

Mary Ellen Sanders, Ph.D.

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BIO SKETCH

Mary Ellen Sanders is an internationally recognized consultant to food and supplement companies in probiotic microbiology, with special expertise in paths to scientific substantiation of probiotic product label claims. Through numerous written, oral and video pieces (see www.mesanders.com), including a website, USProbiotics.org, she also strives to provide objective, evidence-based information on probiotics for consumers and professionals. Some of her key activities and roles include:

- Member of the working group convened by the FAO/WHO that developed [guidelines for probiotics](#) (2002)
- Panels to determine GRAS status of probiotic strains
- Member of the American Gastroenterological Association Scientific Advisory Board for AGA Center for Gut Microbiome Research and Education
- World Gastroenterology Organisation Committee preparing practice guidelines for the use of probiotics and prebiotics for GI indications (2008, 2011, 2014)
- Served on the Product Integrity Working Group of the NIH National Center for Complementary and Alternative Medicine
- Science Communicator for the Institute for Food Technologists
- Participated in an NIH project titled "[Federal Regulation of Probiotics](#): An Analysis of the Existing Regulatory Framework and Recommendations for Alternative Frameworks," coordinated at the University of Maryland School of Law

Dr. Sanders served as the founding president of the International Scientific Association for Probiotics and Prebiotics (ISAPP) and is currently the organization's Executive Science Officer. This international, non-profit association of academic and industrial scientists is dedicated to advancing the science of probiotics and prebiotics (www.isapp.net).

Dr. Sanders received her B.S. in Food Science at University of California - Davis, and her M.S. and Ph.D. in Food Science with an emphasis in microbiology at North Carolina State University in Raleigh.

Dr. Sanders does not currently oversee a research laboratory. Her past research efforts focused on strain development of lactic acid bacteria with a primary emphasis on genetic improvement of starter cultures as a scientist and group leader in the Biotechnology Group of Miles Laboratories (1983-1989) and *in vitro* characterization and identification of probiotic lactobacilli and bifidobacteria for commercial applications, evaluation of the effect of probiotics on fecal micro-ecology and tracking specific probiotics through the gastrointestinal tract at the Dairy Products Technology Center at California Polytechnic State University.

Dr. Sanders is on the Editorial Board for the journals *Beneficial Microbes* and *Gut Microbes*, is Associate Editor for *Functional Food Reviews* and is an ad hoc reviewer for several journals, including *Gastroenterology*, *Archives of Pediatrics & Adolescent Medicine*, *Applied and Environmental Microbiology*, *International Dairy Journal*, *Nutrition Research*, *British Journal of Nutrition*, *Archives of Internal Medicine*, *Journal of Pediatric Gastroenterology & Nutrition*, *American Journal of Clinical Nutrition*, *European Journal of Clinical Nutrition* and *Nutrition Reviews*. She has published over 100 peer-reviewed papers, mostly in the area of probiotics.

OTHER ACTIVITIES

Organizing committee for the following scientific meetings:

- June 12, 2013. Probiotics, Prebiotics, and the Host Microbiome: The Science of Translation, The New York Academy of Sciences Conference Center, New York City.
- May 9-10, 2012. United States Pharmacopeia's Probiotics Workshop. Objective: to discuss the challenges and opportunities for the development of standards for the quality, identity and authenticity of probiotics.
- December 6-8, 2011. Scientific Organizing Committee, as Consensus Panel Moderator and as author of resulting paper for "Defining a Healthy Gut Microbiome." Project sponsored by the ILSI-North America Committee on Gut Microbes and Health.
- July 24-28, 2011. Probiotics, Intestinal Microbiota and the Host: Physiological and Clinical Implications. FASEB Summer Research Conference. Carefree AZ. Scientific meeting organizer.
- June 11, 2010. Probiotics: From Bench to Market. New York Academy of Sciences. Scientific Organizing Committee.
- June 12, 2010. Probiotic Foods and Supplements. The Science and Regulations of Labeling. New York Academy of Sciences. Scientific Organizing Committee.
- October 16-17, 2006. Developing Probiotics as Foods and Drugs – Scientific and Regulatory Challenges. Marriott Conference Center, University of Maryland College Park Campus, Adelphi, MD. Scientific Organizing Committee.
- As Executive Science Officer of ISAPP, plays key role in developing scientific content and logistics for annual ISAPP meetings, since 2002.

Video appearances and webcast presentations:

- [Germ with a Positive Attitude \(2011\)](#) Developed by Council for Agricultural Science and Technology.
- [Microwarriors: The Power of Probiotics](#) (2011)
- [Probiotics and the Hygiene Hypothesis: A Case for Protective Nutrients](#) (2006)
- [The Health Impact of Active Cultures: Probiotics](#) (2006)
- [Practical Applications of Probiotics in Health and Disease](#) (2008)
- [Infections and Health: How Can Probiotics Help?](#) (2010)

Continuing Education courses co-authored:

- [Probiotics for GI Health in 2012: Issues and Updates](#) (CME-certified, targeted for primary care physicians).
- [Probiotic Supplementation: What Nurse Practitioners Need to Know to Recommend Safe and Effective Formulations](#). (CE-certified, targeted for nurse practitioners.)

