

Lisa J. Mauer

A. GENERAL INFORMATION

1. Academic Record

Degree	Field of Study	Institution	Date
Ph.D.	Food Science	University of Minnesota	7/1999
B.S.	Food Science	Purdue University	5/1995

Professional Experience

Position	Department	University	Dates
Professor	Department of Food Science	Purdue University	8/2011- present
Director	Center for Food Safety Engineering	Purdue University	2012- present
Interim Director	Center for Food Safety Engineering	Purdue University	2011-2012
Associate Professor	Department of Food Science	Purdue University	8/2006 – 7/2011
Assistant Professor	Department of Food Science	Purdue University	3/2001 – 7/ 2006
Member	Whistler Center for Carbohydrate Research	Purdue University	7/2002 - present
Adjunct Faculty Member	Family, Consumer, and Nutritional Sciences Department	College of St. Catherine, St. Paul, MN	8/1999 – 12/2000
Postdoctoral Research Associate	Food Science and Nutrition Department	University of Minnesota, St. Paul, MN	3/2000 – 1/2001

2. Professional Awards and Honors since 2006

Agricultural Research Award (2010)
Fellow of the Purdue University Teaching Academy (2010)
Faculty Award of Merit from Purdue University Chapter of Gamma Sigma Delta (2010)
Purdue University Faculty Scholar (2009-2013)
2009-2010 Class of LEAD21 Program
The David C. Pfendler Outstanding Undergraduate Counselor Award (2009)
Purdue Entrepreneurial Leadership Fellow (2008-2009)
Outstanding Counselor Award in the Department of Food Science (2006, 2008, 2009)
Purdue University College of Agriculture Millionaire's Club (2007)
Purdue University Seed for Success Award (2007)

3. Membership in Academic, Professional, and Scholarly Societies since 2006

Institute of Food Technologists (IFT) (member 1992-present; Chair of Indiana IFT section 2008-2009)
Gamma Sigma Delta (2010)
Research Chefs of America (2010-present)
Phi Beta Kappa

B. EXCELLENCE IN RESEARCH SCHOLARSHIP & CREATIVE ENDEAVOR

1. Research Publications since 2006

a. Refereed Papers (* indicates major contributors, † indicates corresponding author).

1. Salameh*, A.K., L.J. **Mauer***, and L.S. Taylor*†. 2006. Deliquescence lowering in food ingredient mixtures. *Journal of Food Science*. 71(1): E10-E16.
2. Kim*, S., H. Kim, B.L. Reuhs*, and L.J. **Mauer***†. 2006. Differentiation of outer membrane proteins from *Salmonella enterica* serotypes using Fourier transform infrared spectroscopy and chemometrics. *Letters in Applied Microbiology*. 42:229-234.
3. Wang*, L., K.D. Hayes*, and L.J. **Mauer***†. 2006. Fluorescent labeling study of plasminogen concentration and location in simulated bovine milk systems. *Journal of Dairy Science*. 89(1): 58-70.
4. Kim*, S., Y. Burgula, T. Ojanen-Reuhs, M.A. Cousin, B.L. Reuhs*, and L.J. **Mauer***†. 2006. Differentiation and classification of crude lipopolysaccharides from *Escherichia coli* strains using Fourier transform infrared spectroscopy and chemometrics. *Journal of Food Science*. 71(2):M57-M61.
5. Burgula*, Y., D. Khali*, S.S. Krishnan, M.A. Cousin, J.P. Gore*, B.L. Reuhs*, and L.J. **Mauer***†. 2006. Detection of *E. coli* O157:H7 and *Salmonella* Typhimurium using filtration followed by FT-IR spectroscopy. *Journal of Food Protection*. 69 (8): 1777-1784.
6. Granizo*, D.P., B.L. Reuhs*, R. Strohshine*, and L.J. **Mauer***†. 2007. Evaluating the solubility of powdered food ingredients using dynamic nuclear magnetic resonance (NMR) relaxometry. *Lebensmittel Wissenschaft und Technology (LWT) Food Science and Technology*. 40 (1): 36-42.
7. Mejia*, C.D., L.J. **Mauer***, and B.R. Hamaker*†. 2007. Similarities and differences in secondary structure of viscoelastic polymers of maize α -zein and wheat gluten. *Journal of Cereal Science*. 45:353-359.
8. Wang*, L., K. Hayes*, and L.J. **Mauer***†. 2007. Effects of heat and β -lactoglobulin on distribution of fluorescently labeled tissue and urokinase type plasminogen activators in a bovine milk model system. *International Dairy Journal*. 17(5): 448-458.
9. Burgula*, Y., D. Khali, S. Kim, M.A. Cousin, J.P. Gore, B.L. Reuhs*, and L.J. **Mauer***†. 2007. Review of Mid-IR Fourier-transform infrared (FT-IR) spectroscopy applications for bacterial detection. *Journal of Rapid Methods & Automation in Microbiology*. 15: 146-175.
10. Gandolph*, J., A. Shand*, A. Stoklosa, A. Ma, I. Weiss, D. Alexander, M. Perchonok, L.J. **Mauer***†. 2007. Foods for a Mission to Mars: Investigations of Low-Dose Gamma Radiation Effects. *World of Food Science*. Volume 2: Food and Space. http://www.iufost.org/publications/world_of_food_science/ (invited article)
11. Gandolph*, J., G. Chen*, I. Weiss, M. Perchonok, W. Wijeratne, S. Fortune, C. Corvalan*, O. Campanella*, M. Okos*, and L.J. **Mauer***†. 2007. Foods for a Mission to Mars:

