

BYEONGHWA JEON, PHD

Associate Professor
Division of Environmental Health Sciences, School of Public Health
University of Minnesota, Twin Cities
Minneapolis, MN, USA

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 (tenured)**, Division of Environmental Health Sciences, School of Public Health, University of Minnesota, Twin Cities, USA

2017 - 2019 **Associate Professor (tenured)**
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

- Research area: Stress tolerance regulation in *Campylobacter*

2005 - 2009 **Postdoctoral Research Fellow**, Department of Veterinary Microbiology and Preventive Medicine, Iowa State University, USA

- Research area: Antibiotic resistance mechanisms in *Campylobacter*

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

Adjunct Professorship

- 2020 -present** Department of Veterinary and Biological Sciences, College of Veterinary Medicine, University of Minnesota, USA
- 2016 -present** Center for Animal Disease and Control, University of Miyazaki, Miyazaki, Japan
- 2016 -2019** Department of Food Science and Biotechnology, College of Agriculture and Life Sciences, Seoul National University, Seoul, South Korea

Academic Distinctions and Awards

- 2019** **Japan Society for the Promotion of Science**, Foreign Researcher Fellowship
- 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

RESEARCH

Research Interests

- Antibiotic resistance and tolerance in *Campylobacter*
- Effects of antibiotic growth promoters on the transmission of virulence factors in pathogenic bacteria, particularly 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*
 - *mcr-1* in *E. coli*
- Biofilm formation in pathogenic bacteria
 - Biofilm formation mechanisms in *Campylobacter*
 - Genetic associations and molecular mechanisms for *Listeria* biofilms
 - 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
- Bacteriophage-based interventions to control antibiotic-resistant pathogens
- Investigation of *Campylobacter* transmission to humans
- Molecular mechanisms for the stress tolerance and survival of *Campylobacter*
- Vaccination strategies to reduce *Campylobacter* in poultry

Refereed Publications

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

1. Santativongchai P, Tulayakul P, and **Jeon B*** (2023) Enhancement of the antibiofilm activity of nisin against *Listeria monocytogenes* using food plant extracts. **Pathogens** 2023, 12, 444. <https://doi.org/10.3390/pathogens12030444>.
2. Kim J, Park M, Ahn E, Mao Q, Chen C, Ryu S, and **Jeon B*** (2023) Stimulation of surface polysaccharide production under aerobic conditions confers aerotolerance in *Campylobacter jejuni*. **Microbiology Spectrum** e0376122. doi: 10.1128/spectrum.03761-22.
3. Santativongchai P, Tulayakul P, Ji Y, **Jeon B***. (2022) Synergistic potentiation of antimicrobial and antibiofilm activities of penicillin and bacitracin by octyl gallate, a food-grade antioxidant, in *Staphylococcus epidermidis*. **Antibiotics** 11: 1775. doi.org/10.3390/antibiotics11121775.
4. Park H, Kim J, Kim H, Cho E, Park H, **Jeon B**, and Ryu S (2022) Characterization of the lytic phage MSP1 for the inhibition of multidrug-resistant *Salmonella enterica* serovars Thompson and its biofilm. **International Journal of Food Microbiology** 385:110010. doi: 10.1016/j.ijfoodmicro.2022.110010.
5. Hur JI, Kim J, Ryu S, and **Jeon B*** (2022) Phylogenetic association and genetic factors in cold stress tolerance in *Campylobacter jejuni*. **Microbiology Spectrum** e0268122. doi: 10.1128/spectrum.02681-22.
6. Park M, Kim J, Horn L, Haan J, Strickland A, Lappi V, Boxrud D, Hedberg C, Ryu S, and **Jeon B*** (2022) Sugar modification of wall teichoic acids determines serotype-dependent strong biofilm production in *Listeria monocytogenes*. **Microbiology Spectrum** e0276922. doi: 10.1128/spectrum.02769-22.
7. Park M, Kim J, Feinstein J, Lang KS, Ryu S, and **Jeon B*** (2022) Development of fluoroquinolone resistance through antibiotic tolerance in *Campylobacter jejuni*. **Microbiology Spectrum** e0166722. doi: 10.1128/spectrum.01667-22.
8. Rueanghiran C, Dawanpa A, Pinneum N, Sanguankiat A, Chiemchaisri C, Chiemchaisri W, Sritumpawa W, Kijpreedaborisuthi O, **Jeon B**, and Tulayakul P (2022) Environmental risk quotient of the antibiotic, phenotypic, and genotypic profiles for antibiotic resistance of *Escherichia coli* collected from manure and wastewater at swine farms in Prachinburi Province, Thailand, **Emerging Contaminants** 8:340-350. doi.org/10.1016/j.emcon.2022.07.003,
9. **Jeon, B***, Saisom, T, Sasipreeyajan, J, Luangtongkum, T (2022) Live-attenuated oral vaccines to reduce *Campylobacter* colonization in poultry. **Vaccines** 10: 685. doi: 10.3390/vaccines10050685.
10. Park, M, Horn, L, Lappi, V, Boxrud, D, Hedberg, C, and **Jeon, B*** (2022) Antimicrobial synergy between aminoglycosides and licorice extract in *Listeria monocytogenes*. **Pathogens** 11: 440. doi:10.3390/pathogens11040440.
11. Park, H., Kim, J., Ryu, S., and **Jeon, B***(2022) The rate of frequent co-existence of plasmid-mediated quinolone resistance (PMQR) and extended-spectrum β -lactamase (ESBL) genes in *Escherichia coli* isolates from retail raw chicken in South Korea. **Food Science and Biotechnology** 31:739-743. doi:10.1007/s10068-022-01077-0.

