

BYEONGHWA JEON, PhD

Associate Professor
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Contact Information

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Academic Training and Background

2001 - 2005	Ph.D. in Veterinary Medical Sciences, University of Tokyo, Japan
1998 - 1999	M.Sc. in Food Science and Biotechnology, Lund University, Sweden
1993 - 1997	B. Sc. in Food Science and Technology, Seoul National University, Korea

Professional Experience

2019 – Present	Associate Professor , Division of Environmental Health Sciences, School of Public Health, University of Minnesota, Twin Cities, USA
2017 - 2019	Associate Professor Environmental Health Sciences School of Public Health, University of Alberta, Canada
2012 - 2016	Assistant Professor , Environmental Health Sciences School of Public Health, University of Alberta, Canada
2010 - 2012	Assistant Professor , Department of Pathology and Microbiology Atlantic Veterinary College, University of Prince Edward Island, Canada
2009 - 2010	Research Associate , Center for Agricultural Biomaterials Seoul National University, Korea <ul style="list-style-type: none">• Research area: Stress tolerance regulation in <i>Campylobacter</i>
2005 - 2009	Postdoctoral Research Fellow , Department of Veterinary Microbiology and Preventive Medicine, Iowa State University, USA <ul style="list-style-type: none">• Research area: Antibiotic resistance mechanisms in <i>Campylobacter</i>
2002, 2004	Teaching Assistant , Department of Veterinary Medical Sciences University of Tokyo, Japan
2000 - 2001	Research Assistant , Department of Food and Biotechnology Seoul National University, Korea

Academic Distinctions and Awards

2001 - 2005	Japanese Government Scholarship , roundtrip airplane tickets, tuition and living expenses
1998 - 1999	STINT (The Swedish Foundation for International Cooperation in Research and Education) Scholarship , tuition and living expenses
1993 - 1997	Honors Scholarship , Seoul National University, Korea
1993	University Entrance Scholarship , Seoul National University, Korea, tuition and admission fee

Adjunct Professorship

2016-present	Department of Food Science and Biotechnology, College of Agriculture and Life Sciences, Seoul National University, Seoul, South Korea,
2016-present	Center for Animal Disease and Control, University of Miyazaki, Miyazaki, Japan

RESEARCH

Research Interests

- Investigation of *Campylobacter* transmission to humans
- Molecular mechanisms for the stress tolerance and survival of *Campylobacter*
- Antibiotic resistance in *Campylobacter*
 - Fluoroquinolone resistance in *Campylobacter*
 - Multidrug efflux pumps in *Campylobacter*
- Effects of antibiotic growth promoters on virulence in Shiga toxin-producing *Escherichia coli*
- Plasmid-mediated antibiotic resistance in foodborne pathogens
 - Plasmid-mediated quinolone resistance (PMQR) genes in *Salmonella* and *E. coli*
 - Extended spectrum β -lactamase (ESBL)-producing *E. coli*
- Biofilm formation in pathogenic bacteria
 - Biofilm formation mechanisms in *Campylobacter*
 - Transmission of antibiotic resistance within biofilms
 - Inhibition of biofilms in *Listeria monocytogenes*, methicillin-resistant *Staphylococcus aureus* (MRSA)
- Development of novel adjuvant strategies to control antibiotic-resistant pathogens
- Vaccination strategies to reduce *Campylobacter* contamination of poultry carcasses

Refereed Publications

The students whom I advised or co-advised are underlined; * Publication as the corresponding author

1. Oh, E., Andrews, K.J., McMullen, L.M., and **Jeon, B.***, (2019) Tolerance to stress conditions associated with food safety in *Campylobacter jejuni* strains isolated from retail raw chicken, **Scientific Reports**, 9:11915.
2. Kiatsompob S, Taniguchi T, Tarigan E, Latt KM, **Jeon B**, Misawa N, (2019), Aerotolerance and multilocus sequence typing among *Campylobacter jejuni* strains isolated from humans, broiler chickens, and cattle in Miyazaki Prefecture, Japan, **Journal of Veterinary Medical Sciences**, 81:1144-1151
3. Kim, J., Shin, H, Park, H., Jung, H., Kim, J., Cho, S., Ryu, S., and **Jeon, B.***, (2019) Microbiota analysis for the optimization of *Campylobacter* isolation from chicken carcasses using selective media, **Frontiers in Microbiology**, 10:1381
4. Kim, K., Guk, J-H., Mun, S-H., An, J-U., Song, H., Kim, J., Ryu, S., **Jeon, B.**, and Cho, S., (2019) Metagenomic analysis of isolation methods of a targeted microbe, *Campylobacter jejuni*, from chicken feces with high microbial contamination, **Microbiome**, 7:67.
5. Chaplot, S., Yadav., B., **Jeon, B.**, Syamaladevi, R.M., (2019) Atmospheric cold plasma and peracetic acid-based hurdle intervention to reduce *Salmonella* on raw poultry meat. **Journal of Food Protection** 82: 878–888
6. Park, H., Kim, J., Ryu, S., and **Jeon, B.***, (2019) The predominance of blaCTX-M-65 and blaCTX-M-55 in extended-spectrum β -lactamase (ESBL)-producing *Escherichia coli* from retail raw chicken in South Korea. **Journal of Global Antimicrobial Resistance**, 17:216-220.
7. Chandrashekhar, K., Hwang, S., **Jeon, B.**, Ryu, S., Rajashekara, G., (2018) Transducer-like protein in *Campylobacter jejuni* with a role in mediating chemotaxis to iron and phosphate, **Frontiers in Microbiology** 9: 2674
8. Bai, J., **Jeon, B.**, and Ryu, S. (2018) Effective inhibition of *Salmonella Typhimurium* in fresh produce by a phage cocktail targeting multiple host receptors, **Food Microbiology** 77:52-60.
9. Oh, E., Andrews, K.J., and **Jeon, B.*** (2018) Enhanced biofilm formation by ferrous and ferric iron through oxidative stress in *Campylobacter jejuni*, **Frontiers in Microbiology** 9:1204.
10. Oh, E., Chui, L., Bae, J., Li, V., Ma, A., Mutschall, S.K., Taboada, E.N., McMullen, L.M., and **Jeon, B.*** (2018) Frequent implication of multistress-tolerant *Campylobacter jejuni* in human infections, **Emerging Infectious Diseases** 24:1037-1044.