- Equivalent System Mass and Development of a Multipurpose Small-Scale Seed Processor. *World of Food Science*. Volume 2 Food and Space. http://www.iufost.org/publications/world_of_food_science/ (invited article)
12. Vardin*, H., Tay, A., Ozen*†, B. and L.J. **Mauer***. 2008. Authentication of pomegranate juice concentrate using FTIR and chemometrics. *Food Chemistry*. 108(2): 742-748.
 13. Wang*, L. and L.J. **Mauer***†. 2008. The effect of heat on the distribution of fluorescently-labeled plasminogen and plasminogen-activators in bovine skim milk. *Journal of Food Science*. 73(3): C185-190.
 14. Burgula*, Y., B.L. Reuhs*, and L.J. **Mauer***†. 2008. Rapid FT-IR methods for detection of *Escherichia coli* O157:H7 in fruit juices. *World of Food Science*. Volume 3: Food Safety. http://www.iufost.org/publications/world_of_food_science/ (invited article)
 15. Ortiz*, J., M.G. Ferruzzi*, L.S. Taylor*, and L.J. **Mauer***†. 2008. Interaction of environmental moisture with powder green tea formulations: effects on catechin stability. *Journal of Agricultural and Food Chemistry*. 56(11):4068-4077.
 16. Hiatt*, A., M.G. Ferruzzi, L.S. Taylor*, and L.J. **Mauer***†. 2008. Impact of deliquescence on the chemical stability of vitamins B₁, B₆, and C in powder blends. *Journal of Agricultural and Food Chemistry*. 56(15):6471-6479.
 17. Ravindranath*, S.P., L.J. **Mauer**, C. DebRoy, and J. Irudayaraj*†. 2009. Bio-functionalized magnetic nanoparticle integrated mid-IR pathogen sensor for food matrices. *Analytical Chemistry*. 81(8):2840-2846.
 18. **Mauer***†, L.J., A. Chernyshova*, A. Deering*, A. Hiatt*, and R. Davis*. 2009. Melamine detection in infant formula powder using mid and near infrared spectroscopy. *Journal of Agricultural and Food Chemistry*. 57(10): 3974–3980. Note: One of the ten most-accessed articles from this journal for the period of April-June 2009 and a Thomson Reuters “New Hot Paper 2010” for the field of Agricultural Sciences.
 19. Ortiz*, J., U. Kestur, L.S. Taylor*, and L.J. **Mauer***†. 2009. Interaction of environmental moisture with powder green tea formulations: relationship between catechin stability and moisture-induced phase transformations. *Journal of Agricultural and Food Chemistry*. 57(11): 4691-4697.
 20. Kim*, S., B. Schuler, J. Auer*, A. Terekhov, L.J. **Mauer**, L. Perry, and B. Applegate*†. 2009. A rapid bioluminescence-based assay for enumeration of lytic bacteriophage. *Journal of Microbiological Methods*. 79(1):18-22.
 21. Tongdeesontorn*, W., L.J. **Mauer***, S. Wongruong, P. Rachtanapun*†. 2009. Water vapour permeability and sorption isotherms of cassava starch based films blended with gelatin and carboxymethylcellulose. *Asian Journal of Food and Agro-Industry*. 2(4): 501-514.
 22. **Mauer**, L.J.*† and L.S. Taylor*. 2010. Water-Solids Interactions: Deliquescence. *Annual Review of Food Science and Technology*. 1:41-63.
 23. Hiatt*, A., L.S. Taylor*, and L.J. **Mauer***†. 2010. Influence of simultaneous variations in temperature and relative humidity on chemical degradation of two vitamin C forms and implications for shelf-life models. *J. of Agricultural and Food Chemistry*. 58(6):3532-3540.
 24. Davis*, R., J. Irudayaraj, B.L. Reuhs, and L.J. **Mauer***†. 2010. Detection of *Escherichia coli* O157:H7 from ground beef using Fourier transform infrared (FT-IR) spectroscopy and chemometrics. *Journal of Food Science*. 75 (6): M340-346.
 25. **Mauer**, L.J.* and L.S. Taylor*†. 2010. Deliquescence of pharmaceutical systems. *Pharmaceutical Development and Technology*. 15(6):582-594.
 26. Davis*, R., Y. Burgula*, A. Deering, J. Irudayaraj, B.L. Reuhs, and L.J. **Mauer***†. 2010. Detection and differentiation of live and heat treated *Salmonella enterica* serovars inoculated

