators of white-to-brown adipocyte switches.” PI: Janos Zempleni (0.25 months calendar). Co-Investigator: Soonkyu Chung (University of Nebraska-Lincoln, Dept. of Nutrition and Health Sciences). Aims: (1) Develop the UCP1-Luc high-throughput screening assay. (2) Screen a library of naturally occurring compounds for regulators of white-to-brown adipocyte switches in hASC transfected with UCP1-Luc. $100,000 total costs (including $29,548 F&A costs). 11/01/2014 – 10/32/2015.

NIH (DK104693) “Assessment of gene networks and phenotypes that depend on dietary non-coding RNAs.” Multiple PI mechanisms. PI (contact): Janos Zempleni (2 months calendar). PI: Juan Cui (University of Nebraska-Lincoln, Dept. of Computer Science and Engineering); Co-Investigator: Jennifer Wood (University of Nebraska-Lincoln, Dept. of Animal Sciences). Aims: (1) Assess gene regulation networks in dietary microRNA supplementation and depletion studies in humans and mice. (2) Assess phenotypes of dietary microRNA depletion in mice. $1,250,000 direct costs ($498,621 F&A costs). 4/01/2015 – 3/31/2020.

NIH (OD021023) “Creation of a conditional microRNA knockdown reporter mouse.” Multiple PI mechanisms. PI: Janos Zempleni (1 month calendar). Co-I: Channabasavaiah Gurumurthy. Aim: Create a conditional microRNA-29b knockdown sponge reporter mouse (iRFP-mir-29b sponge mouse) and a sponge mutant mouse (control). $275,000 direct costs ($117,280 F&A costs). 7/01/2015 – 6/30/2017.

ARD Enhanced Research Funding program (TBD) “Metabolism and gene regulation by dietary microRNAs in humans.” — linked with Multistate Project W-3002. PI: Janos Zempleni (0.4 months calendar). Aims: (1) Determine whether miR-29b in cow’s milk crosses the intestinal barrier and affects gene expression in peripheral tissues in cell cultures and humans. (2) Assess the efficacy of miR-29b to increase osteoblast differentiation and bone mineral content in a fluorescent mouse model. $400,000 direct costs (no F&A costs). 10/01/2014 – 09/30/2018.

Dairy Research Institute pre-proposal “Milk microRNAs as novel bioactive compounds - what are the phenotypes of milk microRNA depletion.” Aim: Assess phenotypes of milk microRNA depletion in mice. $500,000 ($50,000 F&A costs). 1/1/2015-12/31/2018.

NIH (1R01DK102029) “Dietary white-to-brown adipocyte switches.” PI: Janos Zempleni (1 month calendar). Co-Investigators: Tim Carr, Angela Pannier, Jennifer Wood (all UNL) and Naima Moustaid-Moussa (Texas Tech, Lubbock). Goals: (1) Determine whether eicosapentaenoic acid increases the differentiation of human mesenchymal stem cells into brown adipocytes. (2) Assess the efficacy of eicosapentaenoic acid and its precursor, alpha-linolenic acid, to increase brown adipose tissue mass in a fluoresecent mouse model. $750,000 direct costs ($332,146 F&A costs, UNL and consortium). 04/01/2014 – 03/31/2017.

NIH (TBD) “Discovery of metabolites in the microbial metabolome that cause a lean phenotype.” Multiple PI: Janos Zempleni (1.5 months academic), Pat Dussault (0.5 months), Samodha Fernando (1.0 months). Co-Investigator: Robert E. Lewis (University of Nebraska for Medical Sciences, Omaha). Goals: (1) Identify compounds in the gut microbial metabolome that inhibit the anchoring of ACC2 in the mitochondrial membrane. (2) Determine whether gut microbial metabolites cause an increase in fatty acid beta-oxidation and a lean phenotype in C2C12 skeletal myotubes and Drosophila screens. $1,250,000 direct costs ($549,565 F&A costs, UNL and consortium). 07/01/2014 – 06/30/2019.

NIH (R01DK101902) “A cell survival screen for the discovery of compounds that cause a lean phenotype.” PI: Janos Zempleni (1.8 months summer). Co-Investigators: Robert E. Lewis (University of Nebraska for Medical Sciences, Omaha) and Melvin Reichman (Lankenau Institute for Medical Research, Wynnewood, PA). Goals: (1) Identify compounds that inhibit the anchoring of acetyl-CoA carboxylase 2 in the mitochondrial membrane. (2) Determine whether inhibitors of acetyl-CoA carboxylase 2 anchoring cause an increase in fatty acid beta-oxidation and a lean phenotype in HepG2 cell and mouse screens. (3) Assess the efficacy of ACC2 inhibitors in causing a lean phenotype in C57BL/6 mice on a high-fat diet. $750,000 direct costs ($306,569 F&A costs, UNL and consortium). 04/01/2014 – 03/31/2017.

NIH (number not yet assigned) “Micronutrient control of epigenetic marks in stem cells for regenerative medicine applications.” Goals: 1) Identify mechanisms by which biotin supply in culture media regulates the *proliferation* of adult human mesenchymal stem cells (MSCs). 2) Identify mechanisms by which biotin supply in culture media regulates the *differentiation* of adult human mesenchymal stem cells. Multiple PI mechanism: Angela Pannier (contact PI), Dong Wang, Janos Zempleni

(5% effort; 0.056 FTE; 0.5 person months/academic year). $1,250,000 direct costs ($568,750 F&A costs). 04/01/2011 – 03/31/2016. (Revision in preparation)

Women Investing in Nebraska (TBD) “Better infant formulas for better child health and development.” PI: Janos Zempleni (0.5 months calendar). Aims: (1) Assess the effects of dietary miR-29b intake on miR-29b status in infants. Sub-aim 1a: Quantify the levels of miR-29b in human breast milk at various stages of lactation, and in leading brands of cow’s milk-based infant formulas, soy-based formulas, and hypoallergenic milk-based formulas. Sub-aim 1b: Assess the urinary excretion of miR-29b, as a marker of microRNA status, in cohorts of infants fed breast milk, milk-based formulas, soy-based formulas, and hypoallergenic milk-based formulas. (2) Assess markers of bone health (serum bone-specific alkaline phosphatase and urinary c-terminal telopeptide), in cohorts of infants fed breast milk, milk-based formulas, soy-based formulas, and hypoallergenic milk-based formulas. $76,000 (no F&A costs). 08/16/2014 – 08/15/2015.

National Institutes of Health (1 R01 DK098705-01). “Inhibitors of acetyl-CoA carboxylase 2 decrease adipocyte differentiation in mice.” PI: Janos Zempleni (effort = 1 summer month and 1 month academic year). Co-I: Jennifer Wood (UNL). Subcontract to Channabasavaiah Gurumurthy (Co-I, University of Nebraska for Medical Sciences, Omaha, NE). Goals: (1) Determine whether piceatannol lowers body fat mass in wild-type mice. (2) Determine whether inhibitors of adipocyte differentiation elicit off-target effects in iRFP mice. 04/01/2013 – 03/31/2017. $900,000 direct costs ($358,894 F&A costs).

NineSigma “Packaging made of processed soy protein is a renewable, edible, and waste-free vehicle for delivering micronutrients under harsh conditions and also enhances the intake of essential amino acids” This is an “idea proposal” (NineSights Ideation Challenge #68502) and NineSigma will select ideas that will be shared with potential partners; submitted 8/7/2012. Janos Zempleni and Yiqi Yang.

NIH (1 R01 CA179166-01) “A novel biotin-dependent checkpoint in in breast cancer induction and metastasis.” Multiple PI mechanism, Contact PI Janos Zempleni (1 month summer, 1.46 month academic), Co-PI: John West. Co-Investigators: Robert Boissy, James Eudy, Channabasavaiah Gurumurthy (all at the University of Nebraska for Medical Sciences, Omaha). Consultant: Tony Sanchez (UVP LLC). Goals: (1) Determine whether the high tumor load in biotin-deficient BALB/c wild-type mice results from increased metastasis or independent spontaneous tumorigenesis. (2) Determine whether the repressor activity of MBP-1 depends on biotin supply in human mammary carcinoma MCF-7 cell cultures. (3) Characterize the effects of biotin on breast cancer metastasis in c-myc/iRFP near-infrared fusion protein knock-in mice. $1,250,000 direct costs ($562,000 F&A costs, UNL and consortium).

NIH (R01CA152041) “Role of dietary biotin in retroelement-mediated chromosome instability.” Multiple PI Mechanism: Janos Zempleni (11% effort; 0.99 person months/academic year), Joel C. Eissenberg, and John T. West. 04/01/2011 – 03/31/2016. $3,604,973 direct costs ($572,796 F&A costs). Goals: (1) Identify biotin-dependent mechanisms leading to genome instability in human cells, MMTV-infected mice, and HCS knockout mice. (2) Identify fragile sites in *Drosophila* chromosomes caused by decreased biotinylation of histones at retroelements. (Ranked 36th percentile; revision in preparation)

National Institute of Food and Agriculture, Agriculture and Food Research Initiative (proposal number 2013-03072). “Epigenetic synergies between dietary methyl donors and biotin repress gastrointestinal inflammation.” Goals: (1) Determine whether HLCS interacts physically with DNMT and EHMT-1 and whether biotinylation of K161 in EHMT-1 is a crucial event in establishing H3K9me marks.

(2) Characterize the synergies among methylated cytosines, H3K9me2, and biotin in the repression of loci coding for the pro-inflammatory cytokines in human monocyte cell cultures. (3) Determine whether dietary methyl donors and biotin affects gastrointestinal inflammation in dextran sodium sulfate-treated mice. PI: Janos Zempleni (0.5 month academic year); Co-I: Amanda Ramer-Tait. $389,888 direct costs ($109,968 F&A costs). 09/01/2013 – 08/31/2018.

NIH (1R21DK096979) “Mechanisms of inhibition of adipocyte differentiation by bioactive food compounds.” Aim: Discover bioactive food compounds that inhibit HLCS, thereby inhibiting the differentiation of human mesenchymal stem cells into adipocytes. Multiple PI mechanism: Janos Zempleni (contact PI, 1 person month, summer), Co-PIs: Angela Pannier, Vicki Schlegel. $275,000 direct costs ($118,500 F&A costs). 09/01/2012 – 08/31/2014.

NIH (1R21AT007576). “Epigenetic off-target effects of dietary sulforaphane.” Goals: (1) Determine effects of SFN at loci coding for tumor suppressor genes 21 and Bax (targets) and for LTRs (off-tagets) using primary cell lines.. (2) Identify dietary amounts of SFN that yield a maximal ratio of target—to—off-target effects in human dose-response studies. Multiple PI mechanism: Vicki Schlegel (contact PI), Janos Zempleni (0.9 person months/academic year). $275,000 direct costs ($111,361 F&A costs). 07/01/2013 – 06/30/2015.

National Institutes of Health (3R01DK063945-A1). “Moderate biotin deficiency causes abnormal meiosis by epigenomic mechanisms.” PI: Janos Zempleni (effort = 1 summer month and 1 month academic year). Subcontracts to Alan Diekman (University of Arkansas for Medical Sciences, Little Rock, AR) and Joel C. Eissenberg (Saint Louis University School of Medicine, St. Louis, MO); consultant: Donald M. Mock (University of Arkansas for Medical Sciences, Little Rock, AR). Goals: (1) Determine whether genome stability depends on biotin in human sperm. (2) Determine whether genome stability depends on biotin in Drosophila oocytes. 12/01/2012 – 11/30/2017. $2,509,281 direct costs ($653,999 F&A costs).

NIH 1 T32 DK094731-01A1 “Nutrigenomics Pre-doctoral Training (NuT) Program.” PI: Janos Zempleni (effort = 2 person months, academic year); Co-Is: 13 investigators from UNL (9 units). $342,480 direct costs ($18,069 F&A costs). Goal: Provide training for and graduate four pre-doctoral students in nutritional genomics. 06/01/2013 – 05/31/2018. This application received a very favorable review. NIH has requested Just-in-Time information, which is currently awaiting council review.

UNL and UNMC Bioengineering for Human Health “Creation of a near-infrared fluorescent protein mouse for the non-invasive tracking of cell fate in vivo.” $99,653 (no F&A costs) PI: Janos Zempleni (0.5 months calendar); Co-investigator: Channabasavaiah Gurumurthy. Goals: (1) Create an iRFP conditional knock-in mouse. (2) Assess the effects of piceid on adipocyte differentiation in iRFP mice. 6/1/2013 – 5/31/2015.

NIH (1R01AT007603) “Dietary manipulation of acetyl-CoA carboxylase 2 decreases adipogenesis.” Aims: (1) Determine whether ACC2 is a key regulator of adipocyte differentiation. (2) Identify the mechanisms through which non-alcoholic grape products decrease ACC2 activity and prevent adipocyte differentiation. PI: Janos Zempleni (2 person months, summer), Co-I: Vicki Schlegel. $1,250,000 direct costs ($531,440 F&A costs). 12/01/2012 – 11/30/2017.

National Institute of Food and Agriculture, Agriculture and Food Research Initiative (2011-03390). “Epigenetic synergies between dietary methyl donors and biotin to repress inflammation.” Goals: (1) Identify and characterize physical interactions among HLCS, EHMT-1, DNMT1, and MeCP2. (2) Determine whether folate and biotin synergize in the epigenomic regulation of pro-inflammatory cytokines in human immune cells. (3) Determine whether methyl donors and biotin act

synergistically in the repression of dextran sodium sulfate (DSS)-induced colitis in C57BL/6 mice. PI: Janos Zempleni (1 month academic year). $389,997 direct costs ($109,999 F&A costs), including a subcontract to Dr. Craig Franklin, University of Missouri-Columbia ($76,085 direct costs, $21,460 F&A).

NIH (1R21AT007576). "Epigenetic off-target effects of dietary sulforaphane." Goals: (1) Determine whether SFN causes genome instability in primary human cells and identify the mechanisms leading to instability. (2) Identify dietary amounts of SFN that yield a maximal ratio of target—to—off-target effects in human dose-response studies. Multiple PI mechanism: Vicki Schlegel (contact PI), Janos Zempleni (0.9 person months/academic year). $275,000 direct costs ($111,361 F&A costs). 12/01/2012 – 11/30/2014.

NIH (1P20GM104320). "Nebraska center for the prevention of obesity diseases through dietary molecules." PI: Janos Zempleni (3.0 person months calendar). $7,799,900 direct costs ($3,749,344 F&A). Aims: (1) Establish an NPOD administrative core of personnel and programs that support and enhance the Center's research. (2) Develop a critical mass of faculty through the support of five thematically linked primary research projects, a strong mentoring program for junior investigators, and through support of two essential research core facilities and a pilot grant program. (3) Increase research capacity through targeted recruitment of five researchers in areas key to Center success. (4) Graduate from IDeA funding as a self-sustainable center of research excellence through the development of program projects, collaborative grants, and industry partnerships.

Nebraska Department of Health and Human Services (no number assigned). "Dietary molecules prevent adipocyte differentiation." (PI: Janos Zempleni (effort = 0.5 months calendar, no salary support). Co-I: Jennifer Wood. Aim: Determine whether supplementing an obesogenic diet with specialty crops in young C57BL mice prevents obesity later in life. 07/01/2012 – 06/30/2013. $87,263 direct costs (no F&A).

Nebraska Grape and Winery Board (no number assigned). "Compounds in grapes and grape leaf extracts decrease obesity risk." PI: Janos Zempleni (0.5 months effort). 07/01/2012 – 06/30/2014. $127,075 ($77,661 requested from the Board, $48,414 as matching funds from J. Zempleni).

ARD/IANR Equipment grant (no number assigned). "Request for an Ion Torrent Personal Genome Machine towards understanding diet- microbe interactions to develop dietary intervention strategies to mitigate greenhouse gas emissions in intensive and extensive beef production systems." PI: Samodha Fernando; Co-PIs: 16 faculty from UNL, including J. Zempleni (0% effort by J. Zempleni).). 06/01/2012 – 08/30/2012. $66,000 ($50,000 requested from ARD/IANR, $16,000 as matching funds from S. Fernando).