12. Tamang DM, Bae J, Park M, and **Jeon B*** (2022) Potentiation of β -lactams against methicillin-resistant *Staphylococcus aureus* (MRSA) using octyl gallate, a food-grade antioxidant, **Antibiotics** 11:266. doi: 10.3390/antibiotics11020266
13. Kim J, Hur JI, Ryu S, and **Jeon B*** (2021) Bacteriophage-mediated modulation of bacterial competition during selective enrichment of *Campylobacter*, **Microbiology Spectrum** 9:e0170321. doi: 10.1128/Spectrum.01703-21.
14. **Jeon B***, Luangtongkum, T., Shen, Z., Logue, M.C., and Lin, J. (2021) Editorial: Resistance and tolerance in food-borne pathogens: mechanisms, public health impact, and control measures, **Frontiers in Microbiology** 12:769931. doi: 10.3389/fmicb.2021.769931.
15. Kim J, Park, H, Ryu S, and **Jeon B*** (2021) Inhibition of antimicrobial-resistant *Escherichia coli* using a broad host range phage cocktail targeting various bacterial phylogenetic groups, **Frontiers in Microbiology** 12:699630. doi: 10.3389/fmicb.2021.699630.
16. Park M, Hwang S, Ryu S, and **Jeon B*** (2021) CosR regulation of *perR* transcription for the control of oxidative stress defense in *Campylobacter jejuni*, **Microorganisms** 9:1281. doi: 10.3390/microorganisms9061281.
17. Rubino I, Oh E, Han S, Kaleem S, Hornig A, Lee SH, Kang HJ, Lee DH, Chu KB, Kumaran S, Armstrong S, Lalani R, Choudhry S, Kim CI, Quan FS, **Jeon B**, and Choi HJ, (2020) Salt coatings functionalize inert membranes into high-performing filters against infectious respiratory diseases, **Scientific Reports** 10:13875. doi: 10.1038/s41598-020-70623-9
18. Guk JH, Kim J, Song H, Kim J, An JU, Kim J, Ryu S, **Jeon B**, and Cho S (2019) Hyper-aerotolerant *Campylobacter coli* from duck sources and its potential threat to public health: virulence, antimicrobial resistance, and genetic relatedness, **Microorganisms** 2019, 7: 579. doi:10.3390/microorganisms7110579
19. Kim J, Park H, Kim J, Kim JH, Jung JI, Cho S, Ryu S, and **Jeon B*** (2019) Comparative analysis of aerotolerance, antibiotic resistance, and virulence gene prevalence in *Campylobacter jejuni* isolates from retail raw chicken and duck meat in South Korea, **Microorganisms**, 7: 433. doi:10.3390/microorganisms7100433.
20. Kim J, Hwang BK, Choi H, Wang Y, Choi SH, Ryu S, **Jeon B*** (2019) Characterization of *mcr-1*-harboring plasmids from pan drug-resistant *Escherichia coli* strains isolated from retail raw chicken in South Korea, **Microorganisms** 7:344. doi:10.3390/microorganisms7090344.
21. Oh E, Andrews KJ, McMullen LM, 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.
22. Kiatsomphob 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.
23. 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.

