Curriculum Vitae December 2022

ROBERT J. McGORRIN, PHD, CFS

Professor of Flavor Chemistry

Department of Food Science & Technology
Oregon State University
100 Wiegand Hall
Corvallis, OR 97331

Phone: (541) 737-8737 • FAX: (541) 737-1877

Robert.mcgorrin@oregonstate.edu

CAREER SUMMARY

Unique perspectives of the food science profession from dual job experiences in academia at a Tier-1 Land Grant university, and in research and development at two major food companies. Academic experience: Flavor research, food safety, and administrative responsibilities in Food Science research, outreach, and instruction to prepare future food and fermentation science graduates for workforce pipeline needs of the food industry. Industry experience: Technical expertise in flavor chemistry, chemistry of food components and ingredients, food safety, special situations, regulatory, basic research, product development programs. Service: Leadership on university task force committees, advisory boards. Membership on editorial boards and grant review panels. Leadership and governance of local, divisional, and national committees for the ACS and IFT.

EDUCATION

Ph.D. Organic/Medicinal Chemistry, University of Illinois, Urbana, IL 1980
M.S. Organic/Medicinal Chemistry, University of Illinois, Urbana, IL 1976
B.A. Chemistry, Northwestern University, Evanston, IL 1973

CERTIFICATIONS

Certified Food Scientist (CFS), International Food Science Certification Commission
Lead Instructor Training for FSPCA Preventative Controls for Human Food, AFDO
Sensory Spectrum, Flavor Profile Analysis, Texture Profile Analysis
Arthur D. Little, Flavor Profile Method

PROFESSIONAL EXPERIENCE

2019-present	Professor of Flavor Chemistry, Food Science & Technology, Oregon State Univ. Corvallis, OR
2000-2018	Department Head, Food Science & Technology, Oregon State University, Corvallis, OR
2000-2018	Jacobs-Root Professor, Food Science & Technology, Oregon State University, Corvallis, OR
2006-2007	Interim Superintendent, OSU Food Innovation Center, Portland, OR
6/98-1/00	Section Manager, Strategic Innovative Research, Kraft Foods, Inc., Research & Development, Glenview, IL
6/94-5/98	Section Manager, Analytical Chemistry, Kraft General Foods, Inc., R&D
8/89-5/94	Section Manager, Chromatography, Flavor & Bioanalysis, Kraft General Foods, R&D
8/88-7/89	Section Manager, Flavor Chemistry, Kraft, Inc., R&D
7/86-7/88	Senior Group Leader, Flavor Chemistry, Kraft, Inc., R&D
8/84-6/86	Senior Research Scientist II, Basic Flavor Chemistry, Kraft, Inc., R&D
8/81-7/84	Senior Research Scientist I, Basic Flavor Chemistry, Kraft, Inc., R&D
2/78-8/81	Research Chemist, Flavor Technology Div.; Pet Foods Div., Quaker Oats, R&D

RESEARCH EXPERTISE

Chemistry of food ingredients, flavor chemistry, trace volatile analysis, natural products chemistry. Flavor compound-food component interactions, identifications of key aroma compounds in dairy and food products. Effects of processing / packaging on flavor generation and deterioration. Food analysis, chromatography and separations (GC, HPLC), spectrometry (GC/MS, GC/MS/MS, GC/IR)

- Conducted flavor chemistry research and technical problem-solving with hazelnuts, seafood, small-fruit flavors, wine flavor, cheese and whey ingredient flavors in support of the local food and beverage industries. Provided technical support for food flavors and off-flavor problem solving. Examples:
  - Basic research of hazelnut drying and water activity to optimize freshness and shelf-life extension.
  - Flavor quality and shelf life of aquaculture-raised sturgeon and trout
  - Vineyard trials, soil nutrition, and grape flavor optimization during fermentation for Oregon *Pinot noir* and *Pinot gris* wine flavors
  - Flavor evaluation of ultra-high pressure treated tomatoes and orange juice
  - Halal issues with natural tallow flavor in French-fried potatoes
  - Optimization of peppermint distillation in the field to improve essential oil fractionation and yield.
  - Compilation of character impact flavor & off-flavor compounds in foods (mints, fruits, etc.)

DEPARTMENT ADMINISTRATION

As Department Head, provided leadership and strategic direction for teaching, research, and Extension programs in Food Science & Technology including food chemistry, processing, preservation, quality and microbiological food safety as part of the mission of the College of Agricultural Sciences at Oregon State University. Responsible for managing, administering, and coordinating the operations of the Department, comprising 24 tenure-track faculty, 1 senior instructor, 1 instructor, 4 professional faculty, 3 administrative staff, 5 faculty research assistants/associates, 40 graduate students, and 180 undergraduate majors. Responsible for developing programs, overseeing a $3.2 M annual state budget, $2.9 M external grant/contract support, implementing a strategic plan that identifies program priorities and directions, sources of outside research funding, and capital fundraising to develop professorships and upgrade/build new facilities.

Academic Administration of Research, Teaching and Extension (Oregon State University)

- Worked with faculty to develop a 5-year strategic Plan for the Department with goals to increase student numbers, enhance the Fermentation teaching and research program and facilities, and build a new Enology & Viticulture program.
- Developed marketing and recruitment plans to significantly increase number of undergraduate majors. Enrollments of B.S. Food Science & Technology majors have increased 500% from 40 to nearly 220 students over a ten-year period since 2003.
- Preparation for and successful completion of a three departmental external reviews: 1) CSREES; 2) IFT accreditation of undergraduate BS program (70% re-approval rate); and 3) OSU graduate/ undergraduate programs.
- Liaison to Oregon Wine Industry with OSU College of Agricultural Sciences (2001 to 2008). Worked with College of Agricultural Sciences, Horticulture Dept., OSU Foundation and industry to develop a strategy for creation of an Oregon Wine Research Institute at the University to address industry research and outreach needs.
- Coordinated risk management issues for fermentation program; implemented licensing and bonding of research brewery and winery facilities with Oregon Liquor Control Commission.
- Developed manufacturing strategy for Beaver-branded OSU student-made food products, including estimates of facility, equipment, staff, and student labor needs to manufacture the first set of food products (artisan cheeses), based on recommendations of an MBA student project.
- Priority staffing and resource justification to hire eleven new campus-based tenure track faculty, an instructor, and three professional faculty members.
- Facility planning, justification, management, and renovation of Withycombe Hall creamery and enology pilot plants, Wiegand Hall research labs, conference rooms, and walk-in cooler/freezer

facilities. Strategic space planning for teaching laboratories with expansion of undergraduate and graduate food science programs.