National Institutes of Health (3R01DK063945). "Moderate biotin deficiency causes abnormal meiosis by epigenomic mechanisms." PI: Janos Zempleni (effort = 1 summer month and 1 month academic year). Subcontracts to Alan Diekman (University of Arkansas for Medical Sciences, Little Rock, AR) and Xin Bi (university of Rochester, Rochester, NY); child account for Andrea Cupp (Department of Animal Sciences, UNL); consultant: Donald M. Mock (University of Arkansas for Medical Sciences, Little Rock, AR). Goals: (1) Determine whether genome stability depends on biotin in human sperm. (2) Quantify mammalian biotin requirements by using oocyte development as a marker. (3) Identify biotin-dependent mechanisms that prevent meiotic abnormalities in Saccharomyces cerevisiae. 07/01/2012 – 06/30/2017. $2,179,237 direct costs ($821,833 F&A costs).NIH 1 T32 DK094731-01 "Nutrigenomics Pre-doctoral Training (NuT) Program." PI: Janos Zempleni (effort = 2 person months, academic year); Co-Is: 13 investigators from UNL (9 units).

$396,824 direct costs ($17,792 F&A costs). Goal: Provide training for and graduate four pre-doctoral students in nutritional genomics. 06/01/2012 – 05/31/2017.

NIH R01DK077816 (competing renewal) “Holocarboxylase synthetase regulates epigenomic synergies between biotin and methyl donors.” PI: Janos Zempleni (effort = 2 summer months). Goals: (1) Identify novel HLCS-binding proteins in a multiprotein repressor complex in human chromatin. (2) Discover epigenetic synergies between biotin and methyl donors. (3) Discriminate between the functions of HLCS as a histone biotin ligase and as component of a multiprotein complex in gene repression. 07/01/2012 – 06/30/2017. $1,250,000 direct costs ($545,896 F&A costs).

National Institutes of Health 1 R21 ES021322. “Epigenetic off-target effects of dietary sulforaphane.” Goals: (1) Determine whether SFN causes genome instability in primary human cells and identify the mechanisms leading to instability. (2) Identify dietary amounts of SFN that yield a maximal ratio of target—to—off-target effects in human dose-response studies. Multiple PI mechanism: Vicki Schlegel (contact PI), Janos Zempleni (0.9 person months/academic year). $300,000 direct costs ($119,287 F&A costs). 12/01/2011 – 11/30/2014.

NIH R21 (1 R21 RR032639) “Creation of a conditional holocarboxylase synthetase knockout mouse.” PI: Janos Zempleni (effort = 1 person month, summer). Goal: (1) Create a conditional holocarboxylase synthetase knockout mouse. 10/01/2011 – 09/30/2013. $275,000 direct costs ($125,125 F&A costs).

NIH R21 (1 R21 RR032639) “Creation of a conditional holocarboxylase synthetase knockout mouse.” PI: Janos Zempleni (effort = 1 person month, summer). Goals: (1) Create a conditional holocarboxylase synthetase knockout mouse. (2) Develop a synthetic inhibitor of nuclear HLCS and monoallelic HLCS KO mouse fibroblasts to study dosage effects of nuclear HLCS on cell death. 04/01/2012 – 03/31/2014. $275,000 direct costs ($125,125 F&A costs).

NIH R01DK077816 (competing renewal) “Epigenomic synergies between methyl donors and biotin maintain genome stability.” PI: Janos Zempleni (effort = 2 summer months); subcontract to Craig Cooney (VA Medical Center, Little Rock, AR). Goals: (1) Identify and characterize physical interactions among HLCS, EHMT-1, DNMT1, and MeCP2. (2) Determine whether folate and biotin synergize in the epigenomic regulation of imprinted genes and LTRs, thereby maintaining genome stability in human fibroblasts. (3) Determine whether methyl donors and biotin act synergistically in the repression of the a^{vy} locus in agouti mice. 02/01/2012 – 1/31/2017. $1,669,083 direct costs ($651,727 F&A costs).

NIH (1R01CA161191-01) “Mechanisms of gene and growth regulation in PXD101-treated colon cancer.” PI: Janos Zempleni (effort = 1 person month, academic year), Co-investigator: Mike Brattain. $1,250,000 direct costs ($575,722 F&A costs). Goals: (1) Identify epigenetic mechanisms that mediate the effects of PXD101 on gene transcriptional activity in colon cancer cells. (2) Predict growth and metastasis of orthotopic xenograft transplants by epigenetic profiling. 07/01/2011 – 06/30/2016.

NIH Center of Biomedical Research Excellence (COBRE) in Nutrigenomics and Disease Prevention. PI: Janos Zempleni (effort = 3 person months calendar year), co-investigators: Peter Kador, Jaekwon Lee, Robert Lewis, Marjorie Lou. Internal pre-proposal UNL, 2010.

USDA AFRI 2009-02894. “Epigenetic synergies between dietary folate and biotin to repress inflammation.” PI: Janos Zempleni [16.7% effort (2 summer months)]. $389,930 direct costs ($109,980 F&A costs). 10/01/2009 – 09/30/2012. Objectives: (1) Determine whether HCS physically interacts with DNMT1 and MeCP2 in human immune cells. (2) Quantify the enrichment of methylated cytosines, H3K9me2, and

H4K12bio at loci coding for pro-inflammatory cytokines in human immune cells. (3) Characterize synergistic effects of biotin and folate in the repression of pro-inflammatory genes in dose-response studies at nutritionally relevant levels.

USDA AFRI Training Grant (number unknown). "Gut health, inflammation, and functional foods: a graduate training program for food science and nutritional science students." PI: Bob Hutkins; Co-PIs: Janos Zempleni (effort = 0.5 person months). $776,160 direct costs ($218,916 F&A costs). 10/01/2009 – 09/30/2013.

Revised application ("supplement") to National Institutes of Health (R01DK063945). "Biotin deficiency impairs silencing of repeat regions and retrotransposons." PI: Janos Zempleni; co-investigator: Dong Wang. $200,000 direct costs ($89,900 F&A costs); 09/01/09 – 08/31/10. Goal: to quantify the relative enrichment of biotinylated histones and other repression marks in LTRs and LINEs throughout the human genome.

NIH "Modulation of insulin resistance by fatty acids." Goals: 1) Elucidate molecular mechanisms, including epigenetic modes of action such as DNA methylation and histone modifications, for the regulation of adipocyte fatty acid binding protein (aP2) expression by inflammatory stimuli and fatty acids (FA) and assess the contribution of macrophage aP2 to pro- or anti-inflammatory properties of various FA. 2) Determine the effect of altered aP2 expression by FA in activated macrophages on the development of IR in adipocytes and skeletal muscle. 3) Evaluate in vivo modulation of macrophage aP2 expression by FA and determine molecular and epigenetic mechanisms for divergent effects of FA on IR in vivo in an experimental setting of type 2 diabetes. PI: Ji-Young Lee; co-investigator: Janos Zempleni (5% effort; 0.45 person months/academic year). $839,879 total cost (NIH Challenge Grant, American Reinvestment and Recovery Act funds), 09/01/2009 – 08/31/2011.

Revised application ("supplement") to National Institutes of Health (R01DK077816). "Biotin sensing and chromatin remodeling by holocarboxylase synthetase." PI: Janos Zempleni; co-investigator: James Takacs. $250,000 direct costs ($71,840 F&A costs); 09/01/09 – 08/31/10. American Reinvestment and Recovery Act funds. Goal: to identify synthetic and naturally occurring inhibitors of holocarboxylase synthetase.

Nebraska Department of Health and Human Services "Micronutrient control of epigenetic marks in stem cells." Goals: 1) Identify mechanisms by which biotin supply in culture media regulates the *proliferation* of adult human mesenchymal stem cells (MSCs). 2) Identify mechanisms by which biotin supply in culture media regulates the *differentiation* of adult human mesenchymal stem cells. Multiple PI mechanism: Angela Pannier (contact PI), Janos Zempleni (0.7 person months/academic year). $145,070 direct costs (no F&A costs). 07/01/2011 – 06/30/2013.

National Institutes of Health. "Biotin-dependent silencing of retroviruses by epigenetic mechanisms." Contact PI (Multiple PI Mechanism): John West (University of Oklahoma Health Sciences Center); $275,000 total direct costs (about $126,500 F&A costs); (multiple) PIs with subcontracts: Yuri Lyubchenko (UNMC) and Janos Zempleni (UNL); Zempleni subcontract: (5% effort = 0.45 person months, academic year; no salary support); $91,662 total direct costs ($41,156 F&A costs). 12/01/08 - 11/30/10.

Gerber Foundation. "The Role of Biotin in Birth Defects." PI: Donald M. Mock; Co-Investigator: Janos Zempleni (3% effort = 0.27 person months, academic year; without salary support). $714,000 direct costs ($71,400 F&A costs). Zempleni subcontract = $90,780 ($9,078 F&A costs), equally split over three years. Objective 1: To test the hypothesis that biotin status is significantly reduced in early pregnancy as assessed by decreased activity of the biotin-dependent enzyme propionyl CoA carboxylase in peripheral blood lymphocytes. Objective 2: To test the hypothesis

that reduced propionyl CoA carboxylase activity identified in women does indeed reflect biotin deficiency by conducting a placebo-controlled, double blind biotin supplementation study. Secondary objectives of Specific Aim #2 are to investigate the cellular mechanism of the reduced PCC activity and to conduct novel studies of the potential mechanisms for human teratogenesis. 05/01/08 – 04/30/11.

NSF IGERT Traineeship application. “IGERT: CUBED, Clustered Units of Biology and Engineering Departments.” PI: Paul Blum (00% effort = 00 calendar month); Co-PIs: Dennis Alexander, Joseph Turner, and Janos Zempleni (each at 00% effort = 00 person months, academic year). $1,500,000 direct costs (~690,000 F&A costs). Objective: Create training opportunities for graduate students at the interface cell biology & engineering. 2009 - 2014.

USAMRMC Office of the Congressionally Directed Medical Research Programs. “Role of DNA methylation and histone biotinylation in progression in the MCF-10 model of human breast cancer progression.” PI: Judith Christman; Co-PI: Janos Zempleni (10% effort = 0.9 person months, academic year). $500,000 direct costs ($161,845 F&A costs). Subcontract: $60,386 (direct costs in year 1) and $62,088 (direct costs in year 2); $28,683 (F&A year 1) and ($29,492 year 2), for a grand total (subcontract) of $180,649). 07/01/07 - 06/30/09.

American Institute for Cancer Research. “Biotin-dependent chromatin remodeling decreases cancer risk.” PI: Subhashinee S.K. Wijeratne (80% effort = 9.6 person months, calendar year). Consultants: Janos Zempleni, Gautam Sarath, Vicki Schlegel (0% effort). $76,000 (no F&A costs). 07/01/2008 – 06/30/2010. Objective 1: Quantify effects of oxidative stress on oncogene expression (*KRAS* and *EGFR*). Objective 2: Determine whether increased histone biotinylation at *KRAS* and *EGFR* loci in response to biotin supplementation decreases oncogene expression in response to oxidative stress.

Nebraska Research Initiative “Development of Technology for high throughput analysis of epigenomic modifications.” PI: Judith Christman, 10% effort [Co-PIs: Janos Zempleni (10% effort) and David Klinkebiel]; $471,910 total direct costs (no F&A costs); 2006 – 2008.

National Institutes of Health (application for competing renewal of DK063945). “Biotin deficiency impairs silencing of repeat regions and retrotransposons.” PI: Janos Zempleni (25% effort); $1,181,247 direct costs ($476,333 F&A costs); 01/01/08 - 12/31/12.

National Institutes of Health (DK077816). “Biotin sensing and chromatin remodeling by holocarboxylase synthetase.” PI: Janos Zempleni (30% effort; 3.6 calendar months); $800,000 direct costs ($359,200 F&A costs); 1/1/08 - 12/31/11.

International Life Sciences Institute North America. “Future Leader Award: Biotin-dependent chromatin remodeling in response to DNA breaks” PI: Janos Zempleni (no salary support); $30,000 (no F&A costs); 1/1/06 – 12/31/08.

National Science Foundation. "Oxidative folding of secretory proteins depends on flavins." PI: Janos Zempleni (15% effort); 11/1/03 - 10/31/05; $154,870 direct costs ($66,298 indirect costs).

National Institutes of Health. "Regulation of biotinidase-dependent pathways." PI: Janos Zempleni (no salary support); $96,000 total direct costs (over three years) ($9,893 indirect costs). Supplement to DK60447, using the "Fogarty International Research Collaboration Award" mechanism. Foreign collaborator: Alfonso Leon-Del-Rio, National Autonomous University of Mexico.

American Institute for Cancer Research. "Jurkat cells respond to DNA damage with increased biotinylation of histones." PI: Janos Zempleni (18% effort); $142,029 total direct costs (over two years).

UNL Tobacco Settlement Biomedical Research Enhancement Fund. " Jurkat cells respond to DNA damage with increased biotinylation of histones." PI: Janos Zempleni (5% effort); $28,625 direct costs

UNL Grant Proposal for Academic Enhancement. "Molecular/Biochemical Nutrition." PIs: Marilynn Schnepf and Janos Zempleni (no salary support for PIs); $538,881

UNL/ARD Equipment Request "Purchase of a microarray scanner" PI: Janos Zempleni; $65,252

UNL/ARD Equipment Request "Purchase of a UV detector for HPLC" PI: Janos Zempleni; $5,712

Nebraska Universities Foundation. "Acquisition of a confocal and digital-video microscope imaging system for the microscope core facility." PI: Y. Joe Zhou; Co-Applicants J. Zempleni and eight other investigators; $200,000

University of Nebraska-Lincoln, Agricultural Research Division. "Effects of biotin on stress survival are mediated by NF-κB." PIs: Janos Zempleni and Lawrence G. Harshman (no salary support for PIs); 1/1/04 - 9/30/05; $35,000 direct costs (no indirect costs).

National Institutes of Health. “Roles for biotin in epigenetic events.” PI: Janos Zempleni (20% effort); $275,000 direct costs ($126,500 F&A costs); 7/1/05 - 6/30/07.

American Institute for Cancer Research. “*Drosophila melanogaster* is a unique tool to identify dietary compounds that promote anti-cancer gene expression profiles in human prostate and breast.” PI: Janos Zempleni (18% effort); $150,000 direct costs ($15,000 F&A costs); 7/03/06 – 7/02/08.

United States Department of Agriculture, National Research Initiative Competitive Grants Program. “Histone biotinylation in chromatin during switchgrass seed germination.” PI: Gautam Sarath; 9/1/06 - 8/31/09; $398,403 direct costs ($39,804 F&A costs). Subcontract to Janos Zempleni (8% effort) and Ashraf Raza (5% effort), Co-PIs; $166,287 direct costs ($36,780 F&A costs).

University of Nebraska-Lincoln, Agricultural Research Division. "Chromatin remodeling by holocarboxylase synthetase and tolerance to heat and water stress in plants." PIs: Heriberto Cerutti, Madhavan Soundarajan, and Janos Zempleni (no salary support for PIs); 7/1/06 - 6/30/08; $40,000 direct costs (no indirect costs).

National Science Foundation, EPSCoR “Regulation of Lifespan and Senescence in Eukaryotes.” PI: Marjorie Lou [Co-PIs: Larry Harshman, Rob Lewis, Janos Zempleni (5% effort); 6 additional investigators from UNL, UNMC, and Creighton University]; $2,500,000 total request (approx. $1.7M direct cost and $0.78M F&A cost); 2/1/07 – 1/31/10.

University of Nebraska-Lincoln - Office of the Vice Chancellor for Research: Strategic Research Cluster Grant. “Establishing a Center to Identify Epigenetic Pathways that Affect Fertility.” PI: Andrea Cupp; Co-PIs: Judith Christman; Brett White; Jennifer Wood; Janos Zempleni. $50,000 direct costs per year for two years (no F&A costs); 7/1/2007 – 6/30/2009.

NSF EPSCoR Research Infrastructure Investment (RII) grant pre-proposal. “Self assembly of nanosystems and novel biological nanomaterials.” PI: Yuri Lyubchenko; co-investigator: Janos Zempleni and 11 other faculty from UNMC, Creighton University Medical Center, and University of Nebraska-Omaha. $9,000,000 total direct costs (~$4,000,000 F&A costs); direct costs in sub-award for the Zempleni lab: $367,074; F&A cost: $148,812); 08/01/10 – 07/31/15.