24. Kim K, Guk JH, Mun SH, An JU, 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.
25. Chaplot S, Yadav B, **Jeon B**, Syamaladevi RM(2019) Atmospheric cold plasma and peracetic acid-based hurdle intervention to reduce *Salmonella* on raw poultry meat. **Journal of Food Protection** 82: 878–888.
26. Park H, Kim J, Ryu S, and **Jeon B*** (2019) The predominance of *bla*_{CTX-M-65} and *bla*_{CTX-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.
27. Chandrashekhara 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.
28. 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.
29. Oh E, Andrews KJ, and **Jeon B*** (2018) Enhanced biofilm formation by ferrous and ferric iron through oxidative stress in *Campylobacter jejuni*, **Frontiers in Microbiology** 9:1204.
30. Oh E, Chui L, Bae J, Li V, Ma A, Mutschall SK, Taboada EN, McMullen LM, and **Jeon B*** (2018) Frequent implication of multistress-tolerant *Campylobacter jejuni* in human infections, **Emerging Infectious Diseases** 24:1037-1044.
31. Oh E, Bae J, Kumar A, Choi HJ, **Jeon B*** (2018) Antioxidant-based synergistic eradication of methicillin-resistant *Staphylococcus aureus* (MRSA) biofilms with bacitracin, **International Journal of Antimicrobial Agents** 52:96-99.
32. Tamang MG, 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.
33. 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.
34. 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.
35. 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.
36. Kim J, Han X, Bae J, Chui L, Louie M, Finley R, Mulvey MR, Ferrato CJ, 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.
37. Oh E, Kim JC, and **Jeon B*** (2016) Stimulation of biofilm formation by oxidative stress in *Campylobacter jejuni* under aerobic conditions. **Virulence** 7:1-6.
38. 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.

39. Kim JC, 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.
40. Kim JC, 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.
41. 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.
42. Oh E, and **Jeon B*** (2015) Synergistic anti-*Campylobacter jejuni* activity of fluoroquinolone and macrolide antibiotics with phenolic compounds. **Frontiers in Microbiology** 6:1129.
43. Kim JC, 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.
44. 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.
45. Oh E, McMullen L, and **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.
46. Oh E, and **Jeon B*** (2015) Contribution of surface polysaccharides to the resistance of *Campylobacter jejuni* to antimicrobial phenolic compounds, **Journal of Antibiotics** 68, 591-593.
47. Kim JC, Oh E, Hwang S, Ryu S, and **Jeon B*** (2015) Non-selective regulation of peroxide and superoxide resistance genes by PerR in *Campylobacter jejuni*. **Frontiers in Microbiology** 6:126.
48. Bae J, Oh E, and **Jeon B*** (2014) Enhanced transmission of antibiotic resistance in *Campylobacter jejuni* biofilms by natural transformation. **Antimicrobial Agents and Chemotherapy** 58:7573-7575.
49. **Jeon B*** (2014) A tangle of poly-phosphate in *Campylobacter*, **Virulence** 5:449-450.
50. Hwang S, Miller WG, Ryu S, and **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.
51. Oh E, and **Jeon B*** (2014) Role of alkyl hydroperoxide reductase (AhpC) in the biofilm formation of *Campylobacter jejuni*, **PLoS One** 9:e87312.
52. Oh E, Zhang Q, and **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.
52. 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.