- Food Innovation Center Interim Superintendent (Aug. 2006 – Jan. 2007): Staffing plans and strategy development; working with Oregon food industry clients to transfer new technologies; assisting small- and medium-size food businesses with product development/quality improvement projects
- Strategy and fundraising for new facility for Food/Fermentation Science (Center for Innovations in Fermentation). Worked with College of Agricultural Sciences Dean and Executive Associate Dean to develop draft vision statement and facility plans.
- Fundraising and development for the Food Science & Technology department program
  - Establishment of a $1.28M charitable remainder trust for the FST department head unrestricted endowment and international internship endowment
  - Development of a $300K undergraduate food science scholarship trust fund to attract incoming freshmen to food science
  - Fundraising activities with Oregon food companies (Resers, Arbuthnot, Tillamook) for scholarships, endowed professorship, and a capital campaign for a new food science building.

HONORS AND AWARDS

Fellow, Institute of Food Technologists (IFT) 2014
Fellow, American Chemical Society (ACS) 2014
Honorary State FFA (Future Farmers of America) Degree 2013
College of Agricultural Sciences Leadership Academy Mentor Awards 2013-2019
E. R. Jackman Fellow, College of Agricultural Sciences, Oregon State University 2007
Agricultural & Food Chemistry Division-ACS, "700 Club" Book Award 2000, 1997
Agricultural & Food Chemistry Division-ACS, Distinguished Service Award 1999
Kraft Foods ABCD (Above and Beyond the Call of Duty) Award 1999
American Chemical Society Outstanding Division Performance Award 1995
Kraft Foods ABCD (Above and Beyond the Call of Duty) Award 1995
Kraft Foods TQ (Total Quality) Guiding Principle Award 1994
Kraft Food Ingredients Special Commendation Award 1994
Kraft Foods Director's Awards of Excellence 1992, 1993

LEADERSHIP / SERVICE

Editorial Boards

Editorial Board, *Chemosensory Perception* 2007-2022
Editorial Advisory Board, *Journal of Agricultural & Food Chemistry* 1994-2018
Editorial Advisory Board, *Chemical Innovation* / *CHEMTECH* 1996-2001
Section Editor, Food Analysis, *Encyclopedia of Analytical Chemistry* (Wiley) 1998-99
Editorial Advisory Board, American Chemical Society Books 1991–1993

Board Service

Elected Member, Board of Directors, Institute of Food Technologists 2015-2018
Member, Advisory Board, OSU Food Innovation Center 2008-2018
Member, Policy Advisory Board, Oregon Wine Research Institute 2009-2013
Research Liaison, Oregon Wine Board 2001-2008

Research Committees

Research Subcommittee, Executive Committee, Western Regional Aquaculture Center 2006-present
Technical Advisor, Western Regional Aquaculture Center 2003-2006

Professional Societies
Member, Executive Committee, ACS Agricultural & Food Chemistry Division 1998-present
ACS Expert (American Chemical Society) 2015-present
Chair, IFT Division Enhancement Workgroup 2015
IFT Nominations and Elections Task Force 2013
IFT Certified Food Scientist Oversight Group 2012-2013
IFT Certified Food Scientist Implementation Committee 2011-2013
Chair (2010), IFT Higher Education Review Board 2008-2011
Chair (2009), IFT Council of Food Science Administrators 2000-2018
IFT Annual Meeting Scientific Program Advisory Committee 2006-2008
Chair (2009), IFT Fermented Foods & Beverages Division. Alternate Councilor 2006
Secretary, IFT Functional Foods Division 2004
Councilor, IFT Oregon Section 2003
Chair-Elect (1999), ACS Chicago Section. Vice-Chair 1998
Chair, ACS Agricultural & Food Chemistry Division 1994
Program Chair, ACS Agricultural & Food Chemistry Division 1993-1994
Chair, Flavor Subdivision, Agricultural & Food Chemistry Division 1989
President, Chicago Chemists' Club 1986, 1998

Federal Grant Review Panels (Washington, DC)
Panel Manager, USDA-NIFA Improving Food Quality 2013, 2014
USDA-NIFA Physical & Molecular Mechanisms of Food Contamination Review Panel 2011
USDA-NIFA Improved Food Processing Technologies Competitive Grant Review Panel 2011
USDA-AFRI NRI Improving Food Quality and Value Competitive Grant Review Panel 2009
USDA-CSREES NRI Improving Food Quality & Value Competitive Grant Review Panel, 2008
USDA-CSREES National Needs Graduate Fellowship Review Panel, 2008
USDA-CSREES NRI Improving Food Quality & Value Competitive Grant Review Panel, 2007

University Service (Oregon State University)
Chair, Search Committee, College of Agric Sciences, Coordinator of Outreach and Recruitment, 2022
Internal Advisory Council, OSU ADVANCE, 2015-19
Chair, College of Agricultural Sciences, Faculty and Staff Awards Selection Committee 2017
Senator, College of Agricultural Sciences, OSU Faculty Senate 2015-17
Bylaws and Nominations Committee, OSU Faculty Senate 2015-17
Search Committee, Department of Environmental & Molecular Toxicology, Office Manager 2017
Graduate Marshal, OSU Commencement 2010-2018, 2021
Participant, CAS Summer Agricultural Institute 2002-2018
Search Committee, College of Agricultural Sciences. Associate Dean, 2015
OSU Campus Evaluation Committee for Fulbright U.S. Student Program 2012
Search Committee, College of Public Health and Human Sciences. Director – Moore Family Center for Whole Grain Foods, Nutrition & Preventative Health (Dr. Emily Ho) 2011-2012
Student Mentor, Leadership Academy, College of Agricultural Sciences 2011-22
Chair, Search Committee, College of Agricultural Sciences. Department Head – Animal and Rangeland Sciences (Dr. John Killefer) 2010-2011
Chair, Search Committee, College of Agricultural Sciences. Director – Oregon Wine Research Institute (Dr. Neil Shay) 2009-2010
Chair, Search Committee, College of Agricultural Sciences. Director – OSU Seafood Laboratory (Dr. Christina DeWitt) 2008-2010

Promotion & Tenure Committee, College of Agricultural Sciences. 2008

REGIONAL RESEARCH COLLABORATION TASK FORCE
Washington State/ Idaho / Oregon State Universities Cross-Strategy Summit - Food Safety 2011

INTERNATIONAL SCIENTIFIC EXCHANGES

OSU Food Science Research Exchange/Shanghai Ocean University – Shanghai, China 2016
Oregon State University CAS Department Heads Delegation – Beijing/Nanjing, China 2013
Oregon State – OSU Deans Delegation to National Taiwan/Fu Jen University Taipei, Taiwan 2013
Oregon State – Fu Jen University Food Science Cultural Exchange – Taipei, Taiwan 2011
ADEC/USDA Scientific Delegation on Food Safety – Beijing/Nanjing/Shanghai, China 2008

LEADERSHIP DEVELOPMENT

U.S. National Science Foundation ADVANCE STEM Training Workshop 2015
ESCOP/ACOP Leadership Development Internship Program (2000-2001)
Workshop for Newly-Appointed Administrators, University of Nebraska (May, 2001)
Leading People at Kraft, Kraft Foods (1999)
GOLD (Gaining Organizational Leadership through Development) Kraft Foods (1998)
Delegation & Team Effort, University of Michigan Business School, Ann Arbor, MI (1998)
Leadership Development Program, Center for Creative Leadership, Boulder, CO (1993) Management II: Mid-Management Development Program, Univ. Michigan Business School, Ann Arbor, MI (1990)

