CURRICULUM VITAE

BRUCE R. HAMAKER
Distinguished Professor of Food Science

Department of Food Science and
Whistler Center for Carbohydrate Research
Purdue University
West Lafayette, Indiana 47907

Academic Record

Degree Received	Institution	Date
B.S., Biological Sciences	Indiana University, Bloomington	May 1977
M.S., Human Nutrition	Purdue University, West Lafayette	May 1983
Ph.D., Food Chemistry	Purdue University, West Lafayette	December 1986

Professional Experience

1/2014 – present	Distinguished Professor, Department of Food Science, Purdue University
2/2008 – present	Roy L. Whistler Chair, Department of Food Science, Purdue University, Affiliation: Whistler Center for Carbohydrate Research
7/2003 – present	Director, Whistler Center for Carbohydrate Research, Purdue University
9/1999 – present	Professor, Department of Food Science, Purdue University. Affiliations: Whistler Center for Carbohydrate Research, Center for Enhancing Foods to Protect Health
8/1993 - 8/1999	Associate Professor (tenured 1995), Department of Food Science, Purdue University. Affiliation: Whistler Center for Carbohydrate Research.
2/1992 - 8/1993	Visiting Associate Professor, Department of Food Science, Purdue University.
6/1988 - 1/1992	Assistant Professor, Department of Food Science, University of Arkansas.
9/1986 - 5/1988	Post-Doctoral Research Associate, Instituto de Investigación Nutricional/Johns Hopkins University, Lima, Perú.
1/1983 - 8/1986	Graduate Research Assistant, Department of Food Science, Purdue University.
1/1982 - 12/1982	Graduate Research Assistant, Department of Foods and Nutrition, Purdue University.
9/1977 - 12/1979	U.S. Peace Corps Volunteer, Liberia, West Africa.

Awards and Honors

- IFT Fellow, Institute of Food Technologists, 2014
- Distinguished Professor, Purdue University, 2013
- American Association of Cereal Chemists International, Alsberg-French-Schoch Award, 2013
- WK Kellogg International Food Security Award, Institute of Food Technologists, 2012

- Hall of Fame recognition, Foods and Nutrition Department , Purdue University, 2010
- Outstanding Graduate Educator, College of Agriculture, Purdue University, 2009-2010
- International Award, Institute of Food Technologists, 2008
- Faculty Award of Merit, Gamma Sigma Delta, Purdue Chapter, 2008
- Geddes Lecture Award, Northwest Section of the American Association of Cereal Chemists International, 2008
- Plenary Lecture, Starch 2008, Starch Section of the UK Royal Chemical Society, University of Nottingham, England
- Roy L. Whistler Chair Professor, 2008
- University Faculty Scholar, 2002-2007
- Agricultural Research Award recipient for 2000, School of Agriculture
- Member of 1998 winning Team Award for INTSORMIL project, School of Agriculture
- Outstanding Counselor for 1997, Department of Food Science
- Who is Who in Cereal Science and Technology listing, International Cereal Congress

Professional Leadership

- Member, National Academy of Sciences committee to evaluate genetically engineered crops, 2014-2015
- Member, American Association of Cereal Chemists International Board of Directors, 2011-2014
- Program Chair, 2011 Starch Roundtable held in Palm Springs, CA, October
- Chair, Carbohydrate Division of AACCI, 2009-2010
- Member of Scientific Advisory Panel of American Association of Cereal Chemists and Chairman of *ad hoc* Committee on the Annual Meeting, 2000-2008
- ESCOP Leadership Program, 2002-2003
- Associate Editor, *Cereal Chemistry*, 1997-2001
- Chairman of the Carbohydrate Division of the Institute of Food Technologists, 2000-2001.
- Member and past vice-chair of US AID-funded INTSORMIL CRSP Technical Committee, 1997-present
- Team leader for terminal evaluation of a 5 year UNDP/FAO project on corn processing, Changchun/Beijing, China, February 1998
- Chairman of Indiana Section of Institute of Food Technologists, 1993-1994

Memberships in Academic, Professional and Scholarly Societies

- Institute of Food Technologists
- American Association of Cereal Chemists
- American Chemical Society
- American Society of Nutrition
- Phi Tau Sigma (Honor Society for Food Science)
- Gamma Sigma Delta (Honor Society of Agriculture)

Research Publications

<u>Refereed Papers</u> (impact factors included from 2000)

1. Groziak, S., Kirksey, A. and Hamaker, B. 1984. Effect of maternal vitamin B-6 restriction on pyridoxal phosphate concentrations in developing regions of the central nervous system in rats. *J. Nutr*. 114:727-732.
2. Hamaker, B., Kirksey, A., Ekanayake, A. and Borschel, M. 1985. Analysis of B-6 vitamers in human milk by reverse-phase liquid chromatography. *Am. J. Clin. Nutr*. 42:650-655.
3. Graham, G.G., MacLean, W.C., Morales, E., Hamaker, B.R., Kirleis, A.W., Mertz, E.T. and Axtell, J.D. 1986. Digestibility and utilization of protein and energy from nasha, a traditional Sudanese fermented sorghum weaning food. *J. Nutr*. 116:978-984.
4. Hamaker, B.R., Kirleis, A.W., Mertz, E.T. and Axtell, J.D. 1986. Effect of cooking on in vitro digestibility of sorghum and maize. *J. Agric. Food Chem*. 34:647-649.
5. Hamaker, B.R., Kirleis, A.W., Butler, L.G., Axtell, J.D. and Mertz, E.T. 1987. Improving in vitro digestibility of sorghum with reducing agents. *Proc. Natl. Acad. Sci., USA*. 84:626-628.
6. Borschel, M., Kirksey, A. and Hamaker, B.R. 1987. A micromethod for determination of plasma pyridoxal phosphate and its use in assessment of storage stability of the vitamin. *J. Ped. Gastroent. Nutr.* 6:409-413.
7. Stuart*, M.A., Johnson, P.E., Hamaker, B. and Kirleis, A. 1987. Absorption of zinc and iron by rats fed meals containing sorghum food products. *J. Cereal Sci*. 6:81-90.
8. Hamaker, B.R., Kirksey, A. and Borschel, M.W. 1990. Diurnal distribution of B-6 vitamers in milk of PN-HCl supplemented mothers. *Am. J. Clin. Nutr.* 51:1062-1066.
9. Hamaker, B.R. and Griffin, V.K. 1990. Changing the viscoelastic properties of cooked rice through protein disruption. *Cereal Chem*. 67:261-264.
10. Hamaker, B.R., Griffin, V.K. and Moldenhauer, K.A.K. 1991. Potential influence of a starch granule-associated protein on cooked rice stickiness. *J. Food Sci*. 56:1327-1329.
11. Hamaker, B.R., Rivera, K., Morales, E., and Graham, G.G. 1991. Effect of dietary fiber and starch on fecal composition in pre-school children consuming maize, amaranth, or cassava flours. *J. Ped. Gastroent. Nutr.* 13:59-66.
12. Hamaker, B.R., Valles, C., Gilman*, R., and Hardmeier, R.M. 1992. Amino acid and fatty acid profiles of the Inca Peanut *(Plukenetia volubilis). Cereal Chem*. 69:461-463.
13. Mohammed, A.A., Hamaker, B.R. and Aboubacar, A. 1993. Effects of flour/water ratio and time of testing on sorghum porridge firmness as determined by a uniaxial compression test. *Cereal Chem*. 70:739-743.
14. Hamaker, B.R. and Griffin, V.K. 1993. Effect of disulfide bond-containing protein on rice starch gelatinization and pasting. *Cereal Chem*. 70:377-380.
15. Landers, P.S. and Hamaker, B.R. 1994. Antigenic properties of protein concentrates and albumin/globulin fractions from rice bran. *Cereal Chem*. 71:409-411.
16. Hamaker, B.R., Mertz, E.T., and Axtell, J.D. 1994. Effect of extrusion on sorghum kafirin solubility. *Cereal Chem*. 71:515-517.
17. Cavanaugh, K.J., Zehr, B.E., Nyquist, W.E., Hamaker, B.R., and Crane, P.L. 1995. Responses to selection for endosperm hardness and associated changes in agronomic traits after four cycles of recurrent selection in maize. *Crop Sci*. 35:745-748.
18. Moro, G.L., Lopes, M.A., Habben, J.E., Hamaker, B.R., and Larkins, B.A. 1995. Phenotypic effects of opaque2 modifer genes in normal maize endosperm. *Cereal Chem.* 72:94-99.
19. Hamaker, B.R., Mohamed, A.A., Habben, J.E., Huang, C.P., and Larkins, B.A. 1995. An efficient procedure for extracting maize and sorghum kernel proteins reveals higher prolamin contents than the conventional method. *Cereal Chem*. 72:583-588.
20. Oria, M.P., Hamaker, B.R., and Shull, J.M. 1995. Resistance of sorghum α-, ß-, and γ-kafirins to pepsin digestion. *J. Agric. Food Chem.* 43:2148-2153.

21. Oria, M.P., Hamaker, B.R., and Shull, J.M. 1995. In vitro protein digestibility of developing and mature sorghum grain in relation to α-, ß-, and γ-kafirin disulfide crosslinking. *J. Cereal Sci.* 22:85-93.
22. Habben, J.E., Moro, G.L., Hunter, B.G., Hamaker, B.R., and Larkins, B.A. 1995. Elongation factor 1α concentration is highly correlated with the lysine content of maize endosperm. *Proc. Natl. Acad. Sci. USA* 92:8640-8644.
23. Hamaker, B.R., Rivera, K., Morales, E. and Graham, G.G. 1995. Measurement of fecal carbohydrate in human metabolic balance studies: calculated versus determined. *Nutr. Res.* 15:1095-1098.
24. Zehr, B.E., Tragesser, G.F., Hamaker, B.R., Crane, P.L., and Bauman, L.F. 1995. Registration of H125 yellow-endosperm parental inbred line of maize. *Crop Sci.* 35:1242-1243.
25. Zehr, B.E., Tragesser, G.F., Hamaker, B.R., Crane, P.L., and Bauman, L.F. 1995. Registration of H126w white-endosperm parental inbred line of maize. *Crop Sci.* 35:1243-1244.
26. Zehr, B.E., Tragesser, G.F., Hamaker, B.R. 1995. Registration of HQPSSS and HQPSCB maize germplasm. *Crop Sci*. 35:1720.
27. Zehr, B.E., Tragesser, G.F., Hamaker, B.R., Grogan, J.E., and Scott, D.H. 1996. Registration of HWSA(FG)C1 and HWSB(FG)C1 white endosperm food-grade maize germplasm. *Crop Sci*. 36:213-214.
28. Zehr, B.E., Tragesser, G.F., Hamaker, B.R., Grogan, J.E., and Scott, D.H. 1996. Registration of HDSSS(FG)C1 and HDSCB(FG)C1 yellow endosperm food-grade maize endosperm. *Crop Sci.* 36:214.
29. Elkin, R.G., Freed, M.B., Hamaker, B.R., Zhang, Y., and Parsons, C.M. 1996. Condensed tannins are only partially responsible for variations in nutrient digestibilities of sorghum grain cultivars. *J. Agric. Food Chem*. 44:848-853.
30. Wehling, R.L., Jackson, D.S., and Hamaker, B.R. 1996. Prediction of corn dry-milling quality by near-infrared spectroscopy. *Cereal Chem*. 73:543-546.
31. Moro, G.L., Habben, J.R., Hamaker, B.R., and Larkins, B.A. 1996. Characterization of the variability in lysine content for normal and opaque2 maize endosperm. *Crop Sci*. 36:1651-1659.
32. Bryant, C.M. and Hamaker, B.R. 1997. Effect of lime on gelatinization of corn flour and starch. *Cereal Chem*. 74:171-175.
33. Sathe, S.K., Sze-Tao, K.W.C., Wolf, W.J., and Hamaker, B.R. 1997. Biochemical characterization and in vitro digestibility of the major globulin in cashew nut *(Anacardium occidentale). J. Agric. Food Chem.* 45:2854-2860.
34. Batterman-Azcona, S.J. and Hamaker, B.R. 1998. Changes occurring in protein body structure and α-zein during cornflake processing. *Cereal Chem*. 75:217-221.
35. Weaver, C.A., Hamaker, B.R., and Axtell, J.D. 1998. Discovery of grain sorghum germplasm with high uncooked and cooked in vitro protein digestibilities. *Cereal Chem*. 75:665-670.
36. Zhang, G. and Hamaker, B.R. 1998. Low α-amylase starch digestibility of cooked sorghum flours and the effect of protein. *Cereal Chem*. 75:710-713.
37. Rahmanifar, A. and Hamaker, B.R. 1998. Potential nutritional contribution of Quality Protein Maize in poor communities: A close-up on children's diets. *Ecol. Food Nutr.* 38:165-182.
38. Aboubacar, A. and Hamaker, B.R. 1999. Physicochemical properties of flours that relate to sorghum couscous quality. *Cereal Chem*. 76:308-313.
39. Zhang, G. and Hamaker, B.R. 1998. SDS-sulfite increases enzymatic hydrolysis of native sorghum starches. *Starch/Staerke* 51:21-25.

