

Lynne A. McLandsborough Ph.D.

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The mission of the Department of Food Science at University of Massachusetts Amherst.
The education of undergraduate, graduate and nontraditional students in the field of Food Science and the study and application of science and technology to further basic knowledge, add value, foster economic development and provide a safe, healthful and high quality food supply consistent with the mission of a Land Grant University.

Education and Professional Development

Education

1993 Ph.D., Food Science, University of Minnesota
1989 MS, Food Science, University of Minnesota
1986 BA., Microbiology, Miami University (Ohio)

Leadership Development

2019 HERS Leadership Institute, Golden CO.

Professional Development

2017 Lead Instructor of the FSPCA Preventive Controls for Human Food Course
2016 Qualified Individual FSPCA for Preventive Controls for Human Food
2010 Certified HACCP Trainer, Meat and Poultry, International HACCP Alliance

Professional Positions

2016- Present Professor, Dept. of Food Science
Associate Faculty Member, Molecular and Cellular Biology
Interdisciplinary Program
IALS Delivery System Working Group
University of Massachusetts, Amherst, MA

2001-2016 Associate Professor, Dept. of Food Science
University of Massachusetts, Amherst, MA

1995 – 2001 Assistant Professor, Dept. of Food Science
University of Massachusetts, Amherst, MA

- 1993-1995 Post-Doctoral Fellow, Dept. of Microbiology,
University of Minnesota Medical School, Minneapolis, MN
- 1986-1993 Research Assistant, Dept. of Food Science and Nutrition, University of
Minnesota, St. Paul, MN

SUMMARY OF CV

Research (page 4) Current research projects in my laboratory use *Salmonella* sp. *Listeria monocytogenes* and *E. coli* O157:H7 and as the model organisms to study a variety of questions relevant to Food Safety. I have been associated with over 7.2 million dollars of research funding at UMass Amherst, with \$1,891,500 funded as a PI. I have two US patents, and published 58 papers in peer reviewed journals. In addition, I have 67 published abstracts, authored 4 book chapters, given 22 invited talks and been interviewed for general media (TV, print, podcasts).

Professional Activities, Outreach and Service (page 22) I have been very active in my scientific specialty, by being active in IFT, serving on editorial boards and as an ad hoc reviewer, serving on a state Food Safety committee, and participating on national and international grant review panels. I have also been active in service at the University, College and Departmental levels. At the University level, I was the chair of the Institutional Biosafety Committee (member 13 years, chair 9 years) and at the College level, I have served on a variety of committees (including Curriculum committee, and Personnel Committee). At the Departmental level, I have been in an administrative role as the Chief Undergraduate Advisor since 2001, served and chaired a large number of committees (Departmental Personnel Committee and Search Committees). I collaborate with UMass Extension on giving workshops and trainings and have a consulting relationship with a number of companies.

Mentorship and Teaching Experience (page 28). To date, I have mentored 8 Post-Doctoral Researchers, 8 PhD students, 23 MS students, 23 Undergraduate Researchers, and 5 Visiting Scholars. I have been the department chief undergraduate advisor since 2001 and have won college awards for advising and teaching. I have written a laboratory textbook that has been adopted by both national and international institutions, and I have constantly obtain high teaching evaluations.

Leadership Development and Experience

HERS Leadership Development Program, Golden CO, June 2019. I was selected by the University of Massachusetts to attend the HERS Leadership Development Program, along with 63 others from all over the country. The current HERS curriculum covers many aspects of how to successfully lead a change initiative: general leadership principles, higher education trends, change management, budgets and financial statements, career planning, legal issues, equity, strategic enrollment management, talent management, and fundraising. As a participant, I developed a Capstone and Signature Work Project, to establish a campus-wide Programmatic Assessment Working Group, to support programmatic assessment and accreditation. This project will be implemented over the 2019-2020 academic year.

Institutional Biosafety Committee, Chair (2009-2018). This is an NIH mandated committee to provide review and oversight of all forms of research utilizing recombinant or synthetic nucleic acid molecules at UMass Amherst. *Responsibilities* chairing monthly meeting, reviewing faculty research registration, writing registration letters and acting as a faculty liaison. Under my leadership, the UMass IBC committee switched from paper registration to an electronic registration system.

Chief Undergraduate Advisor, Chair Food Science Undergraduate Program Committee (2000-current). I am committed to make the UMASS Food Science Undergraduate Program to be an outstanding learning environment. I have held this administrative position for the past 19 years. During this time, our Undergraduate program increased from 30 to 100 students. Responsibilities include running all aspects of the Undergraduate program. I have my own academic advisees; meet with advisees of other faculty members who have academic difficulties, award departmental scholarships, maintaining IFT accreditation of the program with yearly reports, maintenance of the Undergraduate portion of the departmental web page, provide catalog updates, graduation clearance and attending the college graduation celebration. In addition, I am involved in interacting with companies recruiting students for internships, as well as being involved in undergraduate recruiting, hosting and providing prospective students and their families' tours and information about our program. In this role, I also serve on the College of Natural Science (CNS) Curriculum Committee, CNS Chief Undergraduate Advisors Committee, and CNS Scholarship Committee.

Search Committee Chair. I have served on chaired five academic search committees, both within my department and elsewhere in the University. In 2018-2019, I lead a search committee to implement evaluation rubrics in an attempt to reduce implicit bias and encourage diversity. Our committee gathered feedback from faculty, staff and students, and utilized the data in the decision making process. I am happy to report that we were successful in landing an outstanding candidate

Personnel Committee Chair (Departmental and College). I have served as the Personnel Committee Chair for our department numerous times, and have also served and chaired the College Personnel Committee. At UMass Amherst, these committees are responsible for personnel recommendations (tenure, promotion) at the departmental and college levels, along with input from the Department Head and Deans. I am knowledgeable with issues of faculty tenure, promotion, and retention.

Acting Department Head (May – August 2008). I was the acting Department Head and Search chair in 2008. In this position, I dealt with personnel issues with the support staff, coordinated building renovations, utilized departmental budgets to repair and maintain equipment, and worked with a faculty

member who had an offer from another University. We successfully hired an internal candidate, Eric Decker, who has been the Department Head for the past 10. Eric just renewed his contract for another five years this past fall.

HONORS

2019	Finalist University of Massachusetts Distinguished Teaching Award
2009	College of Food and Natural Resources Outstanding Advisor Award
2001	College of Food and Natural Resources 2001 Outstanding Teaching Award

RESEARCH

Summary: Current research projects in my laboratory use Salmonella sp. Listeria monocytogenes and E. coli O157:H7 and as the model organisms to study a variety of questions relevant to Food Safety.

Research Interests

- Bacterial ecology in foods and processing surfaces
 - Influence of bacterial surface structures to microbial adhesion
 - Mechanisms of bacterial adhesion
 - Mechanisms of biofilm formation on food processing surfaces
 - Ecology of biofilm formation
 - Bacterial survival under desiccated conditions
- Cross contamination and Cleaning and Sanitation
 - Mechanisms of physical transfer of bacteria between foods and surfaces
 - Methods of biofilm destruction and removal
 - Antimicrobial delivery systems
 - Antimicrobial surfaces

Funded Research Grants

Summary: I have been associated with over 7.2 million dollars of research funding at UMass Amherst, with \$1,891,500 funded as a PI.

Development and validation of oil based antimicrobial delivery systems for dry cleaning and sanitation of food processing equipment USDA AFRI-NIFA A1332, PI L. McLandsborough \$434,215, (5/20 – 4/2024)

Food Science Undergraduate Learning (FUEL Scholars Program: a yearlong REEU to propel students into a career in Food Science. USDA AFRI-NIFA, A7401 PI McLandsborough, co PI, E. Decker and M. Moore. \$482,648, (5/2020-4/25)

Risky Business? Conducting a risk assessment of postharvest operations using washing machines for leafy greens. Massachusetts Department of Agricultural Resources (MDAR) Specialty Crop grant. A. Kimchla PI, Co-PI M. Moore and L. McLandsborough \$71,294 (10/1/2019-9/20/2022)

Development of a label-free SERS mapping based platform for multi-bacteria detection. PI He. Co-PI McLandsborough. USDA AFRI-NIFA A1511 \$444,200 (1/15-1/18)

Preventing Spoilage of Packaged Foods by Non-Migratory Active Packaging PI Goddard, CoPI: Decker and McLandsborough. USDA AFRI-NIFA A1361 \$498,165 (1/15-1/18)

Fabrication, Characterization & Toxicology of Antimicrobial Nanoparticle Delivery Systems. PI. McClements Co-PI McLandsborough, L. and Xiao, H. United States Department of Agriculture, Agriculture and Food Research Initiative Competitive Grants Program area A1511. \$454,000(12/10 – 11/15)

Survival, Transfer, and Inactivation of Salmonella on Plastic Materials Used in Tomato Harvest. PI. McLandsborough, Co PI: Goddard J and Autio W. Center for Produce Safety Grant Program. \$250,695 (1/11 – 12/12)

Development Of Antimicrobial Food Processing Surfaces By Nanoscale Surface Modification PI. Goddard, J. Co-PI: R. Hotchkiss and L. McLandsborough. United States Department of Agriculture, Agriculture and Food Research Initiative Competitive Grants Program area A1511. \$488,000 (12/10-11/13)

Autoclave Purchase for Food Science Department L. McLandsborough UMASS Hatch Equipment Funding Grant 2010. \$35,000

Bioactive Foods Research for Health and Food Safety, MA P: Park, Y Co-PI: Xiao, H.; Nugen, S.R.; Goddard, J., McClements, D.J.; Decker, E.A.; Shetty, K.; Levin, R.E.; Labbe, R.G.; McLandsborough, L. USDA Special Grant \$488,601 (5/1/10- 4/30/12)

Biofilm inactivation and removal using micellular encapsulated antimicrobial. PI J. Weiss and L. McLandsborough (*amended 8/08 – PI McLandsborough*). National Research Competitive Grants Program. United States Department of Agriculture. \$255,914 (7/1/07 – 6/30/09)

Characterization of the transfer of Listeria monocytogenes between processing surfaces and foods. PI National Research Competitive Grants Program. United States Department of Agriculture. \$244,113 (9/1/03 – 8/30/07)

Assessment of biofilm production on stainless steel by reduced biofilm production (RBP) mutants. PI. National Cattlemen's Beef Association. \$33,968 (*funding withdrawn by granting agency due to IP issues with the University of Massachusetts*)

Seafood Safety 7. PI. R. E. Levin Co-PI: L. McLandsborough, K. Shetty, R. Labbe, F. Clydesdale, E. Decker, D. J. McClements, J. Weiss and Y. Park. Special Research Grants Program. United States Department of Agriculture. \$423,293. (7/1/06 – 6/30/08)

Seafood Safety 6. PI. R. E. Levin Co-PI: L. McLandsborough, K. Shetty, R. Labbe, F. Clydesdale, E. Decker, D. J. McClements, J. Weiss and Y. Park. Special Research Grants Program. United States Department of Agriculture. \$406,508 (7/1/05 - 6/30/07) .