UNL Life Sciences Competitive Grants Program “Effect of metabolic stress on the regulation of oocyte mRNA abundance.” Goals: 1) Identify obesity-dependent changes in the transcriptional activity of growing oocytes. 2) Identify obesity-dependent changes in post-transcriptional regulation of mRNA abundance in MII-arrested oocytes. 3) Define genotype-dependent changes in oocyte quality in the absence or presence of metabolic stress. PI: Jennifer Wood; Co-Is: Daniel Ciobanu,

Janos Zempleni (5% effort; 0.056 FTE; 0.5 person months/academic year). $200,000 direct costs (no F&A costs). 07/01/2011 – 06/30/2013.

NIH (1R01AT007603) “Roles of resveratrol metabolites in adipocyte differentiation and body fat loss.” Aims: (1) Determine whether ACC2 is a key regulator of adipocyte differentiation. (2) Identify the mechanisms through which non-alcoholic grape products decrease ACC2 activity and prevent adipocyte differentiation. (3) Assess the effects of dietary piceatannol synergistic compounds on body fat mass in *Drosophila melanogaster* and multipotent cell fate in mice.PI: Janos Zempleni (1 person month, summer), Co-Is: Naima Moustaid-Moussa, Vicki Schlegel. $1,250,000 direct costs ($568,750 F&A costs). 12/01/2012 – 11/30/2017.

Patents

Antibody licenses to Upstate, Inc. (2004) and Active Motif (2012)

U.S. Application for "Antibodies against biotinylated histones and related proteins and assays hereto” claiming priority from U.S. Provisional Application Serial No. 60/674,221 Zempleni et al. Filed April 22, 2005 (administratively withdrawn by UNL in 2008, because the Office for Technology Transfer missed a submission deadline.)

Invention Disclosure “Synthetic inhibitors of holocarboxylase synthetase” filed with NUTechVentures at UNL, 8/8/2011

Extracellular Vesicles and Methods of Using, provisional application filed on 3/15/2017 (62/471,572)

Close Collaborators

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Jiujiu Yu, Department of Nutrition and Health Sciences, University of Nebraska-Lincoln

List of publications

<u>Original communications</u>

1. Zempleni J, Link G, Kübler W. The transport of thiamine, riboflavin and pyridoxal 5'-phosphate by human placenta. Int J Vitam Nutr Res 62:165-172, 1992

2. Zempleni J, Kübler W. The utilization of intravenously infused pyridoxine in humans. Clin Chim Acta 229:27-36, 1994

3. Zempleni J, Kübler W. Metabolism of vitamin B_6 by human kidney. Nutr Res 15:187-192, 1995

4. Zempleni J, Link G, Bitsch I. Intrauterine vitamin B_2 uptake of preterm and full-term infants. Pediat Res 38:585-591, 1995

5. Zempleni J. Determination of riboflavin and flavocoenzymes in human blood plasma by high-performance liquid chromatography. Ann Nutr Metabol 39:224-226, 1995

6. Zempleni J, Galloway JR, McCormick DB. Pharmacokinetics of orally and intravenously administered riboflavin in healthy humans. Am J Clin Nutr 63:54-66, 1996

7. Zempleni J, Galloway JR, McCormick DB. The identification and kinetics of 7α-hydroxyriboflavin (7-hydroxymethylriboflavin) in blood plasma from humans following oral administration of riboflavin supplements. Int J Vitam Nutr Res 66:151-157, 1996

8. Link G, Zempleni J. Intrauterine elimination of pyridoxal 5'-phosphate in full-term and preterm infants. Am J Clin Nutr 64:184-189, 1996
Letter to the editor (reply) in: Am J Clin Nutr 65: 1571-1572, 1997

9. Zempleni J, Hagen M, Hadem U, Vogel S, Kübler W. Utilization of intravenously infused thiamin hydrochloride in healthy adult males. Nutr Res 16:1479-1485, 1996

10. Zempleni J, Galloway JR, McCormick DB. The metabolism of riboflavin in female patients with liver cirrhosis. Int J Vitam Nutr Res 66:237-243, 1996

11. Zempleni J, McCormick DB, Stratton SL, Mock DM. Lipoic acid (thioctic acid) analogs, tryptophan analogs, and urea do not interfere with the assay of biotin and biotin metabolites by high-performance liquid chromatography/avidin-binding assay. J Nutr Biochem 7:518-523, 1996

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14. Zempleni J, Trusty TA, Mock DM. Lipoic acid reduces the activities of biotin-dependent carboxylases in rat liver. J Nutr 127:1776-1781, 1997

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16. Zempleni J, Mock DM. Uptake and metabolism of biotin by human peripheral blood mononuclear cells. Am J Pysiol 275 (Cell Physiol 44):C382-C388, 1998

17. Zempleni J, Mock DM. The efflux of biotin from human peripheral blood mononuclear cells. J Nutr Biochem 10:105-109, 1999

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19. Zempleni J, Mock DM. Mitogen-induced proliferation increases biotin uptake into human peripheral blood mononuclear cells. Am J Physiol 276 (Cell Physiol 45):C1079-C1084, 1999

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122. Zempleni J. Milk exosomes. Program Officials of the Gates Foundation. August 7, 2018 [delivered remotely by Zoom]

123. Zempleni J. Bovine milk exosomes: bioavailability, distribution and interactions with the gut microbiome. PureTech Health, Inc., Boston, MA, August 23, 2018

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129. Zhou F, Sadri M, Zempleni J. Impaired maternal milk exosomes and microRNAs biogenesis decrease gut health and food intake in mouse pups. Nutrition 2019 Conference, American Society for Nutrition; Baltimore, MD, June 8-11, 2019

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Invited Lectures & Meeting Presentations Not Associated With Published Abstracts
(see above for meeting presentations with published abstracts)

1. Zempleni J. Lipoic acid reduces the activities of biotin-dependent carboxylases. Arkansas Children’s Hospital Research Institute, Research Seminar; Little Rock, Arkansas; May 15, 1997.

2. Zempleni J. Lipoic acid reduces the activities of biotin-dependent carboxylases in rat liver. Arkansas Children’s Hospital, Fellow’s Day; Little Rock, Arkansas; May 22, 1997.

3. Zempleni J. Lymphocytes as a model system for biotin metabolism in humans. Arkansas Children’s Hospital Research Institute, Research Seminar; Little Rock, Arkansas; November 13, 1997.

4. Zempleni J. Pharmacokinetics and metabolism of biotin. Symposium of the American Society for Nutritional Sciences (“Nutrition, Biochemistry and Molecular Biology of Biotin”); San Francisco, California; April 19, 1998.

5. Zempleni J, Mock DM. Biotin transport and catabolism by human lymphocytes. Student Research Days at the University of Arkansas for Medical Sciences, Little Rock, Arkansas; April 1, 1998.

6. Zempleni J. The uptake of biotin and synthetic derivatives into proliferating and non-proliferating lymphocytes. Arkansas Children's Hospital Research Institute, Research Seminar; Little Rock, Arkansas; May 14, 1998.

7. Zempleni J. Biotin uptake into human peripheral blood mononuclear cells is increased by mitogen-induced cell proliferation. Arkansas Children's Hospital, Fellow's Day; Little Rock, Arkansas; May 28, 1998.

8. Zempleni J. Utilization of biotin in proliferating human lymphocytes. Symposium of the American Society for Nutritional Sciences ("Mechanistic Aspects of Vitamin and Coenzyme Utilization and Function"); Washington, D.C.; April 19, 1999.

9. Zempleni J. The essential role of biotin in cell proliferation. University of Arkansas for Medical Sciences; Little Rock, Arkansas; September, 27, 2000.

10. Zempleni J. Nutrients modify nucleic acid-binding compounds. Interdepartmental Nutrition Seminar, University of Nebraska-Lincoln; Lincoln, Nebraska; April 11, 2001.

11. Zempleni J. Biotin. Course NUTR929: Vitamin Nutrition, University of Nebraska-Lincoln; Lincoln, Nebraska; April 19, 2001.

12. Zempleni J. Nutrients modify nucleic acid-binding compounds. Department of Biochemistry, University of Nebraska-Lincoln; Lincoln, Nebraska; September 4, 2001.

13. Zempleni J. Nutrients modify nucleic acid-binding compounds. Department of Veterinary and Biomedical Sciences, University of Nebraska-Lincoln; Lincoln, Nebraska; February 18, 2002.

14. Zempleni J. Vitamins modify nucleic acid-binding compounds. Institute for Biomedical Research at the National Autonomous University of Mexico, Mexico City; March 22, 2002.

15. Zempleni J. Molecular Nutrition. Course NUTR452: Medical Nutrition Therapy, University of Nebraska-Lincoln; Lincoln, Nebraska; April 16, 2002.

16. Zempleni J. Vitamins affect the metabolism of cytokines in human lymphoid cells. Department of Animal Sciences, University of Nebraska-Lincoln, October 30, 2002.

17. Zempleni J. Biotin. Course NUTR929: Vitamin Nutrition, University of Nebraska-Lincoln; Lincoln, Nebraska; April 8, 2003.

18. Zempleni J. Biochemical basis of oxidative protein folding in the endoplasmic reticulum. Science 290:1571-1574, 2000. Journal Club, Department of Animal Sciences, University of Nebraska-Lincoln, May 27, 2003.

19. Zempleni J. Apoptotic phosphorylation of histone H2B is mediated by mammalian sterile twenty kinase. Cell 113:507-517, 2003. Journal Club, Department of Animal Sciences, University of Nebraska-Lincoln, October 28, 2003.

20. Zempleni J. Biotinylation of histones. Department of Nutrition Science and Home Economics, University of Giessen, Germany, November 3, 2004.

21. Zempleni J. Water-soluble vitamins in parenteral nutrition (In German: Zufuhr wasserloeslicher Vitamine). 13. Workshop Heimparenterale Ernaehrung im Kindes- und Jugendalter" Frankfurt, Germany, November 5, 2004.

22. Zempleni J. Biotin-dependent cell signaling. Mexican Biochemical Society, Ixtapa, Mexico, December 2, 2004.

23. Zempleni J. Biological functions of biotinylated histones. Mexican Biochemical Society, Ixtapa, Mexico, December 3, 2004.

24. Zempleni J. Biological functions of biotinylated histones. Food Science and Human Nutrition Department, University of Florida-Gainesville, January 28, 2005.

25. Zempleni J. Biological functions of biotinylated histones. Animal Biological Systems Seminar, Department of Animal Sciences, University of Nebraska-Lincoln, February 11, 2005.

26. Kothapalli N, Chew YC, Zempleni J. Histone biotinyl transferase activity depends on p53 in HCT 116 colon cancer cells. Fourth Annual American Association for Cancer Research Conference; Baltimore, MD, October 30 – November 2, 2005; poster presentation (10/31/2005).

27. Zempleni J. Metabolite Signaling Center. 18th EPSCoR National Conference; Westin Rio Mar Resort, Rio Grande, Puerto Rico, 9/25/2005 – 9/29/2005.

28. Camporeale G, Eissenberg JC, Zempleni J. Lifespan and resistance to heat stress depend on histone biotinylation in *Drosophila melanogaster*. 18th EPSCoR National Conference; Westin Rio Mar Resort, Rio Grande, Puerto Rico, 9/25/2005 – 9/29/2005.

29. Sarath G, Kobza K, Chew YC, Johnson K, Zempleni J, Raza A. Histone biotinylation in germinating switchgrass (*Panicum virgatum* L.) seeds. Association of Biomolecular Resource Facilities 2006 Annual Meeting February 11-14, 2006 in Long Beach, CA

30. Zempleni J. Molecular responses to biotin. Minisymposium "Molecular responses to nutrients" on March 29, 2006, NSF EPSCoR, Lincoln, NE.

31. Zempleni J. Biological functions of biotinylated histones. Nebraska Center for Virology, University of Nebraska-Lincoln, April 7, 2006.

32. Zempleni J. Biological functions of biotinylated histones. Edward A. Doisy Department of Biochemistry and Molecular Biology, University of St. Louis Medical School, October 4, 2006.

33. Zempleni J. Molecular Nutrition. Course NUTR805 Research Methods. University of Nebraska-Lincoln; Lincoln, Nebraska; September 19, 2006.

34. Gries T, Chew YC, Zempleni J, Cuppett S, Schlegel V. Detection of organic acid and nucleotide metabolic pools in immortal cell lines by capillary zone electrophoresis. University of Nebraska Research Expo, Omaha, NE, March 21, 2007.

35. Zempleni J. Biological functions of biotinylated histones. Department of Biology, Rochester University, NY, April 9, 2007.

36. Gries T, Schlegel V, Chew YC, Zempleni J, Cuppett S. Detection of organic acid and nucleotide metabolic pools in immortal cell lines by capillary zone electrophoresis. 4th Annual Food Science Symposium, (2007 Susan Hefle Memorial Seminar), Department of Food Science and Technology, University of Nebraska, Lincoln, NE, April 14, 2007.

37. Gries T, Schlegel V, Chew YC, Zempleni J, Cuppett S. Detection of organic acid and nucleotide metabolic pools in immortal cell lines by capillary zone electrophoresis. 49th Annual Rocky Mountain Analytical Conference, Breckenrigde, CO, July 23, 2007.

38. Gries T, Schlegel V, Chew YC, Zempleni J, Cuppett S. Detection of organic acid and nucleotide metabolic pools in immortal cell lines by capillary zone electrophoresis. 2007 Microbiology Initiative Annual Symposium, University of Nebraska, Lincoln, NE, August 20, 2007.

39. Zempleni J. Epigenetic regulation of chromatin structure and gene function by biotin: are biotin requirements being met? Two-day symposium entitled “Diet, epigenetic events, and cancer prevention,” organized by the Nutritional Sciences Research Group, DCP, National Cancer Institute, and the Office of Dietary Supplements, NIH; Gaithersburg Marriott Washingtonian Center; Gaithersburg, MD, September 26/27, 2007.

40. Zempleni J. Biological functions of biotinylated histones. Department of Biochemistry and Molecular Biology, University of Nebraska Medical Center, Omaha, NE, September 10, 2007.

41. Zempleni J. Chromatin remodeling events at the SMVT locus. In the symposium entitled “Advances in understanding of the biological role of biotin at the clinical, biochemical and molecular level” (organizers: Mock DM, Said HM; sponsor: American Society for Nutrition) at the Experimental Biology meeting; April 7, 2008, 10:30 a.m. – 12:30 p.m., San Diego, CA.

42. Zempleni J. Histone biotinylation – a novel epigenetic phenomenon and its biological functions. Jimei University, Fisheries College, Xiamen, China; June 17, 2008.

43. Zempleni J. Histone biotinylation – a novel epigenetic phenomenon and its biological functions. Shanghai University for Ocean Sciences; Shanghai, China; June 19, 2008.

44. Zempleni J. Repression of transposable elements by histone biotinylation. Department of Food Sciences and Technology, University of Nebraska-Lincoln, September 15, 2008.

45. Zempleni J. Repression of transposable elements by histone biotinylation. Department of Biochemistry and Molecular Biology, University of Maryland, September 22, 2008.

46. Zempleni J. Repression of transposable elements by histone biotinylation. Epigenetics Symposium, National Institutes of Health, Durham, NC, September 25, 2008.

47. Wijeratne SSK, Zempleni J. K12-biotinylated histone H4 is enriched in human telomeric repeats. 2008 Nebraska Research and Innovation Conference. Cornhusker Mariott Hotel, Lincoln, NE, October 28, 2008.

48. Bao B, Pestinger V, Zempleni J. Holocarboxylase synthetase physically interacts with histone H3 to mediate biotinylation of K9 and K18. 2008 Nebraska Research and Innovation Conference. Cornhusker Mariott Hotel, Lincoln, NE, October 28, 2008.

49. Rodriguez-Melendez, Zempleni J. Nitric oxide signaling depends on biotin in Jurkat human lymphoma cells. 2008 Nebraska Research and Innovation Conference. Cornhusker Mariott Hotel, Lincoln, NE, October 28, 2008.

50. Hassan YI, Moriyama H, Bi X, Zempleni J. N- and C-terminal domains in human holocarboxylase synthetase participate in substrate recognition. 2008 Nebraska Research and Innovation Conference. Cornhusker Mariott Hotel, Lincoln, NE, October 28, 2008.

51. Pestinger, Wijeratne SSK, Zempleni J. Enrichment of H3K4bio, H3K9bio, H3K18bio, and H4K8bio in distinct genomic loci. 2008 Nebraska Research and Innovation Conference. Cornhusker Mariott Hotel, Lincoln, NE, October 28, 2008.

52. Mall GK, Zempleni J. Homeostasis of biotin in human lymphoma cells. 2008 Nebraska Research and Innovation Conference. Cornhusker Mariott Hotel, Lincoln, NE, October 28, 2008.