- onto chicken breast using Fourier transform infrared (FT-IR) spectroscopy. *Journal of Applied Microbiology*. 109(6): 2019-2031.
27. Kwok*, K., L.J. **Mauer***, and L.S. Taylor*†. 2010. Phase behavior and moisture sorption of deliquescent powders. *Chemical Engineering Science*. 65(21):5639-5650.
 28. Kwok*, K., L.J. **Mauer***, and L.S. Taylor*†. 2010. Kinetics of moisture-induced hydrolysis in powder blends stored at and below the deliquescence relative humidity: Investigation of sucrose-citric acid mixtures. *Journal of Agricultural and Food Chemistry*. 58(22):11716-11724.
 29. Tongdeesoontorn*, W., L.J. **Mauer***, S. Wongruong, P. Sriburi, and P. Rachtanapun*†. 2011. Effect of carboxymethylcellulose concentration on mechanical and physical properties of biodegradable cassava starch-based films. *Chemistry Central Journal*. 5:6.
 30. Hiatt*, A., L.S. Taylor*, and L.J. **Mauer***†. 2011. Effects of co-formulation of amorphous maltodextrin and deliquescent sodium ascorbate on moisture sorption and stability. *International Journal of Food Properties*. 14(4): 726-740.
 31. West*, M.E. and L.J. **Mauer***†. 2011. Development of an integrated approach for the stability testing of flavonoids and ascorbic acid in powders. *Food Chemistry*. 129(1):51-58.
 32. Li, N. *, L.S. Taylor*, and L.J. **Mauer***†. 2011. Degradation kinetics of catechins in green tea powder: Effects of temperature and relative humidity. *Journal of Agricultural and Food Chemistry*. 59(11):6082-6090.
 33. Stoklosa*, A., I. Weiss*, B. Bugbee, M. Perchonok, and L.J. **Mauer***†. 2011. Composition and functional properties of Apogee and Perigee compared to common terrestrial wheat cultivars. *International Journal of Food Properties*. 14(5):996-1006.
 34. Deering*†, A.J., R.E. Pruitt*, L.J. **Mauer***, and B.L. Reuhs*. 2011. Identification of the cellular location of internalized *Escherichia coli* O157:H7 in mung bean, *Vigna radiata*, by immunocytochemical techniques. *Journal of Food Protection*. **74(8):1224-1230**.
 35. Lipasek, R., L.S. Taylor, and L.J. **Mauer***†. 2011. Effects of anticaking agents and relative humidity on the physical and chemical stability of powdered vitamin C. *Journal of Food Science*. **76(7):C1062-1074**.
 36. Davis, R. and L.J. **Mauer***†. 2011. Subtyping of *Listeria monocytogenes* at the haplotype level by Fourier transform infrared (FT-IR) spectroscopy and multivariate statistical analysis. *International Journal of Food Microbiology*. 150(2-3):140-149.
 37. Hiatt*, A., M.G. Ferruzzi, L.S. Taylor*, and L.J. **Mauer***†. 2011. Deliquescence behavior and chemical stability of vitamin C forms (ascorbic acid, sodium ascorbate, and calcium ascorbate) and blends. *International Journal of Food Properties*. 14(6):1330-1348.
 38. Lipasek, R., J. Ortiz, L.S. Taylor, and L.J. **Mauer***†. 2012. Effects of anticaking agents and storage conditions on the moisture sorption, caking, and flowability of deliquescent ingredients. *Food Research International*. **45(1):369-380**.
 39. Deering*†, A.J., L.J. **Mauer***, and R.E. Pruitt*. 2012. Internalization of *E.coli* O157:H7 and *Salmonella* spp. in plants: A review. *Food Research International*. **45:567-575**.
 40. Deering*†, A.J., R.E. Pruitt*, L.J. **Mauer***, and B.L. Reuhs*. 2012. Examination of the internalization of *Salmonella* serovar Typhimurium in peanut, *Arachis hypogaea*, using immunocytochemical techniques. *Food Research International*. **45:1037-1043**.
 41. Lipasek*, R., L.S. Taylor, L.J. **Mauer***. 2012. Letter to the editor: On the effects of anticaking agents on vitamin C physical and chemical stability response. *Journal of Food Science*. 77(1):XII-XIV.

42. Stoklosa*, A., M.H. Perchonok, K.M. Little, D.E. Nivens, and L.J. **Mauer***†. 2012. Effects of low-dose gamma-radiation on select wheat characteristics. *Int. Journal of Food Properties*. 15(1-2): 109-121.
43. Mejia*, C.D., D.C. Gonzalez, L.J. **Mauer**, O.H. Campanella, B.R. Hamaker*†. 2012. Increasing and stabilizing b-sheet structure of maize zein causes improvement in its rheological properties. *Journal of Agricultural and Food Chemistry*. 60(9):2316-2321.
44. Davis*, R., A. Deering, Y. Burgula*, L.J. **Mauer***, and B.L. Reuhs*†. 2012. Differentiation of live, dead, and treated cells of *E. coli* O157:H7 using FT-IR spectroscopy. *Journal of Applied Microbiology*. **112(4):743-751**.
45. Davis*, R., G. Paoli*, and L.J. **Mauer***†. 2012. Evaluation of Fourier transform infrared (FT-IR) spectroscopy and chemometrics as a rapid approach for subtyping *E. coli* O157:H7 isolates. *Food Microbiology*. 31:181-190.
46. Mura, S., G. Greppi1, M.L. Marongiu, P.R. Roggero, S.P. Ravindranath, L.J. **Mauer**, N. Schibeci, F. Perria, M. Piccinini, P. Innocenzi, J. Irudayaraj. 2012. FTIR nanobiosensors for *Escherichia coli* detection. *Beilstein Journal of Nanotechnology*. 3:485-492.
47. Soendjojo, E, A. Deering, R. Davis, and L. J. **Mauer***†. 2012. A survey of the microbiological quality of fresh lettuce and spinach from grocery stores and farmers' markets. *Journal of Purdue Undergraduate Research*. 2:54-63.
48. Tongdeesontorn*, W., L.J. **Mauer***, S. Wongruong, P. Sriburi, and P. Rachtanapun*†. 2012. Mechanical and physical properties of cassava starch-gelatin composite films. *International Journal of Polymeric Materials*. 61(10):778-792.
49. A. Stoklosa*, R. Lipasek*, L.S. Taylor, and L.J. **Mauer***†. 2012. Effects of storage conditions, formulation, and particle size on moisture sorption and flowability of powders: a study of deliquescent ingredient blends. *Food Research International*. 49: 783-791.