Seafood Safety 5. PI. R. E. Levin Co-PI: L. McLandsborough, K. Shetty, R. Labbe, and F. Clydesdale, Special Research Grants Program. United States Department of Agriculture. \$353,881 (\$176,441 to UMass) (7/1/04 - 6/30/06) .

Seafood Safety 4. PI. R. E. Levin Co-PI: L. McLandsborough, K. Shetty, R. Labbe, F. Clydesdale, E. Decker, and D. J. McClements. Special Research Grants Program. United States Department of Agriculture. \$394,705 (7/1/03 - 6/30/05)

Seafood Safety 3. PI. R. E. Levin Co-PI: L. McLandsborough, K. Shetty, R. Labbe, F. Clydesdale, E. Decker, P. Chinachoti, and D. J. McClements. Special Research Grants Program. United States Department of Agriculture. \$374, 135 (7/1/02 - 6/30/04)

Seafood Safety 2. PI: R. E. Levin, Co-PI L. McLandsborough, K. Shetty, R. Labbe, F. Clydesdale. Special Research Grants Program. United States Department of Agriculture. \$259,471 (7/1/01 - 6/30/03)

Seafood Safety 1. PI R. E. Levin Co-PI: L. McLandsborough, K. Shetty, R. Labbe, F. Clydesdale and M. Peleg. Special Research Grants Program. United States Department of Agriculture. \$234,000 (7/1/00 - 6/30/03)

Bacterial Adhesion and growth at interphases. PI University of Massachusetts/ USDA Hatch Grant Program (9/1/00 - 8/31/05)

Online Education for Secondary Science Teachers: An Integrated Approach to Food Safety Training. PI N.L. Cohen. Co-PI. L. McLandsborough, W. Mohling and R. Brennan Olson. Integrated Research, Education and Extension Competitive Grants Program, USDA. \$549,994 (10/1/02 – 9/30/05)

Using good agricultural practices (GAP) to integrate food safety principles into small farm production of fresh and minimally processed fruits and vegetables. Research Participant. New England Cooperative Extension Project. Lead Institution: University of Rhode Island. United States Department of Agriculture. Total \$472,926. University of Massachusetts Extension portion \$84,199. (10/1/00-9/31/03).

Development of a microtiter plate biofilm assay and assessment of the ability of L. monocytogenes isolates to produce biofilms. PI. University of Massachusetts Faculty Research Grant, \$10,000 (1/1/00 - 12/31/00).

Enhanced green fluorescent protein expression in Escherichia coli to study adherence to meat. PI National Research Competitive Grants Program. United States Department of Agriculture \$92,000 (10/15/97 - 10/14/99).

Analysis of E. coli removal from beef tissue using laser scanning confocal microscopy. PI National Cattlemen's Beef Association \$22,000 (1/1/98-12/31/98).

Hemin-supplemented media for selection of Escherichia coli O157:H7 from foods. PI National Research Competitive Grants Program. United States Department of Agriculture, \$53,000 (11/1/96 - 10/31/98).

Multiplex nested polymerase chain reaction for the detection of shiga-like toxin producing Escherichia coli in food systems. PI University of Massachusetts/ USDA Hatch Grant Program \$15,000/yr (9/1/95 - 8/31/00)

Research in the area of destruction and injury of foodborne bacteria via pulsed electric field . PI Ion Physics Corp. \$3,915 (6/1/97 - 8/30/97).

Research in the identification and characterization of protein binding receptors on lactic acid bacteria PI Protein Group Inc. \$5,000 (6/1/97 - 8/30/97)

Use of green fluorescent protein to study the behavior of bacteria upon solid meat surfaces by laser scanning confocal microscopy. PI University of Massachusetts Faculty Research Grant, \$5,000 (12/1/96 - 11/30/97)

Publication and Media List

Summary: I have two US patents, and published 58 papers in peer reviewed journals. In addition, I have 67 published abstracts, authored 4 book chapters, given 22 invited talks and been interviewed for general media (TV, print, podcasts) 12 times.

Patents and Patent Applications

McClements, D. J., L. McLandsborough, and Y. Chang. Antimicrobial delivery systems, methods of manufacture, and methods of use thereof. Patent Application No. 13/433,661. March 29, 2012. **Awarded 2017 Patent: US 9,781,949 B2**

McClements, D. J., A. H. Saberi, Y. Chang and L. McLandsborough. Methods for producing optimal stable nanoemulsions and formulation obtained therefrom. Patent application No: 14/458,517. Aug., 13, 2014.

McClements, D. J., L. McLandsborough, and K. Landry. Antimicrobial activity of acidified spontaneous essential oil nanoemulsions and their utilization as a food and surface disinfectant/sanitizer. US Patent Application no 15/216895 July 22, 2016. **Awarded 2019 US Patent: US20 170,020,171 A1**

Peer-Reviewed Publications

- Ryu, V., M. Corradini, D. J. McClements, L. McLandsborough. 2019. Impact of ripening inhibitors on molecular transport of antimicrobial components from essential oil nanoemulsions. *J. Coll. Int. Sci.* 556:568-576
- Hung, Y-T, L. A. McLandsborough, J. M. Goddard and L. J. Bastarrachea. 2018. Antimicrobial polymer coating with efficacy against pathogenic and spoilage microorganisms. *LWT-Food Sci Tech.* 97:546-554.
- Ryu, V, D. J. McClements, M. G. Corradini, J. S. Yang and L. McLandsborough, 2018. Natural antimicrobial delivery systems: formation, antimicrobial activity, and mechanism of action of quillaja saponin-stabilized carvacrol nanoemulsions. *Food Hydrocolloids.* 82:442-450.
- Chuesiang P, U. Siripatrawan, R. Sanguandeeikul. L. McLandsborough. J. D. McClements. Optimization of cinnamon oil nanoemulsions using phase inversion temperature method: Impact of oil phase composition and surfactant concentration. *J. Col. Interf. Sci.* 154:208-216
- Pearson B, Mills A, Tucker M, Gao S, McLandsborough L, He L. 2018. Rationalizing and advancing the 3-MPBA SERS sandwich assay for rapid detection of bacteria in environmental and food matrices. *Food Microbiology* 72:89-97.
- Ryu V, McClements DJ, Corradini MG, McLandsborough L. 2018. Effect of ripening inhibitor type on formation, stability, and antimicrobial activity of thyme oil nanoemulsion. *Food Chemistry* 245:104-111
- Landry, K. S., Sela, D. A., & McLandsborough, L. (2018). Influence of sprouting environment on the microbiota of sprouts. *Journal of Food Safety*. DOI: 10.1111/jfs.12380
- Wang, L. J. G. Stoffolano and L. McLandsborough. 2017. Development of the fly “crop vessel” bioassay for fly/microbial studies. *Afr. J. Microbiolol. Res.* 11:1027-1034
- Pearson, B., Wang, P., Mills, A., Pang, S., McLandsborough, L., & He, L. (2017). Innovative sandwich assay with dual optical and SERS sensing mechanisms for bacterial detection. *Analytical Methods*, 9(32), 4732-4739.
- Wang, P., Pang, S., Pearson, B., Chujo, Y., McLandsborough, L., Fan, M. and He, L., 2017. Rapid concentration detection and differentiation of bacteria in skimmed milk using surface enhanced Raman scattering mapping on 4-mercaptophenylboronic acid functionalized silver dendrites. *Anal Bioanal Chem.*, 409:2229-2238.
- Landry, S. K., J. Komaiko, D. Wong, T. Xu, D. J. McClements and L. McLandsborough. 2016 The inactivation of *Salmonella* spp. on sprouting seeds using a spontaneous carvacrol nanoemulsion acidified with organic acids. *J. Food Protection* 79:1115-1126.
- Huang, K., L. A. McLandsborough, and J. M. Goddard. 2016. Adhesion and removal kinetics of *Bacillus cereus* biofilms on Ni-PTFE modified stainless steel. *Biofouling* 32:523-533