40. Batterman-Azcona, S.J., Lawton, J., and Hamaker, B.R. 1999. Effect of specific mechanical energy on protein bodies and α-zeins in corn flour extrudates. *Cereal Chem*. 76:316-320.
41. Batterman-Azcona, S.J., Lawton, J.W., and Hamaker B.R. 1999. Microstructural changes in zein proteins during extrusion. *Scanning* 21:212-216.
42. Oria, M.P., Hamaker, B.R., Axtell, J.D., and Huang, C.P. 2000. A highly digestible sorghum cultivar exhibits a unique folded structure of endosperm protein bodies. *Proceedings of the National Academy of Sciences USA* 97:5065-5070. (IF=9.771)
43. Aboubacar, A. and Hamaker, B.R. 2000. Branched soluble starch as a determinant of sorghum couscous stickiness. *Journal of Cereal Science* 31:119-126. (IF=2.655)
44. Huang, C.P., Hejlsoe-Kohsel, E., Han, X.Z., and Hamaker, B.R. 2000. Proteolytic activity in sorghum flour and its interference in protein analysis. *Cereal Chemistry* 77:343-344. (IF=1.422)
45. Han, X.Z. and Hamaker, B.R. 2000. Functional and microstructural aspects of soluble corn starch in pastes and gels. *Starch/Stärke* 2-3:76-80. (IF=1.261)
46. Bugusu, B.A., Campanella, O., and Hamaker, B.R. 2001. Improvement of sorghum-wheat composite dough rheological properties and breadmaking quality through zein addition. *Cereal Chemistry* 78:31-35. (IF=1.422)
47. Aboubacar, A., Axtell, J.D., Huang, C.P., and Hamaker, B.R. 2001. A rapid protein digestibility assay for identifying highly digestible sorghum lines. *Cereal Chemistry* 78:160-165. (IF=1.422)
48. Han, X.Z. and Hamaker, B.R. 2001. Amylopectin fine structure and rice starch paste breakdown. *Journal of Cereal Science* 34:279-284. (IF=2.655)
49. Bugusu, B.A., Rajwa, B., Hamaker, B.R. 2002. Interaction of maize zein with wheat in composite dough and bread as determined by confocal laser scanning microscopy. *Scanning* 24:1-5. (IF=1.333)
50. Han, X.Z., Campanella, O.H., Guan, H., Keeling, P.L., Hamaker, B.R. 2002. Influence of maize starch granule-associated protein on the rheological properties of starch pastes. Part I. Large deformation measurements of paste properties. *Carbohydrate Polymers* 49:323-330. (IF=3.463)
51. Han, X.Z., Campanella, O.H., Guan, H., Keeling, P.L., and Hamaker, B.R. 2002. Influence of maize starch granule-associated protein on the rheological properties of starch pastes. Part 2. Dynamic measurements of viscoelastic properties of starch pastes. *Carbohydrate Polymers* 49:315-321. (IF=3.463)
52. Han, X.Z. and Hamaker, B.R. 2002. Location of starch granule-associated proteins revealed by confocal laser scanning microscopy (Rapid Communication). *Journal of Cereal Science* 35:109-116. (IF=2.655)
53. Lin, Y.P., Aboubacar, A., Zehr, B.E., Hamaker, B.R. 2002. Corn dry-milled grit and flour fractions exhibit differences in amylopectin fine structure and gel texture. *Cereal Chemistry* 79:354-358. (IF=1.422)
54. Elkin, R.G., Arthur, E., Hamaker, B.R., Axtell, J.D., Douglas, M.W., Parsons, C.M. 2002. Nutritional value of a highly digestible sorghum cultivar for meat-type chickens. *Journal of Agricultural and Food Chemistry* 50:4146-4150. (IF=2.912)
55. Sathe, S. K., Hamaker, B. R., Sze-Tao, K. W. C., Venkatachalam, M. 2002. Isolation, purification, and biochemical characterization of a novel water soluble protein from Inca peanut *(Plukenetia volubilis L.). Journal of Agricultural and Food Chemistry* 50:4906-4908. (IF=2.912)
56. L.F. Dowling, Arndt, C., and Hamaker, B.R. 2002. Economic viability of high digestibility sorghum as feed for market broilers. *Agronomy Journal* 94:1050-1058. (IF=1.797)

57. Han, X.Z. and Hamaker, B.R. 2002. Association of starch granule proteins with starch ghosts and remnants revealed by confocal laser scanning microscopy. *Cereal Chemistry* 79:892-896. (IF=1.422)
58. Han, X.Z., Campanella, O.H., Mix, N.C., and Hamaker, B.R. 2002. Consequence of starch damage on rheological properties of maize starch pastes. *Cereal Chemistry* 79:897-901. (IF=1.422)
59. Hunter, B.G., Beatty, M.K., Singletary, G.W., Hamaker, B.R., Dilkes, B.P., Larkins, B.A., and Jung, R. 2002. Maize opaque endosperm mutations create extensive changes in patterns of gene expression. *Plant Cell* 14:2591-2612. (IF=9.396)
60. Han, X.Z. and Hamaker, B.R. 2002. Partial leaching of granule-associated proteins from rice starch during alkaline extraction and subsequent pasting. *Starch/Stärke* 54:454-460. (IF=1.261)
61. Zhang, G. and Hamaker, B.R. 2003. A three component interaction among starch, protein, and free fatty acids revealed by pasting profiles. *Journal of Agricultural and Food Chemistry* 51:2797-2800. (IF=2.912)
62. Zhang, G., Maladen, M.D., and Hamaker, B.R. 2003. Detection of a novel three component complex consisting of starch, protein, and free fatty acids. *Journal of Agricultural and Food Chemistry* 51:2801-2805. (IF=2.912)
63. Aboubacar, A., Axtell, J.D., Nduulu, L., and Hamaker, B.R. 2003. Turbidity assay for rapid and efficient identification of high protein digestibility sorghum lines. *Cereal Chemistry* 80:40-44. (IF=1.422)
64. Duodu, K.G., Taylor, J.R.N., Belton, P.S., and Hamaker, B.R. 2003. Factors affecting sorghum protein digestibility. *Journal of Cereal Science* 38:117-131. (IF=2.655)
65. Miklus, M.B., and Hamaker, B.R. 2003. Isolation and characterization of a soluble branched starch fraction from corn masa associated with adhesiveness. *Cereal Chemistry* 90:693-698. (IF=1.422)
66. Han, J-A., BeMiller, J.N., Hamaker, B.R., and Lim, S.T. 2003. Structural changes of debranched corn starch by aqueous heating and stirring. *Cereal Chemistry* 80:323-328. (IF=1.422)
67. Zhang, G. and Hamaker, B.R. 2004. Starch-free fatty acid complexation in the presence of whey protein. *Carbohydrate Polymers* 55:419-424. (IF=3.463)
68. Shin, S.I., Choi, H.J., Chung, K.M., Hamaker, B.R., Park, K.H., and Moon, T.W. 2004. Slowly digestible starch from debranched waxy sorghum starch: preparation and properties. *Cereal Chemistry* 81: 4041-408. (IF=1.422)
69. Zhang, P., Whistler, R.L., BeMiller, J.N., and Hamaker, B.R. 2005. Banana starch: production, physicochemical properties, and digestibility—a review. *Carbohydrate Polymers* 59:443-458. (IF=3.463)
70. Han, X.Z., Benmoussa, M., Gray, J.A., BeMiller, J.N. and Hamaker, B.R. 2005. Detection of proteins in starch granule channels. *Cereal Chemistry* 82:351-355. (IF=1.422)
71. Tandjung, A. S., Janaswamy, S., Chandrasekaran, R., Aboubacar, A., and Hamaker, B. R. 2005. Role of the pericarp cellulose matrix as a moisture barrier in microwaveable popcorn. *Biomacromolecules* 6:1654-1660. (IF=5.327)
72. Lee, S.H., Benmoussa, M., Sathe, S.K., Roux, K.H., Teuber, S.S. and Hamaker, B.R. 2005. A 50 kDA maize γ-zein has marked cross-reactivity with the almond major protein. *Journal of Agricultural and Food Chemistry* 53:7965-7970. (IF=2.912)
73. Zhang, G. and Hamaker, B.R. 2005. Sorghum (*Sorghum bicolor* L. Moench) flour pasting properties influenced by free fatty acids and protein. *Cereal Chemistry* 82:534-540. (IF=1.422)
74. Tesso, T., Ejeta, G., Chandrashekar, A., Huang, C.P., Tandjung, A., Lewamy, M., Axtell, J.D., and Hamaker, B.R. 2006. A novel modified endosperm texture in a mutant high

protein digestibility/high-lysine grain sorghum [*Sorghum bicolor* (L.) Moench]. *Cereal Chemistry* 83:194-201. (IF=1.422)

75. Aboubacar, A., Moldenhauer, K.A.K., McClung, A.M., Beighley, D.H., and Hamaker, B.R. 2006. Effect of growth location in the US on amylose content, amylopectin fine structure and thermal properties of starches of long grain rice cultivars. *Cereal Chemistry* 83:93-98. (IF=1.422)
76. Aboubacar, A., Yacizi, N., and Hamaker, B.R. 2006. Extent of decortication and quality of flour, couscous and porridge made from different sorghum cultivars. *International Journal of Food Science & Technology* 41:698-703. (IF=1.223)
77. Benmoussa, M., Suhendra, B., Aboubacar, A. and Hamaker, B.R. 2006. Distinctive sorghum granule morphologies appear to improve raw starch digestibility. *Starch/Stärke* 58:92-99. (IF=1.261)
78. Han, X-Z., Ao, S., Janaswamy, S., Jane, J-L., Chandrasekaran, R. and Hamaker, B.R. 2006. Development of a low glycemic maize starch: preparation and characterization. *Biomacromolecules* 7:1162-1168. (IF=5.327)
79. Zhang, G., Ao, Z. and Hamaker, B.R. 2006. Slow digestion property of native cereal starches. *Biomacromolecules* 7:3252-3258. (IF=5.327)
80. Zhang, G., Venkatachalam, M. and Hamaker, B.R. 2006. Structural basis for the slow digestion property of native cereal starches. *Biomacromolecules* 7:3259-3266. (IF=5.327)
81. Lee, S-H. and Hamaker, B.R. 2006. Cys 155 of 27 kDa maize γ-zein is a key amino acid to improve its in vitro digestibility. *FEBS Letters* 580:5803-5806. (IF=3.601)
82. Nyannor, E.K.D., Adedokun, S.A., Hamaker, B.R., Ejeta, G. and Adeola, O. 2007 Nutritional evaluation of high-digestible sorghum for pigs and broiler chicks. *Journal of Animal Science* 85:196-203. (IF=2.580)
83. Rose, D.J., Demeo, M.T., Kesavarzian, A. and Hamaker, B.R. 2007. Influence of dietary fiber on inflammatory bowel disease and colon cancer, and the importance of its fermentation pattern (lead article). *Nutrition Reviews* 65:51-62. (IF=4.077)
84. Benmoussa, M., Moldenhauer, K.A.K. and Hamaker, B.R. 2007. Rice amylopectin fine structure variability affects starch digestion properties. *Journal of Agricultural and Food Chemistry* 55:1475-1479. (IF=2.912)
85. Kean, E.G., Ejeta, G., Hamaker, B. and Ferruzzi, M.G. 2007. Characterization of carotenoid pigments in mature and developing kernels of select yellow endosperm sorghum varieties. *Journal of Agricultural and Food Chemistry* 55:2619 - 2626. (IF=2.912)
86. Mejia, C.D., Mauer, L.J. and Hamaker, B.R. 2007. Similarities and differences in secondary structure of viscoelastic polymers of maize α-zein and wheat gluten proteins. *Journal of Cereal Science* 45:353-359. (IF=2.655)
87. Ao, Z., Simsek, S., Zhang, G., Venkatachalam, M., Reuhs, B.L., and Hamaker, B.R. 2007. Starch with slow digestion property produced by altering its chain-length, branch density and crystalline structure. *Journal of Agricultural and Food Chemistry* 55:4540-4547. (IF=2.912)
88. Ao, Z. Quezada-Calvillo, R., Sim, L., Nichols, B.L., Rose, D.R., Sterchi, E.E., and Hamaker, B.R. 2007. Evidence of native starch degradation with human small intestinal maltase-glucoamylase (recombinant). *FEBS Letters* 581:2381-2388. (IF=3.601)
89. Quezada-Calvillo, R., Robayo-Torres, C. C., Ao, Z., Hamaker, B. R., Quaroni, A., Brayer, G. D., Sterchi, E. E., Baker, S. S., and Nichols B. L. 2007. Lumenal substrate "brake" on mucosal maltase-glucoamylase activity regulates total rate of starch digestion to glucose. *Journal of Pediatric Gastroenterologyand Nutrition* 45:32-43. (IF=2.180)
90. Quezada-Calvillo, R., Robayo-Torres, C.C., Opekun, A.R., Sen, P., Ao, Z., Hamaker, B.R., Quaroni, A., Brayer, G.D., Wattler, S., Nehls, M.C., Sterchi, E.E., and Nichols, B.L.

2007. Contributions of mucosal maltase-glucoamylase activities to mouse small intestinal starch alpha–glucogenesis. *Journal of Nutrition* 137:1725-1733. (IF=4.295)

91. Quezada-Calvillo, R., Sim, L., Ao, Z., Hamaker, B.R., Quaroni, A., Brayer, G.D., Sterchi, E.E., Robayo-Torres, C.C., Rose, D.R., Nichols, B.L. 2008. Localization of luminal starch substrate ”brake” on maltase-glucoamylase activity within the glucoamylase subunit. *Journal of Nutrition* 138:685-692. (IF=4.295)
92. Zhang, G., Ao, Z., and Hamaker, B.R. 2008. Nutritional property of endosperm starches from maize mutants: a parabolic relationship between slowly digestible starch content and amylopectin fine structure. *Journal of Agricultural and Food Chemistry* 56:4686-4694. (IF=2.912)
93. Zhang, G., Maghaydah, S., Ao, Z., and Hamaker, B.R. 2008. Slowly digestible state of starch: mechanism of slow digestion property of gelatinized starch. *Journal of Agricultural and Food Chemistry* 56:4695-4702. (IF=2.912)
94. Bultosa, G., Hamaker, B.R., and BeMiller, J.N. 2008. An SEC-MALLS study of molecular features of water-soluble amylopectin and amylose of Tef [Eragrostis tef (Zucc.) Trotter] starches. *Starch/Stärke*. 60:8-22. (IF=1.261)
95. Holding, D.R., Hunter, B.G., Chung, T., Gibbon, B.C., Ford, C.F., Bharti, A.K., Messing, J., Hamaker, B.R., and Larkins, B.A. 2008. Genetic analysis of *opaque2* modifer loci in quality protein maize. *Theoretical and Applied Genetics* 117:157–170. (IF=3.264)
96. Tesso, T., Hamaker, B.R., and Ejeta, G. 2008. Sorghum protein digestibility is affected by dosage of mutant alleles in endosperm cells. *Plant Breeding* 127:579-586. (IF=1.391)
97. Kean, E., Hamaker, B., and Ferruzzi, M. 2008. Carotenoid bioaccessibility from whole grain and degermed maize meal products. *Journal of Agricultural and Food Chemistry* 56:9918-9926. (IF=2.912)
98. Groth, D.J., Santini, J., Hamaker, B., and Weil, C.F. 2008. High-throughput screening of EMS mutagenized maize for altered starch digestibility. *BioEnergy Research* 1:118-135. (IF=4.019)
99. Liu, J., Fei, L., Maladen, M., Hamaker, B.R., and Zhang, G. 2009. Iodine binding property of a ternary complex consisting of starch, protein, and free fatty acids. *Carbohydrate Polymers* 75:351-355. (IF=3.463)
100. Rose, D.J., Keshavarzian, A., Patterson, J.A., Venkatachalam, M., Gillevet, P., and Hamaker, B.R. 2009. Starch-entrapped microspheres extend in vitro fecal fermentation, increases butyrate production, and influences microbiota pattern. *Molecular Nutrition & Food Research* 53:121-130. (IF=4.713)
101. Pai, D.A., Blake, O.A., Hamaker, B.R., and Campanella, O.H. 2009. Importance of extensional rheological properties on fiber-enriched corn extrudates. *Journal of Cereal Science* 50:227-234. (IF=2.655)
102. Nichols, B.L., Quezada-Calvillo, R., Robayo-Torres, C.C., Ao, Z., Hamaker, B.R., Butte, N.F., Marini, J., Jahoor, F., and Sterchi, E.E. 2009. Mucosal maltase-glucoamylase plays a crucial role in starch digestion and prandial glucose homeostasis of mice. *Journal of Nutrition* 139:684-690. (IF=4.295)
103. Matalanis, A.M., Campanella, O.H., and Hamaker, B.R. 2009. Storage retrogradation behavior of sorghum, maize and rice starch pastes related to amylopectin fine structure. *Journal of Cereal Science* 50:74-81. (IF=2.655).
104. Sands, A.L., Leidy, H.J., Hamaker, B.R., Maguire, P., and Campbell, W.W. 2009. Consumption of the slow-digesting waxy maize starch leads to blunted plasma glucose and insulin response but does not influence energy expenditure or appetite in humans. *Nutrition Research* 29:383-390 (IF=2.092).
105. Venkatachalam, M., Kushnick, M.R., Zhang, G., and Hamaker, B.R. 2009. Biopolymer-entrapped starches as a novel approach to vary blood glucose profiles. *Journal of the American College of Nutrition* 28:583-590. (IF=1.950)