11. Oh, E., Bae, J., Kumar, A., Choi, H-J., **Jeon, B.*** (2018) Antioxidant-based synergistic eradication of methicillin-resistant *Staphylococcus aureus* (MRSA) biofilms with bacitracin, **International Journal of Antimicrobial Agents** 52:96-99.
12. Tamang, M.G., Sunwoo, H., and **Jeon, B.***(2017) Phage-mediated dissemination of virulence factors in pathogenic bacteria by antibiotic growth promoters in animals: a perspective, **Animal Health Research Reviews** 18:160-166.
13. Oh, E., McMullen, L., Chui, L., and **Jeon, B.*** (2017) Differential survival of hyper-aerotolerant *Campylobacter jejuni* under different gas conditions. **Frontiers in Microbiology**, 8:954.
14. Oh, E., and **Jeon, B.*** (2016) Method of peptide nucleic acid (PNA)-mediated antisense inhibition of gene expression in *Campylobacter jejuni*. **Methods in Molecular Biology** 1512:43-49.
15. Kim, J., Oh, E., Banting, G., Braithwaite, S., Chui, L., Ashbolt, N., Neumann, N., and **Jeon, B.*** (2016) An Improved culture method for selective isolation of *Campylobacter jejuni* from wastewater. **Frontiers in Microbiology** 7:1345.
16. Kim, J., Han, X., Bae, J., Chui, L., Louie, M., Finley, R., Mulvey, M.R., Ferrato, C.J., and **Jeon, B.*** (2016) Prevalence of plasmid-mediated quinolone resistance (PMQR) genes in non-typhoidal *Salmonella* strains with resistance and reduced susceptibility to fluoroquinolones from human clinical cases in Alberta, Canada, 2009–13 Canada, from 2009 to 2013. **Journal of Antimicrobial Chemotherapy** 71:2988-90.
17. Oh, E., Kim, J-C., and **Jeon, B.*** (2016) Stimulation of biofilm formation by oxidative stress in *Campylobacter jejuni* under aerobic conditions. **Virulence** 7:1-6.
18. Banting, G., Braithwaite, S., Scott, C., Kim, J., **Jeon, B.**, Ashbolt, N., Ruecker, N., Tymensen, L., Charest, J., Pintar, K., Checkley, S., and Neumann, N. (2016) An evaluation of various *Campylobacter*-specific qPCR assays for detection and enumeration of *Campylobacteraceae* in irrigation water and wastewater using a miniaturized MPN-qPCR assay, **Applied and Environmental Microbiology** 82:4743-4756.
19. Kim, J-C., Chui, L., Wang, Y., Shen, J., and **Jeon, B.*** (2016) Expansion of Shiga toxin-producing *Escherichia coli* by bovine antibiotic growth promoters. **Emerging Infectious Diseases** 22:802-809.
20. Kim, J-C. and **Jeon, B.*** (2016) Novel adjuvant strategy to potentiate bacitracin against multidrug-resistant methicillin-resistant *Staphylococcus aureus* (MRSA). **Journal of Antimicrobial Chemotherapy** 71:1260-1263.
21. Oh, E., McMullen, L., **Jeon, B.*** (2015) High prevalence of hyper-aerotolerant *Campylobacter jejuni* in retail poultry with potential implication in human infection. **Frontiers in Microbiology** 6:1263.