- Wang P, S. Pang J. Chen, L. McLandsborough, S.R. Nugen, M. Fan, and L. He. 2016. Label-free mapping of single bacterial cells using surface-enhanced Raman spectroscopy. *Analyst* 141:1356-1362
- Landry, K. S., S. Micheli, D. J. McClements and L. McLandsborough. 2015, Effectiveness of a spontaneous carvacrol nanoemulsion against *Salmonella enterica* Enteritidis and *Escherichia coli* O157:H7 on contaminated broccoli and radish seeds. *J. Food Microbiology*. 51:10-17.
- Chang, Y., L. McLandsborough, D. J. McClements. 2015. Fabrication, Stability and efficacy of dual component antimicrobial nanoemulsions: essential oil (thyme oil) and cationic surfactant (lauric arginate). *Food Chem.* 172:298-304.
- Landry, K. S., Y. Chang, D. J. McClements, and L. McLandsborough. 2014. Effectiveness of a novel spontaneous carvacrol nanoemulsion against *Salmonella enterica* Enteritidis and *Escherichia coli* O157:H7 on contaminated mung bean and alfalfa seeds. *Intl. J. Food Microbiol.* 187:15-21.
- Loeffler, M., D. J. McClements, L. McLandsborough, N. Terjung, Y. Chang, and J. Weiss. 2014. Electrostatic interactions of cationic lauric arginate with anionic polysaccharides affect antimicrobial activity against spoilage yeasts. *J. Appl. Microbiol.* 117:28-39.
- Talbert, J., K. Seto, J. Cotter, L. McLandsborough, J. M. Goddard. 2014. Effect of cleaning and sanitizing agents on the surface characteristics of new and extended-wear produce picking bins. *J. Sci of Food and Agr.* 94:1681-1687
- Bastarrachea, L.J., L.A. McLandsborough, M. Peleg, J. M. Goddard. 2014 Antimicrobial N-halamine modified polyethylene, characterization, biocidal efficacy, regeneration, and stability. *J. Food Sci.* 79:E887-E897.
- Chang, YH, L. McLandsborough, D. J. McClements. 2014. Interaction of cationic antimicrobial (ϵ -polylysine) with food-grade biopolymers: dextran, chitosan, carrageenan, alginate, and pectin. *Food Res. Intl.* 64:396-401
- Chang, YH, L. McLandsborough, D. J. McClements. 2014. Antimicrobial delivery systems based on electrostatic complexes of cationic ϵ -polylysine and anionic gum arabic. *Food Hydrocolloids.* 35:137-143.
- Bastarrachea, LJ, M. Peleg, L. McLandsborough and J. M Goddard. 2013. Low density polyethylene modified with antimicrobial N-halamines: Kinetics of inactivation against *Listeria monocytogenes* and N-halamine regeneration. *J. Food Eng.* 117:52-58.
- Chang, YH, WM Gu, FJ Zhang, and L. McLandsborough. 2013. Disruption of lmo1386, a putative DNA translocase gene, affects biofilm formation of *Listeria monocytogenes* on abiotic surfaces. *Intl. J. Food Microbiol.* 161:158-163.

- Chang, Y. L. McLandsborough. And D. J. McClements. 2012. Physical properties and antimicrobial efficacy of thyme oil nanoemulsions: influence of ripening inhibitors. *J. Ag. Food Chem.* 60:12056-120563.
- Y. Chang, W. Gu, N. Fischer and L. McLandsborough. 2012. Identification of genes involved in *Listeria monocytogenes* biofilm formation by *mariner*-based transposon mutagenesis. *Appl. Microbiol. Biotechnol.* 93:2051-2062 DOI10.1007/s00253-011-3719-z. Published on line Nov 27,2011.
- Y. Chang, L. McLandsborough 2012 Low Concentration of Ethylenediaminetetraacetic Acid (EDTA) Affects Biofilm Formation of *Listeria monocytogenes* by Inhibiting its Initial Adherence. *Food Microbiology* . 29:10-17
- Chang, Y. H., L. McLandsborough, D. J. McClements. 2012. Cationic Antimicrobial (epsilon-Polylysine)-Anionic Polysaccharide (Pectin) Interactions: Influence of Polymer Charge on Physical Stability and Antimicrobial Efficacy. *J. Ag. Food Chem.* 60:1837-1844
- Y. Chang, L. McLandsborough, D. J. McClements. 2011. Physiolochemical properties and antimicrobial efficacy of electrostatic complexes based on cationic epsilon-polylysine and anionic pectin. *J. Agricultural and Food Chemistry.* 12:6776-6782.
- K. Ziani, Y. Chang, L. McLandsborough, D. J. McClements. 2100. Influence of surfactant charge on antimicrobial efficacy of surfactant-stabilized thyme oil nanoemulsions. *J. Agriculture and Food Chemistry* 11: 6247-6855
- Y. Chang, L. McLandsborough, D. J. McClements 2011. Interactions of a cationic antimicrobial (epsilon-Polylysine) with an anionic biopolymer r(pectin): an isothermal titration calorimetry, microeletophoresis and turbidity study. *J. Agricultural and Food Chemistry* 10:5579-5588.
- D. Pérez-Conesa., J. Cao, L. Chen, L. McLandsborough and J. Weiss 2011 Inactivation of *Listeria monocytogenes* and *Escherichia coli* O157:H7 Biofilms by Micellar-Encapsulated Eugenol and Carvacrol *J. Food Protection* 74:55-62
- Roberts, A. J., J. Robbins, L. McLandsborough, and M. Wiedmann. 2010. A 10 Year Review of the Food Science Summer Scholars Program at Cornell University and the University of Massachusetts: A Model for Research Training and for Recruiting Undergraduate Students into Graduate Programs and Careers in Food Science *J. Food Sci Edu.* 9:98-105.
- Dai Y, L A. McLandsborough, J. Weiss, and M. Peleg 2010 The concentration and application order effects of sodium benzoate and eugenol mixtures on the growth inhibition if *Saccharomyces cereviceae* and *Zygosaccharomyces bailii*. *J. Food Sci* 75: M482-M488
- Rodríguez, A., W. R. Autio and L. A. McLandsborough.2008. Effects of contact time, pressure, percent relative humidity (%RH) and material type on *Listeria* biofilm adhesive strength at a cellular level using atomic force microscopy (AFM). *Food Biophysics.* 3:305-311.

- Rodríguez, A., W. R. Autio and L. A. McLandsborough. 2008 Effect of surface roughness and stainless steel finish on *Listeria monocytogenes* attachment and biofilm formation. *J. Food Protection* 71:170-175.
- Rodríguez, A., W. R. Autio and L. A. McLandsborough. 2007. Effect of biofilm dryness on the transfer of *Listeria monocytogenes* biofilms grown on stainless steel to bologna and hard salami. *J. Food Protection* 70 : 2480-2484
- P.A. Beffa-Negrini, N, L. Cohen, M. J. Laus, and L. McLandsborough. 2007. Development and Evaluation of an online, inquiry based food safety education program for secondary teachers and their students. *J. Food Science Education*. 6:66-71
- Rodríguez, W. R. Autio and L. A. McLandsborough. 2007. Effects of inoculation level, material hydration, and stainless steel surface roughness on the transfer of *Listeria monocytogenes* from inoculated bologna to stainless steel and high density polyethylene *J. Food Protection* 70:1423-1428
- Rodríguez and L. A. McLandsborough 2007. Evaluation of the transfer of *Listeria monocytogenes* from surfaces to foods. *J. Food Protection* 70:600-606.
- D. Pérez-Conesa, L. McLandsborough, and J. Weiss 2006. Inhibition and Inactivation of *Listeria monocytogenes* and *Escherichia coli* O157:H7 Colony Biofilms by Micellar-Encapsulated Eugenol and Carvacrol. *J. Food Protection*. 69: 2947-2954
- Cao, J., C. Cronin, M. Clarke, R. Witkowsky, H. Lu, A. Sayedahaman, R.E. Levin, and L. A. McLandsborough. 2006 Levels and Tracking of *Listeria monocytogenes* Strains in a Seafood-Processing Environment using Enrichment Most Probable Number and Randomly Amplified Polymorphic DNA. *J. Food Prot.* 69:489-494
- L. McLandsborough, A. Rodriguez, and D. Pérez-Conesa and J. Weiss. 2006. Biofilms: At the Interface between Biophysics and Microbiology. *Food Biophysics*. 1:94-114
- Cao, J, C. Cronin, L. McLandsborough, R. E. Levin. 2005. Effects of primers and *Taq* polymerase on randomly amplified polymorphic DNA analysis for typing *Listeria monocytogenes* from the environment of a shrimp processing plant. *Food Biotechnol.* 19:217-226.
- P. Prachaiyo and L. A. McLandsborough. 2003. Oil-in-water emulsion as a model system to study the growth of *E. coli* O157:H7 in a heterogenous food system. *J. Food Sci.* 68:1018-1024
- D. Djordjevic, M. Wiedmann, and L. A. McLandsborough. 2002. Microtiter plate assay for assessment of *Listeria monocytogenes* biofilm formation. *Appl. Environ. Microbiol.* 68:2950-2958.
- Li, J., D. J. McClements and L. A. McLandsborough. 2001. Interaction between emulsion droplets and *Escherichia coli* cells. *J. Food Sci.* 66:570-575.