Refereed Papers In Press:

50. Wegiel*, L.A., L.J. **Mauer***, K.J. Edgar, L.S. Taylor*†. Crystallization of amorphous solid dispersions of resveratrol during preparation and storage – Impact of different polymers. *Journal of Pharmaceutical Sciences*. **Published online Nov. 6, 2012**. DOI: 10.1002/jps.23358.
51. Li*, N., M.G. Ferruzzi, L.S. Taylor, and L.J. **Mauer***†. Chemical Stability and Color Degradation of (-)-epi-gallocatechin Gallate in Solid and Solution State. *Food Research International*. **In Press**.
52. Li*, N., M.G. Ferruzzi, L.S. Taylor, and L.J. **Mauer***†. Kinetic study of catechin stability: Effects of pH, concentration, and temperature. *Journal of Agricultural and Food Chemistry*. **In Press**.

Patents and Disclosures

1. Leavened products made from non-wheat cereal proteins. 2008. Hamaker, B., C. Mejia, L.J. **Mauer**, and O. Campanella. PatentWO/2008/036646. International Application No. PCT/US2007/078750.
2. Leavened products made from non-wheat cereal proteins. Dec. 10, 2009. Hamaker, B., C. Mejia, L.J. **Mauer**, and O. Campanella. US 2009/0304861

b. Book Chapters and Conference Proceedings since 2006

Book Chapters

1. J. Floros, I. Weiss, and L.J. **Mauer**. 2010. Aseptic Packaging Technology. Ed. P.E. Nelson. Principles of Aseptic Processing and Packaging Third Edition. Purdue University Press. p. 101-133.
2. L.J. **Mauer** and B.L. Reuhs. 2010. Chapter 3.1 Agriculture and Food Supply: Mid-Infrared Sensors for the Rapid Analysis of Select Microbial Food Borne Pathogens. In Wiley Handbook of Science and Technology for Homeland Security. John Wiley & Sons Publishers. John G. Voeller (Editor). 2888p.
3. R. Davis and L.J. **Mauer**. 2010. Fourier transform infrared (FT-IR) spectroscopy: A rapid tool for detection and analysis of foodborne pathogenic bacteria. In Current Research, Technology and Education Topics in Applied Microbiology and Microbial Biotechnology. Volume 2. Formatex Research Center (publisher). A.Mendez-Vilas (Editor). 1582-1594.

Conference Proceedings

1. Tongdeesoontorn, W., L.J. **Mauer**, S. Wongruong, P. Sriburi, P. Rachtanapun. 2009. Effect of antioxidant concentrations and relative humidity on mechanical properties of cassava starch/gelatin films. Proceedings of Starch Update 2009: The 5th International Conference on Starch Technology. Bangkok, Thailand. p. 251-258.
2. Davis, R., Y. Burgula, J. Irudayaraj, B.L. Reuhs, L.J. **Mauer**. 2010. Fourier transform infrared (FT-IR) spectroscopy coupled with filtration and immunomagnetic separation for the detection of *E. coli* O157:H7 in ground beef. Proceedings of the 2010 18th Biennial University/Government/Industry Micro/Nano Symposium, Purdue University, West Lafayette, IN.
3. Deering, A., B.L. Reuhs, L.J. **Mauer**. 2010. Nanostructural differentiation between live and dead Escherichia coli cells using FT-IR spectroscopy and comparison of detection limits to quantitative PCR (qPCR). Proceedings of the 2010 18th Biennial University/Government/Industry Micro/Nano Symposium, Purdue University, West Lafayette, IN.

c. Research Abstracts since 2006

Presented at International Meetings outside of the USA

1. Tongdeesoontorn, W., L.J. **Mauer**, S. Wongruong, P. Sriburi, P. Rachtanapun. 2009. Study of chemical interaction, melting temperature and morphology of cassava starch based films with gelatin and carboxymethyl cellulose. Proceedings of the International conference on Functionalized and Sensing Materials (FuSeM) 2009. Bangkok, Thailand.
2. Murdock, L., V. Margam, I. Baoua, S. Balfe, L.J. **Mauer**, R.E. Shade. 2010. Purdue Improved Cowpea Storage (PICS): What it is and how it works. World Cowpea Conference 2010. Dakar, Senegal.
3. Tongdeesoontorn, W., L.J. **Mauer**, S. Wongruong, P. Sriburi, P. Rachtanapun. 2011. Physical properties and antioxidant activity of cassava starch-carboxymethyl cellulose films incorporated with quercetin and TBHQ. The Third Thai-Japan Bioplastics and Biobased Materials Symposium (AIST-NIA-TBIA Joint Symposium). Bangkok, Thailand. Dec. 20-21, 2011.
4. L.J. **Mauer**, M. Ghorab, L.S. Taylor. 2012. Effects of co-formulation on the water-solids interactions of crystalline deliquescent and amorphous ingredients. Presented at the 7th International Conference on Water in Food, Helsinki, Finland June 3-5, 2012.