PROFESSIONAL EXPERT CONSULTING / LEGAL TESTIMONY

Expert Witness on behalf of Firmenich for potential *Inter Partes* Review against Symrise AG 2018
Plaintiff vs. McDonald's Personal injury/slip-fall – fresh apple slices 2016
Class Action Litigants vs. The Clorox Company (D. CA) Cat litter box odor trapping 2014
Kellogg Co./Kellogg USA vs. FPC Packaging vs. IGI (D. MI) Aroma tainted cereal liner 2013-14
Wm. Wrigley Jr. vs. Cadbury Adams (D. IL) Physiological coolants in chewing gum 2004-11

INDUSTRY / GOVERNMENT / UNIVERSITY SERVICE
Northwest Food Processors Association, University liaison, student scholarships 2003-2018
Member, Rulemaking Advisory Committee, Olive oil standard of identity, Oregon Department of Agriculture 2011
Member, Rulemaking Committee for Oregon HB 3042, Relating to the use of alcoholic beverages for educational purposes; provided testimony to Higher Education Subcommittee 2011
Advisory input to faculty and university president, proposed graduate program in Food Policy and Culture, Marylhurst University 2010
Member, Organizing Committee, Oregon Wine Industry Symposium 2004-2010

JOURNAL PEER REVIEWER (Ad-hoc reviewer for scientific manuscripts):
Journal of Agricultural & Food Chemistry
Journal of Dairy Science
American Chemical Society Books
Journal of Food Science
American Journal of Enology & Viticulture
Chemosensory Perception

PROFESSIONAL AFFILIATIONS
Institute of Food Technologists
American Chemical Society
Chicago Chemists' Club
Alpha Chi Sigma Fraternity (chemistry professional)

REPRESENTATIVE PUBLICATIONS AND SCHOLARSHIP

Books (5)

Cadwallader, K. R., Drake, M. A., **McGorrin, R. J.** Eds., *Flavor of Dairy Products*, ACS Symposium Series 971, ACS Books, Washington, D.C., 2007.

McGorrin, **R. J.** Section Editor, Food Analysis. In *Encyclopedia of Analytical Chemistry: Instrumentation and Applications*, R. A. Meyers, Ed., John Wiley & Sons, New York, NY, 2000, Vol. 5, pp. 3857-4332.

McGorrin, **R. J.**, Leland, J., Eds. *Flavor-Food Interactions*, ACS Books, Washington, D.C., ACS Symposium Series 633, 1996.

Parliment, T. H., Morello, M. J., **McGorrin**, **R. J.,** Eds. *Thermally Generated Flavors: Maillard, Microwave, and Extrusion Processes*, ACS Books, Washington, D.C., American Chemical Society Symposium Series 543, 1994.

Parliment, T. H., **McGorrin**, **R. J.**, and Ho, C.-T., Eds. *Thermal Generation of Aromas*, ACS Books, Washington, D.C., ACS Symposium Series 409, 1989.

Peer Reviewed Publications

McGorrin, R. J. Key aroma compounds in oats and oat cereals. *J. Agric Food Chem., 67* (50), 13778-13789, 2019. DOI: 10.1021/acs.jafc.9b00994.

Choi, J., Lee, S. I., Rackerby, B., Moppert, I., **McGorrin, R**., Ha, S.-D., Park, S. H. Potential contamination sources on fresh produce associated with food safety. *J. Food Hyg. Saf., 34 (1)*, 1-12, 2019.

Wang, W. Jung, J., **McGorrin, R. J.**, Zhao, Y. Investigation of the mechanisms and strategies for reducing shell cracks of hazelnut *(Corylus avellana* L.*)* in hot air drying. *LWT – Food Science Technol., 98*, 252-259, 2018.

Wang, W. Jung, J., **McGorrin, R. J.,** Traber, M. G., Leonard, S. W., Zhao, Y. Investigation of drying conditions on bioactive compounds, lipid oxidation, and enzyme activity of Oregon hazelnuts *(Corylus avellana* L.*). LWT – Food Science Technol., 90*, 526-534, 2018.

Jung, J., Wang, W., **McGorrin, R. J.,** Zhao, Y. Moisture adsorption isotherm and storability of hazelnut inshells and kernels produced in Oregon, USA. *J. Food Science*., *83 (2)*, 340-348, 2018.

McGorrin, **R. J.** Character-impact Flavor and Off-Flavor Compounds in Foods. In *Flavor, Fragrance, and Odor Analysis*, 2nd. ed, R. Marsili, Ed., CRC Press, Boca Raton, FL, 2012, Chapter 9, pp. 207-262.

McGorrin, R. J. The Significance of Volatile Sulfur Compounds in Food Flavors. In *Volatile Sulfur Compounds in Food*, M. Qian, X. Fan, and K. Mahattanatawee, Eds., ACS Symposium Series 1068, ACS Books, Washington, D.C., 2011, Chapter 1, pp. 3-31.

McGorrin, **R. J.** One Hundred Years of Progress in Food Analysis *J. Agric. Food Chem.*, *57*, 8076-8088, 2009.

McGorrin, **R. J.** Flavor Analysis of Dairy Products. In *Flavor of Dairy Products*, K. R. Cadwallader, M. A. Drake, and R. J. McGorrin, Eds., ACS Symposium Series 971, ACS Books, Washington, D.C., 2007, pp. 23-49.

McGorrin, R. J. Character-impact Flavor Compounds. In *Sensory-Directed Flavor Analysis*, R. Marsili, Ed., Taylor & Francis/CRC Press, Boca Raton, FL, 2007, pp. 223-267.

Akpinar, O.; **McGorrin**, **R. J.**, Penner, M. H. Cellulose Based Chromatography for Cellooligosaccharide Production *J. Agric. Food Chem.*, *52*, 4144-4148, 2004.

McGorrin, R. J. Character Impact Compounds: Flavors and Off-Flavors in Foods. In *Flavor, Fragrance, and Odor Analysis*, R. Marsili, Ed., Marcel Dekker, New York, NY, 2002, pp. 375-413.

McGorrin, R. J. Advances in Dairy Flavor Chemistry, In *Food Flavors and Chemistry: Advances of the New Millennium*, Spanier, A. M., Shahidi, F., Parliment, T. H., Mussinan, C. J., Ho, C.-T., Contis, E. T., Eds., Royal Society of Chemistry, Cambridge, 2001, pp. 67-84.

McGorrin, R. J., Gimelfarb, L. Novel Aspects of Tomatillo Flavor. In *Aroma Active Compounds in Foods*, Takeoka, G., Engel, C. H., Guntert, M., Eds., ACS Symposium Series 794, ACS Books, Washington, D.C., 2001, pp. 73-90.