- Shaw, W.K., and L. A. McLandsborough. 2000. PCR reaction parameter titration as an approach to develop shortened reaction times in a conventional thermal cycler. *J. Rapid Meth. Automat. Microbiol.* 8:53-64
- Prachaiyo, P., and L. McLandsborough. 2000. A microscopic method to visualize *Escherichia coli* interaction with beef muscle. *J. Food Prot.* 63:427-433
- Fernec, J., J. Oliver, R. Witkowski, L. McLandsborough, and R. Levin. 2000. Studies in the growth of *Escherichia coli* O157:H7 strains at 45.5°C. *J. Food Prot.* 63:1173-1178.
- Li, J. and L. A. McLandsborough. 1999. The effects of the surface charge and hydrophobicity of *Escherichia coli* in its adhesion to beef muscle. *Int. J. Food Microbiology.* 53:185-193
- Cleary, P. P., L. McLandsborough, L. Ikeda, D. Cue, J. Krawczak, and H. Lam. 1998. High-frequency intracellular infection and erythrogenic toxin A expression undergo phase variation in M1 group A streptococci. *Mol. Microbiol.* 28:157:67.
- McLandsborough, L. A., L. Sechard, L. L. McKay. 1998. Synergistic effect of combination of lactococcal phage resistance fragments of pNP40 with cloned abortive infection gene *abiD*. *J. Dairy Sci.* 81:362-368.
- Ji, Y., L. McLandsborough, A. Kondagunta, and P. P. Cleary. 1996. C5a peptidase alters clearance and trafficking of group A streptococci by infected mice. *Infect. Immun.* 64:503-510.
- Cleary, P. P., L. A. McLandsborough, and K. Hoikka Prichard. 1995. Differential expression of genes in the vir regulon. *Dev. Biol. Stand.* 85:145-8
- McLandsborough, L. A. and P. P. Cleary. 1995. Insertional inactivation of *virR* in *Streptococcus pyogenes* M49 demonstrates that VirR functions as a positive regulator of streptococcal C5a peptidase and M protein in OF⁺ strains. *Dev. Biol. Stand.* 85:149-52
- McLandsborough, L. A., and P. P. Cleary. 1995. Insertional inactivation of *virR* in *Streptococcus pyogenes* M49 demonstrates that VirR functions as a positive regulator of ScpA, FcRA, OF, and M protein. *FEMS Microbiol. Let.* 128:45-52.
- McLandsborough, L. A., K. M. Kolaetis, T. Requena, and L. L. McKay. 1995. Cloning and characterization of the abortive infection genetic determinant *abiD* isolated for pBF61 of *Lactococcus lactis* subsp. *lactis* KR5. *Appl. Environ. Microbiol.* 61:2023-2026.
- McLandsborough, L. and S. R. Tatini. 1991. A 6 h microslide immunodiffusion assay for confirmed detection of staphylococcal enterotoxins. *Let. Appl. Microbiol.* 12:81-84.

Books

- L. McLandsborough. Food Microbiology Laboratory. CRC Press, Boca Raton, FL. 2005.

W. K. Shaw Jr and L. McLandsborough. Instructor's guide to Food Microbiology Laboratory. CRC Press, Boca Raton, FL. 2005

Book Chapters

L. McLandsborough. 2015. Ch.1. Current knowledge and perspectives on biofilm formation and remediation. *In*. Biofilms in the Food Environment. 2nd Edition. A. Pometto and A. Demirci, Editors. John Wiley and Sons

L. McLandsborough. 2013. Ch. 27. Microbial Biofilms and Food Safety. *In* Guide to Foodborne Pathogens. Ed. R. G. Labbe and S. Garcia. John Wiley & Sons. Oxford, UK

Rodríguez-Lozano, A. and L. McLandsborough. 2009. Biofilm formation by *Listeria monocytogenes* and transfer to foods *In* Biofilms in the food and beverage industries. P. M. Fratamico, B. A. Annous and N. W. Gunther, Editors. Woodhead Publishing Limited, Cambridge. P 200-225

Shaw, W. K. Jr. and L. McLandsborough 2006. Biofilm production by *Listeria monocytogenes*. *In* Food Biotechnology 2nd Edition K. Shetty, G. Paliyath, A. Pometto and R. E. Levin Editors. CRC Press 1329 – 1342.

Media advice

Interviewed for “Sell by, use by, best if used by – Here’s why food labels may not actually matter” (6/25/2019) <https://www.wvlp.com/news/sell-by-use-by-best-if-used-by-heres-why-food-labels-may-not-actually-matter/>

Scientific consultant for “Why do Bananas Change Color?”
<https://www.scientificamerican.com/video/why-do-bananas-change-color/>

Interviewed for “Insect legs? Mouse feces? Here are the disgusting things you can find in your food” (2/15/2018). <http://wvlp.com/2018/02/15/insect-legs-mouse-feces-here-are-the-disgusting-things-you-can-find-in-your-food/>

Collaboration with Lili He featured on New England Public Radio (Feb 7 2018)
<http://nepr.net/post/scientists-develop-smartphone-app-prevent-food-poisoning#stream/0>

Featured on pod cast *This Won't Hurt A Bit* 2016 Episode 18 “Food Poisoning”
<https://itunes.apple.com/us/podcast/this-wont-hurt-a-bit/id1047494657?mt=2#episodeGuid=56158cb0e4b03839a64105f3%3A561596d2e4b0b9df5c3b0de5%3A57313cd2b6aa606748faba16>

Featured expert on NBC nightly News on Saturday January 23, 2016. “One Dead Following Listeria Outbreak from Dole Salad Mix” <http://www.nbcnews.com/nightly-news/video/1-dead-following-listeria-outbreak-from-dole-salad-packages-607574083843>

“Listeria in Ice Cream: Expert Analysis” April 2015. Food Safety Magazine.
<http://www.foodsafetymagazine.com/news/listeria-in-ice-cream-expert-analysis/>

“Expert Advice: The 10 most dangerous foods and how to avoid them”. 2014. Men’s Journal.
<http://www.mensjournal.com/expert-advice/the-10-most-dangerous-foods-and-how-to-avoid-them-20140613>

Icebox Confidential, Freezing 101. April 2012. Whole Living Magazine.
<http://www.wholeliving.com/173303/freezing-101>

“Why do apple slices turn brown after being cut?” 2007. Ask The Expert section of Scientific America Magazine. October 2007 p 114. <http://www.scientificamerican.com/article/experts-why-cut-apples-turn-brown/>

“Old Milk Danger” 2003. Child Magazine

Li, J. and L. A. McLandsborough. 1999. The application of significance of zeta potential measurement to study bacterial interaction with foods. *In* Particle Techniques, a newsletter from the Malvern Science and Technology Group.

Software and Educational CDs

M. Mattingly and L. McLandsborough 2004. FOOD SAFETY FIRST Microbial Growth Simulation Program for high school and middle school students. Food Safety First web page
http://www.foodsafetyfirst.org/fsf_mgsp.html

UMass Extension Nutrition Education Program. Food Safety FIRST course for Science Teachers CD. Material on CD written (and performed) by L. McLandsborough: 7 Videos, 5 teaching presentations and 1 interactive activity.

Abstracts of presented research (presenter in caps)

BERUS, N., J. Feirtag, M. G. Corradini, L. A. MCLANDBOROUGH. A Study to Evaluate the Influence of Packaging Materials on Broccoli Quality during Transport. International Association of Food Protection 2019 National Meeting, Louisville, KY T3-02

TUCKER, M., B. Pearson, L. He, L. McLandsborough. Rapid Bacterial Detection Using β -Cyclodextran and Surface Enhanced Raman Spectroscopy in Ground Beef. International Association of Food Protection 2018 National Meeting, Salt Lake City, Utah. P1-65

BERUS, N., J. Feirtag, M. G. Corradini, L. A. McLandsborough, Effect of Packaging Type on Temperature and Relative Humidity During Harvest, Processing, and Transport of Broccoli. 2018 IFT National Meeting. Chicago IL P05-075

MCLANDBOROUGH, L. Biofilm formation and removal. KoSFoST International Symposium and Annual Meeting, Busan, South Korea 6/27/2018

MCLANDBOROUGH, L. Antimicrobial Delivery Systems. Foods for Health Conference; Celebrating the 100th Anniversary of UMass Food Science, Bangkok, Thailand 1/10/2018

BOULDEN, B. and L. A. McLandsborough. 2017. Investigating natural biofilm dispersion in *Listeria monocytogenes*. Poster #4. Pioneer Valley Microbiology Symposium 2017. UMass Amherst.

RYU, V., D. J. McClements, and L. McLandsborough. 2017 Effect of ripening inhibitor type on formation, stability and antimicrobial activity of thyme oil nanoemulsions. Poster # 29 Pioneer Valley Microbiology Symposium 2017. UMass Amherst.

ROSENTHAL, Z., K. S. Landry, D. J. McClements and L. McLandsborough. 2015. The effectiveness of a eugenol nanoemulsion against *Salmonella enterica* subsp. Enteritidis contaminated mung bean seeds. UMass Amherst Undergraduate Life Science Symposium Poster Session.

ZOU, N. K. Landry, D. J. McClements and L. McLandsborough. 2015. The effectiveness of food grade antimicrobial treatment against *Salmonella spp.* contaminated stainless steel. UMass Amherst Undergraduate Life Science Symposium Poster Session.

XU, T., K. S. Landry, L. McLandsborough. 2015. The influence of lipoteichoic acid (LTA) on growth of *Listeria monocytogenes* at various temperatures. UMass Amherst Undergraduate Life Science Symposium Poster Session.

LANDRY, K. S., D. J. McClements, L. McLandsborough. Effectiveness of a spontaneously emulsified carvacrol nanoemulsion acidified with organic acids against a *Salmonella sp.* cocktail on contaminated mung beans. P3-212. IAFP Annual Meeting. July 25-28, Portland, OR.

WANG, L., J. G. Stoffolano, Jr., L. McLandsborough. Development of the fly “crop vessel assay” to evaluate the growth of *Escherichia coli* O157:H7 in the house fly, *Musca domestica*. P2-161. IAFP Annual Meeting. July 25-28, Portland, OR.

Tirajaya Brooks, I, T. Xu, K. S. Landry and L. MCLANDBOROUGH. The influence of lipoteichoic acid on *Listeria monocytogenes* adaptation to cellular stress. Poster # 094-139 2015 IFT Annual Meeting, Chicago IL.

