BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2.

NAME Susanne U. Talcott	POSITION TITLE Assoc. Professor
eRA COMMONS USER NAME smertens	

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
University of Bonn, Germany	BS/MS	1993-1998	Nutrition
Food Science and Nutrition, University of Florida, Gainesville, FL	Ph.D	2000-2004	Cytotoxic activities of Flavonoids in Leukemia Cells
Pharmaceutics, University of Florida, Gainesville, FL	Postdoctoral training	2004-2006	Food-Drug Interactions, Pharmacodynamics of Polyphenols in Disease Prevention

A. Personal Statement

The proposed research presents a continuation of ongoing research efforts in the investigation of pharmacokinetic/pharmacodynamic factors influencing the efficacy of bioactive plant compounds in the promotion of intestinal health and prevention of inflammation in a translational research approach. My background and training in molecular nutrition, human pharmacokinetics and pharmacodynamics of botanicals include training received during my recent NIH-NCCAM-K01 where microRNA-regulated mechanisms of polyphenols in cancer and inflammation were investigated. Current research focuses on the investigation of the interactions between dietary polyphenols, human intestinal microbiota and anti-inflammatory mechanisms of microbial metabolites.

B. Positions and Honors

Employment

- **Assoc. Professor** Dept. of Nutrition and Food Science, Texas A&M University, College Station, TX, since 2014
- **Assistant Professor** Dept. of Nutrition and Food Science, Texas A&M University, College Station, TX, since 2008
- **Asst. Research Scientist,** joint position at the Dept. Vet. Physiology and Pharmacology and Dept. Nutrition and Food Science, Texas A&M University, College Station, TX, 2006-2008
- **Postdoctoral Research Associate in Pharmaceutics,** University of Florida, Gainesville, FL, Pharmaceutics Department, Center for Food Drug Interactions and Education, 2004-2006
- **Graduate Research Assistant,** University of Florida, Gainesville, FL, Food Science and Human Nutrition Department. 2000-2004
- **Research Assistant** Departments of Biochemistry/Nutrition, University of Bonn, Bonn, Germany, 1998-2000

Honors and Awards

- **Excellence Award for Mentoring**, Nutrition and Food Science Dept, Texas A&M University, 2011
- **Excellence Award for Research,** Nutrition and Food Science Dept, Texas A&M University, 2009
- **ASN Mary Swartz Rose Young Investigator Award,** 2009. American Society of Nutrition
- **First Place, Research Competition.** Nutrition Division, Institute of Food Technologists (IFT) Annual meeting 2004, Las Vegas, NE.

- **Presidential Recognition** for outstanding students, University of Florida, Gainesville, FL, 2004
- **George K. Davis Fellowship,** Institute for Agricultural and Life Sciences, University of Florida, Gainesville, FL. 2000-2004

Professional Associations:

- Intercollegiate Faculty of Toxicology, Texas A&M University, since 2007
- American College of Clinical Pharmacology (ACCP), New Hartford, NY, 2005-2011
- Plant Phenolics and Human Health Research Interest Group (PhenRIG), American Society for Nutrition (ASN), Bethesda, MD since 2003
- Dietary Bioactive Compound RIS, American Society for Nutrition (ASN), since 2003, Chair 2011-2012
- Institute of Food Technologists (IFT), Chicago, IL 2001-2009
- American Society for Nutrition (ASN), Bethesda, MD since 2001

B. Selected Peer-reviewed Publications

Peer reviewed, refereed journal articles (h-factor: 21, 1-2015) selected out of 40, in chronological order