22. Oh, E., and **Jeon, B.*** (2015) Synergistic anti-*Campylobacter jejuni* activity of fluoroquinolone and macrolide antibiotics with phenolic compounds. **Frontiers in Microbiology** 6:1129.
23. Kim, J-C., Oh, E., Kim, J., and **Jeon, B.***, (2015) Regulation of oxidative stress resistance in *Campylobacter jejuni*, a microaerophilic foodborne pathogen. **Frontiers in Microbiology** 6:751.
24. Chandrashekhar, K., Gangaiah, D., Pina-Mimbela, R., Kassem, I., **Jeon, B.**, and Rajashekara, G., (2015) Transducer-like proteins of *Campylobacter jejuni*: role in chemotaxis, virulence-associated traits, and colonization of the chicken gastrointestinal tract. **Frontiers in Cellular and Infection Microbiology** 5:46.
25. Oh, E., McMullen, L., **Jeon, B.*** (2015) Impact of oxidative stress defense on bacterial survival and morphological change in *Campylobacter jejuni* under aerobic conditions. **Frontiers in Microbiology** 6:295.
26. Oh, E., **Jeon, B.*** (2015) Contribution of surface polysaccharides to the resistance of *Campylobacter jejuni* to antimicrobial phenolic compounds, **Journal of Antibiotics** 68, 591-593.
27. Kim, J-C., Oh, E., Hwang, S., Ryu, S., **Jeon, B.*** (2015) Non-selective regulation of peroxide and superoxide resistance genes by PerR in *Campylobacter jejuni*. **Frontiers in Microbiology** 6:126.
28. Bae, J., Oh, E., **Jeon, B.*** (2014) Enhanced transmission of antibiotic resistance in *Campylobacter jejuni* biofilms by natural transformation. **Antimicrobial Agents and Chemotherapy** 58:7573-7575.
29. **Jeon, B.*** (2014) A tangle of poly-phosphate in *Campylobacter*, **Virulence** 5:449-450.
30. Hwang, S., Miller, W. G., Ryu, S., **Jeon, B.*** (2014) Divergent distribution of the sensor kinase CosS in non-thermotolerant *Campylobacter* species and its functional incompatibility with the response regulator CosR of *Campylobacter jejuni*, **PLoS One** 9:e89774.
31. Oh, E. and **Jeon, B.*** (2014) Role of alkyl hydroperoxide reductase (AhpC) in the biofilm formation of *Campylobacter jejuni*, **PLoS One** 9:e87312.
32. Oh, E., Zhang, Q., **Jeon, B.*** (2014) Target optimization for peptide nucleic acid (PNA)-mediated antisense inhibition of the CmeABC multidrug efflux pump in *Campylobacter jejuni*, **Journal of Antimicrobial Chemotherapy** 69:375-380.

33. Hong, S., Cha, I, Kim, N, Seo, J., Kim, S., Kim, J., Chung, K., **Jeon, B.**, and Kang, Y. (2014) Comparative proteomic label free analysis of *Campylobacter jejuni* cultured with mucin, **Foodborne Pathogens and Disease** 11:240-247.
34. Shen, Z., Luangtongkum, T., Qiang, Z., **Jeon, B.**, Wang, L., and Zhang, Q. (2014) Identification of a novel membrane transporter mediating resistance to organic arsenic in *Campylobacter jejuni*, **Antimicrobial Agents and Chemotherapy** 58:2021-2029.
35. Bae, J. and **Jeon, B.*** (2013) Increased emergence of fluoroquinolone-resistant *Campylobacter jejuni* in biofilm, **Antimicrobial Agents and Chemotherapy** 57:5195-5196.
36. Mu, Y., Shen, Z., **Jeon, B.**, Dai, L., and Zhang, Q. (2013) The synergistic effect of anti-CmeA and anti-CmeB peptide nucleic acids in sensitizing *Campylobacter jejuni* to antibiotics, **Antimicrobial Agents and Chemotherapy** 57:4575-4577.
37. Hwang, S., Ryu, S., and **Jeon, B.*** (2013) Roles of the superoxide dismutase SodB and the catalase KatA in the antibiotic resistance of *Campylobacter jejuni*, **Journal of Antibiotics** 66:351-353.
38. Hwang, S., Zhang, Q., Ryu, S., and **Jeon, B.*** (2012) Transcriptional regulation of the CmeABC multidrug efflux pump and the KatA catalase by CosR in *Campylobacter jejuni*. **Journal of Bacteriology** 194:6883-6891.
39. Luangtongkum, T., Shen, Z., Seng, V., Sahin, O., **Jeon, B.**, Liu, P., and Zhang, Q. (2012) Impaired fitness and transmission of macrolide-resistant *Campylobacter jejuni* in its natural host. **Antimicrobial Agents and Chemotherapy** 56:1300-1308.
40. Liu, H., Wang, Y., Wu, C., Schwarz, S., Shen, Z., **Jeon, B.**, Ding, S., Zhang, Q., and Shen, J. (2012) A novel phenicol exporter gene, *fexB*, found in *Enterococci* of animal origin. **Journal of Antimicrobial Chemotherapy** 67:322-325.
41. Hwang, S., **Jeon, B.**, Yun, J., and Ryu, S. (2011) Roles of RpoN in the resistance of *Campylobacter jejuni* under various stress conditions. **BMC Microbiology** 11:207.
42. Kim, M., Hwang, S., Ryu, S., and **Jeon, B.*** (2011) Regulation of *perR* expression by iron and PerR in *Campylobacter jejuni*. **Journal of Bacteriology** 193:6171-6178.
43. Hwang, S., Kim, M., Ryu, S., and **Jeon, B.*** (2011) Regulation of oxidative stress response by CosR, an essential regulator in *Campylobacter jejuni*. **PLoS One** 6: e22300.
44. Oakland, M., **Jeon, B.**, Sahin, O., and Zhang, Q. (2011) Functional characterization of a lipoprotein-encoding operon in *Campylobacter jejuni*. **PLoS One** 6:e20084.