ADAMS, C. N., D. McClements, L. McLandsborough. Oil disrupts the efficacy of lauric arginate mixed micelles in oil-in-water emulsions. Poster 1352. ASM 114th General Meeting May 17-20, 2014

LANDRY, K. S., Y. Chang, D. J. McClements, L. McLandsborough. Effectiveness of an antimicrobial nanoemulsion against *Salmonella enterica* and *Escherichia coli* contaminated sprouting seeds. Poster 1368. ASM 114th General Meeting May 17-20, 2014

MCLANDBOROUGH, L. Survival, transfer, and inactivation of Salmonella on plastic materials used in tomato harvest. Research Presentation. 2013 Center for Produce Safety Annual Meeting. Rochester, NY

MCLANDBOROUGH, L. Development of Antimicrobial Delivery Systems for Foods and Biofilm removal. Symposium. 2013 IFT Annual Meeting. Chicago, IL

BASTARRACHEA, LJ, Peleg, M, McLandsborough, LA, Goddard, JM. "Low density polyethylene modified with antimicrobial N-halamines: Kinetics of inactivation against *Listeria monocytogenes* and N-halamine regeneration". 245th ACS National Meeting, Division of Agricultural and Food Chemistry, Graduate Student Symposium. April 7th 2013. New Orleans, LA.

LANDRY, K. S., E. F. Dosunmu, and L. McLandsborough. Isolation and effectiveness of antagonistic *Serratia plymuthica* ED1 against *Salmonella Enteritidis* growth on mung bean sprouts. Poster. 2013 Annual International Association for Food Protection Meeting, Charlotte, IL. P3-121

COTTER J., J. Talbert, J. Goddard, W. Autio, and L. McLandsborough. Influence of Soil Particles on the Survival of Salmonella on Plastic Tomato Harvest Containers. 2012 International Association of Food Protection Annual Meeting, Providence Rhode Island T1-04

Y. Lee, P. Rebe, A. Fish and L. MCLANDBOROUGH. Comparison of a reference method of bioaerosol sampling to a newly developed compressed air microbial testing unit (CAMTU). 2012 International Association of Food Protection Annual Meeting, Providence Rhode Island P1-18

ADAMS, C. Y. Chang, D. J. McClements and L. McLandsborough. Determination of the minimal inhibitory concentration of lauric arginate against three strains of *Salmonella enterica*. 2012 International Association of Food Protection Annual Meeting, Providence Rhode Island. P3-97

BASTARRACHEA, L. McLandsborough, J. Goddard. Development of antimicrobial surface-modified stainless steel with N-halamines: characterization and effectiveness against *Listeria monocytogenes*. 2012 International Association of Food Protection Annual Meeting, Providence Rhode Island P3-91

TIRTAJAYA. I., Y. Chang, L. McLandsborough. Influence of lipoteichoic acid (LTA) on *Listeria monocytogenes* biofilm formation. 2012 International Association of Food Protection Annual Meeting, Providence Rhode Island. P3-117

CHANG, Y. L. McLandsborough, D. J. McClements. Interactions of a cationic antimicrobial (ϵ -polylysine) with an anionic biopolymer (pectin): an isothermal titration calorimetry, microelectrophoresis, and turbidity study. Institute of Food Technologists Annual Meeting, New Orleans, LA. 034-01

ZHANG , F and L. McLandsborough. Measurement of *Listeria monocytogenes* biofilm cohesive energy using atomic force microscopy. 2011 International Association of Food Protection Annual Meeting. Milwaukee, WI. P3-44.

CHANG Y. , Weimin Gu and Lynne McLandsborough Disruption of *Listeria monocytogenes* *lmo1386*, a Putative DNA Translocase Gene, Affects Biofilm Formation on Abiotic Surfaces. American Society of Microbiologists Annual Meeting 2010. San Diego MA. P-2294

CHANG Y. and Lynne McLandsborough, Low Concentration of Ethylenediaminetetraacetic Acid (EDTA) Affects *Listeria monocytogenes* Biofilm Formation by Inhibiting Its Initial Attachment. International Association of Food Protection Annual Meeting 2010. Anaheim, CA

ADAMS, C. and L. McLandsborough. 2009. Influence of surface roughness on biofilm adhesion by *Escherichia coli*. 2009 Annual Biomedical Research conference for Minority Students (ABRCMS). 2009 Phoenix AZ .

CHANG, Y., W. Gu, N. Fisher, L. McLandsborough. *Listeria monocytogenes* Biofilm Formation: Identification of Genes that Code for Biofilm Phenotypes by *mariner*-based Transposon Mutagenesis. American Society of Microbiologists Annual Meeting. Philadelphia, PA 2009. P-129.

ASKER, D. Jochen Weiss, and Lynne McLandsborough. Influence of environmental stresses on stability of antimicrobial delivery system of eugenol encapsulated in cationic-nonionic mixed micelle. The Institute of Food Technologists Annual Meeting. Anaheim, CA 2009. 057-24

ASKER, D., J. Weiss, and L. McLandsborough, Influence of Environmental Stresses on Stability of Antimicrobial Delivery System of Eugenol Encapsulated in Ionic-Nonionic Mixed Micelles. 100th AOCS Annual Meeting and Expo. Orlando, FL. May 3-6 2009

DAI, Yumei, Lynne McLandsborough, Jochen Weiss, Micha Peleg. Quantifying the concentration and application order effect of sodium benzoate and eugenol mixtures on the growth suppression and retardation of two yeasts. The Institute of Food Technologists Annual Meeting. Anaheim, CA. 2009. 123-59.

CAO, J. Liwen Chen, Dario Perez-Conesa, Lynne McLandsborough, Jochen Weiss. Antimicrobial effects of micellar-encapsulated eugenol of *Escherichia coli* O157:H7 and *Listeria monocytogenes* biofilms. The Institute of Food Technologists Annual Meeting, New Orleans, LA. 2008 052-26

CHEN Liwen, Lynne McLandsborough, Jochen Weiss. Evaluation of fluorescent stains for detection of *Escherichia coli* and *Listeria monocytogenes* viability by confocal microscopy and fluorescence spectroscopy. The Institute of Food Technologists Annual Meeting, New Orleans, LA. 2008 176-13

RODRIGUEZ, A., W. Autio and L. McLandsborough. Effect of hydration, inoculation level and surface roughness on transfer of *Listeria monocytogenes* from inoculated bologna to surfaces. The Institute of Food Technologists Annual Meeting Chicago IL. 2007 058-01

RODRIGUEZ, A., W. Autio and L. McLandsborough. Effect of surface roughness and stainless steel finish on *Listeria monocytogenes* early attachment and biofilm formation. The Institute of Food Technologists Annual Meeting Chicago IL. 2007 058-02

D. Perez-Conesa, A. Rodriguez, J. Weiss and L. MCLANDBOROUGH. Adhesion foces of *Listeria monocytogenes* Scott A biofilms exposed to surfactant micellular-encapsulated eugenol and carvacrol solutions as measured by atomic force microscopy. T3-01. IAFP 94th Annual Meeting Abstract Book 2007 p 91.

RODRIGUEZ, A. and Lynne A. McLandsborough Evaluation of the Transfer of *Listeria monocytogenes* from Surfaces to Foods. P1-29 IAFP 93rd Annual Meeting Abstract Book. 2006 p.8

J.CAO and Lynne A. McLandsborough . Model Drain System for Biofilm Formation by *Listeria monocytogenes* and Resident Microorganisms.from a Seafood Processing Plant. P1-34 IAFP 93rd Annual Meeting Abstract Book. 2006 p.10

D. PÉREZ-CONESA, Lynne A. McLandsborough, and Jochen Weiss Susceptibility of CDC Reactor Grown *Listeria monocytogenes* and *Escherichia coli* O157:H7 Biofilms to Eugenol and Carvacrol Encapsulated in Surfactant Micelles. P5-68 IAFP 93rd Annual Meeting Abstract Book. 2006 p.99.

PÉREZ-CONESA, Lynne A. McLandsborough, and Jochen Weiss. Effect of Antimicrobials Eugenol and Carvacrol Encapsulated in Surfactant Micelles on *Listeria monocytogenes* and *Escherichia coli* O157:H7 Colony Biofilm Growth. P5-69 IAFP 93rd Annual Meeting Abstract Book. 2006 p.99

BEFFA-NEGRINI, P., Cohen, N.L., Olson, R.B., Laus, M.J. and McLandsborough, L. 2005. Food Safety Education for Secondary Teachers and Their Students: An Evaluation of the Food Safety FIRST Online Professional Development Program. National Environmental Health Association Annual Conference Program Book.

L. McLandsborough. Biofilm formation by *Listeria monocytogenes* Extended abstract to keynote address. Japanese Society for the Protection of Food. Tokyo University of Marine Science and Technology. Tokyo, JAPAN. September 8, 2005

A. RODRIGUEZ, J. Weiss and L. A. McLandsborough 2005. Effect of contact time and pressure on the transfer of *Listeria monocytogenes* biofilms from stainless steel surfaces to bologna. Region I Meeting American Society for Microbiology. Cromwell, CT

W. K. SHAW Jr. and L. A. McLandsborough. 2005. Characterization of *Listeria innocua* biofilm formation using Tn917 transposon mutagenesis and arbitrary PCR. International Association of Food Protection Annual Meeting. Baltimore MD. P1-45

M. AVALLONE and L. A. McLandsborough. 2005. Analysis of microbial diversity using denaturant gradient gel electrophoresis and cloning of 16S rDNA. The Institute of Food

Technologists Annual Meeting New Orleans, LA. 18D-4

A. RODRIGUEZ and L. A. McLandsborough. 2005. Evaluation of *Listeria monocytogenes* strains within a mixed strain biofilm on stainless steel using RAPD-PCR. The Institute of Food Technologists Annual Meeting, New Orleans, LA. 89E-16

J. LAMANA and L. A. McLandsborough. 2005. Growth of *Staphylococcus aureus* in hydrated fish batter. The Institute of Food Technologists Annual Meeting. New Orleans, LA. 89E-19
Sherburne M, N Cohen, L McLandsborough, R Brennan Olson, and MJ Laus, 2003. Food Safety Education through Inquiry-Based Learning. Massachusetts Dietetics Association Fall Conference

SHAW JR., W. K. and L.A. McLandsborough. 2003. Characterization of *Listeria innocua* biofilm formation using Tn917 transposon mutagenesis. P182. *IAFP 2003 90th Annual Meeting Program and Abstracts*.