Presented at National and International Meetings in the USA

1. A. Stoklosa, I. Weiss, M.H. Perchonok, B. Hamaker, and L.J. **Mauer**. 2006. Comparison of structural and functional characteristics of select terrestrial wheat cultivars to apogee and perigee cultivars. Habitation 2006. Orlando, FL.
2. A. Stoklosa, D. Nivens, and L.J. **Mauer**. 2006. Effects of Low Dose Gamma-Radiation on Select Wheat Characteristics. Habitation 2006. Orlando, FL.
3. J. Gandolph, J.R. Burgess, M.H. Perchonok, B.A. Watkins, and L.J. **Mauer**. 2006. Effects of Gamma-Radiation on Select Lipids and Antioxidants. Habitation 2006. Orlando, FL.
4. A.T. Ma, J. Gandolph, L.J. **Mauer**. 2006. The effects of gamma-radiation on soybean oil with and without added antioxidant. Institute of Food Technologists' (IFT) Annual Meeting and Food Expo. Orlando, FL.
5. Y. Burgula, M.A. Cousin, B.L. Reuhs, L.J. **Mauer**. 2006. Differentiation of Live vs. Dead cells of *E. coli* O157:H7 based upon incubation and immunomagnetic separation. IFT Annual Meeting and Food Expo. Orlando, FL.
6. Y. Burgula, M.A. Cousin, B. Applegate, R. Linton, B.L. Reuhs, L.J. **Mauer**. 2006. Effects of processing treatments on FT-IR based classification of dead *E. coli* K12 cells in comparison to live cells. IFT Annual Meeting and Food Expo. Orlando, FL.
7. K. Paarlberg, Y. Burgula, M.A. Cousin, B.L. Reuhs, L.J. **Mauer**. 2006. Development of a FT-IR spectral library for select microorganisms. IFT Annual Meeting and Food Expo. Orlando, FL.
8. W. Octavia, L. Wang, L.J. **Mauer**. 2006. Quantification of the effects of temperature on the location of β -casein in bovine milk using a fluorescent labeling technique. IFT Annual Meeting and Food Expo. Orlando, FL.
9. W. Octavia and L.J. **Mauer**. 2006. Effects of temperature on the secondary structure of β -casein determined using Circular Dichroism (CD) and Fourier-transform infrared (FTIR) spectroscopy. IFT Annual Meeting and Food Expo. Orlando, FL.
10. W. Octavia, J. Burgner, L.J. **Mauer**. 2006. Temperature Sequence effects on the location of β -casein in bovine milk determined using Urea Polyacrylamide Gel Electrophoresis (PAGE). IFT Annual Meeting and Food Expo. Orlando, FL.
11. J.Ortiz, R.J. Green, L. Taylor, M. Ferruzzi, L.J. **Mauer**. 2006. Effects of deliquescent ingredients and environmental moisture in catechin stability. IFT Annual Meeting and Food Expo. Orlando, FL.
12. A.T. Ma, D. Alexander, J. Gandolph, L.J. **Mauer**. 2006. Effects of gamma-radiation on soybean oil and peanut oil with and without added antioxidant. 36th International Conference on Environmental Systems (ICES). Norfolk, Virginia.
13. A.T. Ma, A.T. Shand, R. Green, M. Ferruzzi, L.J. **Mauer**. 2006. Effects of radiation and storage on vitamin C supplements. 36th ICES. Norfolk, Virginia.
14. A. Hiatt, L.J. **Mauer**. 2007. Impact of deliquescent ingredients and storage relative humidity on the stability of thiamin hydrochloride (B1) and pyridoxine hydrochloride (B6) in mixtures. IFT Annual Meeting and Food Expo. Chicago, IL.
15. Nagel, A.C., L.J. **Mauer**, A.D. Stoklosa, M.J. Franklin, D.E. Nivens. 2007. Quantification of cellular biomass and extracellular alginate from *Pseudomonas aeruginosa* biofilms using Fourier transform infrared (FT-IR) spectroscopy. American Society for Microbiology 107th Annual General Meeting.
16. A. Hiatt, M.G. Ferruzzi, L.S. Taylor, L.J. **Mauer**. 2008. Impact of deliquescence on select B vitamin chemical stability. IFT Annual Meeting and Food Expo. New Orleans, LA.