1. Ojwang LO, Banerjee N, Noratto GD, Angel-Morales G, Hachibamba T, Awika JM, **Mertens-Talcott** SU. Polyphenolic extracts from cowpea (Vigna unguiculata) protect colonic myofibroblasts (CCD18Co cells) from lipopolysaccharide (LPS)-induced inflammation - modulation of microRNA 126. Food Funct. 2015;6(1):145-53. Epub 2014/10/11. doi: 10.1039/c4fo00459k. PubMed PMID: 25300227.
2. Noratto GD, Garcia-Mazcorro JF, Markel M, Martino HS, Minamoto Y, Steiner JM, Byrne D, Suchodolski JS, **Mertens-Talcott** SU. Carbohydrate-free peach (Prunus persica) and plum (Prunus domestica) juice affects fecal microbial ecology in an obese animal model. PLoS One. 2014;9(7):e101723. Epub 2014/07/10. doi: 10.1371/journal.pone.0101723. PubMed PMID: 25007331; PubMed Central PMCID: PMC4090149.
3. Kresta JY, Oliver JM, Jagim AR, Fluckey J, Riechman S, Kelly K, Meininger C, **Mertens-Talcott** SU, Rasmussen C, Kreider RB. Effects of 28 days of beta-alanine and creatine supplementation on muscle carnosine, body composition and exercise performance in recreationally active females. Journal of the International Society of Sports Nutrition. 2014;11(1):55. Epub 2014/12/17. doi: 10.1186/s12970-014-0055-6. PubMed PMID: 25505854; PubMed Central PMCID: PMC4263036.
4. Dias MM, Noratto G, Martino HS, Arbizu S, Peluzio Mdo C, Talcott S, Ramos AM, **Mertens-Talcott** SU. Pro-apoptotic activities of polyphenolics from acai (Euterpe oleracea Martius) in human SW-480 colon cancer cells. Nutr Cancer. 2014;66(8):1394-405. Epub 2014/10/21. doi: 10.1080/01635581.2014.956252. PubMed PMID: 25329001.
5. Noratto GD, Jutooru I, Safe S, Angel-Morales G, **Mertens-Talcott** SU. The drug resistance suppression induced by curcuminoids in colon cancer SW-480 cells is mediated by reactive oxygen species-induced disruption of the microRNA-27a-ZBTB10-Sp axis. Mol Nutr Food Res. 2013;57(9):1638-48. Epub 2013/03/09. doi: 10.1002/mnfr.201200609. PubMed PMID: 23471840.
6. **Mertens-Talcott** SU, Noratto GD, Li X, Angel-Morales G, Bertoldi MC, Safe S. Betulinic acid decreases ER-negative breast cancer cell growth in vitro and in vivo: role of Sp transcription factors and microRNA-27a:ZBTB10. Mol Carcinog. 2013;52(8):591-602. Epub 2012/03/13. doi: 10.1002/mc.21893. PubMed PMID: 22407812; PubMed Central PMCID: PMC3418350.
7. Garcia-Perez E, Noratto GD, Garcia-Lara S, Gutierrez-Uribe JA, **Mertens-Talcott** SU. Micropropagation effect on the anti-carcinogenic activitiy of polyphenolics from Mexican oregano (Poliomintha glabrescens Gray) in human colon cancer cells HT-29. Plant foods for human nutrition (Dordrecht, Netherlands). 2013;68(2):155-62. Epub 2013/02/26. doi: 10.1007/s11130-013-0344-2. PubMed PMID: 23435631.
8. Del Follo-Martinez A, Banerjee N, Li X, Safe S, **Mertens-Talcott** S. Resveratrol and quercetin in combination have anticancer activity in colon cancer cells and repress oncogenic microRNA-27a. Nutr Cancer. 2013;65(3):494-504. Epub 2013/03/28. doi: 10.1080/01635581.2012.725194. PubMed PMID: 23530649.