APOSTILIDES E. and L. McLandsborough. 2003. Characterization of a swarming phenotype of *Listeria innocua* on semi-solid surfaces. P183. *IAFP 2003 90th Annual Meeting Program and Abstracts*.

CRONIN, C., M. Clarke, R. Witkowsky, H. Lui, A. Sayedahmed, RE Levin and L. McLandsborough. 2003. Monitoring of levels and tracking of *Listeria monocytogenes* strains in a seafood processing environment using enrichment MPN and RAPD. P273. *IAFP 2003 90th Annual Meeting Program and Abstracts*.

McLandsborough, L., M. AVALLONE, M. Clarke, R. Witkowsky, H. Lui, A. Sayedahmad, and RE Levin. 2003. Monitoring of microflora present within a seafood processing environment using plating methodology and denaturing gradient gel electrophoresis. *IFT Annual Meeting Book of Abstracts*. IFT Chicago, IL

PRACHIAYO, P., and L. A. McLandsborough. 2001. Growth of *E. coli* O157:H7 in oil-in-water emulsions. 59F-12. *IFT Annual Meeting Book of Abstracts*. IFT Chicago, IL.

DJORDJEVIC D, and L. A. McLandsborough. 2001. Microtiter plate assay for assessment of *Listeria monocytogenes* biofilm formation. 59F-13. *IFT Annual Meeting Book of Abstracts*. IFT Chicago, IL

SHAW, W. K. and L. A. McLandsborough 1999 Rapid preparation of PCR samples from food combined with shortened PCR cycles for the detection of *E. coli*. P7. *IAMFES 86th Annual Meeting*, Dearborn MI.

LI, J. and L. A. McLandsborough. 1999 Electrostatic interaction between emulsion droplets and bacterial cells. 61-8. *pp162 1999 IFT Annual Meeting Book of Abstracts*. IFT. Chicago, IL.

SHAW, W. K. and L. A. McLandsborough. 1999. Shortened PCR reaction for rapid detection and increased sensitivity in a conventional thermal cycler. 65D-2 p184 *1999 IFT Annual Meeting Book of Abstracts*. IFT. Chicago, IL.

PRACHAIYO, P., J. Li and L. A. McLandsborough. 1999. Binding of enterohemorrhagic *E. coli* to isolated meat components. 79C-6. *1999 IFT Annual Meeting Book of Abstracts*. IFT. Chicago, IL.

PRACHAIYO P. and L. A. McLandsborough. 1999. Development of a model system to study the interaction of *E. coli* with beef muscle. Pp. 122. *Proceedings of the 52nd Annual Reciprocal Meat Conference*. American Meat Science Association, Kansas City, MO

AMOAKO-ATTA, C. and L. McLandsborough. 1998. Surface characteristics of bacterial cells after antimicrobial wash treatments. pp.191 *Proceedings of the 51st Annual Reciprocal Meat Conference*. American Meat Science Association, Kansas City, MO

PRACHAIYO, P. and L. McLandsborough. 1998. Enhanced green fluorescent protein expression in *Escherichia coli* to study the penetration of meat. 9-6. pp13 *1998 IFT Annual Meeting Book of Abstracts*. IFT. Chicago, IL.

SHAW, W. and L. McLandsborough. 1998. Comparison of a PCR-electrophoresis vs a PCR-ELISA method for the rapid and sensitive detection and enumeration of *E. coli*. 17-2. pp.22 *1998 IFT Annual Meeting Book of Abstracts*. IFT. Chicago, IL.

WU, M. and L. McLandsborough. 1998. Distribution of pathogenic factors among *Escherichia coli* O157:H7 isolate to determine conserved PCR target sequences. 9-3. pp. 13 *1998 IFT Annual Meeting Book of Abstracts*. IFT. Chicago, IL.

MCLANDBOROUGH, L. A. and P. P. Cleary. 1994. Insertional inactivation of *virR* in *Streptococcus pyogenes* M49 demonstrates that VirR functions as a positive regulator of streptococcal C5a peptidase and M protein in OF⁺ strains. *IVth International ASM Conference on Streptococcal Genetics program and abstracts*. ASM, Washington DC.

MCLANDBOROUGH, L. A. L. Sechaud, and L. L. McKay. 1994. Construction of plasmids which confer enhanced bacteriophage resistance by using phage resistance mechanisms isolated from two different strains of lactococci. *IVth International ASM Conference on Streptococcal Genetics program and abstracts*. ASM, Washington DC.

MCLANDBOROUGH, L. A., R. Requena, and L. L. McKay. 1993. Sequencing and *Tn5* mutagenesis of the bacteriophage abortive infection genetic determinants of plasmid pBF61 from *Lactococcus lactis* subsp. *lactis* KR5. O68. p331. *Abstracts of the 93rd General Meeting of the American Society for Microbiology*. ASM. Washington, DC.

MCLANDBOROUGH, L. A., K. M. Kolaetis, and L. L. McKay. 1992. Cloning and analysis of the bacteriophage abortive infection genetic determinants of plasmid pBF61 from *Lactococcus*

lactis subsp. *lactis* KR5. O74 p321. *Abstracts of the 92nd General Meeting of the American Society for Microbiology*. ASM. Washington, DC.

MCLANDBOROUGH, L. and S. R. Tatini. 1989. A six hour microslide immunodiffusion assay for detection of staphylococcal enterotoxins. P29 p323. *Abstracts of the 89th General Meeting of the American Society for Microbiology*. ASM. Washington, DC.

Research Presentations and Invited Talks

Berus, N., J. Feirtag, M. G. Corradini, L. A. MCLANDBOROUGH. A Study to Evaluate the Influence of Packaging Materials on Broccoli Quality during Transport. International Association of Food Protection 2019 National Meeting, Louisville, KY 7/22/2019

Biofilm formation and removal. KoSFoST International Symposium and Annual Meeting, Busan, South Korea 6/27/2018

L. Antimicrobial Delivery Systems. Foods for Health Conference; Celebrating the 100th Anniversary of UMass Food Science, Bangkok, Thailand 1/10/2018

Development of delivery systems for essential applications for foods and biofilm removal. Natural & Bio-based Antimicrobials for food applications symposium. 252nd ACS Annual Meeting and Exposition, Philadelphia PA. 9/24/2016

Biological and chemical approaches for sprout safety. UMass Strategic Research Alliance Meeting. April 9, 2015.

Development of Antimicrobial Delivery Systems for Foods and Biofilm removal. Symposium. 2013 IFT Annual Meeting. Chicago, IL

Survival, transfer, and inactivation of Salmonella on plastic materials used in tomato harvest. Research Presentation. 2013 Center for Produce Safety Annual Meeting. Rochester, NY

Survival, Transfer and Inactivation of Salmonella on plastic materials used in Tomato Harvest". Tomato Safety Teleconference 2011, organized by the Food and Drug Administration through the University of Florida, Institute of Food and Agricultural Sciences.

Listeria monocytogenes biofilm formation: remediation and transfer. Invited. 2009. US Military Academy Fifth Annual Microbiology Symposium. West Point, NY.

Listeria monocytogenes biofilm formation. Invited. 44th Annual ASM Region I Meeting, October 22, 2009. Cromwell, CT

Listeria monocytogenes growth, destruction and transfer in the food processing environment. March 6, 2007. Invited. MATFORSK, The Norwegian Food Research Institute, Ås Norway

Listeria monocytogenes growth, destruction and transfer in the food processing environment. Oct. 16, 2006. Invited. Department of Microbiology Lecture Series. UMass Amherst, MA

Biofilm formation by Listeria monocytogenes September 8, 2005. Keynote address. Japanese Society for the Protection of Food. Tokyo University of Marine Science and Technology. Tokyo, JAPAN.

Listeria monocytogenes biofilms adhere to stay. May 5, 2005. Annual Strategic Research Alliance Meeting. Department of Food Science, University of Massachusetts, Amherst

Biofilm formation of Listeria monocytogenes. Sept 25 2002. Invited. Veterinary and Animal Sciences Seminar Series. UMass Amherst, MA

Listeria monocytogenes biofilm formation in the food industry. Oct 20, 2001. Invited Department of Biology Seminar, Rhode Island College, Providence, RI.

Biofilm formation by Listeria monocytogenes. May 3, 2001. Annual Strategic Research Alliance Meeting. Department of Food Science, University of Massachusetts, Amherst

Bacterial adhesion to foods and processing surfaces. November 3, 2000. Invited lecture for the Department of Animal Science, University of Connecticut, Storrs, CT.

Surface Growth: From biofilms to funky colonies. October 11, 2000. Invited lecture for the Department of Food Science, Utah State University, Logan UT.

Bacterial adhesion and implications for food safety. March 31, 2000. Invited lecture as a portion of a Food Safety lecture series hosted by the Department of Food Science and Nutrition, University of Illinois, Urbana IL.

Use of bioluminescent and fluorescent bacteria to study foodborne pathogens. June 23, 1999 52nd Annual Reciprocal Meat Conference, Oklahoma State University, Stillwater, OK

Food Microbiology Beyond Numbers: interactions between bacteria and foods. April 23, 1998. Annual Strategic Research Alliance Meeting. Department of Food Science, University of Massachusetts, Amherst

PROFESSIONAL ACTIVITIES, OUTREACH AND SERVICE

Summary: I have been very active in my field by being active in IFT, serving on editorial boards and as an ad hoc reviewer, serving on a state Food Safety committee, and participating on national and international grant review panels. I have also been active in service at the University, College and Departmental levels. At the University level, I was the chair of the Institutional Biosafety Committee (member 13 years, chair 9 years) and at the College level I have served on a variety of committees (including Curriculum committee, and Personnel Committee). At the Departmental level, I have been in an administrative role as the Chief Undergraduate Advisor since 2001, served and chaired a large number of committees (Departmental Personnel Committee and Search Committees). I collaborate with UMass Extension on giving workshops and trainings and have a consulting relationship with a number of companies.