Other:

- 2014-present. Serve on the Board of Experts for [Gut Microbiota for Health](#), expert exchange. Expert for the "Probiotics" section.
- 2013-present. Member of the American Gastroenterological Association Scientific Advisory Board for AGA Center for Gut Microbiome Research and Education.
- 2011-2012. Guest Editor, ILSI Europe Concise Monograph, [Probiotics, Prebiotics and the Gut Microbiota](#).
- 2011-2012. Participated in committee to develop monograph on "Live Microbial Microbial Food Cultures" for Food Chemical Codex.
- New York Academy of Sciences, 2010, "Science & The City" podcast about probiotics. [Free podcast](#) ("More Than A Yogurt Cup") available at NYAS website and on iTunes (search "Science & The City").

PUBLICATIONS

1. Merenstein DJ, Tan TP, Solano-Aguilar G, Molokin A, Smith KH, Roberts RF, Shara NM, Mete M, Sanders ME. Safety of *Bifidobacterium animalis* subsp. *lactis* (B. lactis) strain BB-12-supplemented yogurt in healthy adults on antibiotics: a phase I, randomized, double-blinded, placebo-controlled clinical trial. Manuscript in preparation.
2. Glanville J, King S, Hill C, Guarner F, Sanders ME. Use of systematic review and meta-analysis to evaluate evidence for health claims on probiotic foods in the European Union. Submitted, Advances in Nutrition.
3. Hill C, Guarner F, Reid G, Gibson GR, Merenstein DJ, Pot B, Morelli L, Canani RB, Flint, HJ, Salminen S, Calder PC, Sanders ME. 2014. [The International Scientific Association for Probiotics and Prebiotics consensus statement on the scope and appropriate use of the term probiotic](#). Nature Rev Gastro Hepatol. 11, 506–514.
4. Sanders ME, Lenoir-Wijnkoop I, Salminen S, Merenstein DJ, Gibson GR, Petschow BW, Nieuwdorp M, Tancredi D, Cifelli C, Jacques P, Pot B. [Probiotics and Prebiotics: Prospects for Public Health and Nutritional Recommendations](#). Ann N Y Acad Sci. 2014 Feb;1309(1):19-29. doi: 10.1111/nyas.12377.
5. King S, Glanville J, Sanders ME, Fitzgerald A, Varley D. 2014. [The Effectiveness of Probiotics on Length of Illness in Healthy Children and Adults who Develop Common Acute Respiratory Infectious Conditions: A Systematic Review and Meta-Analysis](#). Br J Nutr. 112(1):41-54.
6. Sanders ME, Klaenhammer TR, Ouwehand AC, Marco ML, Johansen E, Pot B, Leyer G, Tennilä J, Ross RP, Franz C, Heimbach JT, Salminen S, Pridmore RD, Charbonneau D, Call E, Pagé N, Lenoir-Wijnkoop I. [Effects of genetic, processing, or product formulation changes on efficacy and safety of probiotics](#). Ann N Y Acad Sci. 2014 Feb;1309(1):1-18.
7. Smug L, Salminen S, Sanders ME, Ebner S. 2014. Yoghurt and probiotic bacteria in dietary guidelines of the member states of the European Union. Beneficial Microbes 5(1):61-66.
8. Hecht GA, Blaser MJ, Gordon J, Kaplan L, Knight R, Laine L, Peek R, Sanders ME, Sartor B, Wu G, Yang V. 2013. [What's the Value of an FDA IND for Fecal Microbiota Transplantation in Clostridium difficile Infection?](#) Clin Gastroenterol Hepatol. 12(2):289-91.
9. Petschow B, Dore J, Hibberd P, Dinan T, Reid G, Blaser M, Cani PD, Degnan FH, Foster J, Gibson G, Hutton J, Klaenhammer TR, Ley R, Nieuwdorp M, Pot B, Relman D, Serazin A, Sanders ME. [Probiotics, prebiotics, and the host microbiome: the science of translation](#). Annals NY Acad Sci. Dec;1306(1):1-17.
10. Hill C and Sanders ME. 2013. [Rethinking “probiotics”](#). Gut Microbes. 4(4):269-270.
11. Sanders ME, Guarner F, Guerrant R, Holt PR, Quigley EMM, Sartor RB, Sherman PM, Mayer E. 2013. [An update on the use and investigation of probiotics in health and disease](#). Gut 62(5):787-96.
12. Sanders, ME. 2012. Probiotics for the healthy consumer. Functional Food Reviews 4(4): 144-151.
13. Bäckhed F, Fraser C, Ringel Y, Sanders ME, Sartor RB, Sherman PM, Versalovic J, Young V, Finlay BB. 2012. [Defining a healthy human gut microbiome: Current concepts, future directions, and clinical applications](#). Cell Host Microbe 12(5):611-22.
14. Donovan SM, Schneeman B, Gibson GR, Sanders ME. Establishing and evaluating health claims for probiotics. Adv Nutr. 2012 Sep 1;3(5):723-5.
15. Guarner F, Khan AG, Garisch J, Eliakim R, Gangl A, Thomson A, Krabshuis J, Lemair T, Kaufmann P, de Paula JA, Fedorak R, Shanahan F, Sanders ME, Szajewska H, Ramakrishna BS, Karakan T, Kim N. World Gastroenterology Organisation Global Guidelines: probiotics and prebiotics October 2011. J Clin Gastroenterol. 2012 Jul;46(6):468-81.
16. Floch MH, Walker WA, Madsen K, Sanders ME, Macfarlane GT, Flint HJ, Dieleman LA, Ringel Y, Guandalini S, Kelly CP, Brandt LJ. 2011. Recommendations for probiotic use – 2011 update. J Clin Gastroenterol. 45 Suppl:S168-71.
17. Sanders ME. Impact of probiotics on colonizing microbiota of the gut. 2011. J Clin Gastroenterol. 45 Suppl:S115-9.