53. Zempleni J. A diet-dependent epigenetic mechanism that represses transposable elements. In the conference entitled “Food, Nutrition, Physical Activity and Cancer” (sponsor: American Institute for Cancer Research); Capitol Hilton Hotel, Washington D.C.; November 6, 2008.

54. Zempleni J. Repression of transposable elements by histone biotinylation. Department of Microbiology and Immunology at the University of Oklahoma Health Sciences Center, Oklahoma City, OK, November 10, 2008.

55. Zempleni J, Chew YC, West JT, Kratzer SJ, Ilvarsonn AM, Eissenberg JC, Dave BJ, Klinkebiel D, Christman JK. Repression of transposable elements by histone biotinylation. NIH conference entitled Dynamic Epigenome and Homeostatic regulations in Health and Disease, Bethesda Marriott, MD, November 13, 2008.

56. Zempleni J. Repression of transposable elements by histone biotinylation. USDA W2002 Investigators Meeting 2008-09. January 15/16, 2009; Tucson, AZ.

57. Zempleni J. Repression of transposable elements by histone biotinylation. In the symposium entitled “Nutrients and Epigenetic Regulation of Gene Expression” (organizers: Ho E, Zempleni J; sponsor: American Society for Nutrition) at the Experimental Biology meeting; April, 2009, New Orleans, LA.

58. Zempleni J, Bao B, Pestinger V, Hassan YI. Holocarboxylase synthetase physically interacts with histone H3 to mediate biotinylation of K9 and K18. European Molecular Biology Organization conference “Chromatin and Epigenetics,” Heidelberg, Germany, May 13-17, 2009.

59. Zempleni J, Bao B, Pestinger V, Hassan YI. Holocarboxylase synthetase physically interacts with histone H3 to mediate biotinylation of K9 and K18. FASEB Summer Research Conference “Epigenetics, Chromatin, and Transcription” Snowmass Village, Colorado, July 12-17, 2009.

60. Zempleni J. Repression of transposable elements by histone biotinylation. Nebraska Gateway to Nutrigenomics at the University of Nebraska at Lincoln, Lincoln, NE, September 30, 2009.

61. Zempleni J. Repression of transposable elements by histone biotinylation. Interdepartmental Graduate Program in Nutritional Sciences at Iowa State University, Ames, IA, October 7, 2009.

62. Zempleni J. Nebraska Gateway to Nutrigenomics. Department of Food Sciences and Technology, University of Nebraska-Lincoln, November 2, 2009.

63. Bao B, Pestinger V, Hassan YI, Borgstahl GEO, Kolar C, Camporeale G, Flasinski P, Ilvarsonn A, Chang YH, Eissenberg JC, Zempleni J. Holocarboxylase synthetase catalyzes histone biotinylation, NIH Roadmap Epigenomics meeting, Bethesda, MD, November 5/6, 2009.

64. Zempleni J. Funding opportunities for nutrition science in the U.S. German State Secretary for Science and Education (BMBF), Review Panel “Innovation and New Ideas in Nutrition Research,” Bonn, Germany, February 23/24, 2010.

65. Zempleni J. Roles of holocarboxylase synthetase in histone biotinylation. USDA Multistate Group W-2002, Oklahoma State University, Stillwater, OK, March 4, 2010.

66. Zempleni J. Repression of transposable elements by histone biotinylation. University of Birmingham, Alabama, April 22, 2010.

67. Rickstrew J, Wijeratne SSK, Chaiseeda K, Takacs J, Zempleni J. Synthetic biotin analogs specifically inhibit biotinidase. University of Nebraska Undergraduate Student Research Fair, April 8, 2010, Lincoln, NE.

68. Zempleni J. Enhancing nutrigenomics research in Auckland. University of Auckland, New Zealand, February 3, 2011.

69. Wijeratne SSK, Zempleni J. Identification of HCS-interacting proteins through the CytoTrap™ two-hybrid system. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, February 28th, 2011.

70. Kuroishi T, Zempleni J. Creation of holocarboxylase synthetase knockdown murine primary fibroblasts. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, February 28th, 2011.

71. Pratap Singh M, Zempleni J. Effects of biotinylation of lysine-16 in histone H4 on nucleosomal assembly. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, February 28th, 2011.

72. Eng WK, Giraud D, Zempleni J. Development of an outpatient biotin feeding protocol for studies of biotin biology in adults. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, February 28th, 2011.

73. Teixeira D, Malkaram SA, Zempleni J. Detection and enrichment of a common DNA sequence associated with human genome instability. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, February 28th, 2011.

74. Malkaram SA, Wijeratne SSK, Zempleni J. High-throughput ChIP-seq and RNA-seq investigation of epigenetic regulation of gene expression by biotin. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, February 28th, 2011.

75. Li Y, Zempleni J. Holocarboxylase synthetase interacts with euchromatic histone-lysine N-methyltransferase 1, linking histone biotinylation to histone methylation. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, February 28th, 2011.

76. Xue J, Zempleni J. Epigenetic synergies between methylation of cytosines and biotinylation of histones in gene repression. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, February 28th, 2011.

77. Esaki S, Zempleni J. Effects of single nucleotide polymorphisms in the human *holocarboxylase synthetase* gene on catalytic activity. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, February 28th, 2011.

78. Zempleni J. Biotin-dependent epigenetic mechanisms contributing to genome stability. University of Vienna, Austria, June 16, 2011.

79. Liu D, Zempleni J. Holocarboxylase synthetase (HLCS) interacts physically with nuclear corepressor (N-CoR) and histone deacetylases (HDACs) to mediate gene repression. Research Fair, College of Education and Human Sciences, Lincoln, NE, 11/12/2011

80. Cordonier EL, Kasputis T, Mills JD, Han Z, Pannier AK, Zempleni J. Changes in the carboxylase profile are associated with early and late differentiation stages of osteoblast and adipocytes from human mesenchymal stem cells. Research Fair, College of Education and Human Sciences, Lincoln, NE, 11/12/2011

81. Eng WK, Giraud D, Schlegel V, Wang D, Zempleni J. Development of an outpatient biotin feeding protocol for studies of biotin requirements in adults. Research Fair, College of Education and Human Sciences, Lincoln, NE, 11/12/2011

82. Zempleni J. Epigenetic mechanisms of gene repression by holocarboxylase synthetase. Clinical Epigenetics International Meeting. Homburg/Saar, Germany, 3/9-10/2012

83. Li Y, Zempleni J. Holocarboxylase synthetase interacts with euchromatic histone-lysine N-methyltransferase 1, linking histone biotinylation with methylation. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 14th, 2012.

84. Camara D, Malkaram SA, Zempleni J. Enrichment of a common DNA sequence associated with human DNA recombination. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 14th, 2012.

85. Xue J, Zempleni J. Epigenetic synergies between histone biotinylation and cytosine methylation. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 14th, 2012.

86. Baier SR, Schlegel VL, Zempleni J. Off Target Effects of Dietary Sulforaphane. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 14th, 2012.

87. Pratap Singh M, Zempleni J. Biotinylation of K16 in histone H4 causes chromatin condensation. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 14th, 2012.

88. Wijeratne SSK, Malkaram SA, Zempleni J. Identification of biotin- and holocarboxylase synthetase-dependent microRNAs in human fibroblasts. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 14th, 2012.

89. Eng WK, Schlegel VL, Wang D, Zempleni J. Development of an outpatient biotin feeding protocol for studies of biotin requirements in adults. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 14th, 2012.

90. Cordonier EL, Kasputis T, Mills JD, Han Z, Pannier AK, Zempleni J. Changes in the carboxylase profile are associated with early and late differentiation stages of osteoblast and adipocytes from human mesenchymal stem cells. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 14th, 2012.

91. Liu D, Zempleni J. Holocarboxylase synthetase (HLCS) interacts physically with nuclear corepressor (N-CoR) and histone deacetylases (HDACs) to mediate gene repression. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 14th, 2012

92. Xia M, Malkaram SA, Zempleni J. Identification of three promoters in the human holocarboxylase synthetase (HCS) gene. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 14th, 2012

93. Zempleni J. Holocarboxylase synthetase. W2002 Multistate Meeting at Colorado State University, Fort Collins, CO, June 5th, 2012

94. Teixeira Camara D, Malkaram SA, Zempleni J. Enrichment of meiotic recombination hotspot sequences by avidin capture technology. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 13th, 2013

95. Cordonier EL, Teixeira Camara D, Han Z, Pannier AK, Zempleni J. Acetyl-CoA carboxylases are checkpoints in adipocyte differentiation. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 13th, 2013

96. Xue J, Zhou J, Wijeratne SSK, Zempleni J. Holocarboxylase synthetase catalyzes the covalent binding of biotin to lysine residues in the inducible heat shock protein 72. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 13th, 2013

97. Baier SR. Zbasnik R, Schlegel VL, Zempleni J. Dietary sulforaphane elicits off-target effects at loci coding for long terminal repeats in lymphocytes from healthy adults and in IMR-90 fibroblast cultures, possibly impairing genome stability. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 13th, 2013

98. Zhou J, Wijeratne SSK, Zempleni J. Biotinylation of the c-myc promoter binding protein MBP-1 decreases c-myc expression in mammary carcinoma MCF-7 cells. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, May 13th, 2013

99. Zempleni J. Roles of biotin and holocarboxylase synthetase in disease prevention. W2002 Multistate Meeting at the University of Nebraska-Lincoln, Lincoln, NE, June 3rd, 2013

100. Zempleni J. Epigenetic mechanisms of gene regulation by holocarboxylase synthetase. Invited presentation at the symposium titled “Nutrigenomics and Personalized Foods” held by the Korea Food Research Institute, Seoul, South Korea, October 25th, 2013

101. Wang Q-W, Xue J, Zempleni J. Holocarboxylase Synthetase Catalyzes Biotinylation of Lysine Residues in Enolase-1. University of Nebraska-Lincoln Undergraduate Research Symposium. August 7th, 2013. Lincoln, NE

102. Zempleni J. Keynote speaker Annual Meeting of the German Society for Nutrition (Deutsche Gesellschaft für Ernährung) “Bioinformatics approaches to characterize the regulation of nutritionally relevant genes” Paderborn, Germany, March 13, 2014

103. Sittiwong, W, Cordonier EL, Zinniel D, Zempleni J, Barletta RG, Dussault PH. “Investigation of Biological Activity of Analogs of Biotin-5′-AMP” 247th ACS National Meeting and Exposition, March 16-20, 2014, Dallas, TX

104. Zempleni J. Invited presentation titled “A tale of three stories: holocarboxylase synthetase gene repression complexes, milk-borne microRNAs, and mitochondrial acetyl-CoA carboxylase 2” in the Bortree seminar series in the Department of Veterinary and Biomedical Sciences at Pennsylvania State University, University Park, PA. April 9th, 2014

105. Friemel T, Kusuma Jati R, Zempleni J. Development of a simple and high-throughput screening method for an anti-obesity compound from the gut metabolome: the importance of mitochondrial docking of acetyl-CoA carboxylase (ACC)-2. The 124th Annual Meeting of the Nebraska Academy of Sciences, Nebraska Wesleyan University, Lincoln, NE April 11, 2014

106. Zempleni J. Invited presentation titled “A tale of three stories: holocarboxylase synthetase gene repression complexes, milk-borne microRNAs, and mitochondrial acetyl-CoA carboxylase 2”, Omaha VA Hospital seminar series, Omaha, NE. April 18th, 2014

107. Zempleni J. Invited presentation titled “A tale of three stories: holocarboxylase synthetase gene repression complexes, milk-borne microRNAs, and mitochondrial acetyl-CoA carboxylase 2” as part of the annual W-3002 Multistate group meeting; Purdue University, Lafayette, IN. May 29th, 2014

108. Baier SR, Zempleni J. MicroRNAs in bovine milk are bioavailable in healthy adults and down-regulate reporter gene activity in human kidney HEK-293 cell cultures. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, June 9th, 2014

109. Chiang K, Cui, J, Zempleni J. Distinguishing mitochondrial encoded proteins from nuclear encoded proteins. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, June 9th, 2014

110. Cordonier EL, Adjam R, Camara Teixeira D, Onur S, Zbasnik R, Döring F, Schlegel VL, Zempleni J. Resveratrol compounds are potent inhibitors of human holocarboxylase synthetase and cause a lean phenotype in *Drosophila melanogaster brummer* mutants. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, June 9th, 2014

111. Jati Kusuma R, Friemel T, Fernando S, Zempleni J. Screening the gut metabolome for compounds that prevent acetyl-CoA (ACC)-2 anchoring in mitochondria, causing a lean phenotype. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, June 9th, 2014

112. Camara Teixeira D, Cordonier, EL, Wijeratne SSK, Huebbe P, Jamin A, Jarecke S, Wiebe M, Zempleni J. A cell death assay for assessing the mitochondrial targeting of proteins. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, June 9th, 2014

113. Wolf T, Baier SR, Zempleni J. Transport of microRNA-containing, milk-borne exosomes by human colon carcinoma caco-2 cells. Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, June 9th, 2014

114. Wolf T, Baier S, Zempleni J. Transport of microRNA-containing, milk-borne exosomes by human colon carcinoma caco-2 cells. CEHS Research Fair. Lincoln, NE. 10/23/2014

115. Camara Teixeira D, Cordonier EL, Wijeratne SSK, Huebbe P, Jamin A, Jarecke S, Wiebe M, Zempleni J. A cell death assay for assessing the mitochondrial targeting of proteins. CEHS Research Fair. Lincoln, NE. 10/23/2014

116. Baier SR, Xie F, Wood JR, Zempleni J. MicroRNAs in bovine milk are bioavailable in healthy adults and down-regulate reporter gene activity in human kidney HEK-293 cell cultures. CEHS Research Fair. Lincoln, NE. 10/23/2014

117. Kusuma RJ, Friemel T, Zempleni J. Contents of a novel class of nutrients, microRNAs, in milk and other dairy products. CEHS Research Fair. Lincoln, NE. 10/23/2014

118. Cordonier EL, Han Z, Pannier AK, Zempleni J. Acetyl-CoA carboxylases are checkpoints in adipocyte differentiation. CEHS Research Fair: Lincoln, NE. 10/23/2014

119. Zempleni J. Invited presentation titled “Bovine microRNAs are bioavailable and affect gene expression in humans and mice” in the School of Veterinary Medicine & Biomedical Sciences seminar series, University of Nebraska-Lincoln. November 24th, 2014

120. Baier SR, Howard K, Zempleni J. MicroRNAs in chicken eggs are bioavailable in healthy adults and down-regulate target gene expression in peripheral blood mononuclear cells. Nebraska Center for the Prevention of Obesity Diseases, and Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, March 13th, 2015

121. Cordonier EL, Jarecke S, Hollinger FE, Zempleni J. Inhibition of acetyl-CoA carboxylase activity prevents adipocyte differentiation in 3T3-L1 cells. Nebraska Center for the Prevention of Obesity Diseases, and Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, March 13th, 2015.

122. Kusuma RJ, Friemel T, Zempleni J. Transport of Bovine Extracellular Vesicles in Human Endothelial Cells. Nebraska Center for the Prevention of Obesity Diseases, and Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, March 13th, 2015

123. Howard KM, Jati Kusuma R, Baier SR, Friemel T, Markham L, Vanamala J, Zempleni J. Loss of miRNAs during processing and storage of cow’s (*Bos taurus*) milk. Nebraska Center for the Prevention of Obesity Diseases, and Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, March 13th, 2015

124. Wolf T, Baier SR, Zempleni J. Transport of microRNA-containing, milk-borne extracellular vesicles by human colon carcinoma Caco-2 cells. Nebraska Center for the Prevention of Obesity Diseases, and Nebraska Gateway to Nutrigenomics Retreat. Lincoln, NE, March 13th, 2015

125. Zempleni J. Biological activities of dietary microRNAs. Oregon State University, Corvallis, OR, May 15th, 2015

126. Zempleni J. Bioactivity of dietary exosomes and microRNA cargos, presented at the symposium titled “Nutrition, microRNAs and human health” at Experimental Biology 2016, sponsored by ASN, San Diego, CA, April 5th, 2016.

127. Aguilar-Lozano A, Baier S, Adamec J, Sadri M, Giraud D, Zempleni J. Depletion of dietary microRNAs from cow's milk causes an increase in purine metabolites in human body fluids and mouse livers. NPOD Retreat, April 18, 2016, Lincoln, NE.