53. 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.
54. Bae J, and **Jeon B*** (2013) Increased emergence of fluoroquinolone-resistant *Campylobacter jejuni* in biofilm, **Antimicrobial Agents and Chemotherapy** 57:5195-5196.
55. 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.
56. 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.
57. 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.
58. 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.
59. 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.
60. 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.
61. 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.
62. 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.
63. Oakland M, **Jeon B**, Sahin O, and Zhang Q (2011) Functional characterization of a lipoprotein-encoding operon in *Campylobacter jejuni*. **PLoS One** 6:e20084.
64. 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.
65. **Jeon B**, Wang Y, Hao H, Barton YW, and Zhang Q (2011) Contribution of CmeG to antibiotic and oxidative stress resistance in *Campylobacter jejuni*, **Journal of Antimicrobial Chemotherapy** 66:79-85.
66. **Jeon B**, Muraoka W, and Zhang Q (2010) Advances in *Campylobacter* biology and implications for biotechnological applications. **Microbial Biotechnology** 3: 242–258.
67. 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.
68. Rajashekar 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.
69. **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.

70. Luangtongkum T, **Jeon B**, Han J, Plummer P, Logue CM, and Zhang Q (2009) Antibiotic resistance in *Campylobacter*: molecular mechanisms and ecology of emergence, transmission and persistence. **Future Microbiology** 4:189-200.
71. **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.
72. **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.
73. Yun J, **Jeon B**, Barton YW, 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.
74. **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.
75. 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.
76. **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.
77. **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.
78. **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.
79. **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.

Patents

1. **The United States Patent (US10420815B2)**: Title: Combinational therapy for synergistic inhibition of Gram-positive and Gram-negative bacteria
2. **The United States Patent (US20220184155A1)**. Title: Bacteriophages for inhibiting bacteria.
3. **US Provisional (Filing No. 63324078)**
Title: Live-attenuated vaccine to control *Campylobacter* in poultry

Research Grants

Current Research Support

2019-2022

Title Start-up
Source School of Public Health, UMN
Role PI
Amount \$390,000

Previous Research Supports

2020-2022

Title Phylogenetic, Epidemiological, and Microbiological Approaches to Develop Food Safety Interventions to Control *Listeria monocytogenes* Biofilms
Source Healthy Foods, Healthy Lives
Role PI (Co-PIs: Dr. Craig Hedberg at UMN, and Dr. Dave Boxrud at MDH)
Amount \$150,000

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 CA\$ 245,000
* Returned when I left Canada

2018-2020

Title Investigation of the survival mechanisms of *Campylobacter* under stress conditions
Source National Research Foundation of Korea (NRF)
Role PI
Amount CA\$ 179,000 (KRW 150,000,000)

2018-2021

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

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 CA\$ 209,100

*Returned when I left Canada

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 CA\$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 PI
Amount CA\$ 149,000

2016-2019

Title Hyper-aerotolerant *Campylobacter jejuni* and the safety of poultry meat
Source Alberta Livestock and Meat Agency (ALMA)
Role PI
Amount CA\$ 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 CA\$ 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 CA\$ 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 PI
Amount CA\$ 526,477

2012-2018

Title Mechanisms of antibiotic resistance in *Campylobacter*
Sources Natural Sciences and Engineering Research Council of Canada (NSERC)
Role PI

Amount CA\$ 180,000

2014-2016

Title Control of poultry contamination by aerotolerant *Campylobacter*

Source Alberta Livestock and Meat Agency (ALMA)

Role PI

Amount CA\$ 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 CA\$ 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 PI

Amount CA\$ 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) *Although I was a co-investigator for the project, I developed the primary idea for the proposal.