18. Wallace TC, Guarner F, Madsen K, Cabana MD, Gibson G, Hentges E, Sanders ME. 2011. Human gut microbiota and its relationship to health and disease. *Nutr Rev.* 69(7):392-403.
19. Guarner F, Sanders ME, Gibson G, Klaenhammer T, Cabana M, Scott K, Reid G, Delzenne NM, Fahey G, Hill C. 2011. Probiotic and prebiotic claims in Europe: seeking a clear roadmap. *Brit J Nutr.* 106(11):1765-7.
20. Sanders ME, Heimbach JT, Pot B, Tancredi D, Lenoir-Wijnkoop I, Lähteenmäki-Uutela A, Gueimonde M, Bañares S. 2011. [Health claims substantiation for probiotic and prebiotic products](#). *Gut Microbes* 2:1-7.
21. Merenstein D, Gonzalez J, Young AG, Roberts RF, Sanders ME, Petterson S. 2011. Study to investigate the potential of probiotics in children attending school. *Eur J Clin Nutr.* 65(4):447-53.
22. Sanders, ME, Levy DD. 2011. [The science and regulations of probiotic food and supplement product labeling](#). *Annals New York Acad Sci*; 1219 S1, E1–E23.
23. Sanders, M.E. 2011. Substantiating health benefit claims for probiotics in the United States. *In*, Health Claims and Probiotics, W. Kneifel, S. Salminen, Eds. Blackwell Wiley, Oxford UK.
24. Klein M, Sanders ME, Duong T, Young HA. 2010. [Probiotics: From Bench to Market](#). *Annals New York Acad Sci.* Vol. 1212 S1, pages E1-E14.
25. Sanders ME. 2010. International Scientific Association for Probiotics and Prebiotics 2010 Meeting Report. *Functional Food Reviews* 2:131-140.
26. Shane, AL, Cabana, MD, Vidry, S., Merenstein, D, Hummelen, R, Ellis, CL, Heimbach, JH, Hempel, S, Lynch, SV, Sanders, ME, Tancredi, DJ. 2010. [Guide to designing, conducting, publishing and communicating results of clinical studies involving probiotic applications in human participants](#). *Gut Microbes* 1(4): 1-10.
27. Merenstein, D., Smith K., Scriven, M., Roberts, R., Sanders, M.E., Petterson, S. 2010. The study to investigate the potential benefits of probiotics in yogurt, a patient-oriented, double-blind, cluster-randomised, placebo-controlled, clinical trial. *Eur. J. Clin Nut.* 64(7):685-91.
28. Merenstein D., Murphy, M., Fokar, A., Hernandez, R., Park, H., Nsouli H., Sanders, M.E., Davis B., Niborski V., Tondou F., Shara N. 2010. Use of a fermented dairy probiotic drink containing *Lactobacillus casei* (DN-114 001) to decrease the rate of illness in kids: the DRINK study. A patient-Oriented, Double-Blind, Cluster-Randomized, Placebo-Controlled, Clinical Trial. *European J. Clin Nutr.* 64(7):669-77.
29. Sanders, M.E., Merenstein, D.J. Use of probiotic yogurts in health and disease. 2010. *In*, Probiotics: Clinical Guide, M. Floch, A. Kim, Eds., Slack Inc., pp. 95-120.
30. Sanders M.E., Akkermans LMA., Haller D, Hammerman C, Heimbach J, Huys G, Levy D, Mack D, Phothirath P, Constable A, Solano-Aguilar G, Vaughan E. 2010. [Assessment of probiotic safety for human use](#). *Gut Microbes* 1 (3):1-22.
31. Sanders, M.E., Marco, M. 2010. [Food formats for effective delivery of probiotics](#). *Ann. Rev. Food Sci. Technol.* 1:65–85.
32. Quigley, E.M.M. and Sanders, M.E. 2009. Probiotic Foods for Gastrointestinal Health. *Gastroenterology & Endoscopy News Special Edition.* October;7:27-33.
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36. Reid G, Gibson G, Sanders ME, Guarner F, Versalovic J; International Scientific Association for Probiotics and Prebiotics. Probiotic prophylaxis in predicted severe acute pancreatitis. *Lancet.* 2008 Jul 12;372(9633):112-3.
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38. Sanders ME. 2008. Use of probiotics and yogurts in maintenance of health. J Clin Gastroenterol. 42 Suppl 2:S71-S74.
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51. Sanders, M.E. 2005. 10 myths about probiotics. Prepared Foods, July, p. 67-73.
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55. Tompkins TA, Sanders ME. 2004. Good intentions, poor study design. Can Fam Physician. 50:1499-500.
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57. Sanders, M.E. and J. Heimbach. 2004. Functional foods in the USA: emphasis on probiotic-containing foods. Food Science and Technology Bulletin - Functional Foods 1(8) 1–10.