128. Aguilar-Lozano A, Baier S, Adamec J, Sadri M, Giraud D, Zempleni J. Depletion of dietary microRNAs from cow's milk causes an increase in purine metabolites in human body fluids and mouse livers. University of Nebraska-Lincoln Graduate Student Spring Research Fair, April 12, 2016, Lincoln, NE.

129. Manca S, Giraud D, Zempleni J. Bioavailability and biodistribution of fluorophore-labeled exosomes from cow’s milk after intravenous and oral administration in C57BL/6J mice. University of Nebraska, NPOD 8th Annual Retreat, April 18, 2016, Lincoln, NE.

130. Sadri M, Xie F, Wood J, Zempleni J, Dietary depletion of cow's microRNAs impairs fecundity in mice. University of Nebraska Graduate Poster Session, April 12th at the and NPOD 8th Annual Retreat, April 18, 2016, Lincoln, NE.

131. Mutai E, Ramer-Tait A, Zempleni J. Exosome cargos in cow's milk elicit an increased release of cytokines by PBMCs ex vivo in a human feeding study. University of Nebraska, NPOD 8th Annual Retreat, April 18, 2016, Lincoln, NE.

132. Zempleni J. The delivery of functional RNA species by dietary exosomes. W3002 USDA/NIFA multistate group meeting, University of Illinois-Urbana/Champaign, May 24/25, 2016.

133. Manca S, Zempleni J. Delivery of functional RNA cargos by dietary exosomes from cow's milk in mice. Keystone symposium "Exosomes/Microvesicles: Novel Mechanisms of Cell-Cell communication," June 19-22, 2016, Keystone Resort, Keystone, CO

134. Zempleni J. Delivery of functional RNA cargos by dietary exosomes from cow's milk in C57BL/6 mice. 6th International Conference of Genomics and Pharmacogenomics, September 12-14, 2016, Berlin, Germany; organized by *omics International*

135. Wu D, Shu J, Grove R, Boone C, Cui J, Adamec J, Zempleni J. mRNA cargos in cow's milk exosomes are templates for translation. Nebraska Center for the Prevention of Obesity Diseases. Lincoln, NE, September 21th, 2016.

136. Zhou F, Mutai E, Sadri M, Fernando S, Zempleni J. Bovine milk exosome depletion alters the gut microbiome and behavior in mice. Nebraska Center for the Prevention of Obesity Diseases. Lincoln, NE, September 21th, 2016.

137. Aguilar-Lozano AG, Baier S, Adamec J, Sadri M, Giraud D, Zempleni J. Depletion of dietary microRNAs from cow's milk causes an increase of purine metabolites in human body fluids and mouse livers. Nebraska Center for the Prevention of Obesity Diseases. Lincoln, NE, September 21th, 2016.

138. Mutai E, Ramer-Tait A, Zempleni J. Effects of extracellular vesicles and their cargos from cow's milk on the release of cytokines by human peripheral blood mononuclear cells *ex vitro*. Nebraska Center for the Prevention of Obesity Diseases. Lincoln, NE, September 21th, 2016.

139. Sukreet S, Zhang H, Adamec J, Cui J, Zempleni J. Identification of glycoproteins on the surface of cow's milk exosomes that mediate the uptake of exosomes into human colon carcinoma caco-2 cells. Nebraska Center for the Prevention of Obesity Diseases. Lincoln, NE, September 21th, 2016.

140. Zempleni J. Non-canonical pathways of signaling and metabolic regulation by extracellular vesicles from bovine milk. University of Nebraska Medical Center, Department of Internal Medicine; March 9, 2017, Omaha, NE.

141. Leiferman AL, Aguilar A, Grove R, Shu J, Cui J, Adamec J, Zempleni J. Dietary depletion of bovine milk exosomes elicits changes in amino acid metabolism in C57BL/6 mice. UNL Spring Research Fair; Lincoln, NE, April 5, 2017

142. Mutai E, Ramer-Tait A, Zempleni J. Effects of extracellular vesicles and their cargos from cow's milk on the release of cytokines by human peripheral blood mononuclear cells *ex vitro*. UNL Spring Research Fair; Lincoln, NE, April 5, 2017

143. Zempleni J. Non-canonical pathways of signaling and metabolic regulation by extracellular vesicles from bovine milk. Baylor University College of Medicine & Nutrition Research Center; April 6, 2017, Houston, TX.

144. Zempleni J. Are dietary RNAs bioavailable? RNA Group of Houston, Baylor University College of Medicine, UT Southwestern, University of Houston, and MD Anderson; April 6, 2017, Houston, TX.

145. Zempleni J. Invited presentation titled "Biological activities of bovine milk exosomes and their cargos in non-bovine species" as part of the annual W-3002 Multistate group meeting; Oregon State University, Portland, OR. May 23th, 2017

146. Zempleni J. Molecular signatures of exosomes and their RNA cargos from bovine milk in humans and mice. NIFA Program Directors meeting; Las Vegas, NV. June 24th, 2017

147. Zempleni J. Bioavailability of immune-relevant RNAs from bovine milk exosomes and its implications for pro-inflammatory responses in humans and mice. NIFA Program Directors meeting; Las Vegas, NV. June 24th, 2017

148. Zempleni J. Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules. Agricultural Research Division at the University of Nebraska-Lincoln, August 11, 2017

149. Zempleni J. Invited seminar titled "Biological activities of bovine milk exosomes and their RNA cargos in non-bovine species." University of Nebraska Medical Center, Department of Cellular and Integrative Physiology, Omaha, NE, September 1, 2017

150. Zempleni J, Sadri M, Mutai E, Manca S. The bioavailability and distribution of exosomes and their RNA cargos from bovine and porcine milk in mice. 9th exRNA Communications Consortium Investigators' Meeting. Rockville, MD. November 6/7, 2017

151. Fratantonio D, Zempleni J. Chicken egg exosomes and their cargos are bioavailable and dietary depletion affects spatial learning and memory and gene expression in the hippocampus in mice. University of Nebraska, NPOD 3rd Annual Fall Symposium/10th Annual Retreat, September 20, 2017, Lincoln, NE

152. Sadri M, Mutai E, Zempleni J. Analysis of plasma by RNase H2 PCR provides evidence that microRNAs in bovine milk are bioavailable in humans. University of Nebraska, NPOD 3rd Annual Fall Symposium/10th Annual Retreat, September 20, 2017, Lincoln, NE

153. Manca S, Zempleni J. The bioavailability and distribution of bovine milk exosomes is distinct from that of their cargos in mice. University of Nebraska, NPOD 3rd Annual Fall Symposium/10th Annual Retreat, September 20, 2017, Lincoln, NE

154. Sukreet S, Silva-Resende B, Wu D, Shu J, Adamac J, Cui J, Zempleni J. Sonication and short-term incubation causes a specific loss of RNA cargos in bovine milk exosome. University of Nebraska, NPOD 3rd Annual Fall Symposium/10th Annual Retreat, September 20, 2017, Lincoln, NE

155. Leiferman A, Shu J, Grove R, Cui J, Adamec J, Zempleni J. A diet defined by its content of bovine milk exosomes and their RNA cargos affects gene expression but not amino acid profiles and grip strength in skeletal muscle in C57BL/6 mice. University of Nebraska, NPOD 3rd Annual Fall Symposium/10th Annual Retreat, September 20, 2017, Lincoln, NE

156. Mutai E, Ramer-Tait A, Zempleni J. Immunomodulatory microRNAs in bovine milk are bioavailable and synergize with concanavalin A in the stimulation of cytokine secretion by peripheral blood mononuclear cells *ex vivo* in humans. University of Nebraska, NPOD 3rd Annual Fall Symposium/10th Annual Retreat, September 20, 2017, Lincoln, NE

157. Wu D, Shu J, Upadhyaya B, Cui J, Zempleni J. Bioavailability of microbial RNAs in bovine milk exosomes in mice. University of Nebraska, NPOD 3rd Annual Fall Symposium/10th Annual Retreat, September 20, 2017

158. Opening ceremony speaker at the meeting of the American Society for Exosomes and Microvesicles. Zempleni J, Zhou F, Wu D, Upadhyaya B, Shu J, Paz H, Fernando S, Cui J. Delivery and alterations of microbial signals by bovine milk exosomes in non-bovine species. Asilomar Conference Center, Pacific Beach, CA, October 8-12, 2017

159. Invited presentation “Exosomes and RNA cargos in human milk” at the NIH-sponsored workshop titled “Workshop on Human Milk Composition-Biological, Environmental, Nutritional, and Methodological Considerations Meeting.” Bethesda, MD, November 16-17, 2017

160. Wu D, Shu J, Upadhyaya B, Cui J, Zempleni J. Bioavailability of microbial RNAs in bovine milk exosomes in mice. University of Nebraska, Fall 2017 Research Fair, November 8, 2017

161. Zempleni J. Delivery and alterations of microbial signals by bovine milk exosomes in non-bovine species. W-3002 Multistate group meeting. February 8/9, 2018,Tucson, AZ [talk]

162. Zempleni J. Cross-kingdom communication: bovine milk exosomes talk to the gut microbiome talk to the host. Invited seminar in the Interdepartmental Nutrition seminar series. Speaker chosen by the Nutrition Science Graduate Student Organization as Spring Seminar 2018 Speaker. Purdue University, Lafayette, IN, March 9, 2018 [talk]

163. Wu D, Kittana H, Shu J, Ramer-Tait AE, Cui J, Zempleni J. Effects of diets defined by their content of bovine milk exosomes and their RNA cargos on inflammatory bowel disease in Mdr1a-/- mice. University of Nebraska-Lincoln Graduate Student Spring Research Fair, April 10, 2018, Lincoln, NE

164. Sukreet S, Silva B, Wu Di, Shu J, Adamec J, Cui J, Zempleni J. Sonication and short term incubation causes specific cargos loss in bovine milk exosomes. University of Nebraska-Lincoln Graduate Student Spring Research Fair, April 10, 2018, Lincoln, NE

165. Zhou F, Paz H, Fernando S, Sadri M, Zempleni J. A diet defined by its content of bovine milk exosomes alters the composition of the intestinal microbiome in C57BL/6 mice. University of Nebraska-Lincoln Graduate Student Spring Research Fair, April 10, 2018, Lincoln, NE

166. Sadri M, Shu J, Cui J, Zempleni J. Bovine milk exosomes and their miR-30d cargos cross the placenta contribute toward embryonic development and survival in C57BL/6 mice. UNL Research Fair, April 10, 2018, Lincoln, NE

167. Wu D, Kittana H, Shu J, Ramer-Tait AE, Cui J, Zempleni J. Effects of diets defined by their content of bovine milk exosomes and their RNA cargos on inflammatory bowel disease in Mdr1a-/- mice. Nebraska Center for the Prevention of Obesity Diseases, Spring Retreat. Lincoln, NE, April 11th, 2018

168. Fratantonio D, Shu J, Cui J and Zempleni J. Chicken egg exosomes and their cargo are bioavailable and dietary depletion affects the hippocampus gene expression in mice. Nebraska Center for the Prevention of Obesity Diseases, Spring Retreat. Lincoln, NE, April 11th, 2018

169. Ebea P, Sukreet S, Zempleni J. Uptake of RNA cargos in bovine milk exosomes by murine brain endothelial cells. Nebraska Center for the Prevention of Obesity Diseases, Spring Retreat. Lincoln, NE, April 11th, 2018

170. Khanam A, Yu J, Zempleni J. Uptake of bovine milk exosomes by bone marrow derived macrophages. Nebraska Center for the Prevention of Obesity Diseases, Spring Retreat. Lincoln, NE, April 11th, 2018

171. Sukreet S, Silva B, Wu Di, Shu J, Adamec J, Cui J, Zempleni J. Sonication and incubation of milk causes a moderate loss of exosomes and substantial changes in exosomal RNA, lipid and protein cargos. Nebraska Center for the Prevention of Obesity Diseases, Spring Retreat. Lincoln, NE, April 11th, 2018

172. Mutai E, Ramer-Tait A, Zempleni J. Bioavailability of immunomodulatory microRNAs in bovine milk and cytokine secretion by peripheral blood mononuclear cells *ex vivo* in humans. Nebraska Center for the Prevention of Obesity Diseases, Spring Retreat. Lincoln, NE, April 11th, 2018 [poster]

173. Leiferman A, Shu J, Grove R, Cui J, Adamec J, Zempleni J. A diet defined by its content of bovine milk exosomes and their RNA cargos has moderate effects on gene expression, amino acid profiles and grip strength in skeletal muscle in

C57BL/6 mice. Nebraska Center for the Prevention of Obesity Diseases, Spring Retreat. Lincoln, NE, April 11th, 2018 [poster]

174. Zhou F, Giraud D, Wu D, Brown DM, Zempleni J. Microbial mRNAs in bovine milk exosomes activate interferon-beta in mice. Nebraska Center for the Prevention of Obesity Diseases, April 11th, 2018, Lincoln, NE. Nebraska Center for the Prevention of Obesity Diseases, Spring Retreat. Lincoln, NE, April 11th, 2018 [poster]

175. Upadhyaya B, Xia M, Moriyama H, Ohtsuka M, Zempleni J. Generation of transgenic exosome and cargo tracking mice. NPOD 10th Annual Retreat, April 11, 2018, Lincoln, NE [poster]

176. Sadri M, Shu J, Cui J, Zempleni J. Bovine milk exosomes and their miR-30d cargos cross the placenta contribute toward embryonic development and survival in C57BL/6 mice. NPOD 10th Annual Retreat, April 11, 2018, Lincoln, NE [poster]

177. Zempleni J, Zhou F, Shu J, Wu D, Upadhyaya B, Cui J, Paz H, Fernando S. Milk exosomes interface with the microbiome. Keystone symposium "Exosomes/Microvesicles: Heterogeneity, Biogenesis, Function and Therapeutic Developments," June 4-8, 2018, Beaver Run Resort, Breckenridge, CO [poster]

178. Wu D, Kittana H, Shu J, Ramer-Tait A, Cui J, Zempleni J. Effects of diets defined by their content of bovine milk exosomes and their RNA cargos on inflammatory bowel disease in Mdr1a$^{-/-}$ mice. Keystone symposium "Exosomes/Microvesicles: Heterogeneity, Biogenesis, Function and Therapeutic Developments," June 4-8, 2018, Beaver Run Resort, Breckenridge, CO [poster]

179. Upadhyaya B, Xia M, Moriyama H, Ohtsuka M, Zempleni J. Exosome and cargo tracking mice. Keystone symposium "Exosomes/Microvesicles: Heterogeneity, Biogenesis, Function and Therapeutic Developments," June 4-8, 2018, Beaver Run Resort, Breckenridge, CO [poster]

180. Zempleni J, Wu D, Ramer-Tait A. Effects of diets defined by their content of bovine milk exosomes and their RNA cargos on inflammatory bowel disease in Mdr1a-/- mice. NIFA Program Directors meeting; Boston, MA, June 9th, 2018 [poster]

181. Parry HA, Mobley CB, Mumford PW, Romero MA, Zhang Y. Zempleni J, Young KC, Roberts MD, Kavazis AN. Dietary Exosomes Affect Growth and Skeletal Muscle Physiology in Young Male and Female Rats. American College of Sports Medicine, San Diego, CA, September 5-8. 2018 [talk]

182. Upadhyaya B, Xia M, Moriyama H, Ohtsuka M, Zempleni J. Development of an exosome and cargo tracking mouse. NPOD 4th Annual Symposium, Lincoln, NE, September 12, 2018 [poster]

183. Ebea P, Sukreet S, Zempleni J. Uptake of RNA cargos in bovine milk exosomes by murine brain endothelial cells. NPOD 4th Annual Symposium, Lincoln, NE, September 12, 2018 [poster]

184. Khanam A, Yu J, Zempleni J. Uptake of bovine milk exosomes by bone marrow derived macrophages. NPOD 4th Annual Symposium 2018, Lincoln, NE, September 12, 2018 [poster]

185. Sukreet S, Adamec J, Cui J, Zempleni J. Identification of Glycoproteins on the Surface of Cow's Milk Exosomes that Mediate the Uptake of Exosomes into Human Cells. NPOD 4th Annual Symposium, Lincoln, NE, September 12, 2018 [poster]

186. Zhou F, Shu J, Fernando S, Cui J, Zempleni J. Bovine milk exosomes select polymorphisms in murine intestinal microbiome in vitro. NPOD 4th Annual Symposium, Lincoln, NE, September 12, 2018 [poster]