106. Zhang, G. and Hamaker, B.R. 2009. Slowly digestible starch: concept, mechanism a proposed extended glycemic index. *Critical Reviews in Food Science and Nutrition* 49:852-867. (IF=4.510)
107. Rose, D.J., Venema, K., Keshavarzian, A., and Hamaker, B.R. 2010. Starch-entrapped microspheres show a beneficial fermentation profile and decrease in potentially harmful bacteria during in vitro fermentation in fecal microbiota obtained from patients with inflammatory bowel disease. *British Journal of Nutrition* 103:1514-1524. (IF=3.072)
108. Rose, D.J., Patterson, J.A., and Hamaker, B.R. 2010. Structural differences among alkali-soluble arabinoxylans from maize (Zea mays), rice (Oryza sativa), and wheat (Triticum aestivum) brans influence human fecal fermentation profiles. *Journal of Agricultural and Food Chemistry* 58:493–499. (IF=2.912)
109. Zhang, G. and Hamaker, B.R. 2010. Cereal carbohydrates and colon health. *Cereal Chemistry* 87:331-341. (IF=1.422)
110. Benmoussa, M., Hamaker, B.R., Huang, C.P., Sherman, D.M., Weil, C.F., and BeMiller, J.N. 2010. Elucidation of maize endosperm starch granule channel proteins and evidence for plastoskeletal structures in maize endosperm amyloplasts. *Journal of Cereal Science* 52:22-29. (IF=2.655)
111. Zhang, G., Maladen, M., Campanella, O.H., and Hamaker, B.R. 2010. Free fatty acids electronically bridge the self-assembly of a three-component nanocomplex consisting of amylose, protein, and free fatty acids. *Journal of Agricultural and Food Chemistry* 58:9164-9170. (IF=2.912)
112. Kale, M.S., Pai, D.A., Hamaker, B.R., Campanella, O.H. 2010. Structure-function relationships for corn bran arabinoxylans. *Journal of Cereal Science* 52:368-372. (IF=2.655)
113. Klein, M.I., DeBaz, L., Agidi, S., Lee, H., Xie, G., Lin, A.H.M., Hamaker, B.R., Lemos, J.A., and Koo, H. 2010. Dynamics of *Streptococcus mutans* transcriptome in response to starch and sucrose during biofilm development. *PLoS One* 5: e13478. (IF=3.234)
114. McCrory, M.A., Hamaker, B.R., Lovejoy, J.C., and Eichelsdoerfer, P.E. 2010. Pulse consumption, satiety and weight management. *Advances in Nutrition* 1:17-30. (IF=4.3)
115. Gonzalez, D.C., Khalef, N., Wright, K., Okos, M.R., Hamaker, B.R., and Campanella, O.H. 2010. Physical aging of processed fragmented biopolymers. *Journal of Food Engineering* 100:187-193. (IF=2.168)
116. Mirmonsef, P., Gilbert, D., Zariffard, M.R., Hamaker, B.R., Kaur, A., Landay, A.L., Spear. G.T. 2010. The effects of commensal bacteria on innate immune responses in the female genital tract. *American Journal of Reproductive Immunology* 65:190-195. (IF=2.451)
117. Shah, A., Zhang, G., Hamaker, B.R., and Campanella, O.H. 2011. Rheological properties of a soluble nanoscale self-assembled complex from starch, protein and free fatty acids. *Journal of Food Engineering* 105:444-452. (IF=2.168)
118. Moussa, M., Qin, X., Chen, L.F., Campanella, O.H., and Hamaker, B.R. 2011. High quality instant sorghum porridge flours for the West African market using continuous processor cooking. *International Journal of Food Science and Technology* 46:2344-2350. (IF=1.223)
119. Kaur, A., Rose, D.J., Rumpagaporn, P., Patterson, J.A., and Hamaker, B.R. 2011. In vitro batch fecal fermentation comparison of gas and short-chain fatty acid production by “slowly fermentable” dietary fibers. *Journal of Food Science* 76:H137-H142. (IF=1.733)
120. Espinosa-Solis, V., Sanchez-Ambriz, S.L., Hamaker, B.R., Bello-Pérez, L.A. 2011. Fine structural characteristics related to digestion properties of acid-treated fruit starches. *Starch* 63:717-727. (IF=1.261)
121. Benmoussa, M. and Hamaker, B.R. 2011. Rapid small-scale starch isolation using a combination of ultrasonic sonication and sucrose density separation. *Starch* 63:333-339. (IF=1.261)

122. Kean, E.G., Bordenave, N., Ejeta, G., Hamaker, B.R., and Ferruzzi, M.G. 2011. Carotenoid bioaccessibility from whole grain and decorticated yellow endosperm sorghum porridge. *Journal of Cereal Science* 54:450-459. (IF=2.665)
123. Mufumbo, R., Baguma, Y., Kashub, S., Nuwamanya, E., Rubaihayo, P., Mukasa, S., Hamaker, B., and Kyamanywa, S. 2011. Amylopectin molecular structure and functional properties of starch from three Ugandan cassava varieties. *Journal of Plant Breeding and Plant Science* 3:195-202.
124. Mufumbo, R., Baguma, Y., Kashub, S., Nuwamanya, E., Rubaihayo, P., Mukasa, S., Hamaker, B., and Kyamanywa, S. 2011. Functional properties of starches on the East African market. *African Journal of Food Science* 5:594-602.
125. Rumpagaporn, P., Kaur, A., Campanella, O.H., Patterson, J.A., and Hamaker, J.A. 2012. Heat and pH stability of alkali-extractable corn arabinoxylan and its xylanase-hydrolyzate and their viscosity behavior. *Journal of Food Science* 77:H23-H30. (IF=1.733)
126. Zhang, P. and Hamaker, B.R. 2012. Banana starch and its digestibility. *Carbohydrate Polymers* 87:1552-1558. (IF=3.463)
127. Mejia, C.D., Gonzalez, D.C., Mauer, L.J., Campanella, O.H., and Hamaker, B.R. 2012. Increasing and stabilizing β-sheet structure of maize zein causes improvement in its rheological properties. *Journal of Agricultural and Food Chemistry* 60:2316-2321. (IF=2.912)
128. Erickson, D.P., Campanella, O.H., and Hamaker, B.R. 2012. Functionalizing maize zein in viscoelastic dough systems through fibrous, β-sheet-rich protein networks: An alternative, physicochemical approach to gluten-free breadmaking. *Trends in Food Science and Technology* 24:74-81. (IF=3.710)
129. Fevzioglu, M., Hamaker, B.R., and Campanella, O.H. 2012. Gliadin and zein show similar and improved rheological behavior when mixed with high molecular weight glutenin. *Journal of Cereal Science* 55:265-271. (IF=2.665)
130. Casarrubias-Castillo, M.G., Hamaker, B.R., Rodriguez-Ambriz, S.L., Bello-Pérez, L.A. 2012. Physicochemical, structural, and digestibility properties of enzymatic modified plantain and mango starches. *Starch* 64:304-312. (IF=1.261)
131. Lin, A.H.M., Nichols, B.L., Ao, Z., Quezada-Calvillo, R., Avery, S.E., Sim, L., Rose, D.R., Naim, H.Y., and Hamaker, B.R. 2012. Unexpected high digestion rate of cooked starch by the ct-maltase-glucoamylase small intestinal mucosal α-glucosidase subunit. *PLoS ONE* 7(5): e35473. doi:10.1371/journal.pone.0035473. (IF=3.234)
132. Goodall, M.A., Campanella, O.H., Ejeta, G., and Hamaker, B.R. 2012. Grain of high digestible, high lysine (HDHL) sorghum contains kafirins which enhance the protein network of composite dough and bread. *Journal of Cereal Science* 56:352-357 (IF=2.665)
133. Ferruzzi, M.G., Bordenave, N., and Hamaker, B.R. 2012. Does flavor impact function? Potential consequences of polyphenol-protein interactions in delivery and bioactivity of flavan-3-ols from foods*. Physiology & Behavior* 107:591-597. (IF=2.891)
134. Lee, B.H., Eskandari, R., Jones, K., Reddy, R.K., Nichols, B.L., Rose, D.R., Hamaker, B.R.*, Pinto, B.M.* 2012. Modulation of starch digestion for slow glucose release through "toggling" of activities of mucosal α-glucosidases. *Journal of Biological Chemistry* 287:36917-36921. (* indicates co-corresponding authors) (IF=4.651)
135. Lin, A. H-M., Nichols, B.L., Quezada-Calvillo, R., Rose, D.R., Hamaker, B.R. 2012. Starch source influences dietary glucose generation at the mucosal α-glucosidase level. *Journal of Biological Chemistry* 287:36917-36921. (IF=4.651)
136. Ao, Z., Quezada-Calvillo, R., Nichols, B.L., Rose, D.R., Sterchi, E.E., Hamaker, B.R. 2012. *Journal of Pediatric Gastroenterology and Nutrition* 55:S42-43.
137. Lin, A.H.M., Hamaker, B.R., Nichols, B.L. 2012. Direct starch digestion by sucrase-isomaltase and maltase-glucoamylase. *Journal of Pediatric Gastroenterology and Nutrition* 55:S43-S45.

138. Lee, B.H., Quezada-Calvillo, R., Nichols, B.L., Rose, D.R., Hamaker, B.R. 2012. Inhibition of maltase-glucoamylase activity to hydrolyze α-1,4 linkages by the presence of undigested sucrose. *Journal of Pediatric Gastroenterology and Nutrition* 55:S45-S47.
139. Hamaker, B.R., Lee, B.H., Quezada-Calvillo, R. 2012. Starch digestion and patients with congenital sucrase-isomaltase deficiency. *Journal of Pediatric Gastroenterology and Nutrition* 55:S45-S47.
140. Ie, P.S., Petros, D., Stinner, D.H., Phelan, P.L., Hamaker, B., Koelling, K.W., Vodovotz, Y. 2012. Comparison of the gelatinization behavior of organic and conventional spelt starches assessed by thermal and rheological analyses. *Journal of Agricultural and Food Chemistry* 60:9229-9235. (IF=2.912)
141. Yang, Y., Campanella, O.H., Hamaker, B.R., Zhang, G., Gu*, Z. 2013. Rheological investigation of alginate chain interactions induced by concentrating calcium cations. *Food Hydrocolloids* 30:26-32. (IF=3.473)
142. Kale, M.S., Hamaker, B.R., Campanella*, O.H. 2013. Alkaline extraction conditions determine gelling properties of corn bran arabinoxylans. *Food Hydrocolloids* 31:121-126. (IF=3.473)
143. Lee, B.H., Yan, L., Phillips, R.J., Reuhs, B.L., Jones, K., Rose, D.R., Nichols, B.L., Quezada-Calvillo, R., Yoo, S.H., Hamaker*, B.R. 2013. Enzyme-synthesized highly branched maltodextrins have slow glucose generation at the mucosal α-glucosidase level and are slowly digestible in vivo. *PLoS ONE* 8(4):e59745; doi:10.1371/journal.pone.0059745. (IF=3.234)
144. Diaz-Sotomayor, M., Quezada-Calvillo, R., Avery, S.E., Chacko, S.K., Yan, L., Lin, H.M., Ao, Z., Hamaker, B.R., and Nichols*, B. 2013. Sucrase-isomaltase dominates mucosal maltase activity and early rate of ad libitum starch digestion. *Journal of Pediatric Gastroenterology and Nutrition* 57:704-712. (IF=2.298)
145. Lee, B.H., Bello-Pérez, L.A., Lin, A.H.M., Kim, C.Y., Hamaker, B.R. 2013. Importance of location of digestion and colonic fermentation of starch related to its quality. *Cereal Chemistry* 90:335-343. (IF=1.251)
146. Shen, X., Bertoft, E., Zhang, G., Hamaker*, B.R. 2013. Iodine binding to explore the conformational state of internal chains of amylopectin. *Carbohydrate Polymers* 98:778-783. (IF=3.628)
147. Dhital, S., Lin*, A.H.M., Hamaker, B.R., Gidley, M.J., Muniandy, A. 2013. Mammalian mucosal α-glucosidases coordinate with α-amylase in the initial starch hydrolysis stage to have a role in starch digestion beyond glucogenesis. *PLoS ONE* DOI: 10.1371/journal.pone.0062546. (IF=3.234)
148. Dimerkesen, I., Campanella, O., Sumnu, G., Sahin, S., Hamaker, B.R. 2014. A study on staling characteristics of gluten-free breads prepared with chestnut and rice flours. *Food and Bioprocess Technology* DOI 10.1007/s11947-013-1099-3. (IF=3.126)
149. Cheng, M.W., Chegeni, M., Kim, K.H., Zhang, G., Benmoussa, M., Quezada-Calvillo, R., Nichols, B.L., Hamaker, B.R. 2104. Different sucrase-isomaltase response of Caco-2 cells to glucose and maltose suggests dietary maltose sensing. *Journal of Clinical Biochemistry and Nutrition* 54:55-60. (IF=2.294)
150. Bordenave, N., Hamaker, B.R., Ferruzzi, M.G. 2014. Nature and consequences of non-covalent interactions between flavonoids and macronutrients in foods. *Food & Function* 5:18-34. (IF=2.907)
151. Lee, B.H., Lin, A.H.M., Nichols, B.L., Jones, K., Rose, D.R., Quezada-Calvillo, R., Hamaker, B.R. 2014. The mucosal C-terminal maltase-glucoamylase quickly digests large maltooligosaccharides that may contribute to rapid postprandial glucose generation and the high glycemic spike. *Molecular Nutrition and Food Research*, 58:1111-1121. (IF=4.909)