58. Sanders, M.E., T. Tompkins, J. Heimbach, S. Kolida. 2004. Weight of evidence needed to substantiate a health effect for probiotics and prebiotics: scientific and regulatory considerations in Canada, EU, and U.S. *Eur J Nutr.* 44(5): 303-310.
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PRESENTATIONS

1. Sanders, M.E. 2013. What pharmacists need to know about probiotics. St. John's University, College of Pharmacy and Health Sciences, Office of Continuing Professional Education. Jamaica, New York, November 2.
2. Sanders, M.E. 2013. Probiotics: Optimizing the Benefits Within Regulatory Limitations. Institute of Food Technologists annual meeting, Chicago, July 16.
3. Sanders, M.E. Probiotic Basics for Pharmacists. American Pharmacists Association annual meeting, March 2.
4. Sanders, M.E. 2012. Probiotics, health claims and EFSA. Presented as part of a symposium: Probiotics and prebiotics in practice - a practical guide to usability in specific cases. Ljubljana, Slovenia, November 29.
5. Sanders, M.E. 2012. Regulation of Health and Nutritional Claims Comparison of Europe and U.S.A. Symposium: Clinical Trials for Foods and Supplements—Guidance for Industry, Limerick, Ireland. September 28.
6. Sanders, M.E. 2012. Developing a Dossier to Substantiate Health Effects of Probiotic Foods, Experimental Biology Meeting, San Diego, April 23.
7. Sanders, M.E. 2012. Evidence needed for a health claim. Gut Microbiota For Health 1st World Summit, European Society of Neurogastroenterology and Motility, Evian, France. March 26-28.
8. Sanders, M.E. 2012. Translation of Probiotic Science into Probiotic Foods. Food Forum Workshop on the Human Microbiome, Diet, and Health. Sponsored by the Institute of Medicine. Washington DC, February 22-23.
9. Sanders, M.E. 2011. Probiotics - Friendly Flora. Hot Topics in Nutrition, sponsored by Dairy Council of Arizona, Phoenix, October 18.
10. Sanders, M.E. 2011. Demystifying probiotics. Nonprescription Medicines Academy Annual Conference, Mason OH, October 14.
11. Sanders, M.E. 2011. Is your pizza probiotic? Webcast lecture as part of Yakult USA Dietician Website lecture series, September 14.
12. Sanders, M.E. 2011. The Impact of Regulatory Frameworks on Probiotic Development Pathways. FASEB Summer Research Conference, Carefree AZ, July 28.
13. Sanders, M.E. 2011. Developing Efficacy Standards to Support the Health Benefits of Probiotics. Institute of Food Technologists Webcast, July 19.
14. Sanders, M.E. 2011. What Are the Risks and Challenges of Making Health Benefit Claims on Probiotic Foods and Supplements? University College Cork, Ireland, June 22.
15. Sanders, M.E. 2011. Communicating health benefits on probiotic foods. International Dairy Foods Association 2011 Milk and Cultured Dairy Products Symposium, Rosemont, IL, March 22.
16. Sanders, M.E. 2011. Can Probiotics Alter the Microbiota? Yale University 3rd Workshop on Advances in Probiotic Use, New Haven, CT, April 8.
17. Sanders, M.E. 2011. The Impact of Regulatory Frameworks on Probiotic Development Pathways. FASEB Summer Research Conferences, "Probiotics, Intestinal Microbiota and the Host: Physiological and Clinical Implications", Carefree Resort, Carefree, Arizona, July 24 – July 29.
18. Sanders, M.E. 2010. What to Look For in a Probiotic Product. American Academy of Family Physicians, Dinner Symposium on "Infections and Health: How Can Probiotics Help?" Denver CO, September 30.
19. Sanders, M.E. 2010. Confused about probiotics? Here's help! Webcast lecture as part of Yakult USA Dietician Website monthly lecture series.
20. Sanders, ME. 2010. Translating probiotics research: Global regulatory environment. Institute of Food Technologists, Annual Meeting, Chicago, July 19.
21. Sanders, ME. 2010. Translating the science into efficacy claims on probiotic or prebiotic products in the US market. American Dairy Science Association, Annual Meeting, Denver, July 13.

22. Sanders, M.E. 2010. Probiotics: myths vs. facts. NY Academy of Sciences Conference - Probiotics: From Bench to Market, June 11, New York, NY.
23. Sanders, M.E. 2010. New York Academy of Sciences, "Science & The City" podcast about probiotics. [Free podcast](#) ("More Than A Yogurt Cup") at NYAS website and on iTunes (search "Science & The City").
24. Sanders, M. E. 2010. Applications of beneficial microbes: state of the art! TNO beneficial microbes conference, March 15-17, Noordwijkerhout, the Netherlands.
25. Sanders, M.E. 2010. Strategies for Managing Individuals with Diagnosed Lactose Intolerance: Probiotics. National Institutes of Health Consensus Development Conference: Lactose Intolerance and Health. February 22-24, Bethesda MD.
26. Sanders, M.E. 210. The Good Gut Bugs: Prebiotics & Probiotics. Current Issues in Nutrition, Iowa State University, University Extension Program. April 15, Webinar.
27. Sanders, M.E. 2010. Probiotics: what are they and how they might be of value to patients with kidney disease. Council on Renal Nutrition, March 3, Webinar.
28. Sanders, M.E. 2010. Probiotics and prebiotics: what are they and how might they help infants and children. Part 1. Background on the gut microbiota, defining probiotics and prebiotics and the marketplace. Part 2. Examining the clinical evidence for health effects of probiotics and prebiotics of probiotics and prebiotics. WIC conference, February 3, Norman, OK.
29. Sanders, M.E. 2009. Are generic claims justified for probiotic products? The need for strain-specific demonstration of efficacy. Supply Side West trade show, November 13, Las Vegas NV.
30. Sanders, M.E. 2009. Probiotics: An overview – understanding health effects, mechanisms of action and marketplace. Amer College of Nutrition, October 2, Orlando FL.
31. Sanders, M.E. 2009. Understanding and Recommending Probiotics. Teleseminar sponsored by the American Dietetics Association, August 27. [Online archive](#)
32. Sanders, M.E. 2009. How do we define a probiotic? 11th Annual Postgraduate Nutrition Symposium "Protective Nutrients: Are They Here to Stay?" July 8-9, Harvard Medical School, Boston MA.
33. Sanders, M.E. 2009. Probiotics: Health Effects and Navigating the Marketplace. Wyoming Medical Society, June 11, Sheridan, WY.
34. Sanders, M.E. 2009. What Constitutes a Probiotic? American Academy of Physician Assistants 37th Annual conference, May 26, San Diego, CA. [Webcast](#)
35. Sanders, M.E. 2009. The Potential Uses for Probiotics in Human Health, 16th Annual Alimentary Update conference, March 26, South Lake Tahoe, NV
36. Sanders, M.E. 2009. Probiotics: Recommendations for Patients, Navigating the Marketplace and Understanding the Regulatory Categories, 16th Annual Alimentary Update conference, March 26, South Lake Tahoe, NV
37. Sanders, M.E. 2009. Probiotics: strain and dose dependency of effects, Natural Products Expo West, March 6, Anaheim CA
38. Sanders, M.E. 2009. Probiotic effects on human health: what do we know? Lecture presented as part of NIH STEP Lecture Series, January 13, Bethesda, MD
39. Sanders, M.E. 2008. The potential use for probiotics in health. American College of Nutrition, 49th Annual Meeting, October 3, Arlington, VA. [Webcast](#).
40. Sanders, M.E. 2008. Health benefits of active cultures: probiotics. Colorado Academy of Family Physicians, July 18-20, Estes Park, CO
41. Sanders, M.E. 2008. Latest developments in probiotics: scientific, clinical and regulatory – a US perspective. Probiotech2008, June 18-24, Nantes France
42. Sanders, M.E. 2008. NY State Dietetics Assn, May 6-7, Albany, NY.
43. Sanders, M.E. 2008. Probiotics: part of a healthy diet. Nebraska Dietetics Association Annual Meeting, April 24, Omaha, NE.