45. Qin, S., Wu, C., Wang, Y., **Jeon, B.**, Shen, Z., Wang, Y., Zhang, Q., and Shen, J. (2011) Antimicrobial resistance in *Campylobacter coli* isolated from pigs in China. **International Journal of Food Microbiology** 146:94-98.
46. **Jeon, B.**, Wang, Y., Hao, H., Barton, Y.W., and Zhang, Q. (2011) Contribution of CmeG to antibiotic and oxidative stress resistance in *Campylobacter jejuni*, **Journal of Antimicrobial Chemotherapy** 66:79-85.
47. **Jeon, B.**, Muraoka, W., and Zhang, Q. (2010) Advances in *Campylobacter* biology and implications for biotechnological applications. **Microbial Biotechnology** 3: 242–258.
48. Wang, L., **Jeon, B.**, Sahin, O., and Zhang, Q. (2009) Identification of an arsenic resistance and sensing operon in *Campylobacter jejuni*. **Applied and Environmental Microbiology** 75:5064-5073.
49. Rajashekara, G., Drozd, M., Gangaiah, D., **Jeon, B.**, Liu, Z., and Zhang, Q. (2009) Functional characterization of the twin-arginine translocation system in *Campylobacter jejuni*. **Foodborne Pathogens and Disease** 6:935-945.
50. **Jeon, B.** and Zhang, Q. (2009) Sensitization of *Campylobacter jejuni* to fluoroquinolone and macrolide antibiotics by antisense inhibition of the CmeABC multidrug efflux transporter. **Journal of Antimicrobial Chemotherapy** 63:946-948.
51. Luangtongkum, T., **Jeon, B.**, Han, J., Plummer, P., Logue, C.M., and Zhang, Q. (2009) Antibiotic resistance in *Campylobacter*: molecular mechanisms and ecology of emergence, transmission and persistence. **Future Microbiology** 4:189-200.
52. **Jeon, B.**, Muraoka, W., Scupham, A., and Zhang, Q. (2009) Roles of lipooligosaccharide and capsular polysaccharide in antimicrobial resistance and natural transformation of *Campylobacter jejuni*. **Journal of Antimicrobial Chemotherapy** 63:462-468.
52. **Jeon, B.**, Muraoka, W., Sahin, O., and Zhang, Q. (2008) Role of Cj1211 in natural transformation and transfer of antibiotic resistance determinants in *Campylobacter jejuni*. **Antimicrobial Agents and Chemotherapy** 52:2699-2708.
53. Yun, J., **Jeon, B.**, Barton, Y.W., Plummer, P., Zhang, Q., and Ryu, S. (2008) Role of the DksA-like protein in the pathogenesis and diverse metabolic activity of *Campylobacter jejuni*. **Journal of Bacteriology** 190:4512-4520.
54. **Jeon, B.**, and Zhang, Q. (2007) Cj0011c, a periplasmic single- and double-stranded DNA-binding protein, contributes to natural transformation in *Campylobacter jejuni*. **Journal of Bacteriology** 189:7399-7407.
55. Lim, S., Yun, J., Yoon, H., Park, C., Kim, B., **Jeon, B.**, Kim, D., and Ryu, S. (2007) Mlc regulation of *Salmonella* pathogenicity island I gene expression via *hilE* repression. **Nucleic Acids Research** 35:1822-1832.

56. **Jeon, B.**, and Itoh, K. (2007) Production of shiga toxin by a *luxS* mutant of *Escherichia coli* O157:H7 *in vivo* and *in vitro*. **Microbiology and Immunology** 51:391-396.
57. **Jeon, B.**, Hirayama, K., and Itoh, K. (2005) Production of the autoinducer-2 signalling molecule in *Escherichia coli*-monoassociated mice. **Microbial Ecology in Health and Disease** 17:212-215.
58. **Jeon, B.**, Itoh, K., and Ryu, S. (2005) Promoter analysis of cytolethal distending toxin genes (*cdtA*, *B*, and *C*) and effect of a *luxS* mutation on CDT production in *Campylobacter jejuni*. **Microbiology and Immunology** 49:599-603.
59. **Jeon, B.**, Itoh, K., Misawa, N., and Ryu, S. (2003) Effects of quorum sensing on *flaA* transcription and autoagglutination in *Campylobacter jejuni*. **Microbiology and Immunology** 47: 833-839.