McGorrin, R. J. Food Analysis Techniques: Introduction. In *Encyclopedia of Analytical Chemistry: Instrumentation and Applications*, Meyers, R. A., Ed., John Wiley & Sons, New York, NY, 2000, Vol. 5, pp. 3859-3862.

Parliment, T. H., **McGorrin, R. J.** Critical Flavor Compounds in Dairy Products, In *Flavor Chemistry: Industrial and Academic Research*, Risch, S. J.; Ho, C.-T., Eds., ACS Symposium Series 756, ACS Books, Washington, D.C., 2000, pp. 44-71.

McGorrin, R. J., Gimelfarb, L. Comparison of Flavor Components in Fresh and Cooked Tomatillo with Red Plum Tomato. In *Food Flavors: Formation, Analysis, and Packaging Influences. Proceedings of the 9th ACS International Flavor Conference*, *Limnos, Greece*, Contis, E. T., Ho, C.-T., Mussinan, C. J., Parliment, T. H., Shahidi, F., Spanier, A. M., Eds., Elsevier, New York, NY, Developments in Food Science Vol. 40, 1998, pp. 295-313.

Stanford, M. A., **McGorrin, R. J.** Flavor Volatilization in Microwave Food Model Systems. In *Thermally Generated Flavors: Maillard, Microwave, and Extrusion Processes,* Parliment, T. H., Morello, M. J., McGorrin, R. J., Eds., ACS Books, Washington, D.C., ACS Symposium Series 543, 1994, Chapter 36, pp. 414-436.

Croasmun, W. R., **McGorrin, R. J.** Gas Chromatography–Matrix Isolation Infrared Spectroscopy–Mass Spectrometry for Analysis of Thermally Generated Aroma Compounds. In *Thermal Generation of Aromas*, Parliment, T. H., McGorrin, R. J., Ho, C.-T., Eds., ACS Books, Washington, D.C., ACS Symposium Series 409, 1989, Chapter 7, pp. 61-72.

Heydanek, M. G., **McGorrin, R. J.** Oat Flavor Chemistry: Principles and Prospects. In *Oats: Chemistry and Technology*, Webster, F. H., Ed., Amer. Assn. of Cereal Chem., St. Paul, MN, 1986, Chapter 12, pp. 335-369.

McGorrin, R. J., Pofahl, T. R., Croasmun, W. R. Identification of the Musty Component from an Off-Odor Packaging Film. *Anal. Chem.*, *59*, 1109A-1111A, 1987.

Heydanek, M. G., **McGorrin, R. J.** GC-MS Investigations on the Flavor Chemistry of Oat Groats. *J. Agric. Food Chem.*, *29*, 950-954, 1981.

Heydanek, M. G., **McGorrin, R. J.** GC-MS Identification of Volatiles from Rancid Oat Groats. *J. Agric. Food Chem.*, *29*, 1093-1095, 1981.

Katzenellenbogen, J. A., **McGorrin, R. J.**, Tatee, T., Kempton, R. J., Carlson, K. E., Kinder, D. H. Chemically Reactive Estrogens: Synthesis and Estrogen Receptor Interactions of Hexestrol Ether Derivatives and 4-Substituted Deoxyhexestrol Derivatives Bearing Alkylating Functions. *J. Med. Chem.*, *29*, 435-450, 1981.

Selective Flavor Symposia Organized at National Meetings

Raghavan, S., Ho, C.-T., **McGorrin, R. J.** Thermal Generation of Flavors and Off-flavors, American Chemical Society National Meeting, Boston, MA, August 19-23, 2007.

Cadwallader, K. R., Drake, M. A., **McGorrin, R. J.** Dairy Flavor Chemistry, American Chemical Society National Meeting, Philadelphia, PA, August 22-26, 2004.

Cadwallader, K. R., Drake, M. A., **McGorrin, R. J.** Dairy Flavor Symposium, Institute of Food Technologists Annual Meeting, Chicago, IL, June 14, 2003.

Cadwallader, K. R., **McGorrin, R. J.** Developments in the Analysis of Complex Flavor Systems, Institute of Food Technologists Annual Meeting, Food Chemistry Division, Afternoon Session, June 26, 2001.

McGorrin, R. J. Modern Advances in Dairy Flavor Chemistry. 10th International American Chemical Society Flavor Conference, Paros, Greece, July 4-7, 2000.

McGorrin, R. J. and J. Leland. Interactions of Flavors with Foods, American Chemical Society National Meeting, Washington, DC, August 21-25, 1994.

Parliment, T. H., Morello, M. J., **McGorrin, R. J.** *Thermally Generated Flavors: Maillard, Microwave, and Extrusion Processes*, American Chemical Society National Meeting, Washington, DC, August 23-28, 1992.

Parliment, T. H., **McGorrin, R. J.,** Ho, C.-T., Eds. *Thermal Generation of Aromas*, American Chemical Society National Meeting, Los Angeles, CA, September 25-30, 1988.

Recent Abstracts of Technical Papers Presented at Scientific Meetings and Conferences

McGorrin, R. J. (Invited speaker) Flavor Chemistry of Tomatillo – A Unique Latin American Fruit Vegetable, American Chemical Society, 3rd Intl. Flavor & Fragrance Conference, Vina del Mar, Chile, Oct. 1-4, 2019

Kovacevic, J., Waite-Cusic, J., Stone, D., **McGorrin, R.,** DeWitt, C., Dean, T., DiCaprio, E., Pires, A., Rasco, B., Rivadeneira, P., Rock, C., Uyeda, J.. Western Regional Center to Enhance Food Safety. 2019 Annual Meeting, National Consortium for Produce Safety, NASDA. Orlando, FL, March 6-8, 2019. (poster, invited)

Kovacevic, J., Stone, D., DeWitt, C.., **McGorrin, R.**, Dean, T., DiCaprio, E., Pires, A., Rasco, B., Rivadeneira, P., Rock, C. Western Regional Center to Enhance Food Safety (WRCEFS): Summary 2015-2018 and Continuation 2018-2021. FSOP Transition Meeting, Washington, DC. November 28, 2018. (oral)

McGorrin, R. J. (Invited speaker) Key Aroma Compounds in Oats and Oat Cereals, American Chemical Society, 2nd Intl. Flavor & Fragrance Conference, Wuxi, China, May 28-31, 2018

McGorrin, R. J. (Invited speaker) Flavor Interactions in High Protein Food Systems, American Chemical Society, 1st Intl. Flavor & Fragrance Conference, Cartagena, Columbia, May 10-12, 2017

McGorrin, R. J. (Invited speaker) One Hundred Years of Progress in Food Analysis, American Chemical Society National Meeting, Agricultural & Food Chemistry Division, Philadelphia, PA, August 17-21, 2008.

McGorrin, R. J. (Invited speaker) Flavor Analysis of Small Fruits, American Chemical Society National Meeting, Agricultural & Food Chemistry Division, Philadelphia, PA, August 17-21, 2008.