44. Sanders, M.E. 2008. Establishing guidelines for defining probiotics and product quality standards. International Probiotics Association meeting, April 11-12, Beverly Hills.
45. Sanders, M.E. 2008. Probiotics: the health impact of active cultures, Family Medicine Grand Rounds, Department of Family Medicine, University of Colorado at Denver Health Sciences Center, March 5, Aurora, CO.
46. Sanders, M.E. 2007. Factors influencing gut microbiota: Probiotics. NIH/NIDDK Conference on Gastrointestinal Microbiota and Advances in Prebiotic and Probiotic Research. December 11-12, Bethesda, MD.
47. Sanders, M.E. 2007. Use of probiotics and yogurts in maintenance of health. Advances in Clinical Use of Probiotics – 2007. November 16, Yale University, New Haven, CT.
48. Sanders, M.E. 2007. Gut flora and the impact of probiotics on intestinal health. American College of Gastroenterology annual conference. Satellite symposium. October 16, Philadelphia.
49. Sanders, M.E. 2007. Probiotics: The health impact of active cultures. Indiana Academy of Family Physicians 59th Annual Meeting, July 26, French Lick, IN.
50. Sanders, M. E. 2007. Health benefits of probiotics. ILSI China Workshop on Fermented Milk and Health, June 8, Beijing, China.
51. Sanders, M.E. 2007. Breaking the barriers - connecting with consumers and delivering the benefits of probiotic cultures. IDFA Cultured Products Symposium. May 23, Minneapolis, MN.
52. Sanders, M.E. 2007. Barriers to commercialization of probiotic products. ILSI North America meeting, January 24, Cancun, Mexico.
53. Sanders, M.E. 2006. Probiotics: Definition, Source, Selection and Uses. At “Developing Probiotics as Foods and Drugs – Scientific and Regulatory Challenges”. Conference sponsored by Natural Health Products Special Area Interest Community (NHP- SIAC) of the Drug Information Association. October 16-17, College Park MD.
54. Sanders, M.E. 2006. Probiotics: What, Why and When? Presented to the American Academy of Family Practitioners, Satellite Symposium, September 29, Washington DC. [Webcast](#)
55. Sanders, M.E. 2006. Probiotics: benefits and applications. American Dietetic Association Food & Nutrition Conference, September 19, Honolulu, HI.
56. Sanders, M.E. 2006. Probiotic cultures for cheese. 17th Biennial Cheese Industry Conference. August 9, Sun Valley, Idaho.
57. Sanders, M.E. 2006. Probiotics: considerations for human health. Council for Responsible Nutrition’s Day of Science, July 25, Washington DC.
58. Sanders, M.E. 2006. The contribution of microbes in fermented dairy products to health. IFT, June 24-28, Orlando FL.
59. Sanders, M.E. 2006. Health benefits of probiotics. Pennsylvania Dietetic Association Annual Meeting, April 28, King of Prussia, PA.
60. Sanders, M.E. 2006. Health benefits of probiotics in dairy foods. 8th Symposium on Advances in Dairy Products Technology, February 27-28, Shell Beach, CA.
61. Sanders, M.E. 2005. What is a probiotic and how do you choose it? European Conference on Probiotics and Their Applications, October 6 – 8, Krakow, Poland.
62. Sanders, M.E. 2005. Myths about probiotics. The Pennsylvania State University, Departmental Seminar, September 15, University Park, PA.
63. Sanders, M.E. 2005. The value of revising the standard of identity for yogurt: why bacteria are important. Presentation made to Congressional Staffers on behalf of the National Yogurt Association, May 17, Washington DC.
64. Korzenik, J., Kitts, C., Pittler, A., Engelbrektsen, A., Sanders, M. and Klaenhammer, T. 2005. A randomized, double-blind, controlled trial of probiotics to minimize the disruption of gut flora as assessed by 16s rRNA