152. Kittisuban, P. Lee, B.H., Suphantharika, M., Hamaker, B.R. 2014. Slow glucose release property of enzyme-synthesized highly branched maltodextrins differs among starch sources. *Carbohydrate Polymers* 107:182-191. (IF=3.916)
153. Lin, A.H.M., Ao, Z., Quezada-Calvillo, R., Nichols, B.L., Lin, C.T., Hamaker. B.R. 2014. Branch pattern of starch internal structure influences the glucogenesis by mucosal Nt-maltase-glucoamylase. *Carbohydrate Polymers* 111:33-40. (IF=3.916)
154. Spear, G.T., French, A.L., Gilbert, D., Zariffard, M.R., Mirmonsef, P., Sullivan, T.H., Spear, W.W., Landay, A., Micci, S., Lee, B.H., Hamaker, B.H. 2014. Human α-amylase present in lower genital tract mucosal fluid processes glycogen to support vaginal colonization by *Lactobacillus. Journal of Infectious Diseases* 210:1019-1028. (IF=5.778)
155. Erickson, D.P., Renzetti, S., Jurgens, A., Campanella, O.H., Hamaker, B.R. 2014. Modulating state transition and mechanical properties of viscoelastic resins from maize zein through interactions with plasticizers and co-proteins. *Journal of Cereal Science* 60:576-583. (IF=1.943)
156. Hamaker, B.R., Tuncil, Y.E. 2014. A perspective on the complexity of dietary fiber structures and their potential effect on the gut microbiota. *Journal of Molecular Biology* 426:3838-3850. (IF=3.959)
157. Cameron, E.A., Kwiatkowski, K.J., Lee, B.H., Hamaker, B.R., Koropatkin, N., Martens, E. 2014. Multi-functional nutrient binding proteins adapt human symbiotic bacteria for glycan competition in the gut by separately promoting enhanced sensing and catalysis. *mBio*, 81:3973-3983. (IF=6.875)
158. Rosa-Millan, J., Lin, A.H.M., Osorio-Díaz, P., Agama-Acevedo, E., Hamaker, B.R., Bello-Perez, L.A. 2014. Influence of annealing flours from raw and pre-cooked plantain fruit on cooked starch digestion rates. *Starch* 67:139-146. (IF=1.677)
159. Bello-Perez, L.A., Flores-Silva, P.C., Utrilla-Coello, R.G., Agama-Acevedo, E., Hamaker, B.R. 2015. In vitro starch digestibility of gluten-free spaghetti based on maize, chickpea and unripe plantain flours. *Cereal Chemistry*, 92:171-176. (IF=1.231)
160. Lamothe, L.M., Srichuwong, S., Reuhs, B.L., Hamaker, B.R. 2015. Quinoa (Chenopodium quinoa W.) and amaranth (Amaranthus caudatus L.) provide dietary fibers high in pectic substances and xyloglucans. *Food Chemistry* 167:490-496. (IF=3.391)
161. Zhang, G., Hasek, L.Y., Lee, B-H., Hamaker, B.R. 2015. Gut feedback mechanisms and food intake: a physiological approach to slow carbohydrate bioavailability. *Food & Function*, 6:1072-1089. (IF=2.791)
162. Chun, A., Lee, H-J., Hamaker, B.R, Janaswamy, S. 2015. Effects of ripening temperature on starch structure and gelatinization, pasting, and cooking properties in rice (*Oryza sativa*). *Journal of Agricultural and Food Chemistry* 63:3085-3093. (IF=2.912)
163. Rumpagaporn, P., Reuh, B.L., Kaur, A., Patterson, J.A., Keshavarzian, A., Hamaker, B.R. 2015. Structural features of soluble cereal arabinoxylan fibers associated with a slow rate of in vitro fermentation by human fecal microbiota. *Carbohydrate Polymers* 130:191-197. (IF=4.074)
164. Simsek, M., Quezada-Calvillo, R., Ferruzi, M.G., Nichols, B.L., Hamaker, B.R. 2015. Dietary phenolic compounds selectively inhibit the individual subunits of maltase-glucoamylase and sucrase-isomaltase with the potential of modulating glucose release. *Journal of Agricultural and Food Chemistry* 63:3873–3879. (IF=2.912)
165. Bhopatkar, D., Feng, T., Chen, F., Zhang, G., Carignano, M., Park, S.H., Zhuang, H., Campanella, O.H., Hamaker, B.R. 2015. A self-assembled nanoparticle of common food constituents that carries a sparingly soluble small molecule. *Journal of Agricultural and Food Chemistry*, 63:4312-4319. (IF=2.912)
166. Porto, B.C., Augusto, P.E.D., Terekhov, A., Hamaker, B.R., Cristianini, M. 2015. Effect of dynamic high pressure on technological properties of cashew tree gum (*Anacardium occidentale* L.). *Carbohydrate Polymers*, 129:187-193. (IF=4.074)

167. Lee, B.H., Koh, D.W.,Territo, P.R., Park, C.S., Hamaker, B.R., Yoo, S.H. 2015. Enzymatic synthesis of 2-deoxyglucose-containing maltooligosaccharides for tracing the location of glucose absorption from starch digestion. *Carbohydrate Polymers*, 132:41-49. (IF=4.074)
168. Zhang, C., Yin, A., Li, H., Wang, R., Wu, G., Shen, J., Zhang, M., Wang, L., Houb, Y., Ouyang, H., Zhang, Y., Zheng, Y., Wang, J., Lv, X., Wang, Y., Zhang, F., Zeng, B., Li, W., Yan, F., Zhao, Y., Pang, X., Zhang, X., Fu, H., Chen, F., Zhao, N., Hamaker, B.R., Bridgewater, L.C., Weinkove, D., Clement, K., Dore, J., Holmes, E., Xiao, H., Zhao, G., Yang, S., Bork, P., Nicholson, J.K., Wei, H., Tang, H., Zhang, X., Zhao, L., 2015. Dietary modulation of gut microbiota contributes to alleviation of both genetic and simple obesity in children. *EBioMedicine*, 2:968-984. (new journal formed by Cell and Lancet)
169. Spear, G.T., McKenna, M., Landay, A.L., Makinde, H., Hamaker, B., French, A.L., Lee, B.H. 2015. Effect of pH on cleavage of glycogen by vaginal enzymes. *PLoS ONE 10:e0132646.* (IF=3.234)
170. Peng, S., Xue, L., Leng, X., Yang, R., Zhang, G., Hamaker, B.R. 2015. Slow digestion property of octenyl succinic anhydride modified waxy maize starch in the presence of tea polyphenols. *Journal of Agricultural and Food Chemistry* 63:2810-2819. (IF=2.912)
171. Huang, C., Miao, M., Janaswamy, S., Hamaker, B.R., Li, X., Jiang, B. 2015. Polysaccharide modification through green technology: role of endodextranase in improving the physicochemical properties of (1→3)(1→6)-α-D-glucan. *Journal of Agricultural and Food Chemistry* 63:6450-6456. (IF=2.912)
172. Benmoussa, M., Chandrashekar, A., Ejeta, G., Hamaker, B.R. 2015. Cellular response to the high protein digestibility/high-lysine (*hdhl*) sorghum mutation. *Plant Science* 241:70-77. (IF= 3.607)
173. Hutkins, R.W., Krumbeck, J.A., Bindels, L.B., Cani, P.D., Fahey, G., Goh, Y.J., Hamaker, B., Martens, E.C., Mills, D.A., Rastal, R.A., Vaughan, E., Sanders, M.E. 2016. Prebiotics: why definitions matter. *Current Opinion in Biotechnology*. 37:1-7. (IF=7.117)
174. Taylor, J.R.N., Taylor, J., Campanella, O.H., Hamaker, B.R. 2016. Functionality of the storage proteins in gluten-free cereals and pseudocereals in dough systems. *Journal of Cereal Science* 67:22-34. (IF=2.094)
175. Delcour, J.A., Aman, P., Courtin, C.M., Hamaker, B.R., Verbeke, K. 2016. On prebiotics, fermentable dietary fiber and health claims. *Advances in Nutrition* 7:1-4. (IF=5.386)
176. Zhang, G., Hamaker, B.R. The nutritional property of endosperm starch and its contribution to health benefits of whole grain foods. *Critical Reviews in Food Science and Nutrition* DOI:10.1080/10408398.2015.1130685. (IF=5.548)
177. Bertoft, E., Annor, G.A., Shen, X., Rumpagaporn, P., Seetharaman, K., Hamaker, B.R. 2016. Small differences in amylopectin fine structure may explain large functional differences of starch. *Carbohydrate Polymers* 140:113-121. (IF=4.074)
178. Nichols, B.L., Diaz-Sotomayor, M., Avery, S.E., Chacko, S.K., Hadsell, D.L., Baker, S.S., Hamaker, B.R., Yan, L., Lin, H.M., Quezada-Calvillo, R. 2016. Milk glucosidase activity enables suckled pup starch digestion. *Molecular and Cellular Pediatrics* DOI: 10.1186/s40348-016-0032-z.
179. Sorndech, W., Sagnelli, D., Meier, S., Janssond, A.M., Lee, B.H., Hamaker, B.R., Rolland-Sabaté, A., Hebelstruph, K.H., Tongta, S., Blennow, A. 2016. Structure of branching enzyme- and amylomaltase modified starch produced from well-defined amylose to amylopectin substrates. *Carbohydrate Polymers* 152:51-61. (IF=4.074)
180. Lee, B.H., Rose, D.R., Lin, A.H.M., Quezada-Calvillo, R., Nichols, B.L., Hamaker, B.R. 2016. Contribution of the individual small intestinal α-glucosidases to digestion of unusual α-linked glycemic disaccharides. *Journal of Agricultural and Food Chemistry* 64:6487–6494.

181. Moser, S., Lim, J., Chegeni, M., Wightman, J.D., Hamaker, B.R., Ferruzzi, M.G. 2016. Concord and Niagara grape juice and their phenolics modify intestinal glucose transport in a coupled in vitro digestion/caco-2 human intestinal model. *Nutrients* 8: 414; doi:10.3390/nu8070414.
182. Miao, M., Jia, X., Hamaker, B.R., Cui, S.W., Jiang, B., Huang, C. 2016. Structure–prebiotic properties relationship for α-D-glucan from *Leuconostoc citreum* SK24.002. *Food Hydrocolloids* 57:246-252.
183. Rumpagaporn, P., Reuh, B.L., Cantu-Jungles, T.M., Kaur, A., Patterson, J.A., Keshavarzian, A., Hamaker, B.R. 2016. Elevated propionate and butyrate in fecal ferments of hydrolysates generated by oxalic acid treatment of corn bran arabinoxylan. *Food & Function* DOI: 10.1039/C6FO00975A.
184. Lee, B.H., Hamaker, B.R. 2016. Number of branch points in α-limit dextrins impact glucose generation rates by mammalian mucosal α-glucosidases. *Carbohydrate Polymers* 157:207-213.
185. Simsek, M., Quezada-Calvillo, R., Nichols, B.L. Hamaker, B.R. Phenolic compounds increase the transcription of mouse intestinal maltase-glucoamylase and sucrase-isomaltase. *Journal of Nutrition*, submitted.
186. Nichols, B.L., Avery, S.E., Quezada-Calvillo, R., Kilani, S.B., Lin, A.H.M., Burrin, D.G., Hodges, B.E., Chacko, S.K., Opekun, A.R., El Hindaway, M., Hamaker, B.R., Oda, S.I., Improved starch digestion of sucrase deficient shrews treated with oral glucoamylase enzyme supplements. *Journal of Pediatric Gastroenterology and Nutrition*, Accepted.
187. Cisse, F., Erickson, D.P., Hayes, A.M.R., Opekun, A.R., Nichols, B.L., Hamaker, B.R. Traditional Malian solid foods made from sorghum and millet have markedly slower gastric emptying than rice, potato or pasta. *Journal of Nutrition*, submitted.
188. Chen, T., Long, W., Zhang, C., Liu, S., Zhao, L., Hamaker, B.R. Fiber-utilizing capacity varies in *Prevotella*- versus *Bacterioides*-dominated enterotypes. *Scientific Reports*, submitted.
189. Chen, T., Kim, C.Y., Kaur, A., Lamothe, L., Shaikh, M., Keshavarzian, A., Hamaker, B.R. Dietary fibre-based SCFA mixtures promote both protection and repair of intestinal epithelial barrier function in a Caco-2 cell model. *Food & Function*, Accepted.
190. Cantu-Jungles, T.M., Cipriani, T.R., Iacomini, M., Hamaker, B.R., Cordeiro, L.M.C. 2016. A pectic polysaccharide from peach palm fruits (*Bactris gasipaes*) and its fermentation profile by the human gut microbiota *in vitro*. *Bioactive Carbohydrates and Dietary Fibre*. 9:1-6.
191. Maicaurkaew, S., Jogloy, S., Hamaker, B.R., Ningsanond, S. 2017. Fructan:fructan 1-fructosyltransferase and inulin hydrolase activities relating to inulin and soluble sugars in Jerusalem artichoke (*Helianthus tuberosus* Linn.) tubers during storage. *Journal of Food Science and Technology*, doi:10.1007/s13197-017-2508-9.