McGorrin, R. J. (Invited speaker) Thermal Generation of Flavors and Off-Flavors: An Overview, American Chemical Society National Meeting, Boston, MA, August 19-23, 2007.

McGorrin, R. J. (Invited speaker) The Merging of Flavor Technology with Nanotechnology, International Symposium of Novel Food Processing Technology, Fu-Jen University, Taipei, Taiwan, March 31, 2007.

McGorrin, R. J. Overview: Dairy Flavor Analysis, American Chemical Society National Meeting, Agricultural & Food Chemistry Division, Philadelphia, PA, August 25, 2004.

McGorrin, R. J. Overview: Dairy Flavors and Methods of Analysis, Institute of Food Technologists Annual Meeting, Chicago, IL, June 14, 2003.

McGorrin, R. J. Overview: Flavor Analysis in the Food Industry. Institute of Food Technologists Annual Meeting, New Orleans, June, 2001.

McGorrin, R. J. Advances in Dairy Flavor Chemistry. 10th International American Chemical Society Flavor Conference, Paros, Greece, July, 2000.

McGorrin, R. J. and Gimelfarb, L. Novel Aspects of Tomatillo Flavor. American Chemical Society National Meeting, New Orleans, LA, August, 1999.

McGorrin, R. J. and Gimelfarb, L. Flavor Constituents of Fresh Tomatillos. 9th International American Chemical Society Flavor Conference, Limnos, Greece, July, 1997.

Recent Flavor Workshops and Short Courses

McGorrin, R. J. "Interactions of Flavors with Food Systems" Institute of Food Technologists, Short Course. New Orleans, LA, June 1-2, 2019. (Organizer, presenter)

McGorrin, R. J. "Interactions of Flavors with Food Systems" Institute of Food Technologists, Short Course. Chicago, IL, July 14-15, 2018. (Organizer, presenter)

McGorrin, R. J. "Interactions of Flavors with Food Systems" Institute of Food Technologists, Short Course. Las Vegas, NV, June 24-25, 2017. (Organizer, presenter)

McGorrin, R. J. (Invited speaker) "Interactions of Flavors with Foods; Flavor Generation from Food Processing" Flavor and Fragrance Workshop, American Chemical Society, First Intl. Flavor and Fragrance Conference, Cartagena, Columbia, May 8-9, 2017

McGorrin, R. J. "Interactions of Flavors with Food Systems" Institute of Food Technologists, Short Course. Chicago, IL, June 2016. (Organizer, presenter)

McGorrin, R. J. "Interactions of Flavors with Food Systems" Institute of Food Technologists, Short Course. East Brunswick, NJ, March 31 – April 1, 2016. (Organizer, presenter)

McGorrin, R. J. "Interactions of Flavors with Food Systems" Institute of Food Technologists, Short Course. Chicago, IL, July 10-11, 2015. (Organizer, presenter)

McGorrin, R. J. "Flavor Interactions in Foods." Institute of Food Technologists, Short Course. New Orleans, LA, June 20-21, 2014. (Organizer, presenter)

McGorrin, R. J. "Flavor Interactions in Foods." Institute of Food Technologists, Short Course. Chicago, IL, July 12-13, 2013. (Organizer, presenter)

McGorrin, R. J. "Flavor Interactions in Foods." Institute of Food Technologists, Short Course. Las Vegas, NV, June 2012. (Organizer, presenter)

McGorrin, R. J. "What is Flavor?" Institute of Food Technologists, Webinar, Flavor Interactions in Foods: A Primer, Nov. 2011 (Co-organizer, presenter)

McGorrin, R. J. "Analytical Chemistry of Flavors." American Chemical Society, Short Course, Flavor Research Workshop, Boston, MA, August, 2007. (Presenter)

McGorrin, R. J. and F. Germino. "Flavor Interactions in Foods." Institute of Food Technologists, Short Course. Chicago, IL, July, 2007. (Co-organizer, presenter)

McGorrin, R. J. and F. Germino. "Flavor Interactions in Foods. " Institute of Food Technologists, Short Course. Austin, TX, February, 2006. (Co-organizer, presenter)

McGorrin, R. J. "Analytical Chemistry of Flavors." American Chemical Society, Short Course, Flavor Research Workshop, Washington, DC August, 2005. (Presenter)

McGorrin, R. J. and F. Germino. "Flavor Interactions in Foods." Institute of Food Technologists, Short Course. Orlando, FL, March 2003, 2004, 2005. (Co-organizer, presenter)

McGorrin, R. J. "Analytical Chemistry of Flavors." American Chemical Society, Short Course, Flavor Research Workshop, New York, NY, Sept., 2003. (Presenter)

McGorrin, R. J. "Analytical Chemistry of Flavors." American Chemical Society, Short Course, Flavor Research Workshop, Boston, MA, August, 2002. (Presenter)

McGorrin, R. J. and F. Germino. "Flavor Interactions in Foods." Institute of Food Technologists, Short Course. Orlando, FL, March, 2002; March, 2001. (Co-organizer, presenter)

Invited Technical Presentations at Industry and Trade Association Meetings

McGorrin, R. J. Protein + Flavor = A Formulation Challenge, Protein Trends & Technologies Seminar, Itasca, IL, May 22-23, 2018.

McGorrin, R. J. (invited speaker) Food Safety Panel Discussion, Food & Beverage Farm to Label Summit, Davis Wright Tremaine, Portland, OR June 2017.

McGorrin, R. J. Insights into Flavoring Use and the Impact of Clean Labels, Clean Label Conference, Itasca, IL, March 28-29, 2017.

McGorrin, R. J. (invited speaker) Panel Discussion, Food and Beverage Roadmap, Research & Development / Technical Assistance, NWFPA Convention, Portland, OR, Jan. 2017.

McGorrin, R. J. Applying Chemistry to Solve Protein Flavoring Issues, Protein Trends & Technology Forum, Arlington Heights, IL, April 8-9, 2014.

McGorrin, R. J. Surimi Flavor: How to Make Crabstick Tastier, OSU Surimi Industry Forum, Astoria, OR, May 8, 2012.

McGorrin, R. J. Flavor Science: How to Make Surimi Seafood Tastier, OSU Surimi School, Astoria, OR, May 9, 2012.

McGorrin, R. J. Oregon State University Resources for You: Food Science & Technology. *Food Biz* Entrepreneurs Forum, Linn-Benton Community College, Albany, OR, April 29, 2011.

McGorrin, R. J. Fried Surimi Seafood: Fat Facts, OSU Surimi Industry Forum, Astoria, OR, April 13, 2010.

McGorrin, R. J. Resources in OSU Food Science & Technology. *Food Biz* Entrepreneurs Forum, Corvallis, OR, March 27, 2010. Panel discussion with J. H. Wells, S. Masoni.