17. J. Ortiz, A. Hiatt, M.G. Ferruzzi, L.S. Taylor, L.J. **Mauer**. 2008. Effects of deliquescence and citric acid addition on ascorbic acid degradation. IFT Annual Meeting and Food Expo. New Orleans, LA.
18. A. Stoklosa, L.S. Taylor, L.J. **Mauer**. 2008. Water-solid interactions of dry powder blends containing non-nutritive sweeteners. IFT Annual Meeting and Food Expo. New Orleans, LA.
19. A. Stoklosa, L.S. Taylor, L.J. **Mauer**. 2008. Effect of particle size on the deliquescent behavior of food additive mixtures. IFT Annual Meeting and Food Expo. New Orleans, LA.
20. L.J. **Mauer** and L.S. Taylor. 2008. Fundamentals, consequences, and effects of deliquescence in multicomponent systems. USDA-NRI Project Directors Meeting. New Orleans, LA.
21. K. Kwok, L.J. **Mauer** and L.S. Taylor. 2009. Deliquescence of pharmaceutical and food ingredients: The relationship between relative humidity and surface properties of single and binary systems. Division of Colloid & Surface Chemistry for the 237th ACS National Meeting, Salt Lake City, UT, March 22-26.
22. K. Kwok, L.J. **Mauer** and L.S. Taylor. 2009. Deliquescence of pharmaceutical and food ingredients: The effect of relative humidity on the chemical stability of the sucrose-citric acid system. Division of Physical Chemistry for the 237th ACS National Meeting, Salt Lake City, UT, March 22-26.
23. K. Kwok, L.J. **Mauer** and L.S. Taylor. 2009. Deliquescence of pharmaceutical and food ingredients: Phase transition of model systems and moisture sorption studies. Division of Physical Chemistry for the 237th ACS National Meeting, Salt Lake City, UT, March 22-26.
24. G. Sadler, M. Morgan and L.J. **Mauer**. 2009. Dual use packaging- A more versatile approach to food packaging for space travel with secondary applications for spent packaging. Conference on Food Engineering (CoFE), Cincinnati, OH, Apr 5-8.
25. L.J. **Mauer**, J. Gandolph, A. Shand, A. Stoklosa, A. Ma, I. Weiss, D. Alexander, A. Hiatt, M.G. Ferruzzi, M. Perchonok. 2009. Low-dose gamma-radiation effects on select foods and dietary supplements. CoFE, Cincinnati, OH, Apr 5-8.
26. L. J. **Mauer**, J. Ortiz, U. Kestur, L. S. Taylor. 2009. Relationship between catechin stability and moisture-induced phase transformations in powdered green tea formulations. IFT Annual Meeting and Food Expo. Anaheim, CA.
27. A. Hiatt, L.S. Taylor, L.J. **Mauer**. 2009. Influence of different vitamin forms on deliquescence behavior and chemical stability of vitamin C. IFT Annual Meeting and Food Expo. Anaheim, CA.
28. A. M. Stoklosa, D. E. Nivens, L.S. Taylor, L. J. **Mauer**. 2009. Atomic force microscopy investigation of deliquescence lowering induced by capillary condensation in binary crystalline mixtures. IFT Annual Meeting and Food Expo. Anaheim, CA.
29. L.J. **Mauer** and L.S. Taylor. 2009. Fundamentals, consequences, and effects of deliquescence in multicomponent systems. USDA-NRI Project Directors Meeting. Anaheim, CA.
30. K. Kwok, L.J. **Mauer** and L.S. Taylor. 2009. Deliquescence of pharmaceutical and food ingredients: The relationship between relative humidity and surface properties of single and binary systems. IFT Annual Meeting and Food Expo. Anaheim, CA.
31. K. Kwok, L.J. **Mauer** and L.S. Taylor. 2009. Deliquescence of pharmaceutical and food ingredients: The effect of relative humidity on the chemical stability of the sucrose-citric acid system. IFT Annual Meeting and Food Expo. Anaheim, CA.