- terminal restriction fragment length polymorphism and culture enumeration in healthy subjects undergoing antibiotic therapy. *Digestive Disease Weekly*, May 14-19, Chicago, IL.
65. Sanders, M.E. 2005. Prebiotics and probiotics. Albuquerque District Dietetic Association, March 7, Albuquerque NM.
 66. Sanders, M.E. 2005. Communicating about efficacy of probiotic products in the US market: scientific and regulatory considerations. Univ. of Guelph, March 2, Guelph, Ontario Canada.
 67. Sanders, M.E. 2005. Probiotic and prebiotic use in a hospital setting: antibiotic induced diarrhea, Crohn's disease and other indications. February 18, Longmont United Hospital, Longmont, CO.
 68. Sanders, M.E. 2004. The potential impact of probiotics and prebiotics on gastrointestinal and immune health of combat soldiers. Paper presented at the Institute of Medicine Workshop on Optimization of Nutrient Composition of Military Rations for Short-Term, High-Stress Situations. Institute of Medicine. Committee on Optimization of Nutrient Composition of Military Rations for Short-Term, High-Stress Situations. August 9-11, Natick MA.
 69. Nguyen, H.D., Lung, D.Y., Engelbrektson, A.L., Korzenik, J., Sanders, M.E., Leyer, G. and Kitts, C. 2004. The effect of probiotics on the species distribution of *Bifidobacterium* and *Lactobacillus* in healthy subjects undergoing antibiotic therapy. International Society of Microbial Ecology, August 22-27, Cancun, Mexico.
 70. Sanders, M.E. 2004. Probiotics in the control of allergy: clinical support and product development. Institute of Food Technologist Annual Meeting, July 12-16, Las Vegas NV.
 71. Sanders, M. E. and J. Heimbach. 2004. Probiotic and prebiotic standards for yogurt and yogurt drinks. IDFA Cultured Dairy Products Conference, May 18-19, Minneapolis, MN.
 72. Sanders, M.E. 2004. Probiotic bacteria in yogurt: how much is enough? Nutracon, March 4, Anaheim, CA.
 73. Sanders, M. E. 2003. Building a probiotic dairy product: a case study. Worldwide Food Expo 2003, October 30, Chicago, IL.
 74. Sanders, M. E. 2003. Probiotic dairy products: marketing challenges. 40th Annual Marschall Cheese & Dairy Expo, September 17-18, Visalia, CA.
 75. Sanders, M. E. 2003. Probiotics: What's New? 40th Annual Marschall Cheese & Dairy Expo, September 17-18, Visalia, CA.
 76. Sanders, M. E. 2003. Update on probiotics – new research. Cultured Dairy Products Conference, May 20-21, Milwaukee, WI.
 77. Sanders, M. E. 2003. Probiotics: definition, importance to microbiology and health, and optimal standards for human use. American Society for Microbiology, May 18 – 23, Washington DC.
 78. Sanders, M. E. 2003. The role of probiotics in human health. Wisconsin Dietetics Association 2003 Annual Conference, April 10, Madison, WI.
 79. Sanders, M. E. 2003. The science and marketing of probiotics: emphasis on opportunity for dairy products. 2003 All Star Convention, March 12-16, La Jolla, CA.
 80. Sanders, M.E. 2003. *L. acidophilus* NCFM[®]: functional properties of a unique probiotic strain. Expo West, March 7, Anaheim, CA.
 81. Sanders, M. E. 2003. Probiotics: scientific basis and clinical applications. American Society of Parenteral and Enteral Nutrition, National Nutrition Week, January 20-24, San Antonio, TX.
 82. Sanders, M. E. 2002. Safety of oral probiotics in human health: what is known? Montreal International Symposium Probiotics and Health: Biofunctional Perspectives. October 24-25, 2002, Montreal, Quebec.
 83. Sanders, M. E. 2002. Probiotics: what are they and how are they used? American College of Nutrition 43rd Annual Symposium on Advances in Clinical Nutrition, October 3-6, 2002, San Antonio, TX.
 84. Sanders, M. E. and F. Guarner. 2002. Convene round table on: Yogurts and Fermented Milks. Benefits of Live Cultures. September 25, 2002. World Dairy Congress, Paris.
 85. Sanders, M. E. 2002. *L. acidophilus* NCFM[®]: functional properties of a unique probiotic strain. Vitafoods International 2000 Exhibition and Conference, Geneva, Switzerland.