Grant Review Panels

- USDA NIFA Education and Workforce Development Program. *Pre- and Postdoc Fellowship program.* 2018
- EIT Food Expert Grant Reviewer *Added Value Activity.* Knowledge and Innovation Community (KIC) of the European Institute of Innovation and Technology (EIT). March 2018-July 2018.

- New York Sea Grant. 2018-2019. Peer Review.
- US Department of State, Institute of International Education Global Innovation Initiative: *Agriculture, Food Security and Water Panel 1*. Tier 1 Reviewer 2013-2014
- Fulbright Scholar Special Review Committee on Food Technology and Nutrition 2005
- USDA National Research Initiative Grant Program *Food Characterization/Process/Product Research* 2001
- USDA Small Business Innovation Research Grant Program: *Food Science and Nutrition* 1998
- USDA National Research Initiative Grant Program: *Ensuring Food Safety* 1998

Certifications:

- Preventative Controls Qualified Individual
- Lead Instructor of the FSPCA Preventive Controls for Human Food Course
- International HACCP Alliance *HACCP Trainer*

State Committees and Specialty Panels

- Academic Technical Advisor to the Food Establishment Advisory Committee (FEAC), Dept of Public Health, Commonwealth of Massachusetts, Food Protection Program
- Participant in FAO Expert Consultation on the trade impact of *Listeria* in fish products, May 17-20, 1999

Journal Editorial Boards

Food Biotechnology (2001-current)
Food Protection Trends (2006- 2008)
Journal of Food Safety (2006-2009)
Associate Editor Journal of the Science of Food and Agriculture (2004-2007)
Journal of Food Protection (2001- 2003)

Ad Hoc Manuscript Reviewer

Applied and Environmental Microbiology	International Journal of Food Microbiology
Biofouling	Journal of Dairy Science
Critical Reviews in Food Science	Journal of Food Protection
Food Biophysics	Microbiology
Food Microbiology	PIOS One

Professional Memberships

American Society for Microbiology
International Association of Food Protection
Institute of Food Technologists
American Chemical Society

Activities within Professional Organizations

Session Moderator, *Teaching and Learning: Identifying IFT's members current interests and needs*, IFT National Meeting 2019
Member, IFT Teaching and Learning Workgroup, 2019-2022
Judge, IFTSA Smart Snacks Product Development Competition, IFT National Meeting 2019
Member, International Food Science Certification Commission (2014-2017)
Chair, IFT Biotechnology Division (2009-2010)
Session Moderator, Food Biotechnology Division Lecture, IFT National Meeting, 2010
Session Moderator, New Products and Technologies, IFT National Meeting 2010
Session Moderator, Intentional Association of Food Protection National Meeting 2007
Member-at-large, IFT Biotechnology Division Executive Board (2006-2008)
Member, IFT New Products and Technologies Programming Sub-Committee (2006-2009)
Judge, IFT Undergraduate Paper Competition, 2007
Abstract review, IFT Food Microbiology Division (2006)
IFT Continuing Education Initiative Task Force (2006)
Member, IFT Career Development Skills Committee (2004-2006)
National Advisor, Student Association of the Institute of Food Technologists
(1997 - 2000)

Member, IFT Committee on Sections and Divisions (1997 - 2000)

Judge, IFT Food Microbiology Graduate Paper Competition, 1997

Session Chair, Spring 1997 meeting of the New England Society of Industrial Microbiology

University Representative

Planning meetings of the Northeastern Region Land-Grant University Consortium Food Safety Initiative (SAFER). (1997 - 2000)

ISELKI Mundus 2. Internationalization and sustainability of ISEKI Food Network. 1st Overall Meeting. Gothenburg, Sweden (July 2009)

Short Course and Outreach Presentations

FSPCA Preventive Controls for Human Health. UMass Extension. March 12-13, 2019. January 31-February 2, 2018. UMass Extension.

Better Process Control School. UMass Extension. Taught Introduction to Microbiology and Acidified Foods. 2013 - 2019

Introduction to HACCP. UMass Extension. Taught introduction to microbiology. January 2014 and 2015

Assuring Food Safety of Value-Added Products: Development of HACCP plans for Small Scale or Home Businesses. Feb. 3, 1998. Northeast Farmers' Direct Marketing Conference, Sturbridge, MA.

Food Micro 101 Oct. 22, 1997. Safe Food Processing, First Annual Northeast Conference. Saratoga Springs, NY.

Safe-Serv Across the State: Food Safety. Oct. 1996. Multi-location lecture using Picture-Tel technology from University of Massachusetts, Amherst.

Food Safety: Introduction and Current Issues Jan. 31, 1996; Jan. 17 and 24, 1997; Jan 14 and 22, 1998. Guest Lecture. Nutrition 219. *Food: Technical, Distribution, and Marketing*. Tufts University School of Nutrition Science and Policy, Boston, MA.

Consultation relationships

Hans Kissle, Haverhill, MA

Parker Hannifin Corporation, Haverhill, MA

Tribe, Mediterranean Foods, Tauton, MA

Stonewall Kitchens, York, ME

Conagra/Lightlife Foods, Turnersfall, MA

Cricket Creek Farm, Williamstown, MA

Expressive Constructs Inc., Worcester, MA

SafeScience, Boston, MA

Garelick Farms Inc, Franklin, MA

Ion Physics Inc, Atkinson, NH

Vicam Inc., Watertown, MA.

Friendly Ice Cream, Wilbraham, MA

Phone consultations to various local Massachusetts companies

Phone consultations to members of the Department's Strategic Research Alliance

University Service

Departmental

- Undergraduate Program Director and Chief Undergraduate Advisor (2000 – Current)
Responsibilities include:
 - *Curricular Planning*
 - *Preparation of IFT Program Assessment and AQAD Materials*
 - *Advisor Assignments*
 - *Personal Advisees (~20 students)*
 - *Graduation Clearance*
 - *Updating University Catalog and Course Guide*
 - *CNS Undergraduate Committee representation (Curriculum, CUA, and Scholarship Committees)*
- Undergraduate Recruiting Committee (1995 - current), Chair (1996 - 2000)
- Food Science Club Advisor (1996 – 1998, 2000 -2001, 2006 - 2007)
- Graduate Program Committee (1998 - 2000)
- Personnel Committee (1996 - 1997, 1999 – 2000, 2003-2004, Chair, 2004-05, Chair 2005-2006, 2007-2007, 2007-2008, 2008-2009, 2009-2011, 2016-2017, Chair 2014-15. 2015-2016. Chair ,2017-2018)
- Teaching Evaluation Coordinator (1996 - 2006)
- Director of UMass Summer Scholar Program (2008)

College of Food and Natural Resources

- College Personnel Committee (2006-2009, Chair Spring 2009)
- Curriculum Committee (1998 – 2001)
- Undergraduate Advisors Committee (2000-2009)
-

College of Natural Sciences

- Curriculum Committee (2009-current)
- CNS Awards Committee (2009-2011)
- Undergraduate Advisors Committee (2009-current)
- Life Sciences Ad-Hoc Curriculum Committee (Spring 2010)
-

Commonwealth Honors College

- Member Grant and Fellowship Selection Committee (2013)

University

- Institutional Biosafety Committee, Member, (2005-2009), Chair (2009-2018)
- Status of Woman Council
- Member, REU Coordinators Council (2008)
- UMass Extension Food Safety Issue Planning Team

Search Committees

Chair

- Food Engineering Search Committee Chair (2018-2019), Department of Food Science
- IALS Biosensor Search Committee Chair (2016-2017), Department of Food Science
- Food Safety Extension Search Committee Chair (2011), Department of Food Science
- Department Head Search Committee Chair: (2008), Department of Food Science
- Microbiology Department Head (Chair) (2005-2006), Department of Microbiology

Member

- Associate Biosafety Officer, UMass Environmental Health and Safety (2013 and 2016)
- Food Chemist Position (2007), Department of Food Science
- Food Safety Extension Assistant Professor (2006), Nutrition Department
- Jack Francis Chair of Food Science(2004) Department of Food Science
- Assistant Professor (2002), Department of Microbiology

Mentorship and Teaching Experience

Summary: To date, I have mentored 8 Post-Doctoral Researchers, 8 PhD students, 23 MS students, 23 Undergraduate Researchers, and 5 Visiting Scholars. I have been the department chief undergraduate advisor since 2001 and have won college awards for advising and teaching. I have written a laboratory textbook that has been adopted by both national and international institutions, and I have constantly obtained high teaching evaluations.