32. K. Kwok, L.J. **Mauer** and L.S. Taylor. 2009. Deliquescence of pharmaceutical and food ingredients: Phase transition of model systems and moisture sorption studies. IFT Annual Meeting and Food Expo. Anaheim, CA.
33. R. Davis, Y. Burgula, A. Deering, J. Irudayaraj, B.L. Reuhs, L.J. **Mauer**. 2009. Identification, Enumeration, and Differentiation of Live and Dead *E. coli* O157: H7 in Ground Beef using Fourier Transform Infrared (FTIR) Spectroscopy and a Portable IR Sensor IFT Annual Meeting and Food Expo. Anaheim, CA.
34. R. Davis, Y. Burgula, B.L. Reuhs, L.J. **Mauer**. 2009. Detection of Live and Dead *Salmonella enterica* from Chicken Breast Using Filtration and Dynabeads assays followed by Fourier Transform Infrared (FTIR) Spectroscopy. IFT Annual Meeting and Food Expo. Anaheim, CA.
35. A.J. Deering, B.L. Reuhs, L.J. **Mauer**. 2009. Differentiation between Live and Dead Bacterial Cells using FT-IR Spectroscopy and Comparison of Detection Limits using Quantitative PCR (qPCR). IFT Annual Meeting and Food Expo. Anaheim, CA.
36. M. Loewen, A. Hiatt, L.S. Taylor, L.J. **Mauer**. 2009. Influence of deliquescence, formulation, and storage conditions on stability of vitamin C in commercially available supplement powders. IFT Annual Meeting and Food Expo. Anaheim, CA.
37. L.J. **Mauer**, A. Hiatt, A. Chernyshova, R. Davis, A. Deering. 2009. Melamine detection in infant formula powder using Fourier transform infrared spectroscopy (FTIR). IFT Annual Meeting and Food Expo. Anaheim, CA.
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39. W. Tongdeesontorn, L.J. **Mauer**, S. Wongroung, P. Rachtanapun. 2009. Effects of gelatin and carboxy methylcellulose concentration and relative humidity on cassava-starch-based-film properties. IFT Annual Meeting and Food Expo. Anaheim, CA.
40. Kwok, K., L.J. **Mauer**, L.S. Taylor. 2009. Deliquescence of Pharmaceutical and Food ingredients: The Effect of Relative Humidity on the Chemical Stability of the Sucrose-citric acid System. Presented as a poster at the American Association of Pharmaceutical Scientists Annual Meeting, Los Angeles, CA, November 2009, Abstract W4031.
41. Kwok, K., L.J. **Mauer**, L.S. Taylor. 2009. Phase Behavior of Model Deliquescent Systems. Presented as a poster at the American Association of Pharmaceutical Scientists Annual Meeting, Los Angeles, CA, November 2009, Abstract W4303.
42. R. Davis, B.L. Reuhs, L.J. **Mauer**. 2010. Identification and classification of *E. coli* O157:H7 strains at serotype levels by Fourier transform infrared (FT-IR) spectroscopy techniques combined with multivariate analysis. IFT Annual Meeting and Food Expo. Chicago, IL.
43. A.J. Deering, B.L. Reuhs, L.J. **Mauer**. 2010. Comparison of detection limits for differentiation between live and dead *Escherichia coli* cells using FT-IR spectroscopy and quantitative PCR (qPCR). IFT Annual Meeting and Food Expo. Chicago, IL.
44. R. Davis, B.L. Reuhs, L.J. **Mauer**. 2010. Detection and quantification of live bacteria in the presence of dead bacteria in different food matrices using Fourier transform infrared spectroscopy (FT-IR). IFT Annual Meeting and Food Expo. Chicago, IL.
45. J.F. Lefort, L.J. **Mauer**, G. Sadler. 2010. An overwrap packaging model for extended food shelf-life on future NASA space missions. IFT Annual Meeting and Food Expo. Chicago, IL.

46. M. West, L.J. **Mauer**. 2010. Methods for determining the effects of moisture on stability of flavonoids and ascorbic acid in powder blends. IFT Annual Meeting and Food Expo. Chicago, IL.
47. N. Li, M.G. Ferruzzi, L.J. **Mauer**. 2010. Kinetic study of green tea catechin stability in simulated high relative humidity systems. IFT Annual Meeting and Food Expo. Chicago, IL.
48. L.S. Taylor, L.J. **Mauer**. 2010. Fundamentals, effects, and consequences of deliquescence in multicomponent food systems. IFT Annual Meeting and Food Expo. Chicago, IL.
49. R. Lipasek, N. Li, M. West, L.S. Taylor, L.J. **Mauer**. 2010. Effects of temperature on deliquescence and deliquescence lowering. IFT Annual Meeting and Food Expo. Chicago, IL.
50. R. Lipasek, L.S. Taylor, L.J. **Mauer**. 2010. The effects of anticaking agents, temperature, and relative humidity on the chemical and physical stability of powdered vitamin C. IFT Annual Meeting and Food Expo. Chicago, IL.
51. Wegiel L.A., **Mauer** L.J., Edgar K.J., Taylor L.S. 2010. Disruption of Molecular Self Assembly in Amorphous Solid Dispersions of Polyphenols. American Association of Pharmaceutical Scientists Annual Meeting, New Orleans, LA, 16 November, Abstract T3133.
52. Wegiel L.A., **Mauer** L.J., Taylor L.S. 2011. Evaluation of intermolecular interactions in solid dispersions of polyphenols. Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) Annual Meeting, Reno, NV, October.
53. L.J. **Mauer**, N. Li, R. Lipasek, M. West, L.S. Taylor. 2011. Water-solid interactions and implications for the stability of bioactive compounds. 42nd Meeting of the American Chemical Society (ACS) Central Region. Indianapolis, IN. June 8-10.
54. Zhao, Y., L. Wegiel, L.S. Taylor, L.S., **Mauer**, L.J. 2012. Effect of solid state formulation strategies on the stability of curcumin. 2012 International Hydrocolloids Conference. West Lafayette, IN.
55. Zhao, Y., L. Wegiel, L.S. Taylor, L.S., **Mauer**, L.J. 2012. Amorphous solid dispersion formulation effects on the chemical stability of curcumin. IFT Annual Meeting and Food Expo. Las Vegas, NV.
56. Lipasek, R., Taylor, L.S., **Mauer**, L.J. 2012. Effect of initial moisture content and temperature on the chemical stability of various forms of vitamin C. IFT Annual Meeting and Food Expo. Las Vegas, NV.
57. Li, N., Taylor L.S., **Mauer** L.J. 2012. Effects of temperature and relative humidity on the physical and chemical stability of amorphous (-)-epigallocatechin gallate. American Association of Pharmaceutical Scientists Annual Meeting, Chicago, IL.
58. Wegiel L.A., **Mauer** L.J., Taylor L.S. 2012. Curcumin Amorphous Solid Dispersions: The Role of Intra and Intermolecular Bonding on Physical Stability. American Association of Pharmaceutical Scientists Annual Meeting, Chicago, IL.
59. Wegiel L.A., **Mauer** L.J., Taylor L.S. 2012. Assessment of Molecular Drug-Polymer Interactions by Mid-Infrared Spectroscopy as a Polymer Selection Tool for Formulating Amorphous Solid Dispersions with Optimal Physical Stability. American Association of Pharmaceutical Scientists Annual Meeting, Chicago, IL.
60. Martua, M., R. Lipasek, L.J. **Mauer**. 2012. The Effects of Anticaking Agents, Relative Humidity, Temperature, and Initial Moisture Content on the Color Change and Chemical Degradation of Powdered Vitamin C. 2012 Annual Biomedical Research Conference for Minority Students (ABRCMS). San Jose, CA, Nov. 10.