187. Sadri M, Shu J, Cui J, Zempleni J. Bovine milk exosomes and their miR-30d and miR-21-5p cargos cross the placenta and contribute toward embryonic development and survival in C57BL/6 mice. NPOD 4th Annual Symposium, Lincoln, NE, September 12, 2018 [poster]

188. Zhao W, Zempleni J. The role of adipose derived-exosomes in breast tumorigenesis in obese mice. NPOD 4th Annual Symposium, Lincoln, NE, September 12, 2018 [poster]

189. Zempleni J. Exosomes in milk. Grand Challenges Meeting, sponsored by the Gates Foundation, Berlin, Germany, October 15-18, 2018 [talk]

190. Zempleni J. Biotin metabolism. Visiting Professor, University of Yogyakarta, Yogyakarta, Indonesia, November 2, 2018 [talk]

191. Zempleni J. Pursuing a graduate education in US. Visiting Professor, University of Yogyakarta, Yogyakarta, Indonesia, November 2, 2018 [talk]

192. Zempleni J. Obesity research in the United States. Visiting Professor, University of Yogyakarta, Yogyakarta, Indonesia, November 3, 2018 [talk]

193. Zempleni J. Dietary exosomes and their RNA cargos as novel bioactive food compounds. Visiting Professor, University of Yogyakarta, Yogyakarta, Indonesia, November 5, 2018 [talk]

194. Zempleni J. Invited presentation titled "Effects of milk exosomes and their RNA cargos on anti-viral response and postnatal growth" as part of the annual W-4002 Multistate group meeting; UC-Davis, Davis, CA. February 7th, 2019 [talk]

195. Zempleni J. Invited lecture titled "Dietary exosomes" in the graduate class "Exosomes: Molecular Mechanisms and Biomedical Applications" (ME 340.714) at Johns Hopkins University. Baltimore, MD, March 27th, 2019 [talk]

196. Zempleni J. Invited presentation titled "Biological activities of milk exosomes and their RNA cargos across and within species boundaries" in the Department of Biological Chemistry at Johns Hopkins University. Baltimore, MD, March 27th, 2019 [talk]

197. Wu D, Zhou F, Upadhyaya B, Shu J, Mutai E, Cui J, Zempleni J. Microbial mRNAs in bovine milk exosomes are bioavailable in humans and mice and increase survival of mice challenged with influenza A. Nebraska Spring Research Fair; Lincoln, NE, April 15, 2019 [poster]

198. Khanam A, Yu J, Zempleni J. Uptake of bovine milk exosomes by murine bone marrow derived macrophages. Nebraska Spring Research Fair; Lincoln, NE, April 15, 2019 [poster]

199. Ebea P, Sukreet S, Zempleni J, Bovine milk exosomes and miR-34a cargo cross the blood brain barrier and elimination by microglial accumulation is minimal. NPOD 11th Annual Retreat, April 17, 2019, Lincoln, NE [poster]

200. Upadhyaya B, Xia M, Moriyama H, Ohtsuka M, Zempleni J. Development of an exosome and cargo tracking mouse model. NPOD 11th Annual Retreat, April 17, 2019, Lincoln, NE [poster]

201. Mutai E**,** Ramer-Tait A, Zempleni J, Immunomodulatory microRNAs in bovine milk exosomes are bioavailable and depend on co-stimulation with concanavalin A to elicit cytokine secretion by peripheral blood mononuclear cells *ex vivo* in humans. University of Nebraska Graduate Poster Session, April 17th at the and NPOD 11th Annual Retreat, April 17, 2019, Lincoln, NE [poster]

202. Khanam A, Yu J, Zempleni J. Uptake of bovine milk exosomes by murine bone marrow derived macrophages. NPOD 11th Annual Retreat, April 17, 2019, Lincoln, NE [poster]

203. Wu D, Zhou F, Upadhyaya B, Shu J, Mutai E, Cui J, Zempleni J. Microbial mRNAs in bovine milk exosomes are bioavailable in humans and mice and increase survival of mice challenged with influenza A. NPOD 11th Annual Retreat, April 17, 2019, Lincoln, NE [poster]

204. Zhou F, Sadri M, Zempleni J, Loss of exosome and microRNA biogenesis in lactating dams impairs gut health, food intake and postnatal growth in suckling C57BL/6 pups. NPOD 11thAnnual Retreat, April 17th, 2019, Lincoln, NE

205. Zhou F, Dogan H, Shu J, Fernando S, Cui J, Zempleni J, Bovine milk exosomes select polymorphisms in murine intestinal microbiome *ex vivo*. NPOD 12th Annual Retreat, September 11th, 2019, Lincoln, NE [poster]

206. Khanam A, Yu J, Zempleni J. Uptake of bovine milk exosomes by murine bone marrow-derived macrophages. NPOD 12th Annual Retreat, September 11th, 2019, Lincoln, NE [poster]

207. Zhao W, Zempleni J. A mouse for tracking and cargo analysis in adipose-derived exosomes. NPOD 12th Annual Retreat, September 11th, 2019, Lincoln, NE [poster]

208. Sadri M, Zempleni J, Loss of exosome biogenesis in lactating dams impairs gut health and postnatal growth in C57/BL6 pups. NPOD 12th Annual Retreat, September 11th, 2019, Lincoln, NE [poster]

209. Wu D, Zhou F, Upadhyaya B, Shu J, Pereira C, Mutai E, Cui J, Adamec J, Zempleni J, Bioavailability and the potential functions of bovine and microbial mRNAs in bovine milk exosomes. NPOD 12th Annual Retreat, September 11th, 2019, Lincoln, NE [poster]

210. Parry HA, Mobley CB, Mumford PW, Romero MA, Zhang Y. Zempleni J, McCarthy JJ, Young KC, Roberts MD, Kavazis AN. Bovine Milk Exosome Depletion Affects Skeletal Muscle and Liver in Young Growing Rats. American College of Sports Medicine, Orlando, FL, May 28 – June 1, 2019 [talk]

211. Zempleni J, Sadri M, Zhou F. Knockout of maternal Tsg101 and Dicer impair gut health in suckling wild-type pups. American Society for Exosomes and Microvesicles, Asilomar, CA, October 6-10, 2019 [talk]

212. Zempleni J, Sadri M, Zhou F. Knockout of maternal Tsg101 and Dicer impair gut health in suckling wild-type pups. American Society for Exosomes and Microvesicles, Asilomar, CA, October 6-10, 2019 [poster]

213. Zempleni J. Milk exosomes. Session “Exosomes & microRNA” at the 7th International Conference on Food Factors, Kobe, Japan, December 4th, 2019 [talk]

214. Zempleni J. Concluding Remarks. Session “Exosomes & microRNA” at the 7th International Conference on Food Factors, Kobe, Japan, December 4th, 2019 [talk]

Outreach

Outreach presentations

1. Zempleni J. Vitamin metabolism. Center for Continuing Education, University of Nebraska-Lincoln; Lincoln, Nebraska; October 2, 2001.

2. Zempleni J. Genetically modified foods from a European Perspective. World Food Day, University of Nebraska-Lincoln, Department of Veterinary and Biomedical Sciences, October 16, 2001.

3. Zempleni J. Molecular Nutrition. LDDA; Lincoln, Nebraska; January 10, 2002.

4. Zempleni J. Research in Nutrition and Health Sciences. INBRE undergraduate students; July 6, 2005.

5. Zempleni J. Nutritional Genomics. INBRE undergraduate students; July 5, 2006.

6. Zempleni J. Southeast Research and extension Center’s VIP Day for County Commissioners and Extension Board members, Dept. of Nutrition and Health Sciences; March 12, 2007.

7. Zempleni J. Nebraska Gateway to Nutrigenomics, Agriculture Builders of Nebraska, Inc.; Lincoln, NE, April 14, 2009.

8. Zempleni J. Nebraska Gateway to Nutrigenomics, Meeting with representatives from Conagra, Inc.; Lincoln, NE, May 22, 2009.

9. Zempleni J. Research Strength Summit, Nebraska Innovation Campus: Nutrigenomics; Lincoln, NE, June 15, 2009.

10. Zempleni J. Nutrigenomics, "Nutrition Update" meeting; Lincoln, NE, September 25, 2009.

11. Zempleni J. Nebraska Gateway to Nutrigenomics, Osher Lifelong Learning Institute; Lincoln, NE, April 2, 2010.

12. Zempleni J. "Nebraska Gateway to Nutrigenomics" on the KFOR radio show "Lincoln Live" (aired on 9/1/2010 at 12:30 p.m.)

13. Zempleni J. Personalized nutrition: developing nutritional guidelines for individuals based on their genetic makeup, Osher Lifelong Learning Institute; Lincoln, NE, December 17, 2010.

14. Zempleni J. "Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules" on the KFOR radio show "Lincoln Live" (aired on 10/6/2014 at 12:30 p.m.)

15. Zempleni J. Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules and the NIH IDeA program. Ag Builders of Nebraska, July 8, 2016, Nebraska Innovation Campus, Lincoln, NE

Consumer articles/outreach publications

1. Zempleni J. Studies investigating the role of vitamins in fighting cancer. Lincoln Journal Star, August 13, 2002 & October 15, 2002.

2. Zempleni J. Vitamin B2 plays a role in the immune system. Lincoln Journal Star, December 3, 2002.

3. Interview with the news magazine Spiegel regarding microRNAs in milk: Lebensmittel: macht Milch krank? [in German]; http://www.spiegel.de/gesundheit/ernaehrung/milch-ist-sie-gesund-oder-ungesund-a-1048735.html; September 10, 2015

4. Interview with a freelance journalist (Dr. Hubertus Breuer) for an article on dietary microRNAs, to be published in the Austrian, German and Swiss newspapers:
   4.1 Profil ("Weissmalerei" Profil, 42:110-112, 2015)
   4.2 Die Suddeutsche Zeitung
   4.3 Die Schweizer Sonntagszeitung

5. McCann M. Milk miracle: New Zealand AgResearch scientists eye new baby booster. New Zealand Herald, 2/10/2019. https://www.nzherald.co.nz/technology/news/article.cfm?c_id=5&objectid=12177803

6. Dance, A. The body's tiny cargo carriers. The Knowable Magazine (from Annual Reviews), April 30, 2019. https://www.knowablemagazine.org/article/living-world/2019/bodys-tiny-cargo-carriers

Students, postdoctoral fellows, visiting faculty, and technicians that I have mentored

Role as Primary Advisor for Students

Doctoral students

Nagarama Kothapalli (3/2003 – 5/2006)
Title: Roles of histone biotinylation in the cellular response to DNA breaks
Nagarama is an Assistant Professor in the Department of Chemistry and Biochemistry at the University of Oklahoma.

Gabriela Camporeale (8/2003 -- 5/2006)
Title: Identification of amino acid residues in human histones that are targets for biotinylation by holocarboxylase synthetase and biotinidase
Gabriela continued working her laboratory (postdoc) until securing a position as a Postdoctoral Fellow at the University of Buenos Aires (Argentina), Department of Molecular Genetics (see below).

Yap Ching Chew (5/2005 – 8/2008)
Title: Repression of long terminal repeats by histone biotinylation
Yap Ching became a postdoctoral fellow and senior research associate in the Department of Biochemistry and Molecular Biology at the University of Maryland School of Medicine, and now is Director of Epigenetics Technologies at Zymo Research, Inc. in Irvine, CA.

Yousef Hassan (7/2005 – 8/2009)
Title: Identification of proteins interacting with holocarboxylase synthetase in human cells
Yousef is currently a Lecturer in the Nutrition and Food Science Department, Faculty of Health Sciences, University of Kalamoon, Deirattiah, Syria

Jing Xue, 8/16/09 – 8/15/2013
Title: Epigenetic synergies among holocarboxylase synthetase, biotin, and methyl donors
Jing has completed postdoctoral training with Dr. John Wiley (University of Michigan Medical School, Division of Internal Medicine) and Dr. Folami Y. Ideraabdullah (University of North Carolina at Chapel, Hill, Nutrition Research Institute, Kannapolis, NC). Subsequently, Jing was a Fellow in a Data Processing program sponsored by Insight Data Science (https://www.insightdatascience.com/); she now works as data scientist with Goodyear in Akron, OH

Dandan Liu, 8/16/10 – 5/7/2014
Title: From histone modifications to gene repression – epigenetic regulation by holocarboxylase synthetase-containing repression complex and FAD-dependent lysine-specific demethylase
Dandan is currently a postdoctoral fellow with Dr. Bernie Hennig in the University of Kentucky Molecular and Cell Nutrition Laboratory, Lexington, KY.

Daniel Camara Teixeira, 8/16/10 – 12/23/2014

Title: Developing novel research tools for biotin research
Daniel is currently a Professor of Practice in Nutrition and Metabolism in the Health Sciences Center, University of Fortaleza, Brazil.

Scott Baier, 1/1/11 – 5/15/2015
Title: Bioactivity of cow's milk microRNA in humans
Scott joined the lab of Dr. Yihong Wan in the Department of Pharmacology, UT Southwestern as postdoctoral associate in May of 2015. He subsequently accepted a position as clinical research coordinator at Children's Health in Dallas.

Elizabeth Cordonier, 1/1/11 – 8/15/2015
Title: Bioactive compounds in grape products
Liz joined the Human Nutrition Research Center at Baylor University, Houston, TX, as a postdoctoral fellow in August of 2015. Currently, Liz is an anatomy and physiology instructor in the community college system in Houston, TX.

Mahrou Sadri, 1/1/15 –

Sonal Sukreet, 1/1/15 –

Ezra Mutai, 1/1/15 – 8/30/19
Ezra accepted an offer for a postdoctoral fellowship at Cornell University, Division of Nutritional Sciences, effective 9/1/19

Di Wu, 8/15/15 –

Fang Zhou, 8/15/15 –

Afsana Khanam 8/15/17 –

Ngu "Alice" Kah Hui 8/15/19 –

<u>Master's students</u>
Rachel Daberkow, 2001 - 2003
Title: Monocarboxylate transporter 1 mediates biotin uptake in human peripheral blood mononuclear cells
Rachel Daberkow is currently employed with a health center for patients with eating disorders in Arizona.

Gabriela Camporeale, 2001 – 2003
Title: Riboflavin deficiency affects interleukin-2 metabolism, triggering stress response systems
After completing her Master's thesis, Gabriela Camporeale continued her studies in my laboratory and received a Ph.D. degree (see above).

Sarah Scheerger, 2001 – 2003
Title: The effects of biotin on the expression of oncogenes in human small cell lung cancer cells NCI-H69
Sarah Scheerger is currently a student at a School for Osteopathy in Iowa.

Alice Kueh, 2004 - 2005

Title: Characterization of biotinylation sites in human histones and p53
Alice Kueh is currently a Research Associate with the University of Nebraska Medical Center.

Yap Ching Chew, 2004 - 2005
Title: Biotinyl transferases and hydrolases in human cells
After completing her Master's thesis, Yap Ching Chew continued her studies in my laboratory and received a Ph.D. degree (see above).

Karoline Manthey, 2003 – 2005
Title: The influence of riboflavin on the oxidative folding of secretory proteins and oxidative stress in HepG2 cells
Karoline Manthey is currently pursuing a Ph.D. in oral biology at the Dental College at the University of Nebraska Medical Center.

Keyna Kobza, 6/05 – 5/07 (Keyna stayed in the lab for summer 2007, paid on an hourly basis)
Title: Identification of synthetic inhibitors of holocarboxylase synthetase and biotinidase
Keyna is currently attending the Kirksville College School of Osteopathic Medicine to pursue an O.D. degree.

Erin Smith, 6/05 – 5/07
Title: Identification of genes that mediate resistance to biotin deficiency in *Drosophila melanogaster*
Erin is currently the Supervisor of the Food Analysis Laboratory at Midwest Labs (Omaha, NE).

Valerie Pestinger, 01/08 – 12/09
Title: Biological functions of biotinylated histones H3 and H4
Valerie is currently pursuing a Ph.D. in the School of Biosciences at the University of Nottingham, U.K.

Gaganpreet Kaur Mall, 01/08 – 12/09
Title: Homeostasis of biotin in cells from distinct human tissues
After graduating from my lab, Gaganpreet accepted a position as Research Technologist in the laboratory of Dr. Tom Clemente in the Plant Sciences Initiative at UNL.