Book Chapters

1. Hamaker, B.R. 1994. The influence of rice protein on rice quality. In *Rice Science* and Technology, W.E. Marshall and J.I. Wadsworth (eds.), Marcel Dekker, Inc., New York, pp. 177-193.
2. Mertz, E.T., Axtell, J.D., Ejeta, G. and Hamaker, B.R. 1993. Development and recent impact of quality protein maize and sorghum. *In Cereal Science and Technology Impact on a Changing Africa,* J.R.N. Taylor, P.G. Randall, and J.H. Viljoen (eds.), The CSIR, Pretoria, South Africa, pp. 115-131.
3. Habben, J.E., Moro, G.L., Lopes, M.A., Or, E., Hamaker, B. and Larkins, B.A. 1994. Altered patterns of protein synthesis in opaque-2 maize endosperm. In *Plant Molecular*

Biology: Molecular-genetic analysis of plant development, G. Coruzzi and P. Puigdomenech (eds.), Springer-Verlag, Berlin, pp. 301-307.
4. Hamaker, B.R. and Rahmanifar, A. 1997. QPM and nutritional needs of children in poor communities. In *Quality Protein Maize*: 1964-1994, B.A. Larkins and E.T. Mertz (eds.). Purdue University, West Lafayette, pp. 27-39.
5. Hamaker, B.R., Oria, M.P., Weaver, C.A., and Axtell, J.D. 1997. Improving sorghum nutritional quality. In *Quality Protein Maize*: 1964-1994, B.A. Larkins and E.T. Mertz (eds.). Purdue University, West Lafayette, pp. 277-292.
6. Weaver, C.M., Mason, A.C., and Hamaker, B.R. 2000. Food Uses. In *Designing Crops with Added Value*, C. Murphy (ed.). American Society of Agronomy, Madison.
7. Hamaker, B.R. and Larkins, B.A. 2002. Maize food and feed: a current perspective and consideration of future possibilities, *in Transgenic Plants and Crops*, eds. G.G. Khachatourians et al., Marcel Dekker, Inc., New York, pp. 637-654.
8. Hamaker, B.R., Zhang, G., and Venkatachalam, M. 2007. Modified carbohydrates for lower glycemic index, in *Novel Food Ingredients for Weight Control*, ed. C.J.K. Henry, Woodhead Publishing Ltd., Cambridge, UK, pp. 198-217.
9. Hamaker, B.R. 2007. (ed.), Technology of Functional Cereal Products, Woodhead Publishing Ltd., Cambridge, UK.
10. Zhang, G., Venkatachalam, M., and Hamaker, B.R. 2007. Methods to slow starch digestion rate in functional cereal products, in *Technology of Functional Cereal Products*, ed. B.R. Hamaker, Woodhead Publishing Ltd., Cambridge, UK, pp. 518-537.
11. Zhang, G., Ao, Z., and Hamaker, B.R. 2009. Controlling the delivery of glucose in foods, In *Designing Functional Foods: Measuring and Controlling Food Structure Breakdown and Nutrient Absorption*, ed. D.J. McClements and E.A. Decker, Woodhead Publishing Ltd., Cambridge, UK.
12. Kale, M., Pai, D., Hamaker, B.H., and Campanella, O.H. 2011. Incorporation of fibers in foods, a food engineering challenge. In: *Food Engineering Interfaces*, eds. Aguilera, J., Barbosa-Canovas, G.V., Welti, J., and Simpson, R. Springer Verlag, Chpt. 4.
13. Rose, D.J., and Hamaker, B.R. 2011. Overview of dietary fiber and its influence on gastrointestinal health. In: *Nondigestible Carbohydrates and Digestive Health*, eds. Paeschke, T.M., and Aimutis, W.R. Wiley-Blackwell/IFT Press, Chpt. 8.
14. Zhang, G. and Hamaker, B.R. Nutraceutical and health properties of sorghum and millet. In: Cereals and Pulses, Nutraceutical Properties and Health Benefits, eds. Yu, L., Tsao, R., and Shahidi, F. Wiley-Blackwell, Chpt. 12, 2012.
15. Bhopatkar, D., Hamaker, B.R., Campanella, O.H. Micro to macro level structures of food materials. In: Food Materials Science and Engineering, ed. Bhandari, B. John Wiley & Sons, Chpt. 2, 2012.
16. Zhang, G., Hamaker, B.R. Slowly digestible starch and health benefits. In: Resistant Starch Sources, Applications and Health Benefits, eds. Shi, Y.C. and Maningat, C.C. John Wiley & Sons, Chpt. 6, 2013.
17. Kale, M., Hamaker, B.R., Bordenave, N. 2014. Oat β-glucans: physiochemistry and nutritional properties. In: Oats Nutrition and Technology, ed. Chu, Y.F. John Wiley & Sons, Chpt. 6, 2013.
18. Zhang, G., Bhopatkar, D., Hamaker, B.R., Campanella, O.H. Self-assembly of amylose, protein, and lipid as a nanoparticle carrier of hydrophobic small molecules. In: Nanotechnology and Functional Foods, eds. C. Sabliov, H. Chen and R. Yada, Wiley-Blackwell, Chpt. 16, 2015.

Research Abstracts (169 prior to 2010)

170. Hamaker, B.R., Rumpagaporn, P., Rose, D. 2010. Use of cereal bran native and hydrolyzate arabinoxylans for dietary fibers with different fermentation profiles. American Chemical Society annual meeting dietary fiber symposium, San Francisco, March.
171. Kale, M.S., Wolf, M.T., Campanella, O.H., and Hamaker, B.R. 2010. Effect of alkali treatment conditions on the oxidative gelling properties of corn bran arabinoxylans. Institute of Food Technologists annual meeting, Chicago, IL, July.
172. Shah, A., Zhang, G, Campanella, O.H., and Hamaker, B.R. 2010. Dynamic rheological method to study the interaction between starch, protein and lipid during cooling. Institute of Food Technologists annual meeting, Chicago, IL, July.
173. Hamaker, B., Yan, L., Lee, B.H., Powley, T., Phillips, R., Kinzig, K., Kushnick, M., Zhang, G., and Nichols, B. 2010. Defined glucose release profiles of glycemic carbohydrates and their physiologic effect. Institute of Food Technologists annual meeting, Chicago, IL, July.
174. Fevzioglu, M., Mosharraf, L., Campanella, O.H., and Hamaker, B.R. 2010. Effect of HMW glutenin in zein dough rheology and optimization of mixograph parameters. Institute of Food Technologists annual meeting, Chicago, IL, July.
175. Shen, X., Zhang, G., and Hamaker, B.R. 2010. Impact of amylopectin long chains on its functional properties. Institute of Food Technologists annual meeting, Chicago, IL, July.
176. Xu, H., Rumpagaporn, P., Kale, M., Reuhs, B. and Hamaker, B.R. 2010. Structural subunits of alkali-extractable arabinoxylans from corn bran. Institute of Food Technologists annual meeting, Chicago, IL, July.
177. Rumpagaporn, P., Campanella, O.H., and Hamaker, B.R. 2010. Heat and pH stability of corn alkali-extractable arabinoxylan and its xylanase-hydrolyzate and their viscosity behavior. Institute of Food Technologists annual meeting, Chicago, IL, July.
178. Bhopatkar, D., Zhang, G., Campanella, O.H., and Hamaker, B.R. 2010. Effect of Hofmeister series anions on the structural properties of water soluble starch-protein-lipid nano-complex. Institute of Food Technologists annual meeting, Chicago, IL, July.
179. Lee, B.H., Lin, A.H.M., Quezada-Calvillo, R., Nichols, B.L., Rose, D.R., Sim, L. and Hamaker, B.R. 2010. Hydrolysis properties of mammalian mucosal glucogenic enzymes on various oligosaccharides. Institute of Food Technologists annual meeting, Chicago, IL, July.
180. Lin, A.H.M., Nichols, B.L., Quezada-Calvillo, R., Rose, D.R., Sim, L., and Hamaker, B.R. 2010. Starches with different fine structures are digested differently at the human brush border level. Institute of Food Technologists annual meeting, Chicago, IL, July.
181. Moussa, M., Aboubacar, A., Saley, K., N'Doye, A., Hamaker, B.R. 2010. Use of an incubation concept to transfer cereal processing technologies to entrepreneurs in Niger. IUFoST biennial meeting, Cape Town, South Africa, August.
182. Hamaker, B., Zhang, G., Lin, A.H.M., Lee, B.H. 2010. Slowly digestible starch and its potential physiologic effect. IUFoST biennial meeting, Cape Town, South Africa, August.
183. Bordenave, N., Ferruzzi, M.G., and Hamaker, B.R. 2010. Influence of food matrix on the stability of polyphenols through processing. American Association of Cereal Chemists International annual meeting, Savannah, GA, October.
184. Fevzioglu, M., Campanella, O.H., and Hamaker, B.R. 2010. Studies on the improvement of the elastic component of corn zein doughs. American Association of Cereal Chemists International annual meeting, Savannah, GA, October.
185. Kale, M.S., Yang, C., Campanella, O.H., and Hamaker, B.R. 2010. Relationship between solution and gel behavior of arabinoxylans: Effect of structure on properties in aqueous systems. American Association of Cereal Chemists International annual meeting, Savannah, GA, October.
186. Lee, B. and Hamaker, B. 2010. Different human pancreatic α-amylase digestion property of highly branched starch. American Association of Cereal Chemists International annual meeting, Savannah, GA, October.

187. Lin, A., Nichols, B.L., Quezada-Calvillo, R., Rose, D.R., Sim, L., and Hamaker, B.R. 2010. The differential roles of the four mammalian mucosal glucosidase subunits in starch digestion. American Association of Cereal Chemists International annual meeting, Savannah, GA, October.
188. Patel, B.K., Hamaker, B.R., and Campanella, O.H. 2010. Enhancing the functionality of corn fiber gum as an emulsion stabilizing agent by conjugation with whey protein isolate. American Association of Cereal Chemists International annual meeting, Savannah, GA, October.
189. Rumpagaporn, P. and Hamaker, B. 2010. Production of arabinoxylooligosaccharides from corn alkali-extractable arabinoxylan. American Association of Cereal Chemists International annual meeting, Savannah, GA, October.
190. Shen, X., Zhang, G., Bertoft, E.J., and Hamaker, B.R. 2010. Amylopectin fine structure: Mechanism of the long chain function. American Association of Cereal Chemists International annual meeting, Savannah, GA, October.
191. Xu, H., Reuhs, B., and Hamaker, B.R. 2010. Removal of the 3-O-substituent from 2, 3-disubstituent increases the enzymatic degradability of alkali-extractable arabinoxylans from corn bran. American Association of Cereal Chemists International annual meeting, Savannah, GA, October.
192. Cheng, M., Zhang, G., Kim, K., and Hamaker, B.R. 2010. Influence of different sugars on the behavior of Caco-2 cells. American Association of Cereal Chemists International annual meeting, Savannah, GA, October.
193. Lee, B.H., Quexada-Calvillo, R., Nichols, B., Rose, D.R., and Hamaker, D.R. 2011. Alpha-glucogenic activity of mammalian mucosal enzymes on different disaccharides. Experimental Biology annual meeting, Washington, D.C., April.
194. Lin, A.H.M., Nichols, B.L., Quezada-Calvillo, R., Rose, D., and Hamaker, B.R. 2011. A potential control point of glucose delivery from starchy foods: intestinal mucosal {alpha}-glucosidase digestion. Experimental Biology annual meeting, Washington, D.C., April.
195. Quezada-Calvillo, R., Nichols, B., Avery, S., Rocha, M., and Hamaker, B. 2011. Ct-MGAM activity adapts to various botanical food starch intakes by alternative splicing. Experimental Biology annual meeting, Washington, D.C., April.
196. Yan, L., Phillips, R.J., Kinzig, K., Powley, T.L., and Hamaker, B.R. 2011. Slow release glucose in small intestine via dietary approach slows gastric emptying in vivo in a dose response fashion. Experimental Biology annual meeting, Washington, D.C., April.
197. Espinosa-Solis, V., Hamaker, B.R., Bello-Perez, L.A. 2011. Digestion properties of acid-treated mango and plantain starches. Institute of Food Technologists annual meeting, New Orleans, LA, June.
198. Yang, Y., Zhang, G., Hamaker, B.R., and Campanella, O.H. 2011. Synergistic interaction between alginate and pectin for improved delivery of bioactive food components. Institute of Food Technologists annual meeting, New Orleans, LA, June.
199. Hamaker, B.R., Rumpagaporn, P., and Xu, H. 2011. Fine structural features of cereal arabinoxylans that determine fermentation rate properties. Gums & Stabilizers Conference, Wageningen, Netherlands, June.
200. Hamaker, B.R. 2011. Designer carbohydrates and glucose control. ACS Regional Meeting, Indianapolis, IN, June.
201. Hamaker, B., Lee, B.H., Yan, L., Phillips, R., Powley, T., Kinzig, K., and Kushnick, M. 2011. Functional foods containing novel carbohydrates for energy balance and improved health. USDA PI annual meeting, New Orleans, LA, June.
202. Hamaker, B.R., Campanella, O.H., Mauer, L.J., Fevzioglu, M., Goodall, M., and Erickson, D.P. 2011. Use of non-wheat cereal proteins as functional viscoelastic polymers. USDA PI annual meeting, New Orleans, LA, June.