9. Banerjee N, Kim H, Talcott S, **Mertens-Talcott** S. Pomegranate polyphenolics suppressed azoxymethane-induced colorectal aberrant crypt foci and inflammation: possible role of miR-126/VCAM-1 and miR-126/PI3K/AKT/mTOR. Carcinogenesis. 2013;34(12):2814-22. Epub 2013/09/03. doi: 10.1093/carcin/bgt295. PubMed PMID: 23996930.
10. Banerjee N, Talcott S, Safe S, **Mertens-Talcott** SU. Cytotoxicity of pomegranate polyphenolics in breast cancer cells in vitro and vivo: potential role of miRNA-27a and miRNA-155 in cell survival and inflammation. Breast Cancer Res Treat. 2012;136(1):21-34. Epub 2012/09/04. doi: 10.1007/s10549-012-2224-0. PubMed PMID: 22941571; PubMed Central PMCID: PMC3488590.
11. Angel-Morales G, Noratto G, **Mertens-Talcott** SU. Standardized curcuminoid extract (Curcuma longa l.) decreases gene expression related to inflammation and interacts with associated microRNAs in human umbilical vein endothelial cells (HUVEC). Food Funct. 2012;3(12):1286-93. Epub 2012/09/14. doi: 10.1039/c2fo30023k. PubMed PMID: 22972459.
12. Angel-Morales G, Noratto G, **Mertens-Talcott** S. Red wine polyphenolics reduce the expression of inflammation markers in human colon-derived CCD-18Co myofibroblast cells: potential role of microRNA-126. Food Funct. 2012;3(7):745-52. Epub 2012/05/11. doi: 10.1039/c2fo10271d. PubMed PMID: 22572890.
13. Noratto GD, Kim Y, Talcott ST, **Mertens-Talcott** SU. Flavonol-rich fractions of yaupon holly leaves (Ilex vomitoria, Aquifoliaceae) induce microRNA-146a and have anti-inflammatory and chemopreventive effects in intestinal myofibroblast CCD-18Co cells. Fitoterapia. 2011;82(4):557-69. Epub 2011/01/26. doi: 10.1016/j.fitote.2011.01.013. PubMed PMID: 21262328.
14. Noratto GD, Angel-Morales G, Talcott ST, **Mertens-Talcott** SU. Polyphenolics from acai (Euterpe oleracea Mart.) and red muscadine grape (Vitis rotundifolia) protect human umbilical vascular Endothelial cells (HUVEC) from glucose- and lipopolysaccharide (LPS)-induced inflammation and target microRNA-126. Journal of agricultural and food chemistry. 2011;59(14):7999-8012. Epub 2011/06/21. doi: 10.1021/jf201056x. PubMed PMID: 21682256.
15. Manthey JA, Cesar TB, Jackson E, **Mertens-Talcott** S. Pharmacokinetic study of nobiletin and tangeretin in rat serum by high-performance liquid chromatography-electrospray ionization-mass spectrometry. Journal of agricultural and food chemistry. 2011;59(1):145-51. Epub 2010/12/08. doi: 10.1021/jf1033224. PubMed PMID: 21133365.
16. Noratto GD, Bertoldi MC, Krenek K, Talcott ST, Stringheta PC, **Mertens-Talcott** SU. Anticarcinogenic effects of polyphenolics from mango (Mangifera indica) varieties. Journal of agricultural and food chemistry. 2010;58(7):4104-12. Epub 2010/03/09. doi: 10.1021/jf903161g. PubMed PMID: 20205391.
17. Li X, **Mertens-Talcott** SU, Zhang S, Kim K, Ball J, Safe S. MicroRNA-27a Indirectly Regulates Estrogen Receptor {alpha} Expression and Hormone Responsiveness in MCF-7 Breast Cancer Cells. Endocrinology. 2010;151(6):2462-73. Epub 2010/04/13. doi: 10.1210/en.2009-1150. PubMed PMID: 20382698; PubMed Central PMCID: PMC2875816.
18. Chintharlapalli S, Papineni S, Abdelrahim M, Abudayyeh A, Jutooru I, Chadalapaka G, Wu F, **Mertens-Talcott** S, Vanderlaag K, Cho SD, Smith R, 3rd, Safe S. Oncogenic microRNA-27a is a target for anticancer agent methyl 2-cyano-3,11-dioxo-18beta-olean-1,12-dien-30-oate in colon cancer cells. International journal of cancer. 2009;125(8):1965-74. Epub 2009/07/08. doi: 10.1002/ijc.24530. PubMed PMID: 19582879; PubMed Central PMCID: PMC2766353.
19. Pacheco-Palencia LA, Talcott ST, Safe S, **Mertens-Talcott** S. Absorption and biological activity of phytochemical-rich extracts from acai (Euterpe oleracea Mart.) pulp and oil in vitro. Journal of agricultural and food chemistry. 2008;56(10):3593-600. Epub 2008/04/30. doi: 10.1021/jf8001608. PubMed PMID: 18442253.
20. Pacheco-Palencia LA, Noratto G, Hingorani L, Talcott ST, **Mertens-Talcott** SU. Protective effects of standardized pomegranate (Punica granatum L.) polyphenolic extract in ultraviolet-irradiated human skin fibroblasts. Journal of agricultural and food chemistry. 2008;56(18):8434-41. Epub 2008/08/23. doi: 10.1021/jf8005307. PubMed PMID: 18717570.
21. Pacheco-Palencia LA, **Mertens-Talcott** S, Talcott ST. Chemical composition, antioxidant properties, and thermal stability of a phytochemical enriched oil from Acai (Euterpe oleracea Mart.). Journal of

agricultural and food chemistry. 2008;56(12):4631-6. Epub 2008/06/05. doi: 10.1021/jf800161u. PubMed PMID: 18522407.