Luisa Rios Avila, 8/1/08 – 8/13/10
Title: Holocarboxylase synthetase-dependent biotinylation of histones
Luisa is currently pursuing a Ph.D. in the Department of Food Science and Human Nutrition at the University of Florida-Gainesville.

Dipika Singh, 1/5/09 – 12/23/10
Dr. Angela Pannier in the Department of Biological Systems Engineering and I co-advised Dipika for her M.S. studies. Dipika is employed as a technician at the University of Nebraska for Medical Sciences.

Shingo Esaki, 8/16/09 – 8/15/11
Title: Effects of single nucleotide polymorphisms in the human *holocarboxylase synthetase* gene on enzyme catalysis

Shingo is pursuing a Ph.D. in the Department of Chemistry, at Georgia State University in Atlanta, GA.

Wei Kay Eng, 8/16/10 – 8/15/12
Title: Identification and assessment of markers of biotin status in healthy adults
Wei Kay secured a position in a dietetic intership program in Marietta, GA, where she earned an R.D. degree.

Jie Zhou, 8/16/11 – 12/20/2013
Title: Biotinylation of MBP-1 increases transcription factor activity
Jie enrolled in the Ph.D. program in the Department of Human Nutrition and Food Science at The University of Florida-Gainesville.

Rio Jati Kusuma, 8/16/13 – 8/15/2015
Title: Mechansism of milk exosome transport of milk exosomes in human vascular endothelial cells
Rio accepted a position as a lecturer in Indonesia.

Katherine Howard, 8/16/13 – 5/15/2015
Title: Biological activity of chicken egg microRNAs in humans
Kat has accepted a position as dietitian at the Yankton State Hospital, Human Services Center in Yankton, South Dakota.

Tovah Wolf, 1/3/14 – 8/15/2015
Title: Mechansism of milk exosome transport of milk exosomes in human and rat intestinal cells
Tovah enrolled in the Ph.D. program in the Department of Human Nutrition and Food Science at Iowa State University in Ames, Iowa.

Ana Aguilar Lozano, 8/15/15 – 12/15/2018
Ana worked as a research scientist with Pfizer, Inc. in Mexico City before becoming an instructor of cell physiology at the Uniiversidad Iberoamericana, Mexico City

Amy Leiferman, 8/15/16 – 4/30/18
Amy is an instructor at Lincoln Southeast Community College and Wesleyan University in Lincoln, NE.

Pearl Ebea 8/15/17 – 8/13/2019

Mojisola Gunnaike 8/15/19 –

<u>Undergraduate students and high-school students (“Research Experience”)</u>
Tyrie Brown-Ballard, 6/11/01 - 7/20/01
From the Summer Institute for Promising Scholars (A program sponsored by the University of Nebraska Lincoln to enhance recruitment and retention of minority students)

Sarah Raye (Crisp) Alkire, 7/2/01 - 7/27/01 & 7/1/02 - 7/31/02 & 5/19/03 - 6/27/03
A high-school student from Lincoln Southeast Highschool; Sarah worked in my laboratory for three summers. She graduated with a degree in Food Science from the

Univ. of Missouri (2007), and no is a Team Assistant with the Noble Foundation in Ardmore, OK.

Elizabeth E. Galloway (Shubert), June 2002 – May 2003
Undergraduate Honor's Thesis

Lyndsay Schwab, 2002 - 2003
Lyndsay was recruited through the UCARE Program (Undergraduate Research and Creative Activity) at the University of Nebraska. Lyndsay worked in my laboratory for two years to acquire research experience. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory.

Yap Ching Chew, 2002-2003
Yap Ching was recruited through the UCARE Program (Undergraduate Research and Creative Activity) at the University of Nebraska. Yap Ching worked in my laboratory for two years to acquire research experience. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory.

Keyna Kobza, 6/1/03 - 8/31/03 and 5/25/04 - 8/12/04
Keyna was sponsored by an NIH-funded INBRE program. This program has the goal of directing gifted students from small colleges to graduate programs in the state of Nebraska. Keyna was a student from Concordia University, NE, and spent two summers in my laboratory.

Alice Kueh, 2003-2004
Alice was recruited through the UCARE Program (Undergraduate Research and Creative Activity) at the University of Nebraska. Alice worked in my laboratory for one year to acquire research experience. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory.

Brian Rueckert, 6/1/03 - 8/31/03
Brian was sponsored by the NIH-funded INBRE program. This program has the goal of directing gifted students from small colleges to graduate programs in the state of Nebraska. Brian was a student from Concordia University, NE, and spent one summer in my laboratory.

Jia Tse "Michelle" Hoi, June 2004 – May 2006
Michelle was recruited through the UCARE Program (Undergraduate Research and Creative Activity) at the University of Nebraska. Michelle joined my laboratory in 2004 to acquire research experience. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory.

Jordan Pietz, 5/25/04 - 8/12/04
Jordan was sponsored by the NIH-funded INBRE program. This program has the goal of directing gifted students from small colleges to graduate programs in the state of Nebraska. Jordan was a student from Concordia University, NE, and spent one summer in my laboratory.

Kanae Watanabe, 10/1/04 – 12/31/04 (Undergraduate Research Experience) and since 6/1/2005 (UCARE)

Kanae worked in my laboratory in 2004 for an Undergraduate Research Experience project, and joined my laboratory in 2005 as a UCARE student. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory.

Kyle Johnson, 5/31/05 – 8/11/2005 and 6/1/2006 – 8/14/2006
Kyle was sponsored by the NIH-funded INBRE program. This program has the goal of directing gifted students from small colleges to graduate programs in the state of Nebraska. Kyle was a student from Concordia University, NE, and spent two summers in my laboratory.

Kayte Tranel, 6/1/06 – 5/31/07
Kayte was recruited through the UCARE Program (Undergraduate Research and Creative Activity) at the University of Nebraska. Kayte joined my laboratory about in 2006 to acquire research experience. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory.

Stephanie Kratzer, 6/1/2006 – 7/31/2008
Stephanie was recruited through the UCARE Program (Undergraduate Research and Creative Activity) at the University of Nebraska. Stephanie joined my laboratory in 2006 to acquire research experience. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory.

Chris Effken, 5/15/06 – 7/22/2006 and 8/7/2006 – 8/14/2006
Chris was sponsored by the NIH-funded INBRE program. This program has the goal of directing gifted students from small colleges to graduate programs in the state of Nebraska. Chris was a student from Concordia University, NE, and spent one summer in my laboratory.

Brenda Brassill, 2/7/07 – 3/25/07
Brenda was an undergraduate student in the Biochemistry Department, UNL. She conducted a research project on biotin-dependent chromatin remodeling at the IL-2 locus in my laboratory under the supervision of Rocio Rodriguez-Melendez, Postdoctoral Fellow. Brenda was paid on an hourly basis.

Kaile Bouma, 1/3/07 – 5/18/07
Kaile was an undergraduate student in the Department of Nutrition and Health Sciences, UNL. She conducted a research project on biotin-dependent cell signaling in my laboratory under the supervision of Rocio Rodriguez-Melendez, Postdoctoral Fellow.

Toni Hoffer, 6/1/07 – 5/31/08
Toni joined my laboratory in 2007 as a UCARE student. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory.

Jennifer Eaker, 3/26/07 – 5/31/2007
Jennifer was an undergraduate student in the Department of Nutrition and Health Sciences, UNL. She conducted a research project on biotin-dependent signaling by nitric oxide under the supervision of Rocio Rodriguez-Melendez, Postdoctoral Fellow. Jennifer was paid on an hourly basis.

Shyamaly Premaraj, 7/2/07 – 7/20/07
Shyamaly was a student from Lincoln High School, volunteering in the laboratory.

Sara A. Prince, 1/1/08 – 7/31/2008
Sara joined my laboratory in 2008 as a UCARE student. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory.

Claire Swogger, 6/1/08 – 5/31/2009
Claire joined my laboratory in 2008 as a UCARE student. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory.

Brian Cook, 7/7/08 – 5/31/2009
Brian was an undergraduate student in the Department of Biochemistry, UNL. He assisted Yousef Hassan, Ph.D. candidate, with his yeast-two-hybrid studies of holocarboxylase synthetase. Brian was paid on an hourly basis. Effective 6/1/2009, Brian is employed with Cargill, Inc (Omaha, NE) as a Quality Assurance Chemist.

Dipika Singh, 9/15/08 – 12/31/2008
Dipika was an undergraduate student in the Department of Biochemistry, UNL. She assisted Bao Baolong, Postdoctoral Fellow, with implementing novel chromatin techniques in the laboratory. Dipika was paid on an hourly basis and was jointly mentored by Angela Pannier (Biological Systems Engineering) and myself.

Kate Roehrs, 04/14/2009 – 05/31/2009 (Undergraduate Research Assistant), 6/1/2009 – (UCARE)
Kate joined my laboratory in 2009 as a UCARE student. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory.

Jenna Rickstrew, 06/01/2009 – 05/31/2010 (UCARE)
Jenna joined my laboratory in 2009 as a UCARE student. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory.

Duc-Cuong Bui, 6/15/2009 – 8/1/2009 (NSF EPSCoR)
Duc-Cuong is an 11th grader at Pius X High School, and conducted research on epigenetics in bee development in my laboratory in collaboration with Dr. Marion Ellis in the Department of Entomology.

Wei Kay Eng, 3/1/2010 – 5/17/2010
Wei Kay was an undergraduate student in the Department of Nutrition and Health Sciences, UNL. She conducted a research project on crosstalk between histone bioinylation and methylation in Drosophila under the supervision of Rocio Rodriguez-Melendez, Postdoctoral Fellow. Wei Kay was paid on an hourly basis. She will begin her M.S. studies in my laboratory effective 8/2010.

Scott Baier, 5/17/2010 – 12/31/2010
UNL Honor's student. I served as the advisor for Scott's honor's thesis titled "Survey of attitudes towards genetic testing."

Michael Pabian, 2/1/2010 – 12/13/2011 (UCARE)
Michael joined my laboratory as a UCARE student. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory. He worked worked with a senior research associate in my lab (Subhashinee "Samudra" Wijeratne) to identify biotin-dependent micro RNAs.

Drew Granatowicz, 5/17/2010 – 6/2012
Drew was a junior in the Nutritional Sciences option. He assisted with antibody purifications and testing in the lab under the supervision of Subhashinee S. K. Wijeratjne, Postdoctoral Fellow. Drew was paid on an hourly basis until he transitioned to the status of a UCARE student, effective 6/2011. Drew wrote his Honor's thesis based on the research conducted in my laboratory.

Thao Trinh, 7/22/2011 – 5/9/2014
Thao was a junior in the Department of Biochemistry. She volunteered to assist Mahendra Singh, Postdoctoral Fellow, in his studies of effects of K16-biotinylation of histone H4 on nucleosomal compaction.
Effective 6/1/2012 she transferred into UNL's UCARE program where she worked with a doctoral student in my lab (Daniel Teixerira Camara) on the roles of biotin-dependent pathways in the prevention of obesity and the prevention of aberrant meiotic recombination events.
Effective 6/1/2013 began conducting research on the physiological importance of covalent binding of biotin to enolase-1 in partiual fulfillment of the requirements for an Honors thesis. After her graduation, Thao entered the M.D. Ph.D. program at the Indiana School of Medicine.

Tyler Person, 6/1/2012 – 8/1/2012
Michael joined my laboratory as a UCARE student. The UCARE program is sponsored by Pepsi Cola, and students typically work about 10 hours/week in their advisor's laboratory. He worked on the nuclear translocation of HLCS58.

Sarah Jarecke, 8/28/2012 – 5/9/2014
Sarah volunteered in my laboratory and assisted my doctoral student Daniel Camara Teixeira in his studies of the inhibition of lipid accumulation in *brummer* mutant *Drosophila melanogaster* by feeding a diet supplemented with grape leaf extracts. Subsequently, she assisted Elizabeth Cordonier with optimizing the MTT assay for a cell survival-based assay of mitochondrial protein docking, supported through a UCARE award (starting 9/1/2013). After graduation, Sarah entered the nursing program at the University of Nebraska Medical Center.

Christopher Nguyen, 3/14/2013 – 5/15/2015
Christopher volunteered in my laboratory and assisted my doctoral student Scott Baier in his studies of the regulation of host genes by food-borne microRNAs. Effectice 6/2/2014 he was supported through the UCARE program.

Frances "Frannie" Hollinger, 9/1/2013 – 5/15/2015
Frannie was supported by the UCARE program and assisted my doctoral student Daniel Camara Teixeira in his studies of the inhibition of lipid accumulation in *brummer* mutant and wild-type *Drosophila melanogaster* by feeding dietd supplemented with resveratrol metabolites and Soraphen A.

Qiwei Wang, 7/11/2013 – 8/9/2013
Qiwei, a sophomore at Northwest Ag & Forestry University, spent July 11 – August 9, 2013 in my laboratory. Qiwei participated in the 2013 Research Summer Exchange program, sponsored by the Institute of Agricultural and Natural Resources' Global Engagement office. During her stay, Qiwei participated in a research project that addresses the effects of posttranslational modification of enolase-1 on glycolytic activity in humans.

Taylor Friemel, 9/1/2013 – 5/15/2015
Taylor was a student in the INBRE program. She worked with one of my students, Rio Jati Kusuma, in a project to screen the microbial metabolome for compounds that prevent the anchoring of acetyl-CoA carboxylase 2 in the mitochondrial membrane.

Briley Moates, 8/15/2015 – 4/30/2016
Briley conducted research to assess the phenotypes of dietary microRNA depletion.

Jacob Jarecke, 9/1/2015 – 12/15/2016
Jake started out as an undergraduate research volunteer and assisted a Ph.D. student, Mahrou Sadi, in her studies of the effects of dietary microRNA depletion on fecundity in mice.

Hannah Rose Seyller, 6/6/2016 – 12/31/2016
Hannah conducted research to assess the effects of dietary microRNA depletion on neurocognitive performance in mice.

Rachel Maloy, 8/15/2016 – 12/1/2016
Rachel assisted a Ph.D. student, Sonal Sukreet, in the identification of glycoproteins on the surface of cow's milk exosomes and human intestinal cells that facilitate exosome endocytosis.

Ngu "Alice" Kah Hui, 1/10/2017 – 7/31/2017 volunteer, 8/1/2017 – 2/1/2019 (UCARE & research volunteer)
Alice strated as an undergraduate research volunteer and assisted Amy Leiferman in her studies of the effects of bovine milk exosome-defined diets on amino acid metabolism and muscle protein accretion in mice. Effective 8/1/2017, she was supported by UNL's UCARE program and continued her work with Amy until Amy graduated in summer of 2018. Alice finished her UCARE project by working with a Ph.D. student, Sonal Sukreet in December of 2018. She continued to volunteer with Sonal in January and February of 2019 in preparation for her doctoral studies starting in summer of 2019.

David Rosas, 1/3/2019 – 3/31/2019
David volunteered with a PhD. Student, Fang Zhou to prepare himself for pursing a Ph.D. degree.

Allison Hinrichs, 1/27/2020 –
Allison is volunteering in the lab with two PhD. students, Sonal Sukreet and Di Wu. Allison helps in the laboratory and with manuscript writing.

<u>Visiting students</u>

I initiated a Memorandum of Agreement ("Exchange Program") between the University of Nebraska-Lincoln and the University of Giessen, Germany, in 2003 and served as the UNL coordinator since then. I typically host one or two visiting students from Germany in my laboratory each year. Primary goal is to recruit graduate students for the University of Nebraska-Lincoln.

Karoline Manthey, 8/3/01 - 11/11/2001

Dorothea Peters, 8/3/01 - 11/11/2001

Silke Wiedmann, 5/1/02 - 7/31/02 & 1/1/03 - 3/1/03

Anette Landenberger, 6/1/03 - 9/8/03

Ricarda Werner, 7/12/04 – 10/29/04

Simone Lipinski, 7/24/04 – 10/09/2004

Michael Gralla (1/4/06 – 4/15/06)

Riem Adjam (6/1/2012 – 1/15/2013)

Postdoctoral Fellows

Rocio Rodriguez-Melendez, 3/1/02 – 2/28/2005 & 2/1/2007 – 8/31/10
Rocio and her husband relocated to Corpus Christi, TX, where she was a stay-at-home mom last time I heard

Anna M. Oommen, 1/15/04 – 6/30/05
Anna currently is a Senior Research Associate with the University of Nebraska-Lincoln, Department of Chemical Engineering.