203. Hamaker, B.R. 2011. Internationalization of graduate education in food science. Institute of Food Technologists annual meeting, New Orleans, LA, June.
204. Hamaker, B.R. 2011. Structure-function modifications of cereal arabinoxylans. Institute of Food Technologists annual meeting, New Orleans, LA, June.
205. Hamaker, B.R. and Lee, B.H. 2011. Enzyme modification of starch to effect its digestibility. Institute of Food Technologists annual meeting, New Orleans, LA, June.
206. Hamaker, B.R., Lin, A.H.M., Yan, L., and Lee, B.H. 2011. Control of glucose delivery to the body and potential physiologic effect. Seoul National University Center for Agricultural Biotechnology Food Science Symposium, Seoul, South Korea, August.
207. Hamaker, B.R. 2011. Recent advances on functional carbohydrates for improved health. Conference on Functional Foods, Jiao Tong University, Shanghai, China, September.
208. Hamaker, B.R. 2011. Starch digestion – the complexity of structure, digestion rate and physiologic consequence. Starch Roundtable, Palm Springs, CA, October.
209. Goodall, M., Campanella, O., Ejeta, G., and Hamaker, B.R. 2011. High-digestibility, high-lysine (HDHL) sorghum grain contains kafirins which participate in the protein network of composite dough and bread. American Association of Cereal Chemists International annual meeting, Palm Springs, CA, October.
210. Lin, A., Nichols, B., and Hamaker, B. 2011. Small intestine mucosal α-glucosidases have a rate-limiting role in starch digestion. American Association of Cereal Chemists International annual meeting, Palm Springs, CA, October.
211. Xu, H., Reuhs, B.L., Kaur, A., Martens, E.C., and Hamaker, B.R. 2011. Structural evidence for the slowly fermented property of corn arabinoxylans at the human colonic Bacteroides level. American Association of Cereal Chemists International annual meeting, Palm Springs, CA, October.
212. Kale, M.S., Yang, C., Campanella, O.H., and Hamaker, B.R. 2011. Conformation and aggregation of cereal arabinoxylans in water. American Association of Cereal Chemists International annual meeting, Palm Springs, CA, October.
213. Kaur, A., Martin, B., Gillevet, P., Patterson, J., Keshavarzian, A., and Hamaker, B. 2011. Effects of variable rate fermenting fibers on luminal and mucosa-associated microbiota in different segments of the large intestine. American Association of Cereal Chemists International annual meeting, Palm Springs, CA, October.
214. Rahimi, M., Campanella, O., and Hamaker, B. 2011. Extract of Cephalaria syriaca is a powerful agent to strengthen wheat dough. American Association of Cereal Chemists International annual meeting, Palm Springs, CA, October.
215. Rumpagaporn, P., Reuhs, B., and Hamaker, B. 2011. Major determinants of slow fermentation rate in alkali-extractable arabinoxylans and their hydrolyzates from corn, rice, wheat, and sorghum brans. American Association of Cereal Chemists International annual meeting, Palm Springs, CA, October.
216. Bhopatkar, D., Campanella, O.H., and Hamaker, B.R. 2011. Solubilization of hydrophobic compounds in a soft nanocomplex from starch, protein, and lipid. American Association of Cereal Chemists International annual meeting, Palm Springs, CA, October.
217. Fevzioglu, M., Hamaker, B.R., and Campanella, O.H. 2011. Comparison of the secondary structural changes in zein and gliadin with addition of high-molecular-weight subunits of glutenin (HMW-GS). American Association of Cereal Chemists International annual meeting, Palm Springs, CA, October.
218. Lee, B., Yan, L., Phillips, R., Powley, T., and Hamaker, B.R. 2011. Slow digestion of synthesized highly branched starch-based structures at the mucosal α-glucosidase level suggest slow glucose delivery to the body. American Association of Cereal Chemists International annual meeting, Palm Springs, CA, October.

219. Lin, A., Lee, B., and Hamaker, B. 2011. Small intestinal mucosal α-glucosidases: A missing feature of in vitro digestion models. American Association of Cereal Chemists International annual meeting, Palm Springs, CA, October.
220. Hamaker, B.R., Lin, A.H.M., Yan, L., Lee, B.H., Rumpagaporn, P., and Xu, H. 2011. Controlling digestion rate of dietary glycemic carbohydrates for improved health outcomes. SLACA biennial meeting, UNICAMP, Campinas, Brazil, November.
221. Hamaker, B.R., Lin, A.H.M., Yan, L., Lee, B.H., Rumpagaporn, P., and Xu, H. 2011. Carbohydrates and health – a perspective from the Whistler Center. ICoFF biennial meeting, Taipei, Taiwan, November.
222. Hamaker, B.R., Rumpagaporn, P., and Xu, H. 2011. Polysaccharide structures to control colonic fermentation rate. ICoFF biennial meeting, Taipei, Taiwan, November.
223. Hamaker, B. 2011. Nanocomplex-based delivery systems. Joint NIH and USDA Workshop on Using Nanotechnology to Improve Nutrition Through Enhanced Bioavailability and Efficacy, Bethesda, MD, November.
224. Hamaker, B.R. 2011. Control of starch digestion. 50 Years of Congenital Sucrase-Isomaltase Deficiency Disease, Baylor College of Medicine, Houston, TX, December.
225. Lee, B.H., Eskandari, R., Pinto, B.M., Nichols, B.L., Hamaker, B.R. 2012. Modulation of starch digestion for slow glucose release through "toggling" of mucosal α-glucosidases by acarbose. Experimental Biology annual meeting, San Diego, CA, April.
226. Lin, A.H.M., Nichols, B.L., Hamaker, B.R. 2012. Concept of slowly released dietary glucose: a focus on starch digestion at the mucosal α-glucosidase level. Experimental Biology annual meeting, San Diego, CA, April.
227. Nichols, B.L., Diaz-Sotomayor, M., Avery, S., Chacko, S., Hadsell, D., Baker, S., Yan, L., Lin, A.H.M., Ao, Z., Quezada-Calvillo, R., Hamaker, B. 2012. Novel secreted maltase activity enables suckling mouse pup starch digestion. Experimental Biology annual meeting, San Diego, CA, April.
228. Hamaker, B.R. 2012. Importance of location of fiber fermentation and fiber types with extended fermentation profiles. Institute of Food Technologists annual meeting, Las Vegas, NV, June.
229. Lin, A.H.M., Dhital, S., Gidley, M., Hamaker, B. 2012. The roles of α-amylase and α-glucosidase on granular starch digestion. Institute of Food Technologists annual meeting, Las Vegas, NV, June.
230. de la Rosa Millan, J., Bello-Perez, L.A., Osorio-Diaz, P., Agama-Acevedo, E., Hamaker, B., Lin, A.H.M. 2012. The structure characters of hard-to-digest fraction of hydrothermally modified banana starch. Institute of Food Technologists annual meeting, Las Vegas, NV, June.
231. Zhang, L., Rumpagaporn, P., Hamaker, B., Campanella, O.H. 2012. Effect of endoxylanase hydrolysis on the rheology properties of alkali extracted corn arabinoxylans in dilute solutions. Institute of Food Technologists annual meeting, Las Vegas, NV, June.
232. Xu, H., Martens, E., Reuhs, B., Hamaker, B. 2012. Substrate preference of human colonic bacteroides strains on cereal arabinoxylans with distinct structures. American Association of Cereal Chemists International annual meeting, Hollywood, FL, September.
233. Tandazo, S., Campanella, O.H., Hamaker, B.R. 2012. Rheological properties of gluten-free bread dough systems. American Association of Cereal Chemists International annual meeting, Hollywood, FL, September.
234. Simsek., M., Quezada-Calvillo, R., Nichols, B.L., Hamaker, B.R. 2012. Natural polyphenols are potential inhibitors of intestinal maltase-glucoamylase (ct-MGAM subunit) for control of glucose release from starch digestion. American Association of Cereal Chemists International annual meeting, Hollywood, FL, September.
235. Fevzioglu, M., Hamaker, B.R., Campanella, O.H. 2012. Manipulation of zein structure with co-protein addition for application in dough systems: A new approach to functionalize

non-gluten cereal proteins. (Protein Division Walter Bushuk Graduate Research Award in Cereal Protein Chemistry) American Association of Cereal Chemists International annual meeting, Hollywood, FL, September.

236. Lee, B., Hamaker, B.R., Nichols, B.L. 2012. Identification of an α-glucosidase control point for modulating initial high glycemic response from starch digestion. American Association of Cereal Chemists International annual meeting, Hollywood, FL, September.
237. Kale, M.S., Campanella, O.H., Hamaker, B.R. 2012. Oxidative gelation of alkali-extractable arabinoxylans from corn bran. American Association of Cereal Chemists International annual meeting, Hollywood, FL, September.
238. Fevzioglu, M., Hamaker, B.R., Campanella, O.H. 2012. Quantitative approach to study secondary structural changes in protein in the dough state leads to understand the structure-function relationship. American Association of Cereal Chemists International annual meeting, Hollywood, FL, September.
239. Lin, A., Dhital, S., Nichols, B.L., Gidley, M., Hamaker, B. 2012. Mammalian mucosal α-glucosidases may have a role in starch digestion beyond α-glucogenesis to assist α-amylase of granular starch digestion. American Association of Cereal Chemists International annual meeting, Hollywood, FL, September.
240. Lamothe, L.M., Hamaker, B.R., Srichuwong, S. 2012. Isolation and partial characterization of non-starch polysaccharides from quinoa and amaranth grains. American Association of Cereal Chemists International annual meeting, Hollywood, FL, September.
241. Lee, B-H., Nichols, B., Hamaker, B. 2013. Hydrolytic properties of the four small intestinal mucosal α-glucosidases on disaccharides with different linkages and compositions. Experimental Biology, Boston, MA, April.
242. Lin, A. H-M., Muniandy, K., Diaz-Sotomayor, M., Avery, S., Chacko, S., Yan, L., Quezada-Calvillo, R., Hamaker, B., Nichols, B. 2013. Slower in vivo glucogenesis from starch oligomers by mucosal sucrase-isomaltase. Experimental Biology, Boston, MA, April.
243. Cisse, F., Diall, H., Rahmanifar, A., Sylla, M., Opekun, A., Grusak, M., Lin, A., Nichols, B., Hamaker, B. 2013. Sorghum starch is well digested in developmental pancreatic α-amylase insufficient children in Mali. Experimental Biology, Boston, MA, April.
244. Chegeni, M., Kim, C.Y., Naim, H., Hamaker, B. 2013. Elucidating a mechanism for maltooligosacchride sensing at the small intestine enterocyte. Experimental Biology, Boston, MA, April.
245. Simsek, M., Quezada-Calvillo, R., Nichols, B., Hamaker, B. 2013. Inhibition of individual subunits of maltase-glucoamylase and sucrase-isomaltase by polyphenols. Experimental Biology, Boston, MA, April.
246. Chen, T., Kim, C.Y., Hamaker, B. 2013. Impact of dietary fiber-based SCFA mixtures on colon epithelial barrier function. Experimental Biology, Boston, MA, April.
247. Hamaker, B. 2013. In vitro techniques for dietary carbohydrate digestion and fermentation. Institute of Food Technologists annual meeting, Chicago, IL.
248. Hamaker, B. 2013. Slow carb digestion and physiologic effects. Institute of Food Technologists annual meeting, Chicago, IL.
249. Hamaker, B. 2013. Potential of functionalizing non-wheat cereal proteins for gluten-free products. Institute of Food Technologists annual meeting, Chicago, IL.
250. Feng, T., Zhuang, H., Campanella, O.H., Hamaker, B., Bhopatkar, D., Carignano, M., Park, S.H. 2013. Study of amylose solvation and amylose-linoleic acid inclusion behavior in water by molecular dynamic simulation. Institute of Food Technologists annual meeting, Chicago, IL.

251. Espinosa-Solis, V., Bello, L.A.B., Hamaker, B. 2013. Digestion properties of debranched mango and banana starches. Institute of Food Technologists annual meeting, Chicago, IL.
252. Chegeni, M., Cheng, M-W., Hamaker, B. 2013. Influence of different maltooligosaccharides on the sucrase-isomaltase expression of Caco-2 cells. Institute of Food Technologists annual meeting, Chicago, IL.
253. Simsek, M., Hamaker, B., Nichols, B.L., Quezada-Calvillo, R. 2013. Differential effects of polyphenols on the expression of intestinal maltase-glucoamylase. Institute of Food Technologists annual meeting, Chicago, IL.
254. Erickson, D., Campanella, O.H., Hamaker, B. 2013. Understanding the aggregative behavior of maize zein as it pertains to the development of viscoelastic properties in gluten-free dough systems. Institute of Food Technologists annual meeting, Chicago, IL.
255. Hamaker, B.R. Conflicts of interest in science: myth or reality?, academic perspective. 2013. American Association of Cereal Chemists annual meeting, Albuquerque, NM.
256. Simsek, M., Quezada-Calvillo, R., Nichols, B., Hamaker, B. 2014. Inhibition of individual subunits of maltase-glucoamylase and sucrase-isomaltase by polyphenols. Experimental Biology annual meeting, April, San Diego.
257. Lin, A. H-M., Muniandy, A., Diaz-Sotomayor, M., Avery, S., Chacko, S., Yan, L-K., Quezada-Calvillo, R., Hamaker, B., Nichols, B. 2014. Slower in vivo glucogenesis from starch oligomers by mucosal sucrase-isomaltase. Experimental Biology annual meeting, April, San Diego.
258. Lee, B-H., Nichols, B., Hamaker, B. 2014. Hydrolytic properties of the four small intestinal mucosal α-glucosidases on disaccharides with different linkages and compositions. Experimental Biology annual meeting, April, San Diego.
259. Chen, T., Kim, C.Y., Hamaker, B. 2014. Impact of dietary fiber-based SCFA mixtures on colon epithelial barrier function. Experimental Biology annual meeting, April, San Diego.
260. Chegeni, M., Kim, C.Y., Naim, H., Hamaker, B. 2014. Elucidating a mechanism for maltooligosacchride sensing at the small intestine enterocyte. Experimental Biology annual meeting, April, San Diego.
261. Cisse, F., Diall, H., Rahmanifar, A., Sylla, M., Opekun, A., Grusak, M., Lin, A., Nichols, B., Hamaker, B. 2014. Sorghum starch is well digested in developmental pancreatic α-amylase insufficient children in Mali. Experimental Biology annual meeting, April, San Diego.
262. Hamaker, B. 2014. How slowly digestible carbohydrates slow gastric emptying for sustained energy release. Institute of Food Technologists annual meeting, June, New Orleans.
263. Simsek, M., Quezada-Calvillo, R., Nichols, B.L., Hamaker, B. 2014. Maltase activity of individual subunits of recombinant maltase-glucoamylase and sucrase-isomaltase is inhibited differentially by polyphenols. Institute of Food Technologists annual meeting, June, New Orleans.
264. Erickson, D.P., Hamed, E., Keten, S., Campanella, O.H., Hamaker, B.H. 2014. Atomistic modeling of maize α-zein peptides and their propensities for aggregation and β-sheet structuring. American Association of Cereal Chemists International annual meeting, October, Providence.
265. Agama-Acevedo, E., Lee, B.H., Hamaker, B.R. 2014. Slowly digestible enriched starch powder from gelatinized high-amylose starch by hydrothermal treatment. American Association of Cereal Chemists International annual meeting, October, Providence.
266. Nie, X., Martens, E., Hamaker, B. 2014. Exploring the relationship between corn arabinoxylan structure and gut bacterial growth behavior. American Association of Cereal Chemists International annual meeting, October, Providence.