22. Naspinski C, Gu X, Zhou GD, **Mertens-Talcott** SU, Donnelly KC, Tian Y. Pregnane X receptor protects HepG2 cells from BaP-induced DNA damage. Toxicol Sci. 2008;104(1):67-73. Epub 2008/04/03. doi: 10.1093/toxsci/kfn058. PubMed PMID: 18381355.
23. **Mertens-Talcott** SU, Rios J, Jilma-Stohlawetz P, Pacheco-Palencia LA, Meibohm B, Talcott ST, Derendorf H. Pharmacokinetics of anthocyanins and antioxidant effects after the consumption of anthocyanin-rich acai juice and pulp (Euterpe oleracea Mart.) in human healthy volunteers. Journal of agricultural and food chemistry. 2008;56(17):7796-802. Epub 2008/08/13. doi: 10.1021/jf8007037. PubMed PMID: 18693743.
24. Freeman ML, **Mertens-Talcott** SU, St Cyr J, Percival SS. Ribose enhances retinoic acid-induced differentiation of HL-60 cells. Nutr Res. 2008;28(11):775-82. Epub 2008/12/17. doi: 10.1016/j.nutres.2008.09.007. PubMed PMID: 19083487.
25. de Castro WV, **Mertens-Talcott** S, Derendorf H, Butterweck V. Effect of grapefruit juice, naringin, naringenin, and bergamottin on the intestinal carrier-mediated transport of talinolol in rats. Journal of agricultural and food chemistry. 2008;56(12):4840-5. Epub 2008/05/23. doi: 10.1021/jf0728451. PubMed PMID: 18494494.
26. **Mertens-Talcott** SU, De Castro WV, Manthey JA, Derendorf H, Butterweck V. Polymethoxylated flavones and other phenolic derivates from citrus in their inhibitory effects on P-glycoprotein-mediated transport of talinolol in Caco-2 cells. Journal of agricultural and food chemistry. 2007;55(7):2563-8. Epub 2007/03/14. doi: 10.1021/jf063138v. PubMed PMID: 17348674.
27. **Mertens-Talcott** SU, Chintharlapalli S, Li X, Safe S. The oncogenic microRNA-27a targets genes that regulate specificity protein transcription factors and the G2-M checkpoint in MDA-MB-231 breast cancer cells. Cancer research. 2007;67(22):11001-11. Epub 2007/11/17. doi: 10.1158/0008-5472.can-07-2416. PubMed PMID: 18006846.
28. de Castro WV, **Mertens-Talcott** S, Derendorf H, Butterweck V. Grapefruit juice-drug interactions: Grapefruit juice and its components inhibit P-glycoprotein (ABCB1) mediated transport of talinolol in Caco-2 cells. Journal of pharmaceutical sciences. 2007;96(10):2808-17. Epub 2007/06/02. doi: 10.1002/jps.20975. PubMed PMID: 17542018.
29. Salvador MJ, Ferreira EO, **Mertens-Talcott** SU, De Castro WV, Butterweck V, Derendorf H, Dias DA. Isolation and HPLC quantitative analysis of antioxidant flavonoids from Alternanthera tenella Colla. Z Naturforsch C. 2006;61(1-2):19-25. Epub 2006/04/14. PubMed PMID: 16610211.
30. **Mertens-Talcott** SU, Zadezensky I, De Castro WV, Derendorf H, Butterweck V. Grapefruit-drug interactions: can interactions with drugs be avoided? J Clin Pharmacol. 2006;46(12):1390-416. Epub 2006/11/15. doi: 10.1177/0091270006294277. PubMed PMID: 17101740.
31. **Mertens-Talcott** SU, Lee JH, Percival SS, Talcott ST. Induction of cell death in Caco-2 human colon carcinoma cells by ellagic acid rich fractions from muscadine grapes (Vitis rotundifolia). Journal of agricultural and food chemistry. 2006;54(15):5336-43. Epub 2006/07/20. doi: 10.1021/jf060563f. PubMed PMID: 16848514.
32. **Mertens-Talcott** SU, Jilma-Stohlawetz P, Rios J, Hingorani L, Derendorf H. Absorption, metabolism, and antioxidant effects of pomegranate (Punica granatum l.) polyphenols after ingestion of a standardized extract in healthy human volunteers. Journal of agricultural and food chemistry. 2006;54(23):8956-61. Epub 2006/11/09. doi: 10.1021/jf061674h. PubMed PMID: 17090147.
33. De Castro WV, Pires MA, Oliveira MA, Vianna-Soares CD, Nunan EA, Pianetti GA, Moreira-Campos LM, **Mertens-Talcott** SU, Derendorf H. The influence of formulation on the dissolution profile of diclofenac sodium tablets. Drug Dev Ind Pharm. 2006;32(9):1103-9. Epub 2006/10/03. doi: 10.1080/03639040600815152. PubMed PMID: 17012123.
34. De Castro WV, **Mertens-Talcott** S, Rubner A, Butterweck V, Derendorf H. Variation of flavonoids and furanocoumarins in grapefruit juices: a potential source of variability in grapefruit juice-drug interaction studies. Journal of agricultural and food chemistry. 2006;54(1):249-55. Epub 2006/01/05. doi: 10.1021/jf0516944. PubMed PMID: 16390207.