Subhashinee "Samudra" K. Wijeratne, 5/8/06 – 3/2013
Samudra accepted a position as research scientist in the Department of Food Science and Technology at the University of Nebraska-Lincoln

Gabriela Camporeale, 6/1/06 – 10/15/06
Gabriela received additional training as a Postdoctoral Fellow at the Institute for Biochemical Research - Fundacion Instituto Leloir (Argentina), and now is a Research Scientist at CONICET in Argentina.

Baolong Bao, 9/10/07 – 9/30/09
Baolong is now an Assistant Professor at Shanghai Oceans University, Shanghai, China

Toshinobu Kuroishi, 10/1/08 – 04/01/11
Toshi is now an Assistant Professor, Division of Oral Immunology, Department of Oral Biology, Tohoku University Graduate School of Dentistry, Japan

Mahendra P. Singh, 6/1/10 – 5/31/2012
Mahendra is receiving additional postdoctoral training in the lab of Hwa-Young Kim, Professor of Biochemistry and Molecular Biology, Yeunganam University College of Medicine, Daegu, South Korea

Sridhar Malkaram, 6/28/10 – 7/14/2012
Sridhar is receiving additional postdoctoral training in the Department of Biology at the University of West Virginia where he was promoted to Research Assiatnt Professor.

Yong Li, 7/1/10 – 8/30/12
Yong accepted a postdoctoral position at the Medical University of Augusta, Georgia

Zhongji Han, 10/1/11 – 9/30/13
Zhongji accepted a postdoctoral position in the Department of Biological Systems Engineering, University of Nebraska-Lincoln

Wenlei Zhuo, 2/1/12 – 4/30/12
Wenlei accepted a postdoctoral position in Florida

Sonia Manca, 7/8/15 – 12/31/2017
Sonia accepted a postdoctoral position at the University of Nebraska Medical Center, Department of Biochemistry

Deborah Fratantonio 8/3/2016 – 7/31/2018

Bijaya Upadhyaya 8/22/2016 – 7/15/2019

Wei “Vivien” Zhao 4/16/2018 –

Shu Wang 7/1/2019 –

Visiting faculty in my laboratory
Jeff Schwehm, PhD, 6/1/03 - 8/31/03
Concordia University, Seward, NE

Petra Rust, PhD, 9/20/07 – 11/19/07
University of Vienna, Vienna, Austria

Patricia Huebbe, 6/19/2013 - 7/30/2013
University of Kiel, Germany

Lanfang Wang, 9/2016 – 8/1/2017
Institute of Nutrition and Healthy Food, Department of Preventive Medicine, Tongji University School of Medicine, Shanghai, China

Daniel Teixeira Camara, 06/23/2018 - 08/03/2018
University of Fortalzea, Brazil

Technicians
Jacob Griffin, B.S., 4/1/01 - 5/1/06

Azusa Kuroishi, M.S., 3/5/09 – 11/1/09

Mengna Xia, M.S., 1/19/10 – 11/30/2012

David Giraud, M.S., 11/15/09 – (0.5 FTE)

Yilin Liu, Ph.D., 7/8/19 – 11/14/2019 (0.5 FTE)

Anthony Delaney, B.S., 1/2020 – (0.5 FTE)

Staff
Jolene Walker, 10/1/11 – 1/20/2016 (0.75 FTE)
Recipient of the CEHS Staff Star Award, 2/2015

Sarah Gibson 1/14/2016 – 9/13/2019 (1.0 FTE)
Recipient of the CEHS Staff Star Award, 5/2017

Murray Gilbertsen, 9/9/2019 –
Murray was a senior in the Hospitality and Resuatrant Mangement Program and was hired as a student worker to serve as Interim Administrative Coordinator for NPOD after Sarah Gibson resigned.

Member of graduate committees (other than as Chair)
Brian Drewel (Nutrition and Health Sciences), graduated 2004 (M.S.)
Khalid Al-Numair (Nutrition and Health Sciences), graduated 2004 (Ph.D.)
Jennifer Engelmeyer (Nutrition and Health Sciences) graduated 2004 (M.S.)
Theresa Herring (Food Science), graduated 2005 (Ph.D.)
Kim Hargrave (Animal Science), graduated 2005 (Ph.D.)
Robert Fisher (Animal Science), graduated 2005 (Ph.D.)
Samudra Siriwardhana (Food Science), graduated 2005 (Ph.D.)
David Karst (Textiles, Clothing and Design), graduated fall 2006 (Ph.D.)
Wanda Layman (Biological Sciences), graduated August 2006 (M.S.)
Hadise Kabil (Biological Sciences), graduated December 2006 (Ph.D.)
Young-Nam Kim (Nutrition and Health Sciences), graduated December 2007 (Ph.D.)
Olga Vivitskaya (Veterinary and Biomedical Sciences), graduated May 2008 (M.S.)
Jacqueline Smith (Animal Science), graduated May 2008 (M.S.)
Shaklo Yarbaeva (Nutrition and Health Sciences), graduated December 2009 (Ph.D.)
Emily Sitorius (Food Science and Technology), graduated May 2010 (M.S.)
Mark Ash (Nutrition and Health Sciences), graduated May 2010 (M.S.)
Shan Jiang (Animal Science), graduated May 2010 (Ph.D.)
Sara Coleman (Nutrition and Health Sciences), graduated May 2010 (M.S.)
Chai Siah Ku (Nutrition and Health Sciences), graduated May 2010 (M.S.)
Ningxia Lu (Animal Science), graduated December 2010 (M.S.)
Pradeep Krishnan Rajalekshmy (Animal Science), graduated May 2011(Ph.D.)
Sreedevi Madhusoodhanan (Biological Sciences), graduated May 2013 (Ph.D.)
Benjamin Remington (Food Science and Technology), graduated May 2013 (Ph.D.)
Ezequias Castillo Lopez (Animal Science graduated May 2013 (Ph.D.)
Chan Ho Lee (Animal Science), graduated December 2013 (M.S.)
Helan Xu (Textiles, Clothing, and Design), graduated May 2014 (Ph.D.)
Wantanee Sittiwong (Chemistry), graduated August 2014 (Ph.D.)
Tadas Kasputis (Biological Systems Engineering), graduated December 2013 (Ph.D.)
Jocelyn Wiarda (Animal Science), not yet graduated (M.S.)
Joseph Roberts (Nutrition and Health Sciences), graduated May 2015 (M.S.)

Zhufeng Yang (Animal Science), did not graduate with Ph.D., but changed to M.S. and graduated in 2011
Cristiane Rodrigues Camara (Food Science and Technology), graduated in December of 2015 (Ph.D.)
Inhae Kang (Nutrition and Health Sciences), "Reader," graduated in December of 2015 (Ph.D.)
Rafael Munoz (Food Science and Technology,) graduated in May of 2015 (M.S.)
Meshail Okla (Nutrition and Health Sciences), "Reader," graduated in May of 2016 (Ph.D.)
Fang Xie, (Animal Science), "Reader," graduated in May of 2016 (Ph.D.)
Shyamali Jayasena (Food Science and Technology), "Reader," graduated in December of 2016 (Ph.D.)
Rituraj Khound (Nutrition and Health Sciences), graduated in December of 2017 (M.S.)
Amy Desaulniers (Animal Science), graduated in May of 2018 (Ph.D.)
Xingyi Chen (Nutrition and Health Sciences), not yet graduated (Ph.D.)
Lee Palmer (Food Science and Technology), not yet graduated (Ph.D.)
Tyler Kambis (Dept. of Molecular Genetics and Cellular Biology, UNMC, Dr. Paras Mishra's lab), 1/2018 -- , not yet graduated (Ph.D.)
Katie Meinders (School of Biological Sciences, UNL, Dr. Audrey Atkin's lab), 3/2019 --, not yet graduated (Ph.D.)
Cara Tomaso (Clinical Psychology, Timothy Nelson's lab), 5/7/2019 --, not yet graduated. I served on Cara"s NIH NRSA F31 training grant mentoring committee.

Teaching

Classes taught
University of Giessen (Germany): NUTR496/896 Graduate Seminar.
University of Nebraska-Lincoln: NUTR921/ASCI921 Interdepartmental Nutrition Seminar; NUTR820 Molecular Nutrition; NUTR986 Graduate Seminar; NUTR821 Molecular Nutrition Techniques; NUTR896 Journal Club; NUTR896 Independent Studies

Class schedule and enrollment

Course	Credits	Semester	Number of students
NUTR/ASCI921 Interdepartmental Nutrition Seminar	1	Fall 2001	12
NUTR820 Molecular Nutrition	1	Spring 2002	9
NUTR986 Graduate Seminar	1	Fall 2002	9
NUTR821 Molecular Nutrition Techniques	3	Fall 2002	7
NUTR896 Journal Club	1	Fall 2002	4
NUTR820 Molecular Nutrition	2	Spring 2003	5
NUTR821 Molecular Nutrition Techniques	3	Fall 2003	4
NUTR896 Journal Club	1	Fall 2003	3
NUTR820 Molecular Nutrition	2	Spring 2004	11
NUTR821 Molecular Nutrition Techniques	3	Fall 2004	8
NUTR896 Journal Club	1	Fall 2004	3
NUTR820 Molecular Nutrition	2	Spring 2005	7
NUTR821 Molecular Nutrition Techniques	3	Fall 2005	5
NUTR986 Graduate Seminar	1	Spring 2006	6
NUTR820 Molecular Nutrition	2	Spring 2006	13

NUTR821 Molecular Nutrition Techniques	3	Fall 2006	5
NUTR896 Journal Club	1	Fall 2006	4
NUTR921 Nutrition Seminar	1	Fall 2006	14
NUTR821 Molecular Nutrition Techniques	3	Fall 2007	3
NUTR820 Molecular Nutrition	2	Spring 2008	8
NUTR821 Molecular Nutrition Techniques	3	Fall 2008	8
NUTR896 Journal Club	1	Fall 2008	8
NUTR986 Graduate Seminar	1	Spring 2009	8
NUTR820 Molecular Nutrition	2	Spring 2009	10
NUTR821 Molecular Nutrition Techniques	3	Fall 2009	7
NUTR896 Journal Club	1	Fall 2009	8
NUTR820 Molecular Nutrition	2	Spring 2010	8
NUTR821 Molecular Nutrition Techniques	3	Fall 2010	7
NUTR820 Molecular Nutrition	2	Spring 2011	8
NUTR896 Nutrigenomics Journal Club	1	Fall 2011	6
NUTR821 Molecular Nutrition Techniques	3	Fall 2011	9
NUTR820 Molecular Nutrition	2	Spring 2012	9
NUTR821 Molecular Nutrition Techniques	3	Fall 2012	8
NUTR820 Molecular Nutrition	2	Spring 2013	8
NUTR896 Nutrigenomics Journal Club	1	Fall 2013	6
NUTR821 Molecular Nutrition Techniques	3	Fall 2013	8
NUTR820 Molecular Nutrition	2	Spring 2014	10
NUTR921 Interdepartmental Nutrition Seminar	1	Spring 2014	7
NUTR821 Molecular Nutrition Techniques	3	Fall 2014	5
NUTR820 Molecular Nutrition	2	Spring 2015	13
NUTR821 Molecular Nutrition Techniques	3	Fall 2015	11
NUTR820 Molecular Nutrition	2	Spring 2016	8
NUTR821 Molecular Nutrition Techniques	3	Fall 2016	5
NUTR820 Molecular Nutrition	2	Spring 2017	10
NUTR821 Molecular Nutrition Techniques	3	Fall 2017	8
NUTR820 Molecular Nutrition	2	Spring 2018	7
NUTR821 Molecular Nutrition Techniques	3	Fall 2018	5
NUTR820 Molecular Nutrition	2	Spring 2019	9
NUTR821 Molecular Nutrition Techniques	3	Fall 2019	

In addition, I taught a total worth of 40 credits of “NUTR896 Independent Study,” “NUTR498 Research Methods” and “NUTR492 Nutrition Problems” in spring 2002 through fall 2012.

Course evaluation by students[1,2]

Course	Semester	Score (evaluation)
NUTR820 Molecular Nutrition	Spring 2002	1.47
NUTR821 Molecular Nutrition Techniques	Fall 2002	1.27
NUTR896 Journal Club	Fall 2002	1.15
NUTR820 Molecular Nutrition	Spring 2003	1.28
NUTR821 Molecular Nutrition Techniques	Fall 2003	1.23
NUTR896 Journal Club	Fall 2003	1.03
NUTR820 Molecular Nutrition	Spring 2004	1.45
NUTR821 Molecular Nutrition Techniques	Fall 2004	1.44
NUTR896 Journal Club	Fall 2004	1.33
NUTR820 Molecular Nutrition	Spring 2005	1.40

[1]Course evaluations are conducted using a "1" to "5" scale (with "1" being the best score).

[2]Course evaluations are available only for NUTR820 Molecular Nutrition, NUTR821 Molecular Nutrition Techniques, and NUTR896 Journal Club, but not for Independent Studies and Seminars.

Note that effective fall semester 2005, the evaluation forms and scale have changed.[1,2]

Course	Semester	Score (evaluation)
NUTR821 Molecular Nutrition Techniques	Fall 2005	4.75
NUTR820 Molecular Nutrition	Spring 2006	4.27
NUTR821 Molecular Nutrition Techniques	Fall 2006	4.60
NUTR896 Journal Club	Fall 2006	4.75
NUTR821 Molecular Nutrition Techniques	Fall 2007	5.00
NUTR820 Molecular Nutrition	Spring 2008	4.20
NUTR821 Molecular Nutrition Techniques	Fall 2008	4.50
NUTR896 Journal Club	Fall 2008	4.30
NUTR820 Molecular Nutrition	Spring 2009	4.25
NUTR821 Molecular Nutrition Techniques	Fall 2009	4.50
NUTR896 Journal Club	Fall 2009	4.75
NUTR820 Molecular Nutrition	Spring 2010	4.57
NUTR821 Molecular Nutrition Techniques	Fall 2010	4.79
NUTR820 Molecular Nutrition	Spring 2011	4.50
NUTR896 Nutrigenomics Journal Club	Fall 2011	4.80
NUTR821 Molecular Nutrition Techniques	Fall 2011	4.67
NUTR820 Molecular Nutrition	Spring 2012	4.33
NUTR821 Molecular Nutrition Techniques	Fall 2012	4.50
NUTR820 Molecular Nutrition	Spring 2013	4.75
NUTR896 Nutrigenomics Journal Club	Fall 2013	4.50
NUTR821 Molecular Nutrition Techniques	Fall 2013	4.57
NUTR820 Molecular Nutrition	Spring 2014	3.57
NUTR821 Molecular Nutrition Techniques	Fall 2014	5.00
NUTR820 Molecular Nutrition	Spring 2015	4.22
NUTR821 Molecular Nutrition Techniques	Fall 2015	3.88
NUTR820 Molecular Nutrition	Spring 2016	4.75

NUTR821 Molecular Nutrition Techniques	Fall 2016	4.60
NUTR820 Molecular Nutrition	Spring 2017	4.00
NUTR821 Molecular Nutrition Techniques	Fall 2017	4.33
NUTR820 Molecular Nutrition	Spring 2018	4.57
NUTR821 Molecular Nutrition Techniques	Fall 2018	4.33

[1]Course evaluations are conducted using a "1" to "5" scale (with "5" being the best score).

[2]Course evaluations are available only for NUTR820 Molecular Nutrition, NUTR821 Molecular Nutrition Techniques, and NUTR896 Journal Club, but not for Independent Studies and Seminars.

Note that effective spring semester 2019, evaluation scores are broken down by course-related questions and instructor-related question.[1-3]

Course	Semester	Score (evaluation)
NUTR820 Molecular Nutrition	Spring 2019	Course: 4.50 Instructor: 4.89
NUTR821 Molecular Nutrition Techniques	Fall 2019	Course: 4.00 Instructor: 4.15

[1]Course-related scores are calculated by averaging the scores for answers 3-7 and 17-19 in the evaluation sheet. Instructor-related scores are calculated by averaging the scores for answers 8-16 in the evaluation sheet. The score for question 20 ("My overall rating for this course") is no longer reported in annual reports by faculty to department chair and deans.

[2]Course evaluations are conducted using a "1" to "5" scale (with "5" being the best score).

[3]Course evaluations are available only for NUTR820 Molecular Nutrition, NUTR821 Molecular Nutrition Techniques, and NUTR896 Journal Club, but not for Independent Studies and Seminars.