Research Grants

2019-2020

Title Nanotechnology-based development of antimicrobial materials for food packaging and processing
Source Seeding Food Innovation Award from George Western Ltd
Role Co-PI (PI: Dr. Hyo-Jick Choi at the University of Alberta)
Amount \$ 245,000

2018-2021

Title Optimization of live-attenuated vaccine to reduce *Campylobacter* colonization in chickens
Source Alberta Agriculture and Forestry (AAF) & Poultry Cluster
Role Principal Investigator
Amount \$ 206,049 (\$127,000 from AAF and \$79,049 from Poultry Science Cluster)

2018-2020

Title Novel antibiotic alternatives to inhibit both human and poultry pathogens with green materials
Source Poultry Science Cluster
Role Co-PI (PI: Dr. Doug Korver at the University of Alberta)
Amount \$ 209,100

2016-2021

Title Developing a framework for wastewater reuse in Canada
Source Canadian Institutes of Health Research (CIHR)
Role Co-investigator (PI: Dr. Nicholas Ashbolt at the University of Alberta)
Amount \$2,000,000

2016-2019

Title Novel synergistic antimicrobial methods to inhibit antibiotic-resistant bovine mastitis pathogens
Source Alberta Livestock and Meat Agency (ALMA)
Role Principal Investigator (Collaborator: Dr. Herman Barkema, University of Calgary)
Amount \$ 149,000

2016-2019

Title Hyper-aerotolerant *Campylobacter jejuni* and the safety of poultry meat
Source Alberta Livestock and Meat Agency (ALMA)
Role Principal Investigator
Amount \$ 221,000

2016-2019

Title Evaluating microbial risks and performance criteria for safe management of stormwater and rainwater use in Alberta
Source Alberta Innovates Environment and Energy Solutions (AIEES)
Role Co-investigator (PI: Dr. Norman Neumann at the University of Alberta)
Amount \$ 1,453,182

2016-2018

Title Investigation of *Campylobacter jejuni* strains with increased risks in poultry production systems in Korea
Source Korea Food and Drug Administration (KFDA)
Role Co-PI
Amount \$ 340,000

2014-2018

Title Laboratory infrastructure investigating the antibiotic resistance of *Campylobacter*
Sources Canada Foundation for Innovation (CFI)
Alberta Enterprise and Advanced Education (AEAE)
Role Principal Investigator
Amount \$ 526,477

2012-2018

Title Mechanisms of antibiotic resistance in *Campylobacter*
Sources Natural Sciences and Engineering Research Council of Canada (NSERC)
Role Principal Investigator
Amount \$ 180,000

2014-2016

Title Control of poultry contamination by aerotolerant *Campylobacter*
Source Alberta Livestock and Meat Agency (ALMA)
Role Principal Investigator (in collaboration with Dr. Lynn McMullen)
Amount \$ 118,500

2013-2016

Title Expanding wastewater reuse in Alberta through application of a quantitative microbial risk assessment framework
Source Alberta Innovates Environment and Energy Solutions (AIEES)
Role Co-investigator (Project leader: Dr. Norman Neumann at the UofA)
Amount \$ 884,500 (total); CA\$ 75,000 (amount received)

2013-2016

Title Development of live-attenuated vaccines to prevent *Campylobacter* colonization in poultry
Source Canadian Poultry Research Council (CPRC) & Alberta Livestock and Meat Agency (ALMA)
Role Principal Investigator
Amount \$ 118,367

2012-2014

Title Potentiating antibiotics against *Campylobacter* by inhibiting efflux
Source National Institutes of Health (NIH), USA
Role Co-investigator* (Project leader: Dr. Qijing Zhang at Iowa State University, USA)
Amount \$ 309,921

2010-2011

Title Molecular characterization of Cj0355c, a transcriptional regulator essential for *Campylobacter* viability
Source Atlantic Veterinary College Internal Research Grant, University of Prince Edward Island
Role Principal Investigator
Amount \$ 9,987

2009-2010

Title Gene silencing as a novel approach to control of *Campylobacter* and *Salmonella*
Source Iowa State University Food Safety Consortium
Role Co-investigator
Amount \$ 25,000

Selected Conference Presentations

The students whom I advised or co-advised are underlined; * Presentation as the corresponding author

1. Kim, J., Hwang, B.K., Choi, H., Choi, S.H., Ryu., S., **Jeon, B.***, Isolation and characterization of the *mcr-I*-barboring plasmids from pandrug-resistant *Escherichia coli* strains isolated from retail raw chicken in South Korea, International Symposium and Annual Meeting of Korean Society of Food Science and Technology, Pusan, South Korea, June 2018