35. **Mertens-Talcott** SU, Percival SS. Ellagic acid and quercetin interact synergistically with resveratrol in the induction of apoptosis and cause transient cell cycle arrest in human leukemia cells. Cancer Lett. 2005;218(2):141-51. Epub 2005/01/27. doi: 10.1016/j.canlet.2004.06.007. PubMed PMID: 15670891.
36. **Mertens-Talcott** SU, Bomser JA, Romero C, Talcott ST, Percival SS. Ellagic acid potentiates the effect of quercetin on p21waf1/cip1, p53, and MAP-kinases without affecting intracellular generation of reactive oxygen species in vitro. The Journal of nutrition. 2005;135(3):609-14. Epub 2005/03/01. PubMed PMID: 15735102.
37. **Mertens-Talcott** SU, Talcott ST, Percival SS. Low concentrations of quercetin and ellagic acid synergistically influence proliferation, cytotoxicity and apoptosis in MOLT-4 human leukemia cells. The Journal of nutrition. 2003;133(8):2669-74. Epub 2003/07/31. PubMed PMID: 12888656.

D. Research Support

Ongoing Research Support

Research Grant (Talcott) 1/1/2015 – 12/31/2015 Role: PI
Industry $100,000
Microbial Metabolites of Mango Polyphenolics in Intestinal Health

Research Grant (Talcott) 1/1/2015 – 12/31/2015 Role: PI
USDA-AMS National Mango Board $150,000
Microbial Metabolites of Mango Polyphenolics in Intestinal Health

Research Grant (Talcott) 5/1/2014 – 04/30/2015 Role: PI
USDA-AMS National Mango Board $60,000
Mango Polyphenolics in Intestinal Health
The objective of this proposed research is to investigate the beneficial activities of mango in colon health.

CAPES-Brazil, TAMU-VPR 08/01/2014 – 07/30/2016 Role: site-PI
Molecular Mechanisms of Polyphenols in their Anti-Malarial Activities $100,000

Selected Completed Research Support

Research Grant (Talcott) 1/1/2013 – 12/31/2014
USDA-AMS National Mango Board $505,200
Pharmacokinetics and pharmacodynamics of gallotannins from mango relevant to the prevention of inflammation
The objective of this proposed research is to investigate detailed pharmacokinetics of mango polyphenolics in a human clinical trial and to assess the anti-inflammatory effects.

USDA-AFRI (Talcott) 12-01-211- 12-31-2014 0.3 cm, co-PI
USDA $395,849
Natural Pigments with Improved Human Health
The objective of this project is to improve the quality and health benefits of purple potato pigments relevant to anti-inflammatory activity

Research grant (Talcott)	1/1/2010 – 12/31/2013	PI 0.3 calendar months
USDA-AMS National Mango Board	$268,752 (no cost extension)	

Anti-Inflammatory Effects of Mangos

The major goals of this project are to determine the anti-inflammatory properties of different Mango varieties in vitro in subjects with mild inflammatory bowel syndrome.

5K01AT004597 (Talcott)	4/1/2008 – 3/31/2013	PI 9 calendar months
NIH-NCCAM	$ 401,152	

Mechanism-Based Botanical Drugs in Breast-Cancer Chemotherapy

The major goals of this project are to determine the underlying mechanisms of the anti-cancer properties of botanicals

1R03AG032067-01A1 (Christou)	07/01/2008-06/30/2011	Role: co-PI, 0.3 cm
NIH	$ 152,245.00	

Endothelial Dysfunction in Older Adult Humans with the Metabolic Syndrome

The major goal is to determine endothelial function and antioxidant and inflammation biomarkers in metabolic syndrome subjects taking Eplenerone

BGIA (Christou)	10/01/2008- 09/30/2011	Role;co-PI, 0.3 cm
AHA-national	$140,000	

Role of Mineralocorticoid Receptors in Endothelial Dysfunction in Older Adults with Metabolic Syndrome

The major goal is to determine endothelial function and antioxidant and inflammation biomarkers in metabolic syndrome subjects