ADVISING

Departmental Chief Undergraduate Advisor (2001 – current) *Currently advise 25 Undergraduates*

National Advisor to the Student Association of the Institute of Food Technologists 1997-2000

Advising Awards

College of Food and Natural Resources Outstanding Advisor Award, 2009

Graduate and Post-Graduate Advising and Mentoring

Post-Doctoral Research Fellows

John Cotter (January 2011 – 2013)

Yuhua Chang (Septemeber 2010 – 2012)

Yumei Dai (September 2008 – July 2009)

Dalal Asker (September 2008 – July 2009)

Weimin Gu (December 2008 – March 2009)

Jun Cao (Fall 2004 –September 2008)

Dario Perez Conesa (Spring 2005 – 2006)

Jack Li (1998 - 1999)

PhD Students

Victor Ryu (2018 – current)

Kyle Landry (2012- 2016)

Chanelle Adams (2010- 2014)

Imelda Tirtajaya (2009- 2014)

Yuhua Chang (2006 – 2010)

Andres Rodriguez (2004 – 2007)

William Shaw (2001 –2004)

Preyatudsaney Prachiayo (1999- 2003)

MS Students

Nicholas Bernus (2017-2018)

Precious Henshaw (2016-2018)

Madeline Tucker (2016-2018)

Parita Patel (2016-2018t)

Brett Boulden (2015- 2016)

Victor Ryu (2015-2016)

Dillon Murray (2013-2015)

Lufan Wang (2013-2015)
Kaitlin Ewald (2011- 2012)
Fujia Zhang (2008 – 2010)
Elsina Hagan (2008 – 2010)
Ejovwoke Ememu (2008 – 2010)
Imelda Tirtajaya (2005 – 2007)
Jessica Lamana (2004 – 2006)
Caroline Cronin (2002 - 2012)
Chris Aurand (2007 –)
Michael Avallone (2003 –2005)
Emmanouil Apostilides (2001 –2003)
William Shaw (1997 –2001)
Darinka Djordjevic (1999 –2001)
Cynthia Amoako-Atta (1997 - 1999)
Preyatudsaney Prachiayo (1996 - 1999)
Michelle Wu (1996 - 1999)

Undergraduate Research Projects

Michael McGregor (Fall 2016-Spring 2018)
Tim Avery (Summer 2015-Spring 2016)
Ting Xu (Fall 2014-Summer 2015)
Zach Rosenthal (Summer 2014 – Spring 2015)
Nancy Zou (Fall 2014-Spring 2015)
Danielle Faivre (Spring 2013)
Nils Fischer (Summer 2010)
Kaitlin Ewald (Fall 2009)
Lauren Plazek (Spring 2008)
Michael Miller (Fall 2006-Spring 2007)
Faith Rivers (Summer 2004)
Jessica Lamana (Fall 2002-Spring 2003)
Chris Kosteck (Spring 2000)
Emmanouil Apostolidis (Spring 2000)
Igor Gurevich (Summer 1999 - Spring 2000)
Mathew Clark (Fall 1999-Spring 2000) *Honors Thesis*
Karen Pekarski (Fall 1999)
Ulrike Boecker (Spring 1999)
Craig Labadie (Spring 1998 - Fall 1999)
Bukola Adekemi (Fall 1997)
Adebunmi Abdul (Fall 1997 - Fall 1998), *Honors Project*
Jason Coles (Spring 1997)
Mathew Labbe (Fall 1995 - Spring 1997)
Houng K. Huynh (Spring 1996 - Spring 1997)

Visiting Researchers

Piyanan Chuesiang (June 2016 – May 2017, PhD visiting scholar, October 2019- April 2020,
Post-Doctoral visiting scholar)

Natsuki Yamaguchi from Japan (Sept 2018-Aug 2019)
Ying Zhang from China (Sept 2018- Aug 2019)
Yayoi Chujo from Japan (Sept 2015-Aug 2016)
Sachie Nagano from Japan (April 2000 - 2001)
Akiyo Horri from Japan (April 1998-1999)

TEACHING

Teaching Awards

Finalist 2018-2019 UMass Distinguished Teaching Award
College of Food and Natural Resources Outstanding Teacher Award, 2001
College of Food and Natural Resources Certificate for Excellence in Teaching, 2000

Teaching Enhancement

Attended a variety of on-campus teaching seminars
Attended 1996 Northeast Regional Teaching Workshop: *Teaching and Learning through Cases and Discussion*. October 3-5, 1996. University of Maryland, College Park, MD.
Participated in mid-semester teaching evaluations through the University of Massachusetts Center for Teaching.

Teaching Materials

L. McLandsborough. *Food Microbiology Laboratory*. CRC Press, Boca Raton, FL. 2004.
W. K. Shaw Jr and L. McLandsborough. *Instructor's guide to Food Microbiology Laboratory*. CRC Press, Boca Raton, FL. 2004.

Classroom Teaching (University of Massachusetts)

Food Microbiology (FD Sci 467) (both semesters 1995-1999)

Food Microbiology (FD SCI 467), Fall 1995, 4 credits 50% teaching responsibility
Food Microbiology (FD SCI 467), Spring 1996, 4 credits 100%
Food Microbiology (FD SCI 467) Spring 1997, 4 credits 100%
Food Microbiology (FD SCI 467) Fall 1997, 4 credits 100%
Food Microbiology (FD SCI 467) Spring 1998, 4 credits 100%
Food Microbiology (FD SCI 467) Fall 1998, 4 credits 100%
Food Microbiology (FD SCI 467) Fall 1999, 4 credits 100%
Food Microbiology (FD SCI 467) Fall 2000, 4 credits 100%

Hygienic Principles of Food Handling (Fd Sci 466) Spring Semester (1999 – 2009)

Hygienic Principles of Food Handling (FD SCI 466) Spring 1999, 4 credits 50%
Hygienic Principles of Food Handling (FD SCI 466) Spring 2000, 4 credits, 100%
Hygienic Principles of Food Handling (FD SCI 466) Spring 2001, 4 credits, 100%
Hygienic Principles of Food Handling (FD SCI 466) Spring 2003, 4 credits, 50%
Hygienic Principles of Food Handling (FD SCI 466) Spring 2004, 4 credits, 100%
Hygienic Principles of Food Handling (FD SCI 466) Spring 2005, 4 credits, 100%

Hygienic Principles of Food Handling (FD SCI 466) Spring 2007, 4 credits, 100%
Hygienic Principles of Food Handling (FD SCI 466), Spring 2009 4 credits, 100%

Food Microbiology (FD SCI 567/566) Fall Semester (2001-Present)

Food Microbiology (FD SCI 567/566) Fall 2001, 5 credits 100%
Food Microbiology (FD SCI 567/566) Fall 2002, 5 credits 100%
Food Microbiology (FD SCI 567/566) Fall 2003, 5 credits 100%
Food Microbiology (FD SCI 567/566) Fall 2004, 5 credits 100%
Food Microbiology (FD SCI 567/566) Fall 2005, 5 credits 100%
Food Microbiology (FD SCI 567/566) Fall 2006, 5 credits, 100%
Food Microbiology (FD SCI 567/566) Fall 2007, 5 credits, 100%
Food Microbiology (FD SCI 567/566) Fall 2008, 5 credits, 100%
Food Microbiology (FD SCI 567/566) Fall 2009, 5 credits, 100%
Food Microbiology (FD SCI 567/566) Fall 2010, 5 credits, 100%
Food Microbiology (FD SCI 567/566) Fall 2011, 5 credits, 100%
Food Microbiology (FD SCI 567/566) Fall 2012, 5 credits, 100%
Food Microbiology (FD SCI 567/566) Fall 2013, 5 credits, 100%
Food Microbiology (One section FD SCI 567, two sections Fd Sci 566) Fall 2014, 5 credits, 100%
Food Microbiology (One section FD SCI 567, two sections Fd Sci 566) Fall 2015, 5 credits, 100%
Food Microbiology (One section FD SCI 567, two sections Fd Sci 566) Fall 2016, 5 credits, 100%
Food Microbiology (FD SCI 567/566), Fall 2017, 5 credits, 100%
Food Microbiology (FD Sci 567/566), Fall 2018, 5 credits, 100%

Survey of Food Science (FD SCI 265)

Survey of Food Science (FD SCI 265) Fall 2003, 4 credits
Survey of Food Science (FD SCI 265), Fall 2009, 4 credits
Survey of Food Science (FD SCI 265), Fall 2010, 4 credits

Topical Problems in Food Microbiology (FD SCI 797M)

Topical Problems in Food Microbiology (FD SCI 797M), Spring 2013, 3 credits, 100%
Topical Problems in Food Microbiology (FD SCI 797M) Spring 2015, 3 credits 100%
Topical Problems in Food Microbiology (FD SCI 797M) Spring 2017, 3 credits 100%

The Science of Food (FD SCI 150, BS)

The Science of Food (Fd Sci 150), Fall 2018, 4 credits, 33%
The Science of Food (Fd Sci 150), Spring 2019, 4 credits, 33%

Student Evaluations of Teaching Performance (overall average for each course)

Food Microbiology (FD SCI 567/566)

Fall 2001: 4.61/5.00
Fall 2002: 4.50/5.00
Fall 2003: 4.61/5.00
Fall 2004: 4.57/5.00
Fall 2005: 4.46/5.00
Fall 2006: 4.59/5.00
Fall 2007: 4.55/5.00
Fall 2008: 4.34/5.00
Fall 2009: 4.68/5.00
Fall 2010: 4.34/5.00
Fall 2011: 4.58/5.00
Fall 2012: 4.55/5.00
Fall 2013: 4.46/5.00
Fall 2014: 4.61/5.00
Fall 2015: 4.78/5.00
Fall 2016: 4.53/5.00
Fall 2017: 4.52/5.00
Fall 2018: 4.60/5.00

The Science of Food (FD SCI 150)

Fall 2018: 4.43/5.00
Spring 2019: 4.21/5.00

Survey of Food Science (FD SCI 265)

Fall 2009: 4.54/5.00
Fall 2010: 4.25/5.00

Food Microbiology (FD SCI 467)

Fall 1995 5.19/7.00
Spring 1996: 4.42/5.00
Spring 1997: 4.36/5.00
Fall 1997: 4.52/5.00
Spring 1998: 4.60/5.00
Fall 1998: 4.61/5.00
Fall 1999: 4.62/5.00
Fall 2000 4.76/5.00

Hygienic Principles of Food Handling (FD SCI 466)

Spring 1999: 4.62/5.00
Spring 2000: 4.49/5.00
Spring 2001: 4.39/5.00
Spring 2003: 4.15/5.00
Spring 2004: 4.57/5.00
Spring 2006: 4.46/5.00
Spring 2007: 4.34/5.00
Spring 2009: 4.46/5.00