86. Sanders, M. E. 2002. Probiotics for humans: status and future of the science and marketplace. FDA National Center for Toxicological Research, Jefferson, AK.
87. Sanders, M. E. 2002. The scientific basis and clinical effects of probiotics. Michigan State University Malcolm Trout Lecture Series, E. Lansing, MI.
88. Sanders, M. E. 2002. Marketing opportunities for nutraceuticals and probiotics. SmartMarketing 2002 (sponsored by IDFA), San Diego, CA.
89. Sanders, M. E. 2001. Probiotic delivered through foods. Probiotics, Prebiotics and New Foods Conference. Rome, Italy.
90. Sanders, M. E. 2001. Regulatory aspects of health claims associated with probiotics. International Dairy Federation Nutrition Conference. Auckland, New Zealand.
91. Sanders, M.E. 2001. Probiotics: new strains and strain specific research. Nutricon 2001, San Diego, CA.
92. Sanders, M. E. 2001. Probiotics in the human diet: what is their role? American Dietetic Association Annual Meeting, St. Louis, MO.
93. Sanders, M. E. 2001. Probiotics: efficacy and applications to dairy products. 2001 Annual Meeting of Institute of Food Technologist, New Orleans, LA.
94. Sanders, M. E. 2001. Regulatory considerations for labeling foods and supplements with health statements in the U.S. First International Bio-Minerals Symposium: Trace Elements in Nutrition, Health and Disease. Salt Lake City, UT.
95. Sanders, M. E. 2001. Dairy foods and those friendly bacteria important to your health. California Dairy Industry Conference, Pomona, CA.
96. Sanders, M. E. 2001. The emerging role of probiotics in health. Food 3000, Rome, Italy.
97. Sanders, M. E. 2000. Functional foods in the USA: can probiotics and prebiotics play a role? American Association of Candy Technologists, Section Meeting, Chicago, IL.
98. Sanders, M. E. 2000. Probiotics: foods in the marketplace. Food Advisory Committee to FDA, meeting on probiotics, Arlington, VA.
99. Sanders, M. E. 2000. Probiotic theory and application in foods. General Mills Technical Seminar Series, Minneapolis, MN.
100. Sanders, M. E. 2000. Probiotics/prebiotics. Cultured Dairy Products Conference, Las Vegas, NV.
101. Sanders, M. E. 2000. The perfect partnership: milk and probiotics. Fluid Milk Forum, Dairy Management Inc., Rosemont, IL.
102. Sanders, M. E. 2000. Probiotic products in the U.S.: current status and future challenges. California Institute for Agricultural Research Conference XIII, Sacramento, CA.
103. Sanders, M. E. 2000. Better health and better foods: the role of probiotics. East Coast Section of IFT, Philadelphia, PA.
104. Sanders, M. E. 2000. Probiotics. Oregon Dairy Industries 2000 Conference. Eugene, OR.
105. Sanders, M.E. 2000. USA perspectives on probiotics. PROBDEMO Meeting, Rovaniemi, Finland.
106. Sanders, M. E. 1999. Current market and potential for probiotic-containing products in the U.S. IFT Scientific Lecturer. Ohio IFT Division, Cleveland, OH.
107. Sanders, M. E. 1999. Microbiological issues in marketing probiotic products. International Workshop on Dairy Products and Colon Cancer Risk Reduction, Utrecht, The Netherlands.
108. Sanders, M. E. 1999. Bringing a probiotic-containing functional food product to market: microbiological, product, regulatory and labeling issues. Sixth Symposium on Lactic Acid Bacteria, Veldhoven, The Netherlands.
109. Sanders, M. E. 1999. Approaches and limitations of in vitro characterization of probiotic bacteria. Submitted to 1999 Annual Meeting of the American Dairy Science Association, Memphis, TN.
110. Yeung, P. S. M., R. Cano, C. L. Kitts, M. E. Sanders and P. S. Tong. 1999. Gene-based techniques for species identification and strain relatedness of commercial probiotic strains. 1999 IFT Annual Meeting, Abstract 37D-27.

111. Yeung, P.S.M., R. Cano, P. S. Tong, and M. E. Sanders. 1999. Comparison of API, 16S rDNA sequencing and fatty acid analysis as methods to speciate commercial probiotic bacteria. 1999 Annual Meeting of the American Dairy Science Association, Memphis, TN.
112. Iturriria-Laverty, K., P. S. Tong, and M. E. Sanders. 1999. Microbiological stability of probiotic and starter bacteria in commercial yogurt and cottage cheese. 1999 Annual Meeting of the American Dairy Science Association, Memphis, TN.
113. Sanders, M. E. 1999. Functional properties of yogurt. Dannon International Research Center Symposium: "Yogurt: Eighty Years of Active Research for Health", Barcelona, Spain.
114. Sanders, M. E. 1999. Probiotics and health. IRTU Conference on "Dairy Products and Health", Ulster, Northern Ireland.
115. Sanders, M. E. 1999. Considerations for use of probiotic bacteria to modulate human health. 1999 Experimental Biology annual meeting, Washington, D.C.
116. Sanders, M. E., R. Cano and T. R. Klaenhammer. 1998. Lactic acid bacteria – they can be "healthy" for the consumer and you. California Milk Producer Research Conference: Report on Producers' Investments, Visalia, CA.
117. Sanders, M. E. 1998. Current market and potential for probiotic-containing products in the U.S. Northern California Section IFT, San Jose, CA.
118. Sanders, M. E. 1998. Overview of functional foods with an emphasis on probiotic bacteria. Washington DC Section IFT, October 22, Washington DC.
119. Sanders, M. E. 1998. Current market and potential for probiotic-containing products in the U.S., Bonneville Section IFT, September 18, Park City, UT.
120. Sanders, M. E. 1998. Scientific basis of probiotic functionality. Brigham Young University, Departmental Seminar Series, Provo, UT.
121. Sanders, M. E. 1998. Current market and potential for probiotic-containing products in the U.S. Cultured Dairy Products Symposium, Milwaukee, WI.
122. Sanders, M. E. 1997. Overview of functional foods. US/Ireland Co-operation Programme in Agricultural Science and Technology, Conference on Functional Foods, Cork, Ireland.
123. Sanders, M. E. 1997. Probiotics: theory, potential and use. Nutracon 97 Conference, Las Vegas, NV.
124. Sanders, M. E. 1997. Development of consumer probiotics in the US market. Institute of Food Technologists Annual Convention, Orlando, FL.
125. Sanders, M. E. 1996. Probiotic cultures and human health. XII International Symposium on Gnotobiology (ISG), Honolulu, HI.
126. Sanders, M. E. 1996. Probiotic cultures for milk products: positive human health effects and microbiological challenges. Departmental Seminar, Dairy Products Technology Center, Cal Poly State University, San Luis Obispo, CA.
127. Sanders, M. E. 1996. Overview of probiotics: their effect on human health. 16th Symposium on Nutrition and Food Technology, Chicago, IL.
128. Sanders, M. E. 1995. Probiotics: from all things to all people, to snake oil. World Congress on Anaerobic Bacteria and Infections, San Juan, Puerto Rico.
129. Sanders, M. E. 1995. Probiotics: definition and range of applications. Institute of Food Technologists Annual Meeting, Anaheim, CA.
130. Sanders, M. E. 1994. Lactic acid bacteria and human health. Old Herborn University Seminar, Herborn, Germany.
131. Sanders, M. E. 1994. The effect of lactic acid bacteria on human health. Univ. Minnesota Departmental Seminar, St. Paul, MN.
132. Sanders, M. E. 1994. The next generation of fluid milks with added lactic cultures. Spring Dairy Industry Conference, Sacramento, CA.