McGorrin, R. J. and Azarenko, A. N. Overview of Oregon Wine Research Institute (Research and Extension faculty, programs, partnerships). OSU Viticulture & Enology Symposium, Corvallis, OR, Mar. 11, 2010.

McGorrin, R. J. and Bastian, T. Overview of Oregon Wine Research Institute. Oregon Wine Industry Symposium, Eugene, OR, Feb. 23, 2010.

McGorrin, R. J. Flavor Technology for Surimi Seafood, OSU Surimi School, Astoria, OR, April 21, 2009.

McGorrin, R. J. Impact of Grape Maturity on Wine Flavor. Oregon Wine Industry Symposium, Eugene, OR, Feb. 12, 2008.

McGorrin, R. J. and Azarenko, A. N. Overview of OSU Wine Institute. OSU Foundation Board of Trustees, Corvallis, OR, May 18, 2007.

McGorrin, R. J. Welcome and Introductory Comments to OSU Surimi School, Astoria, OR, May, 2007.

McGorrin, R. J. The Merging of Flavor Technology with Nanotechnology, Standard Foods (Quaker Oats), Taipei, Taiwan, April 4, 2007.

McGorrin, R. J. Integrating Technology with Consumer Trends in the Food Industry, Hewlett Packard R&D Council, Corvallis, OR, October 9, 2006.

Dutson, T., Azarenko, A. N., and **McGorrin, R. J**. Viticulture & Enology Industry Update, Oregon Wine Board, Corvallis, OR, May 17, 2006.

McGorrin, R. J. and Azarenko, A N. OSU Viticulture & Enology Program Update. Oregon Wine Industry Symposium, Eugene, OR, Mar. 1, 2006.

McGorrin, R. J. Research Overview: OSU Food Science and Technology, Standard Foods (Quaker Oats), Taipei, Taiwan, December 15, 2005.

Dutson, T., **McGorrin, R. J**. and Azarenko, A. N. Critical Evaluation: Viticulture & Enology Dept. at OSU, Oregon Wine Board, Corvallis, OR, May 17, 2004.

McGorrin, R. J. Educational Opportunities in Dairy Science, 91st Annual Oregon Dairy Industries Conference, Tualatin, OR, April 15, 2003.

McGorrin, R. J. New Trends in Food Science: Introductory Comments to Surimi School, Astoria, OR, April, 2001.

M. Qian and **McGorrin, R. J.** Flavor Chemistry of Dairy Products, 90th Annual Oregon Dairy Industries Conference, Eugene, OR, March, 2001.

Invited Technical Presentations at Universities and Regional Meetings

McGorrin, R. J. Chemical Approaches for the Characterization and Measurement of Flavor, Beijing Technology and Business University, June 2018.

McGorrin, R. J. Recent Advances in Flavor Chemistry, University of Shanghai Science & Technology, October, 2016.

McGorrin, R. J. Overview of Food Science and Technology, Summer Agricultural Institute, Corvallis, OR June, 2016

McGorrin, R. J. Overview of Food Science and Technology, Summer Agricultural Institute, Corvallis, OR June, 2015

McGorrin, R. J. OSU Food Science and Technology, Jiangsu University, April 2014.

McGorrin, R. J. Overview of Food Science and Technology, Summer Agricultural Institute, Corvallis, OR June, 2014

McGorrin, R. J. Overview of Food Science and Technology, Summer Agricultural Institute, Corvallis, OR June, 2012

McGorrin, R. J. Overview of Food Science and Technology, Summer Agricultural Institute, Corvallis, OR June, 2011

McGorrin, R. J. Flavor Analysis Linked to Chemosensory Impact. Dept. of Food Science and Technology/Robert Mondavi Institute, University of California, Davis, CA, October 26, 2010.

McGorrin, R. J. Overview of Food Science and Technology, Summer Agricultural Institute, Corvallis, OR June, 2009

McGorrin, R. J. Thermal Generation of Flavors and Off-flavors: An Overview. Dept. of Food Science, Fu-Jen Catholic University, Taipei, Taiwan, April 29, 2009.

McGorrin, R. J. Enology Program at Oregon State University, Umpqua Community College, Roseburg, OR Feb., 2009

McGorrin, R. J. Overview of Food Science and Technology, Summer Agricultural Institute, Corvallis, OR June, 2007

McGorrin, R. J. Flavor Technology: Uncovering the Secrets of Aroma and Taste. Institute of Food Technologists, Oregon Section, Portland, OR, February 2006.

McGorrin, R. J. Overview of Food Science and Technology, Fu-Jen Catholic University, Taipei, Taiwan, December 9, 2005.

McGorrin, R. J. Opportunities in Food Science & Technology / Food Processing Research, Invited Presentation, Summer Agricultural Institute, Corvallis, OR June, 2005

McGorrin, R. J. Opportunities in Food Science & Technology / Food Processing Research, Invited Presentation, Summer Agricultural Institute, Corvallis, OR June, 2003.

McGorrin, R. J. Opportunities in Food Science & Technology / Food Processing Research, Invited Presentation, Summer Agricultural Institute, Corvallis, OR June, 2002

McGorrin, R. J. Flavor Chemistry: New Frontiers and Challenges, OSU Food Science Faculty Research Day, June 19, 2001.

McGorrin, R. J. Challenges in Dairy Flavor Chemistry, Dairy Science Dept., California Polytechnic State University, San Luis Obispo, CA, March 13, 2001.

News Articles and Popular Media

Tillamook County Creamery Association gives $1.5 million for new research facility at OSU, 2018

Sneed, A., What's Inside: Instant Mashed Potatoes, Faux Bacon, Real Starch, *Wired*, Nov.2015, p.54.

British Chemist and Whiskey Expert to Head OSU's New Distilled Spirits Program, *Portland Food and Drink.com,* Nov. 3, 2015.

Beazell, K. A., Cheers to Science: OSU teaches the science, business, and technology behind good drinks, *Growing Oregon*: *A guide to the state's farms, food and markets*, Oregon Dept. of Agriculture, *2*, 2015-16 edition, p. 38-41.

Rogue Announces Jack Joyce Scholarship Award, *Brewbound*, July 29, 2014.Oregon Lawmakers Step-up to Boost OSU Fermentation Science, Oregon Wine Board, Aug. 2, 2013.

Rees, R., Fermentation Education – OSU Hopes to Use Money to Operate a Still, Add to Fermentation Program, *Bend Bulletin*, July 21, 2013.

Oregon State University Receives $1.2 Million to Expand Fermentation Science Program, *Cheese Reporter*, Aug. 3, 2013, p. 23.

Wong, P., Grant to cover OSU distillery program, *Daily Barometer*, Oct. 1, 2013, p.3.

KGAL Radio Interview, Beaver Classic Cheese, youtube.com/watch?v=Lzdtv8wH5E8, Nov. 19, 2012.

Shrieve, J. OSU Cuts Into Some New Cheese, *Daily Barometer*, Nov. 16, 2012, p. 8.