2. Park, H., Kim, J., Ryu, S., and **Jeon, B.***, Prevalence and characterization of extended-spectrum β -lactamase (ESBL)-producing *Escherichia coli* strains isolated from retail raw chickens in Korea, International Symposium and Annual Meeting of Korean Society of Food Science and Technology, Pusan, South Korea, June 2018
3. Kim, J., Shin, H., Park, H., Kim, J., Jung, H., Cho, S., Ryu, S. and **Jeon, B.***, Metagenomics-based optimization of *Campylobacter* isolation from chicken carcasses, ASM Microbe 2018, Atlanta, USA, June 2018
4. Oh, E., McMullen, L., Chui, L., and **Jeon, B.***, Differential survival of hyper-aerotolerant *Campylobacter jejuni* under different gas conditions. The 19th International Workshop for Campylobacter, Helicobacter, and Related-Organisms (CHRO), Nantes, France, September 2017.
5. Kim, J., Banting, G., Braithwaite, S., Neumann, N. and **Jeon, B.*** A novel culture method for enhanced isolation of *Campylobacter jejuni* from wastewater, poster presentation, INSIGHT, Edmonton, Alberta, October 2015.
6. Oh, E., McMullen, L., **Jeon, B.*** Impact of oxidative stress defense on bacterial survival and morphological change in *Campylobacter jejuni* under aerobic conditions. International Association of Food Protection 2015, Portland, Oregon, August 2015.
7. Kim, J., Banting, G., Braithwaite, S., Neumann, N. and **Jeon, B.*** A novel culture method for enhanced isolation of *Campylobacter jejuni* from wastewater, poster presentation, 65th Annual Conference of the Canadian Society of Microbiologists, Regina, Canada, June 2015.
8. Oh, E., and **Jeon, B.*** Synergistic antimicrobial effect of antibiotics on *Campylobacter jejuni* in combination with the phenolic compounds, oral presentation, 65th Annual Conference of the Canadian Society of Microbiologists, Regina, Canada, June 2015.
9. Oh, E., and **Jeon, B.*** Role of alkyl hydroperoxide reductase in the biofilm formation of *Campylobacter jejuni*, poster presentation, International Union of Microbiological Societies Congresses 2014, Montreal, Canada, July 2014.
10. Oh, E., Zhang, Q., and **Jeon, B.*** Target optimization for peptide nucleic acid (PNA)-mediated antisense inhibition of the CmeABC multidrug efflux pump in *Campylobacter jejuni*, poster presentation, 63rd Annual Conference of the Canadian Society of Microbiologists, Ottawa, Canada, June 2013.
11. Hwang, S., **Jeon, B.**, and Ryu, S. Effects of rpoN mutation on *Campylobacter jejuni* under various stress and culture conditions (poster presentation). 110th American Society for Microbiology (ASM) General Meeting, San Diego, June 2010.
12. **Jeon, B.**, Wang, Y., Hao, H., Barton, Y.W., and Zhang, Q. Implication of the Cj1375 and Cj1687 efflux transporters with multidrug resistance in *Campylobacter jejuni* NCTC

11168, poster presentation, 15th International Workshop on Campylobacter, Helicobacter and Related Organisms (CHRO), Niigata, Japan, August 2009

13. **Jeon, B.**, Yang, W., Hao, H., Barton, Y.W., and Zhang, Q. Strain-dependent contribution of Cj1687 to antimicrobial resistance in *Campylobacter jejuni*, poster presentation, 109th American Society for Microbiology (ASM) General Meeting, Philadelphia, May 2009
14. **Jeon, B.**, Barton, Y.W., and Zhang, Q. Identification of a new efflux pump involved in antimicrobial resistance in *Campylobacter jejuni*, poster presentation, 108th American Society for Microbiology (ASM) General Meeting, Boston, June 2008
15. Fukuda, M., **Jeon, B.**, Sahin, O., and Zhang, Q. Cj0091, an immunogenic lipoprotein of *Campylobacter jejuni*, is required for the adherence to host epithelial cells and colonization of the intestinal tracts of chicken, poster presentation, 108th American Society for Microbiology (ASM) General Meeting, Boston, June 2008
16. **Jeon, B.**, and Zhang, Q. ComEA, a competence protein in *Campylobacter jejuni*, contributes to natural transformation and binds to single- and double-stranded DNA (poster presentation). 107th American Society for Microbiology (ASM) General Meeting, Toronto, Canada, May 2007
17. Wang, L., **Jeon, B.**, Sahin, O., and Zhang, Q. Genetic mechanism of arsenic resistance of *Campylobacter jejuni*, poster presentation, 107th American Society for Microbiology (ASM) General Meeting, Toronto, Canada, May 2007
18. **Jeon, B.**, Shi, F., and Zhang, Q. Transcriptional and functional analysis of the *pldA* gene in *Campylobacter jejuni* (poster presentation). Conference of Research Workers of Animal Diseases (CRWAD), Chicago, Dec. 2006
19. Datta, S., **Jeon, B.**, Hirayama, K., Misawa, N., and Itoh, K. Role of *pldA* gene in the invasion of *Campylobacter jejuni* to INT-407 cells, and colonization and translocation to CF-1 Germfree mice, poster presentation, 13th International Workshop on Campylobacter, Helicobacter and Related Organisms (CHRO) Gold Coast, Queensland, Australia, Sep. 2005
20. **Jeon, B.**, Hirayama, K., and Itoh, K. Evaluation of the role of *luxS*-mediated quorum sensing in the pathogenicity of *Escherichia coli* O157:H7 using germ-free mice, oral presentation, 15th International Symposium on Gnotobiology, Tokyo, Japan, Jun. 2005.
21. **Jeon, B.**, Itoh, K., and Ryu, S. Regulation of cytolethal distending toxin production by quorum sensing in *Campylobacter jejuni*, poster presentation. 12th International Workshop on Campylobacter, Helicobacter and Related Organisms (CHRO), Aarhus, Denmark, Sep. 2003