133. Sanders, M. E. 1994. Culture containing milks for the California market: project update. California Cheese Symposium, San Francisco, CA.
134. Sanders, M. E. 1993. Health attributes of cultured dairy foods. Annual Meeting of American Cultured Dairy Products Institute, Las Vegas, NV.
135. Sanders, M. E. 1992. Rapid Microbiological Methods. Rocky Mountain Section of IFT Suppliers Night, Denver, CO.
136. Sanders, M. E. 1991. HACCP. Rocky Mountain Section of IFT, Denver, CO.
137. Sanders, M. E. 1990. Genetic approaches for the improvement of strains for Italian cheese manufacture. Marschall Italian Cheese Seminar, Madison, WI.
138. Sanders, M. E. 1990. Genetic approaches for improving food starter cultures. ASM Conference on Biotechnology, Chicago, IL.
139. Sanders, M. E. 1989. Bacteriophage resistance and its applications to yogurt flora. International Conference on Health Attributes of Live Active Culture Yogurt, New York.
140. Sanders, M. E. 1989. Phage-resistance in cheese-making bacteria. Western Michigan University, Kalamazoo, MI.
141. Sanders, M. E. 1988. Phage resistant starters. E.M.B.O. Workshop on Genetic Manipulation of Lactic Acid Bacteria: A Breakthrough in the Food Industry, Annecy, France.
142. Sanders, M. E., P.J. Leonhard, and T.R. Klaenhammer. 1986. The use of pTR2030 for the conjugal construction of a fast acid-producing, phage-resistant strain of *Streptococcus lactis*. American Dairy Science Association Annual Meeting, Davis, CA.
143. Sanders, M. E. 1986. Genetic characterization of lactic acid bacteria. Western Food Industry Conference, Davis, CA.
144. Sanders, M. E. 1985. Advances in starter culture technology. X Food Microbiology Research Conference, Chicago, IL.
145. Sanders, M. E. 1985. Protoplast transformation of *Streptococcus cremoris*. Wind River Conference on Genetic Exchange, Estes Park, CO.
146. Sanders, M. E. and T. R. Klaenhammer. 1984. Temperature-sensitive phage resistance in a phage-insensitive strain of *Streptococcus lactis*. 84th Annual Meeting of the American Society of Microbiology, St. Louis, MO.
147. Klaenhammer, T.R. and M. E. Sanders. 1983. Resistance of group N streptococci to lytic bacteriophage: mechanisms and genetic determinants. International Symposium on Lactic Acid Bacteria in Foods: Genetics, Metabolism and Applications. Netherlands Society for Microbiology, Wageningen, The Netherlands.
148. Sanders, M. E. and T. R. Klaenhammer. 1983. Phage resistance in a phage insensitive strain of *Streptococcus lactis*: involvement of plasmid DNA in genetically determining phage adsorption. 77th Annual Meeting of the American Dairy Science Association, University of Wisconsin, Madison, WI.
149. Sanders, M. E. 1982. Involvement of plasmid DNA in the bacteriophage resistance of the lactic streptococci. Carolina - Virginia Section Meeting of Institute of Food Technologists, Winston-Salem, NC.
150. Sanders, M. E. and T. R. Klaenhammer, 1981. Plasmid composition of mutants deficient in restriction and modification and proteolytic capacities in *Streptococcus cremoris* KH. American Society for Microbiology International Conference on Streptococcal Genetics, Sarasota, FL.
151. Sanders, M. E. and T. R. Klaenhammer, 1981. Evidence for plasmid linkage of restriction and modification systems in *Streptococcus cremoris*. 76th Annual Meeting of the American Dairy Science Association, Louisiana State University, Baton Rouge, LA.
152. Sanders, M. E. and T. R. Klaenhammer, 1980. Restriction and modification in the lactic streptococci: the effect of heat on the development of modified, lytic bacteriophage. 75th Annual Meeting of the American Dairy Science Association, Virginia Polytechnic Institute, Blacksburg, VA.

153. Sanders, M. E. and T. R. Klaenhammer, 1979. Host restriction and modification in the lactic streptococci: effect of environmental stress. North Carolina Branch of the American Society for Microbiology, Raleigh, NC.