DeWitt, J., OSU Unveils its own Premium Cheese, *Gazette-Times*, Nov.2, 2012, p. 1.

Hall, L. S. OSU Wine Institute Almost a Reality, *Wine Business Monthly*, June 2008, pp. 96-99.

GRANT AND CONTRACT SUPPORT

Project Title	Funding Source(s)	PI's	Total Amount	Project Period
Optimization of pre and post-harvest factors to extend the shelf life/improve the quality of whole fish/fillets of salmonids and white sturgeon.	USDA Western Regional Aquaculture Center	**Yang, X.** McGorrin, R. Gross, J.	$359,835	9/21-9/24
Quantifying nutrient content of Oregon hazelnut skins to make Oregon hazelnuts more viable in the global marketplace.	USDA Technical Assistance for Specialty Crops	**McGorrin, R.** Zhao, Y.	$184,225	9/21-9/23
Eliminating processing and shelf life trade barriers for Oregon hazelnuts	USDA Technical Assistance for Specialty Crops	**Zhao, Y.** McGorrin, R.	$184,225	9/21-9/23
Western Training, Education, Extension, Outreach, and Technical Assistance Center to Enhance Food Safety (U.S. Western Regional Food Safety Center)	USDA NIFA	**Stone, D.** J. Kovacevic, C. DeWitt, McGorrin, R.	$800,000	9/18 – 8/21
Western Training, Education, Extension, Outreach, and Technical Assistance Center to Enhance Food Safety (U.S. Western Regional Food Safety Center)	USDA NIFA	**McGorrin, R.** Morrissey, M. DeWitt, C.	$1,197,606 ($441,428 to OSU)	9/15-8/18

Development of optimal drying, storage methods and conditions for enhancing storability and extending shelf-life of Oregon hazelnuts	OSU Foundation through a private donation – Jan Wepster	**Zhao, Y.** McGorrin, R.	$94,500	06/15-05/17
Development of process improvements for peppermint oil flavor distillation – Seely Mint	Oregon Manufacturing Extension Partnership (OMEP)	**McGorrin, R**	$8,000	04/15-12/15

ADVISING OF GRADUATE STUDENT RESEARCH

M.S. Students (as member of committee) (9):

Tyler Flaherty, M.S. – Food Science (Lim) April 2016
Individual differences in retronasal odor responsiveness: Effects of aging and concurrent taste

Shi Feng, M.S. – Food Science (Qian) June 2014
Aroma-active compounds in 'Centennial', 'Citra' and 'Nelson Sauvin' hop varieties and their aroma contribution to dry-hopped beer

Juan He, M.S. – Food Science (Qian) March 2012
Flavor comparison between ultra high temperature processing milk heated by ohmic heating and conventional methods

Arthi Padmanabhan, M.S. – Food Science (Lim) Aug. 2011
The effects of odor on vegetable flavor perception and the hedonic response

Quynh Nguyen, M.S. – Food Science (Penner) Sept. 2010
Initial velocity kinetics applied to cellulase-catalyzed wheat straw saccharification; the role of particle size in dictating rates of reaction

Josef Roblero, M.S. – Food Science (Morrissey) Feb. 2009
Development and characterization of shelf-life and sensory properties of restructured albacore tuna (Thunnus alalunga) rolls

Laura Geise, M.S. – Food Science (Morrissey) Sept. 2007
Evaluation of the off-flavor in English sole (Parophrys vetulus) using descriptive analysis techniques and consumer testing

Sarah Marie Mahler-Malowicki, M.S. – Food Science (Qian) June 2007
Flavor composition of transgenic raspberry bushy dwarf virus-resistant "Meeker" raspberries

Emily M. Jorgensen, M.S. – Food Science (Marin/Kennedy) August 2004
Effect of closure type on consumer's perception of wine quality

M.Ag. Student (as member of committee) (1):

Shailaja Ponnamaneni, M. Ag. – Food Science (Torres) Jan. 2004

M.S. and Ph.D. Student Advisees (4)

Rafsan Bashir, M.S. – Food Science (McGorrin) Expected Dec. 2024
Investigations of flavor, freshness, and shelf life indicators for aquaculture sturgeon and trout

Jake Pfeil, M.S. – Food Science (McGorrin) Expected Dec. 2023
Investigations of the chemical and nutrient composition of Oregon hazelnut pellicles

Chris Letchworth, M.S.. – Food Science (McGorrin) April 2020
Reduction of Salmonella spp. on in-shell hazelnuts using continuous steam blanching and the impact on product quality and sensory characteristics

Tomomi Fujimaru, Ph.D. – Food Science (McGorrin) Dec. 2013
Interactions between taste and olfaction

Ph.D. Students (as member of committee) (13):

Ling Huang, Ph.D. – Food Science (Qian) August 2022
Effects of Vineyard Mgmt. on Grape and Wine Quality in Response to Grapevine Red Blotch Disease

Emily Ann Rue, Ph.D. – Pharmacy (Van Breemen) June 2020
Investigation of procyanidins used in botanical dietary supplements

Wenjie Wang, Ph.D. – Food Science (Zhao) Dec. 2019
Investigation of hot-air (HA) drying conditions and shell cracking mechanism and development of radio-frequency (RF) dielectric heating for ensuring quality and reducing shell cracking of Oregon hazelnuts

Zilong Deng, Ph.D. – Food Science (Zhao) Nov. 2018
Cellulose nanomaterial incorporated edible coatings for improving storability of postharvest fruit: Mechanism, development, and validation

Jinhwan Lee, Ph.D. – Food Science (Park) Nov. 2016
Physiochemical Properties of Frozen Fish Muscle as Affected by Trimethylamine-N-Oxide Demethylase (TMAOASE)

Fang Yuan, Ph.D. – Food Science (Qian) 2016 May 2016
Grape and Wine Aroma Influenced by Vine Nutrient Status, Vigor and Crop Levels in Oregon Pinot Noir

Patricia Aron, Ph.D. – Food Science (Shellhammer) Mar. 2011
The effect of hopping technology on lager beer flavor and flavor stability; the impact of polyphenols on lager beer flavor and physical stability

Rosalee Rasmussen, Ph.D. – Food Science (Morrissey) Dec. 2009
DNA-based identification of commercially important salmon and trout species (Genera Oncorhynchus and Salmo) in North America

Xiaofen Du, Ph.D. – Food Science (Qian) Sept. 2009
Aroma investigation of "Marion" and advanced thornless blackberries in the Pacific Northwest of America

Tomoko Okada, Ph.D. – Food Science (Morrissey) May 2006
Extraction and production of n-3 polyunsaturated fatty acid concentrate from Pacific sardines (Sardinops sagax)

Marcia Walker, Ph.D. – Food Science (Goddik) March 2003
Effect of high pressure processing at low temperature on the molecular structure and functionality of dairy proteins

Kannapon Lopetcharat, Ph.D. – Food Science (McDaniel) June 2002
Sub-threshold effects on the perceived intensity of recognizable odorants: the roles of functional groups and carbon chain lengths