Invited Presentations

- **International Symposium and Annual Meeting of Korean Society of Food Science and Technology**, Pusan, South Korea. Title: Strategies to disarm the arsenal of antibiotic-resistant *Campylobacter*, June 2018.
- **Canadian Food Inspection Agency (CFIA)**, Lethbridge, Alberta, Canada. Title: Antibiotic growth promoters, a double-edged sword of antibiotic resistance and virulence. October 2016
- **Superbacteria Research Institute**, Daejeon, South Korea. Title: Antibiotic growth promoters, a double-edged sword of antibiotic resistance and virulence, July 2016.
- **Animal and Plant Quarantine Agency**, Gimcheon, South Korea. Title: Survival mechanisms of microaerophilic *Campylobacter* during transmission to humans, July 2016
- **Pasteur Institute in Korea**, Seongnam, South Korea. Title: Antibiotic growth promoters, a double-edged sword of antibiotic resistance and virulence, June 2016
- **Department of Veterinary Medicine, Seoul National University**, South Korea. Antibiotic growth promoters, a double-edged sword of antibiotic resistance and virulence, June 2016
- **Department of Food Science and Technology, Chungnam National University**, Daejeon, South Korea, Title: Control of antibiotic resistance by modulating the influx and efflux of antimicrobials, June 2016
- **Center for Animal Disease and Control, University of Miyazaki**, Miyazaki, Japan. Title: Survival and transmission of *Campylobacter*, May 2016
- **College of Veterinary Medicine, Chulalongkorn University**, Bangkok, Thailand, Title: Antibiotic growth promoters, a double-edged sword of antibiotic resistance and virulence, April 2016
- **Korea Centers for Disease Control and Prevention**, Osong, South Korea. Title: *Campylobacter* with enhanced capabilities of survival; an emerging threat to food safety, April 2016
- **Department of Food and Nutrition, Sookmyung Women's University**, Seoul, South Korea. Title: Survival mechanisms of microaerophilic *Campylobacter* during transmission to humans, April 2016
- **Korea Food Research Institute, Seongnam, South Korea**. Title: Survival of microaerophilic *Campylobacter* under oxygen-rich conditions: an important implication in food safety, March 2016
- **Canada-Korea Conference 2015**, Kananaskis, Alberta. Title: Control of antibiotic resistance in *Campylobacter jejuni* by modulating the influx and efflux of antimicrobials. A savant presentation for the conference, July 2015

- **Canada-Korea Conference 2015**, Kananaskis, Alberta. Title: Oxidative stress defense and survival mechanisms in *Campylobacter jejuni*. A key-note presentation in the session of Agriculture, Food, and Nutrition, July 2015
- **College of Veterinary Medicine, China Agricultural University**, Beijing, China. Title: Oxidative stress resistance in *Campylobacter*. April 2015
- **Department of Food and Biotechnology, Seoul National University**, Seoul, South Korea. Title: Oxidative stress resistance in *Campylobacter*. March 2015
- **John Waters Zoonotic Diseases Workshop, CanWest Veterinary Conference**, Banff, Canada. Title: Antibiotic resistance in *Campylobacter jejuni*. October 2012
- **National Veterinary Research and Quarantine Service**, Anyang, South Korea. Title: Influx and efflux of antibiotics in *Campylobacter*. March 2010
- **Department of Food and Biotechnology, Seoul National University**, Seoul, South Korea. Title: Multidrug efflux pumps in *Campylobacter*. July 2009

T EACHING & STUDENT SUPERVISION

Courses

I. Instructor

- **One Health** (SPH 516/416 AFNS 516/416; 3-credit), University of Alberta, Winter in 2017 and 2018
- **Food Safety** (SPH 527/AFNS 527/NUFS 327; 3-credit), University of Alberta, Fall in 2013, 2014, 2015, 2016, 2017, and 2018
- **Veterinary Bacteriology and Mycology** (VPM 201; 5-credit), University of Prince Edward Island, Fall in 2011 and 2010

II. Guest lecturer

- Introduction to Environmental Health (SPH 514), University of Alberta, Fall 2012, Fall and Winter in 2013, 2014, 2015, 2016 and 2017.
- Exposure Assessment (SPH 511), University of Alberta, Fall in 2013 and 2014.
- Influence of Microorganisms on Animal Biology (AN SC 318), University of Alberta, Winter in 2013.