267. Simsek, M., Quezada-Calvillo, R., Nichols, B.L., Hamaker, B.R. 2014. Polyphenols have multiple effects on the intestinal α-glucosidases. American Association of Cereal Chemists International annual meeting, October, Providence.
268. Pletsch, B., Hamaker, B. 2015. Understand aspects of carbohydrate quality in rice related to difference in gastric emptying rate. Experimental Biology annual meeting, April, Boston.
269. Cisse, F., Erickson, D., Opekun, A., Nichols, B., Hamaker, B. 2015. Traditional foods made from sorghum and millet in Mali have slower gastric emptying than pasta, potatoes, and rice. Experimental Biology annual meeting, April, Boston.
270. Chegeni, M., Hamaker, B. 2015. Induction of differentiation of small intestinal enterocyte cells by maltooligosaccharides. Experimental Biology annual meeting, April, Boston.
271. Tuncil, Y., Xiao, Y., Porter, N., Martens, E., Hamaker, B. 2015. Dietary fibers as presented in a meal are utilized in a hierarchical order. Institute of Food Technology annual meeting, July, Chicago.
272. Pletsch, B., Hamaker, B. 2015. Brown rice delays gastric emptying to a greater extent than white rice independent of amylose content and starch digestion rate. Institute of Food Technology annual meeting, July, Chicago.
273. Chen, T., Zhao, L., Hamaker, B. 2015. Dietary fiber generates gas and SCFA differently depending on original microbiota composition and fiber structure. Institute of Food Technology annual meeting, July, Chicago.
274. Fang, F., Campanella, O., Hamaker, B. 20-15. Shear-thickening behavior of waxy starch dispersions related to molecular characteristics. Institute of Food Technology annual meeting, July, Chicago.
275. Tuncil, Y., Martens, E., Hamaker, B. 2015. Growth rate of a human gut symbiont on starch is source dependent. American Association of Cereal Chemists International annual meeting, October, Minneapolis.
276. Lamothe, L., Zhang, X., Chen, T., Hamaker, B. 2015. Unusual fermentation property of low gas production found in microwave solubilized quinoa fiber. American Association of Cereal Chemists International annual meeting, October, Minneapolis.
277. Nie, X., Reuhs, B., Martens, E., Hamaker, B. 2015. Seemingly subtle structural features in corn arabinoxylan fractions induce a lag phase shift of Bacteroides xylanisolvens XB1A. American Association of Cereal Chemists International annual meeting, October, Minneapolis.
278. Pletsch, B., Hamaker, B. 2015. Gastric emptying rate of brown rice may be controlled by factors other than slower physical degradation in the stomach. American Association of Cereal Chemists International annual meeting, October, Minneapolis.
279. Chen, T., Keshavarzian, A., Hamaker, B. 2015. Robust butryogenic effect of a mixture of fibers in in vitro fermentation. American Association of Cereal Chemists International annual meeting, October, Minneapolis.
280. Fang, F., Campanella, O., Hamaker, B. 2015. The short-term structure of gelatinized waxy starch dispersions. American Associate of Cereal Chemists International annual meeting, October, Minneapolis.

Intellectual Property

Provisional Patents

1. Hamaker, B.R., Bugusu, B.A. Manipulation of starch digestion rates using protein and oxidizing agents. 2003.
2. Blake, O., Campanella, O., Hamaker, B. Production of a reduced calorie/high fiber puffed product. 2004.

3. Hamaker, B., Campanella, O., Zhang, G. Use of a novel soluble 3-component complex for extended energy release in beverages, or binding of valuable hydrophobic 4th-component molecules. 2004.
4. Hamaker, B., Blake, O., Campanella, O. Development of a new functional food ingredient from agricultural by-products, such as cereal brans to be used in the extrusion processing industry. 2005.
5. Hamaker, B., Ao, Z. Preparation of starch products with slowly digestible property and prebiotics function. 2006.
6. Hamaker, B., Campanella, O., Blake, O., Rose, D. Soluble corn fiber with slow and extended fermentation property. 2009.
7. "Spray-drying methods and microbeads", provisional patent applied for in 2011 (65917.P1.US).
8. "A soft nanoparticle for solubilization and delivery of hydrophobic high-value food and pharmaceutical compounds, provisional patent applied for in 2011 (65902.P1.US).
9. "Methods for improving digestive health", provisional patent applied for in 2011 (65990.P1.US).
10. Keshavarzian, A., De Kivit, S., Hamaker, B.R. Screening assay for choice of prebiotic to prevent/treat gastrointestinal and systemic diseases. PCT Int. Appl. WO 2015157163 A1 20151015. 2015.

U.S. Patent Applications

1. Hamaker, B., Venkatachalam, M., Rose, D., Zhang, G. A method to create slowly digesting starches and fibers for health benefit. 2006. Patent No. 20070196437.

U.S. Patents

1. Hamaker, B.R., Han, X-Z. Slowly digestible starch. 2004. Patent No. 20060257977.
2. Hamaker, B., Campanella, O., Mauer, L., Mejia, C. Leavened products made from non-wheat cereal proteins. 2009.

Invited Lectures Presented at Regional, National, and International Society Meetings and/or Educational Institutions

National (28 prior to 2010)

29. Hamaker, B.R. 2010. Dietary fibers with targeted colonic action and prebiotic effect. Rush Medical School, Immunology Section, Chicago, February.
30. Hamaker, B.R., Rumpagaporn, P., Rose, D. 2010. Use of cereal bran native and hydrolyzate arabinoxylans for dietary fibers with different fermentation profiles. American Chemical Society annual meeting dietary fiber symposium, San Francisco, March.
31. Hamaker, B.R. 2010. Project areas related to carbohydrates and health. Tate and Lyle annual Board of Directors meeting, Chicago, March.
32. Hamaker, B., Zhang, G., Lin, A.H.M., Lee, B.H. 2010. Controlled glucose release from corn starch & its products and implications on diabetes and obesity. Corn Utilization and Technology Conference, Atlanta, June.
33. Hamaker, B.R. 2010. The concept and implications of slow release glycemic carbohydrates. International Life Sciences Institute (ILSI) Carbohydrate Working Group, Washington, D.C., September.
34. Hamaker, B.R. 2010. Project areas related to carbohydrates and health. Pepsico International Webcast, Barrington, IL, September.

35. Hamaker, B.R. 2011. Designer carbohydrates and glucose control. ACS Regional Meeting, Indianapolis, IN, June.
36. Hamaker, B., Lee, B.H., Yan, L., Phillips, R., Powley, T., Kinzig, K., and Kushnick, M. 2011. Functional foods containing novel carbohydrates for energy balance and improved health. USDA PI annual meeting, New Orleans, LA, June.
37. Hamaker, B.R., Campanella, O.H., Mauer, L.J., Fevzioglu, M., Goodall, M., and Erickson, D.P. 2011. Use of non-wheat cereal proteins as functional viscoelastic polymers. USDA PI annual meeting, New Orleans, LA, June.
38. Hamaker, B.R. 2011. Internationalization of graduate education in food science. Institute of Food Technologists annual meeting, New Orleans, LA, June.
39. Hamaker, B.R. 2011. Structure-function modifications of cereal arabinoxylans. Institute of Food Technologists annual meeting, New Orleans, LA, June.
40. Hamaker, B.R. and Lee, B.H. 2011. Enzyme modification of starch to effect its digestibility. Institute of Food Technologists annual meeting, New Orleans, LA, June.
41. Hamaker, B.R. 2011. Starch digestion – the complexity of structure, digestion rate and physiologic consequence. Starch Roundtable, Palm Springs, CA, October.
42. Hamaker, B. 2011. Nanocomplex-based delivery systems. Joint NIH and USDA Workshop on Using Nanotechnology to Improve Nutrition Through Enhanced Bioavailability and Efficacy, Bethesda, MD, November.
43. Hamaker, B.R. 2011. Control of starch digestion. 50 Years of Congenital Sucrase-Isomaltase Deficiency Disease, Baylor College of Medicine, Houston, TX, December.
44. Hamaker, B.R. 2012. Carbohydrates and health. Mars, Inc. global research meeting, McLean, VA, April.
45. Hamaker, B.R. 2012. International Food Technology Center and market opportunities for local food processing in Africa. Partnership on Hunger, Washington, D.C., September.
46. Hamaker, B.R. 2012. Changing dietary carbohydrates for potential health benefit. PepsiCo Global R&D Research Forum, Dallas, TX, October.
47. Hamaker, B. 2013. Slow carb digestion and physiologic effects. Institute of Food Technologists annual meeting symposium, Chicago, IL, July.
48. Hamaker, B., Erickson, D., Fevzioglu, M., Campanella, O. 2013. Potential of functionalizing non-wheat cereal proteins for gluten-free products. Institute of Food Technologists annual meeting symposium, Chicago, IL, July.
49. Hamaker, B. 2013. The intricacies of starch digestion and a view towards quality and health benefit. Alsberg-French-Schoch Award Lecture, American Association of Cereal Chemists International annual meeting, Albuquerque, NM, October.
50. Hamaker, B. 2014. How starch is digested and its health-related implications. Kansas State University, Manhattan, KS, January.
51. Hamaker, B., Xu, H., Reuhs, B., Martens, E. 2014. The potential of dietary fibers to be used for targeted function in the colon. Rush University Medical School, Chicago, IL, February.
52. Hamaker, B., Lin, A.H.M., Lee, B.H., Hasek, L.Y. 2014. Starch structural variability leading to distal intestine digestion and fermentation. Resistant Starch Symposium, Iowa State University, Ames, IA, May.
53. Hamaker, B.2014. What is on the horizon for dietary fiber? IFT Carbohydrate Division, Institute of Food Technologists annual meeting, Chicago, IL, July.
54. Hamaker, B., Lin, A.H.M., Lee, B.H., Hasek, L.Y., Xu, H., Kaur, A. 2014. How slowly digestible carbohydrates slow gastric emptying for sustained energy release. Institute of Food Technologists annual meeting, Chicago, IL, July.
55. Hamaker, B., 2015. The 'discrete structures' of dietary fibers and potential to favor gut bacteria. International Scientific Association for Probiotics and Prebiotics Conference, Washington, D.C., June.

56. Hamaker, B., Chen, T., Xu, H., Tuncil, Y., Zhao, L., Martens, E. 2015. Can dietary fiber structures be matched with targeted, predicted functions in the gut? Institute of Food Technologists annual meeting, Chicago, IL, July.
57. Lin, A., Hamaker, B.R. 2015. Starch and its nutritional quality. Koushik Seetharaman Memorial Symposium, American Association of Cereal Chemists annual meeting, Minneapolis, MN, October.
58. Hamaker, B.R. 2015. Considerations for simulating human digestion *in vitro*. American Association of Cereal Chemists annual meeting, Minneapolis, MN, October.

<u>International</u> (32 prior to 2010)

33. Hamaker, B.R. 2010. Starch fine structure and digestion: Is there a case for slow digestion? International Hydrocolloids Conference, Shanghai, China, June.
34. Hamaker, B.R., Rumpagaporn, P., Xu, H., Rose, D., Yan, L., Lin, A., Lee, B.H., Campanella, O.H. 2010. Cereal bran arabinoxylans – structure, functionality and gut health. Nestle Research Centre, Lausanne, Switzerland, September.
35. Hamaker, B.R., Rumpagaporn, P., and Xu, H. 2011. Fine structural features of cereal arabinoxylans that determine fermentation rate properties. Gums & Stabilizers Conference, Wageningen, Netherlands, June.
36. Hamaker, B.R., Lin, A.H.M., Yan, L., and Lee, B.H. 2011. Control of glucose delivery to the body and potential physiologic effect. Seoul National University Center for Agricultural Biotechnology Food Science Symposium, Seoul, South Korea, August.
37. Hamaker, B.R. 2011. Recent advances on functional carbohydrates for improved health. Conference on Functional Foods, Jiao Tong University, Shanghai, China, September.
38. Hamaker, B.R., Lin, A.H.M., Yan, L., Lee, B.H., Rumpagaporn, P., and Xu, H. 2011. Controlling digestion rate of dietary glycemic carbohydrates for improved health outcomes. SLACA biennial meeting, UNICAMP, Campinas, Brazil, November.
39. Hamaker, B.R., Lin, A.H.M., Yan, L., Lee, B.H., Rumpagaporn, P., and Xu, H. 2011. Carbohydrates and health – a perspective from the Whistler Center. ICoFF biennial meeting, Taipei, Taiwan, November.
40. Hamaker, B.R., Rumpagaporn, P., and Xu, H. 2011. Polysaccharide structures to control colonic fermentation rate. ICoFF biennial meeting, Taipei, Taiwan, November.
41. Hamaker, B.R. 2012. The relationship between starch functionality and proportion of amylopectin long chains. Starch Update biennial conference, Bangkok, Thailand, February.
42. Hamaker, B.R. 2012. Structural features of dietary fibers that drive colon function. University of Sao Paulo, Sao Paulo, Brazil, June.
43. Hamaker, B.R. 2012. Utilization and market opportunities for sorghum and millet. Sorghum and Millet Value-chain Workshop, sponsored by the Gates Foundation, Nairobi, Kenya, July.
44. Hamaker, B.R. 2012. Update on starch digestion and physiologic response research. Starch Digestion Consortium meeting, Waterloo, Canada, August.
45. Hamaker, B. 2013. Locational delivery of dietary glucose and physiological effects. Cereal & Europe Conference, Leuven, Belgium, May.
46. Hamaker, B., Xu, H., Kaur, A., Rumpagaporn, P. 2013. A view towards how dietary fiber types and structures can be used to alter the composition of the colon microbiota. Korean Society of Food Science and Technology Conference, Seoul, South Korea, August.
47. Hamaker, B., Xu, H., Reuhs, B., Martens, E. 2013. Structurally complex subunits within dietary fiber arabinoxylan drive specificity of colonic bacteria. EPNOE Conference, Nice, France, October.