e. Select Press Releases and News Reports Related to Research Activities since 2006

1. "Ask Martha: Shiny royal icing". 2007. Martha Stewart Living. December issue, p. 46-47.
2. "Corn, soy become cupcake wrappers". March. 25, 2009. United Press International. www.upi.com.
3. "Researcher: Lasers used to detect melamine in baby formula". By B. Wallheimer. May 2009. University News Service.

Examples of the media coverage:

- "Lasers detect melamine in baby formula". 2009. Purdue Alumnus July/August issue. p. 48.
 - "Detecting melamine in food" by A. Fischer. 2009. Photonics Spectra vol. 43(7): p.2. Technology section, www.photonics.com.
 - "Spectroscopic test for chemical killer" by P. Daukantas. 2009. Optics & Photonics News July/August issue. p. 8. www.opnmagazine-digital.com/opn
 - "Advance in detecting melamine-adulterated food" Article #1 for Immediate Release. American Chemical Society's Weekly PressPac -- May 13, 2009.
 - "Infrared spectroscopy detects melamine" by K. Nachay. July 2009. Food Technology p. 12.
 - "Rapid method for detecting melamine in infant formula" May 2009. Food Safety Watch. www.foodsafetywatch.com.
 - "A new test is quicker for finding tainted food" by H. Fountain. June 8, 2009. The New York Times (Science section).
4. "Vitamins stored in bathrooms, kitchens may become less effective" by B. Wallheimer. March 2, 2010. University News Service.

Examples of the media coverage:

- This was followed by more than 27,000 Google News Hits related to the vitamin C stability study published in the Journal of Agricultural and Food Chemistry, including major national and international news sources.
- "The two worst places to store vitamins: Exactly where you're keeping them" by J. Deardorff. March 2, 2010. Chicago Tribune.
- "Does your vitamin C live in the kitchen? You may want to relocate it" by J. Stein. March 3, 2010. Los Angeles Times.
- "The worst places to store vitamins". <http://www.aolhealth.com/2010/03/03/the-worst-places-to-store-vitamins/>
- "Do vitamin pills 'go off'?" March 4, 2010. <http://www.nhs.uk/news/2010/03March/Pages/Do-vitamin-pills-deteriorate.aspx>.
- "Vitamin pills are useless within a week of opening". March 4, 2010. Daily Mail. London.
- "Stored vitamins go off in a week". March 4, 2010. Metro. London.
- "Humidity degrades vitamins stored in bathrooms, kitchens". And "Keep the vitamins away from humidity". www.topnews.in
- "Vitamin pills may start to lose effects fast if kept in warm rooms". By L. Moss. March 4, 2010. The Scotsman.

- “Find a new home for vitamins”. By S. Wadyka. 2010. Martha Stewart Living September issue, p. 170.
5. “Agricultural research award goes to food scientist” by B. Wallheimer. May 10, 2010. University News Service.

4.1. Grants

1. Agency: Gates Foundation
 Title of Grant: Stimulating Regional Trade with Hermetic Storage for Cowpea in West and Central Africa
 Duration of Funding: 2007-2012

2. Agency: USDA/ CSREES Higher Education Food and Agricultural Sciences
 National Needs Graduate and Postgraduate Fellowship Grants Program
 Title of Grant: “Foods for Health”
 Duration of Funding: 2008-2013

3. Agency: USDA-NRI (75.0 Nanoscale Science and Engineering for Agriculture and Food Systems program)
 Title of Grant: Enhanced Delivery of Phytochemicals by Nanodispersion in Polysaccharide Matrices
 Duration of Funding: 2008-2012

4. Agency: USDA-AFRI (93430 Improving food quality and value)
 Title of Grant: Use of Non-Wheat Cereal Proteins as Functional Viscoelastic Polymers
 Duration of Funding: 2010-2012

5. Agency: USDA-ARS OSQR
 Title of Grant: Detection of foodborne pathogens
 Duration of Funding: 2011 – 2013

6. Agency: Nestlé (Vevey, Switzerland)
 Title of Grant: Water-solid interactions
 Duration of Funding: 2010-2012