Degree Program Development

- **Master of Public Health (MPH) Program in Food Safety** at the University of Alberta: I developed the MPH in Food Safety Program from scratch. The program application was approved by the University in December 2016, and the MPH in Food Safety Program officially started in the fall semester of 2017. It is the first graduate-level food safety program in the public health schools in Canada.

SERVICE

University Committees & Administrative Duties

- Aug. 2015 – Apr. 2018** **Course Approval Subcommittee.** Committee Chair since 2017. School of Public Health, The committee evaluates and approves new course proposals in the SPH.
- Jul. 2014 – Aug. 2017** **Awards Committee,** School of Public Health at the University of Alberta. The activity of the committee involves the establishment of policy for new scholarships, the evaluation of scholarship applications, and the decision of awardees.
- Dec. 2015 – May. 2016** **Search committee for Food Safety Epidemiologist,** School of Public Health (SPH) at the University of Alberta.
- Mar. 2018; Mar. 2017; Feb. 2016 – Mar. 2016; Mar. 2014 – Apr. 2014; Mar. 2013– Apr. 2013** **MPH Student Admission Committee for the Environmental and Occupational Health Stream.** I took the lead in the evaluation of MPH applications in the Environmental and Occupational Health Stream.
- Jun. 2015 – Aug. 2015** **Search Committee for Food Safety Engineer,** Faculty of Agricultural, Life, and Environmental Sciences (ALES). As part of the collaborative effort to establish a food safety program between SPH and ALES, I participated in the recruitment process for a food safety engineer in ALES.
- Jan. 2013 – Aug. 2013** **Professional Degrees Committee.** The committee was responsible for the curriculum of professional degrees in the SPH. I participated in the committee activities until the committee existed by August 2013.
- Dec. 2011** **Promotion Review Committee** for Drs. Shelley Burton and Gary Conboy, Atlantic Veterinary College, University of Prince Edward Island, Canada.

Jan. 2011 – Feb. 2012 **University Research Advisory Committee**, University of Prince Edward Island, Canada. It was a university-level committee aiming to enhance research activities at the University. The committee consisted of representatives from each faculty, and I participated in the committee for the Faculty of Veterinary Medicine.

Service for Scientific Community

Editor and Reviewer for Scientific Journals

Editorial Board Member Scientific Reports (2018 – present)

Review Editor Frontiers in Microbiology (2015-present)

Associate Editor Microbiology and Immunology (2011-2015)

Reviewer
(since 2010)

- PLoS One
- Molecular Microbiology
- Journal of Bacteriology
- Canadian Journal of Veterinary Research
- Journal of Antibiotics
- Applied and Environmental Microbiology
- BMC Microbiology
- Virulence
- Food Science and Biotechnology
- Poultry Science
- Journal of Antimicrobial Chemotherapy
- Frontiers in Microbiology
- Folia Microbiologica
- Infection Ecology & Epidemiology
- Antimicrobial Agents and Chemotherapy
- Microbial Pathogenesis
- International Journal of Environmental Research and Public Health
- Veterinary Microbiology
- Infection Ecology and Epidemiology
- Microbiology
- Food Control
- FEMS Microbiology Letters

Reviewer for Grant Proposals

Reviewer	<ul style="list-style-type: none"> • The Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant (2016) • Biotechnology and Biological Sciences Research Council (BBRSC), UK; Strategic Longer and Larger (sLoLa) Grant Scheme (2016) • Agriculture and Agri-Food Canada Research Grants, Canada (2015) • Wellcome Trust Sir Henry Postdoctoral Fellowship, UK (2015) • Nova Scotia Health Research Foundation, Canada (2014) • The United States-Israel Binational Agricultural Research & Development Fund (2013)
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Other Activities

Jun. 2014 – Aug. 2017	President, Edmonton Chapter of the Association of Korean-Canadian Scientists and Engineers (AKCSE). The AKCSE is officially supported by the Korean government. The President's role is to promote the relationship among Korean-Canadian researchers, enhance the international collaboration between Korea and Canada, and mentor Korean-Canadian student associations in Edmonton.
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Extra-Curricular Service for Students

Jun. 2014 – Aug. 2017	Mentoring the undergraduate and graduate students in the Edmonton chapter of the Association of Korean-Canadian Scientists and Engineers (AKCSE) at the University of Alberta. I regularly meet the board members for the UofA's Korean student associations to discuss and support their activities.
May 2015	Organizer for the student research day for AKCSE at the UofA
May 2014	Speaker for a career seminar for the AKCSE students at the UofA
Apr. 2013	Review panel and invited speaker for the student research day of AKCSE, Edmonton