48. Hamaker, B., Lin, A.H.M., Lee, B.H., Kittisuban, P. 2013. How starch branched structures might lead to a slowly digestible component with physiological consequences. American Association of Cereal Chemists International China Conference, Wuhan, China, November.
49. Hamaker, B., Xu, H., Reuhs, B., Martens, E. 2013. Dietary fiber types and colon health. SLACA Conference, Campinas, Brazil, November.
50. Hamaker, B., Lin, A.H.M., Lee, B.H., Hasek, L.Y., Xu, H., Kaur, A. 2014. Carbohydrate quality, what it means for health benefit. Conferéncia Internacionál de Alimentos Functionales y Nutraceuticos, Monterrey, Mexico, June.
51. Hamaker, B., Xu, H., Tuncil, Y., Reuhs, B., Martens, E. 2014. How dietary fiber discrete structures may favor colonic bacteria. DASAN Conference, Alpina, South Korea, December.
52. Hamaker, B. 2015. What is "carbohydrate quality" and can we use the concept to make healthier foods? Carbohydrate Competency Centre Annual Meeting, Groningen, Netherlands, April.
53. Hamaker, B. 2015. Thoughts on (semi)-predictable targeted modification of the gut microbiota using dietary fibers. Carbohydrate Competency Centre Annual Meeting, Groningen, Netherlands, April.
54. Hamaker, B. 2015. Modulating glycemic carbohydrates for health, starch structure and texture – some thoughts. Unilever R&D Centre, Rotterdam, Netherlands, April.
55. Hamaker, B. 2015. Carbohydrate digestion and sustained energy. Jiangnan University, Wuxi, China, May.
56. Hamaker, B. 2015. Location of delivery of carbohydrate nutrients in the upper and lower gastrointestinal tract – its relevance to health. International Society for Nutraceuticals and Functional Foods 8th Annual Meeting, Wuxi, China, September.
57. Hamaker, B. 2015. How change in motility and locational delivery of glycemic carbohydrates in the GI tract may confer health benefit. Nestle Research Centre, Lausanne, Switzerland, September.
58. Hamaker, B., Xu, H., Kaur, A., Reuhs, B. 2015. Discrete chemical and physical dietary fiber structures and their potential role in favoring gut bacteria. Probiotics, Prebiotics & New Foods, Rome, Italy, September.
59. Hamaker, B., Lamothe, L., Kaur, A., Keshavarzian, A. 2015. Importance of physical form of insoluble fermentable dietary fibers on the gut microbiome. 6th International Conference on Food Factors, Seoul, South Korea, November.
60. Hamaker, B., Nie, X., Tuncil, Y., Jungles, T., Reuhs, B. 2016. Towards design of dietary fibers for gut health. 13th Biennial International Hydrocolloids Conference, Guelph, Canada, May.

Graduate Student Involvement

<u>Past Graduate Students</u>

1. Weaver, C.A. 1995. Biochemical characterization of a highly digestible sorghum genotype. M.S.
2. Bryant, C.M. 1995. The effect of lime-cooking on the gelatinization properties of normal corn starch. M.S.
3. Oria, M.P. 1995. The role of specific endosperm proteins in low protein digestibility of sorghum. Ph.D.
4. Mamadou, L.K. 1996. Characterization of novel "dense floury" sorghum lines with high lysine and high protein digestibility. M.S.
5. Buckner, R.J. 1997. Developmental and crosslinking aspects related to low protein digestibility of normal grain sorghum. Ph.D.

6. Lin, Y.P. 1997. The influence of thermal and chemical properties on textural characteristics of two corn dry-milled fractions. Ph.D.
7. Aboubacar, A. 1997. Physicochemical properties of flour and fine structure of starch in relation to sorghum couscous quality. Ph.D.
8. Zhang, G. 1997. Sorghum starch hydrolysis and digestibility. M.S.
9. Batterman-Azcona, S.J. 1998. Microstructural and chemical changes in corn protein bodies and α-zeins during processing and their effect on texture. Ph.D.
10. Miklus, M.B. 1999. Identification of novel starch and protein structures related to corn masa. Ph.D.
11. Zhang, G. 1999. A novel three-way interaction among starch, protein, and free fatty acids: functionality and mechanism elucidation. Ph.D.
12. Bugusu, B.A. 2000. Effect of added zein on properties and microstructure of sorghum-wheat composite flour dough and bread. M.S.
13. Tandjung, A.S. 2000. Effect of added corn zein on texture of starch-based model system extrudates. M.S.
14. Mix, N.C. 2000. Origin and role of fragmented starch in couscous and porridge stickiness. M.S.
15. Yacizi, N. 2001. Non-thesis masters. M.S.
16. Han, X.Z. 2001. Influence of starch structure and starch granule-associated proteins on rheological properties of starch pastes. Ph.D.
17. Maladen, M. 2002. Characterization and potential application of a novel complex containing amylose, protein and free fatty acid. M.S.
18. Prado, B. 2002. Characteristics of branched water-soluble glucans from ball-milled starch and commercial maltodextrins and their pasting behavior in starch systems. M.S.
19. Suhendra, B. 2002. Factors that influence the starch digestibility of uncooked sorghum grain. M.S.
20. Tandjung, A. 2003. Improvement in popcorn popping performance through edible coatings and understanding inherent factors affecting moisture loss. Ph.D.
21. Bugusu, B.A. 2003. Improvement of starch digestibility in sorghum foods using a high protein digestibility mutant. Ph.D.
22. Barth, A.M. 2004. The effects of starch properties on sorghum product functionality. M.S.
23. Wright, K. 2005. Starch fragmentation in the corn flaking process related to product quality. Ph.D.
24. Lee, S.H. 2005. Structural aspect of food protein allergens related to digestibility. Ph.D.
25. Widya, Y. 2006. Quantitation of channels in starch granules. M.S.
26. Blake, O. 2006. Incorporation of high fiber contents into extruded cereal products. PhD.
27. Mejia, C. 2006. Improving viscoelastic functionality of corn zein and sorghum kafirin proteins for use in baked goods. Ph.D.
28. Maghaydah, S. 2007. Fundamental relationships between starch amylopectin structures and digestion properties. Ph.D.
29. Moussa, M. 2007. Development of pregelatinized flours for commercialization in West Africa. M.S.
30. Pai, D. 2008. Chemical and rheological properties of dietary fibers for optimum extrusion (co-advisor with O. Campanella). M.S.
29. Rose, D. Slowly fermentable dietary fibers for colonic health. Ph.D.
30. Shah, A. A 3-component nanocomplex as a carrier for conjugated linoleic acid (co-advisor with O. Campanella). M.S.
31. Lamothe, L. 2009. Development of a rapid screening method for improved breeder popcorn lines. M.S.
32. Cheng, M.W. 2010. Digestion and absorption of glycemic mono- and disaccharides using the caco-2 cell model. Ph.D.

33. Shen, X. 2010. Amylopectin fine structure: mechanism of the long chain function. Ph.D.
34. Cholewinski, J. 2010. Sorghum endosperm components responsible for promoting protein polymerization through sulfhydryl-disulfide interchange (co-advisor with M. Ferruzzi). M.S.
35. Rumpagaporn, P. Structural features of cereal bran arabinoxylans related to colon fermentation rate. Ph.D.
36. Rahimi, M. Dynamic rheological properties of wheat dough supplemented with extract of *Cephalaria syriaca* and characterization of active components responsible for wheat dough strengthening. M.S.
32. Dahl, D. Hydroxypropylated maize starch cross-linked with sodium trimetaphosphate. M.S. received December 2011. (co-advisor with J. BeMiller, distance-learning student)
37. Kaur, A. Modulation of gut microbiota and its environment using starch-entrapped microspheres and cereal arabinoxylans. Ph.D. May 2012.
38. Lee, B.H. Mucosal alpha-glucosidase hydrolysis properties and the control of glucogenesis. Ph.D. May 2012.
39. Goodall, M. An investigation into the functionality of kafirin from a high digestible, high-lysine sorghum in a composite dough and bread system. M.S. August 2012.
40. Bhopatkar, D. Food biopolymer based soft nanoparticles for solubilization of sparingly soluble small molecules (co-advisor with O. Campanella). Ph.D. August 2012.
41. Xu, H. Influence of the structural complexity of cereal arabinoxylans on human fecal fermentation and their degradation mechanism by gut bacteria (co-advisor with B. Reuhs). Ph.D. August 2012.
42. Fevzioglu, M. Investigation and improvement of the viscoelastic properties of corn protein zein (co-advisor with O. Campanella). Ph.D. December 2012.
43. Hasek, Like Yan. Dietary approach to modulate postprandial glucose absorption, gastric emptying, and long-term food intake using starch-entrapped microspheres. Ph.D. August 2014.
44. Erickson, Daniel P. Functionalizing maize zein as viscoelastic polymers through β-sheet-rich protein networks. Ph.D. August 2014.
45. Cisse, Fatimata. African starchy foods, gastric emptying, and starch digestion in Malian stunted children. Ph.D. December 2014.
46. Simsek, Meric. Inhibition of activities of individual subunits of intestinal Maltase-Glucoamylase and Sucrase-Isomaltase by dietary phenolic compounds for modulating glucose release and gene response. Ph.D. December 2014.
47. Lamothe, Lisa. Fermentable carbohydrate substrates generated from cereal and pseudocereal insoluble dietary fibers and their in vitro fecal fermentation. Ph.D. December 2014.
48. Chegeni, Mohammad. Dietary carbohydrates influence the structure and function of the intestinal α-glucosidases. Ph.D. May 2015 (defended December 2014).
49. Steen, Ana. Scale-up factors for soft nanoparticle production. M.S. expected May 2015. (co-major professor with O. Campanella)

Current Graduate Students

50. Chen, Tingting. Colonic prebiotics and health. Ph.D. expected December 2016.
51. Nie, Xin. Structures of functional fibers and health. Ph.D. expected December 2016.
52. Tuncil, Yunus. Dietary fiber and colon function. Ph.D. expected August 2016.
53. Pletsch, Elizabeth. Glucose delivery in foods related to gastric emptying. Ph.D. expected May 2017.
54. El-Hindaway, Marwa. Dietary carbohydrate triggers for gut satiety hormones, GLP-1 and PYY. Ph.D. expected May 2017.
55. Kazam, Enosh. Dietary fiber and colon function. M.S. expected December 2016.

56. Fang, Fang. Rheological properties of starch pastes and digestion. Ph.D. expected May 2017. (co-major professor with O. Campanella)
57. Hayes, Anna. Physiological response to locational differences in glucose delivery. Ph.D. expected August 2018.
58. Zhang, Xiaowei. Dietary fiber and promotion of gut bacteria. Ph.D. expected August 2018.
59. Lim, Jongbin. Factors that slow starch digestion. Ph.D. expected August 2018.
60. Torres-Aguilar, Pablo. Marketable, healthy sorghum/millet-based foods for Africa. Ph.D. expected August 2018.
61. Diatta, Aminata. Millet processing. M.S. expected August 2017.
62. Meehl, Joel. Phenolics, bioaccessibility, and carbohydrate/protein interactions. Ph.D. expected August 2019. (co-advisor with M. Ferruzzi)
63. Nkhata, Smith. Malawi staple foods and their improvement for markets. Ph.D. expected August 2019. (co-advisor with M. Ferruzzi lead advisor)

Post-Doctoral Associates

1. Mohamed, A.A. 1992-1994. Investigation of the relationship of amount of zeins and non-zeins to lysine content in maize.
2. Suresh, I. 1996-1997. Development and improvement of ELISA-based methods for quantitation of sorghum storage proteins.
3. Rahmanifar, A. 1996-1997. Development of an approach to assess nutritional impact of Quality Protein Maize.
4. Aboubacar, A. 1997-2003. Development of rapid, simple screening assays to identify our high protein digestibility sorghum mutant in breeding populations, and rice starch structure related to genotype and growing environment.
5. Han, X.Z. 2001-2003. Strategies to create starches of different digestion rates for foods for health and sports-minded individuals.
6. Zhang, P. 2003-2005. Slow digesting properties of banana starch and flour.
7. Benmoussa, M. 2002-2006. Introduction of molecular techniques to study protein structure-function relationships with focus on protein allergenicity and low glycemic properties of specific rice varieties.
8. Venkatachalam, M. 2004-2007. Protein-starch interaction and its effect on starch digestion properties.
9. Zhang, G. 2004-2007. Unique digestion properties of a soluble starch complex.
10. Shin, J.E. 2004-2007. Protein-starch interaction and its effect on starch digestion properties.
11. Ao, Z. 2005-2007. Enzyme-substrate structural studies of starch digestion.
12. Mohey El-Din, F. 2006-2008. Novel food products containing high water content.
13. Chen, G. 2007- 2008. Novel food products containing high water content.
14. Lin, A. 2008-2011. Enzyme-substrate structural studies of starch digestion.
15. Patel, B. 2008-present. Improvement of the functionality of corn arabinoxylans; Film formation in baby foods. (co-supervisor with O. Campanella)
16. Bordenave, Nicolas. 2009-2011. Sorghum phenolics and nutritional implications (co-supervisor with M. Ferruzzi)
17. Lee, B.H. Glycemic carbohydrate structures, inhibition and glucose delivery. May 2012 – April 2014.
18. Kim, C.Y. Glycemic carbohydrates and gene expression related to physiologic effects. November 2012 – April 2013.
19. Chegeni, Mohammad. Glycemic carbohydrate digestion and gastric emptying. January 2015 – present (study funded by General Mills Inc.)

20. Zhang, Bin. Dietary fiber and targeted microbiome function. February 2015 – present (study funded by Nutrabiotix, Inc.)
21. Li, Cheng. Slowly digestible starch in intermediate-moisture baked systems. December 2015 – present (study funded by Mondelez Inc.)
22. Martinez, Mario. Slowly digestible starch in intermediate-moisture baked systems. December 2015 – present (study funded by Mondelez Inc.)

Courses Taught

- FS 455, Cereal Chemistry and Processing (2 cr.), F 96, 98, 00, 02, 04, 06, 08, 10
  Chemical components of cereal grains; changes and interactions during processing; glass transition; types of cereal processing; role of cereals in developing countries
- FS 650, Food Chemistry (1 cr.), F 96 yearly through 12, lead instructor
  Review of principles of food chemistry taught to all incoming graduate students; chemistry and interactions of macromolecules; water and molecular mobility; chemistry and processing; problems encountered in industry
- FS 340, Understanding Food Laws and Regulations (1 cr.), S 06, 07, 08, 09, 10, 11, 12
  Federal, state, and international regulations pertaining to quality, wholesomeness, nutrition, and safety of foods; discussion of current topics in food legislation
- FS 540/F&N 540, Food Regulations (2 cr.), S 96 through 05, co-taught, lead instructor
  Federal, state, and international regulations pertaining to quality, wholesomeness, nutrition, and safety of foods; discussion of current topics in food legislation
- FS 591Q, Understanding World Food Problems (2 cr.), S 96, co-taught, lead instructor
  Issues-oriented course covering food availability, population growth, food technology in developing countries, nutritional concerns, and food aid and trade
- FS 591W, Global Food Issues (1 cr.), SS 95, SS 97
  Discussion-based course on a range of topics related to world food problems

Contributing lecturer: FS 610, Food Proteins – lectures on cereal proteins and biotechnology; FS 161, Science of Food – lecture on cereals and legumes; FS 476, Functional Foods – lecture on regulations; FS 652, Nutritional Sciences – lecture on food allergens; ANSC 620, Proteins and Amino Acids in Nutrition – lecture on cereal protein chemistry.