Ozlem Akpinar, Ph.D. – Food Science (Penner) Feb. 2002
Preparation and modification of cellooligosaccharides

Ph.D. Students (as member of qualifying exam committee):

Sashwat Damani – Food Science (Lin) 2022
Hyunhee Hong – Food Science (Park) 2022
Chieh-Yi Lin – Food Science (Zhao) 2021
Ling Huang – Food Science (Qian) 2019
Angelica de Castro Iobbi – Food Science (Tomasino) 2018
Alexander Emch – Food Science (Waite-Cusic) 2018
Virginia Gouw – Food Science (Zhao) 2017
Jinhwan Lee – Food Science (Park) 2015
Mei Song – Food Science (Tomasino) 2014
Carlos Fajardo – Food Science (Ross) 2013
Daniel Vollmer – Food Science (Shellhammer) 2013
Trina Lapis – Food Science (Lim) 2012
Jooyeoun Jung – Food Science (Zhao) 2010
Tiraporn Junyusen – Food Science (Penner) 2010
Teepakorn Kongraksawech – Food Science (Ross) 2010

INDUSTRY RESEARCH

(Kraft Foods Research & Development, 18.5 years; Quaker Oats R&D, 3.5 years)

- Strategic Innovative Research (Kraft Foods): Responsible for building a strategic research group within a newly-formed department to deliver long-range direction and growth opportunities for Kraft Research. Provided direction to build an innovation agenda that defines future product development support programs. Directly responsible for 7 Ph.D. food scientists with multidisciplinary backgrounds and expertise in food and flavor chemistry, biochemistry, and cereal chemistry. Project team leader for cross-functional Flavor SRI team, and coordination and involvement with Emerging Technologies program across Philip Morris Companies. Managed staffing, planning, operating budget, and capital budget. Responsible for $1.1MM annual section budget ($840M salary, $120M expense, $120M capital, $16M travel).
- Flavor Chemistry, Analytical Chemistry (Kraft Foods): Managed a group of 10 MS/PhD-degree analytical chemists responsible for chromatographic testing, methods development, and problem-solving for carbohydrate, lipid, vitamin, and flavor characterization. Provided direction for leading-edge analytical technologies in chromatography (capillary GC, GC-GC, HPLC, ion chromatography, capillary electrophoresis), spectroscopy (GC-MS, GC-IR), sensors to support rapid-paced product, process, packaging research. Coordinated management of chromatography and flavor analysis activities across 3-site department. Planned and directed exploratory research projects for identification of trace volatile constituents and novel flavor components in dairy products, vegetable oils, and charbroiled chicken. Identification of a musty off-odor component in food packaging film.
- Project team leader for Cheese and Fresh Dairy sub-team (15 members) of the Flavor Technology Strategic Research Initiative. Research Technical Coordinator to Meals Division. ABCD Award for coordinating cheese lipid oxidation Special Situations cross-functional team. Initiated flavor program to incorporate Kraft's Trailblazer® fat mimetic into new fat-free products. Directed outside flavor suppliers to deliver proprietary flavor systems on a rapid timetable.
- Special situations / food safety projects: Detecting and monitoring cyanide tampering in *Kraft* Parmesan Cheese; monitoring cyanide consumer tampering and half-life determination in *Breyers* Yogurt / interface with FDA. Measuring Natamycin levels in *Kraft* Cheese Shreds. Monitoring aflatoxin M1 levels in milk and cheese from cows fed moldy corn. Listeria special situation in *Sealtest*

Polar Bar ice cream squares. Input into Self-GRAS application to FDA for *Trailblazer*™ fat replacer in frozen desserts, process cheese, sour cream, salad dressings.

- Conducted basic flavor chemistry research and technical problem-solving to identify trace volatile constituents and novel components in cheeses, edible oils, spices, ice cream, and confection flavors in support of new product development. Characterized and provided technical problem solving for key ingredient- and packaging-derived off-flavors.

  Representative examples:
  - *Breyers* Chocolate Peppermint Ice Cream flavor system
  - *Altoids* Peppermint Candy mint flavor
  - *Kraft* Caramels Candy flavor
  - *Breyers FREE* and *Sealtest FREE* Ice Cream flavors
  - *Kraft FREE* process cheese flavor for slices
  - *Kraft FREE* salad dressings (Ranch, French)
  - *Miracle Whip* salad dressing, *Kraft* Real Mayonnaise spice flavors
  - Squeeze *Cheez Whiz*
  - *Philadelphia* Cream Cheese dairy flavors
  - *Cracker Barrel* Cheddar cheese flavors
  - *Kraft* Parmesan Cheese flavors
  - *Quaker Chewy Granola* bars
  - *Life, Cap'n Crunch* Cereal flavors, freshness / cereal staling over shelf life
  - *Quaker Oats* oat groats, rolled oats, and oatmeal – basic flavor chemistry studies

TEACHING RESPONSIBILITIES

FST 212 *Dairy Processing* 2 cr. W 2021
FST 213 *Dairy Processing Laboratory* 1 cr. W 2021
FST 260 *Food Science and Technology in Western Culture* (Baccalaureate Core) 3 cr. F2021, 22
FST 385 *Communicating Food & Fermentation Science* – 3 cr. WIC S 2015, S 2020
FST 422/522 *Food Chemistry* "Food Lipids: Fats & Oils" section 4 cr. W 2003, 04; F 04, 05
FST 407 *Senior Seminar* 1 cr. S 2001, F 01, W 02, F 02-19
FST 507/607 *Graduate Seminar* 1 cr. S 2021
FST 102 *Maraschino Cherry* 1 cr. W 2002, 04, 05, 06, 07

Guest Teaching Lectures:
FST 101 *Introduction to Food Science* (1 cr.) Fall 04-19 *"Hidden Science" of Food Products*
FST 628 *Flavor Chemistry* Fall 2006 08,10,12,14,16,18,20,22 *Flavor Interaction with Foods* – 2 lectures
FST 260 *Food Science & Technology in Western Culture* (3 cr). Fall 07, 08 *Food as Experience*
FST 421/521 *Food Law* (3 cr.) Fall 02 *GM Food Regulatory*
FST 479/579 *Food Biotechnology* (3 cr.) Winter 03, 04, 05, 06 *GM Food Safety*
FS 499/599 *Issues in Biotechnology* (3 cr.) Fall 01, 02
FS 430/530 *Biotechnology: Agricultural, Food & Natural Resource Issues* (3 cr.) Fall 04, 05, 07, 08 *Regulating Food Biotechnologies*

Department of Food Science, Shanghai Ocean University, Shanghai, China October, 2016
Visiting Instructor, MS Graduate Course *Advancement in Food Science*
Topics: Flavor chemistry (Lectures 1-4)

Department of Food Science Fu Jen Catholic University, Taipei, Taiwan
1) *Food Additives* 2) *Instrumental Analysis* 3) *Introduction to Research* April 2009