Amount US\$ 309,921 (total); US\$ 138,312 (amount received)

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 PI

Amount CA\$ 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 US\$ 25,000

Selected Conference Presentations

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

1. Ahn E, Kim J, and **Jeon B***, and Ryu S, Effects of the mobilized colistin resistance (*mcr*)-I gene on the pathogenesis of Enterotoxigenic *Escherichia coli*, ASM Microbe 2022, Washington DC, USA, June 2022.
2. Ahn E, Kim J, **Jeon B***, and Ryu S, Horizontal acquisition of the mobilized colistin resistance (*mcr*)-I gene reverses rough phenotype and increases pathogenicity in enterotoxigenic *Escherichia coli*, International Symposium and Annual Meeting of Korean Society of Food Science and Technology, Busan, South Korea, June 2022. (Award for Outstanding Oral Presentation)
3. Kim J, Park M, Mao M, Chen C, Ryu S, and **Jeon B***, Surface polysaccharides as a protective barrier conferring aerotolerance to *Campylobacter jejuni*, 49th Annual Meeting & International Symposium organized by the Korean Society for Microbiology and Biotechnology, Busan, South Korea, June 2022. (Award for Participation in Young Scientist Lectures)
4. Ahn E, Kim J, **Jeon B***, and Ryu S, The colistin resistance gene *mcr*-I alters cell surface and pathogenicity in Enterohemorrhagic *Escherichia coli*, 49th Annual Meeting & International Symposium organized by the Korean Society for Microbiology and Biotechnology, Gyeongju, South Korea, June 2022.
5. Hur JI, Kim J, Ryu S, and **Jeon B***, The *cfrA* Gene Contributes to Cold Stress Tolerance in *Campylobacter jejuni*, 49th Annual Meeting & International Symposium organized by the Korean Society for Microbiology and Biotechnology, Gyeongju, South Korea, June 2022.
6. Hur JI, Kim J, Ryu S, and **Jeon B***, The *cfrA* gene contributes to cold stress tolerance in *Campylobacter jejuni*, ASM Microbe, Washington DC, USA, June 2022.
7. Kim J, Park M, Mao M, Chen C, Ryu S, and **Jeon, B.***, Induction of surface polysaccharide synthesis under aerobic conditions confers aerotolerance in *Campylobacter jejuni*, International Symposium and Annual Meeting of Korean Society of Food Science and Technology, Busan, South Korea, July 2022.
8. Kim J, Hur JI, Park H, Ryu S, and **Jeon B***, Selective of *Campylobacter* using bacteriophages, 48th Annual Meeting & International Symposium organized by the Korean Society for Microbiology and Biotechnology, Busan, South Korea, June 2021. (Award for Participation in Young Scientist Lectures)
9. Kim J, Hur JI, Park H, Ryu S, and **Jeon B***, Bacteriophage-mediated modulation of bacterial competition during selective enrichment of *Campylobacter*, Frontier Scientists Workshop (FWS), Sokcho, South Korea, December 2021.
10. Kim J, Hur JI, Park H, Ryu S, and **Jeon B***, Selective isolation of *Campylobacter* using bacteriophages, 48th Annual Meeting & International Symposium organized by the Korean Society for Microbiology and Biotechnology, Busan, South Korea, June 2021.
11. Hur JI, Kim J, Ryu S, and **Jeon B***, Assessment of strain dependence on the *Campylobacter jejuni* cold stress tolerance and their proteomic analysis, International Symposium and Annual Meeting of Korean Society of Food Science and Technology, Daejeon, South Korea, July 2021.
12. Hur JI, Kim J, Ryu S, and **Jeon B***, Proteomics Profiles in Cold Stress Tolerant *Campylobacter jejuni* under Refrigeration Conditions, 48th Annual Meeting & International Symposium organized by the Korean Society for Microbiology and Biotechnology, Busan, South Korea, June 2021.

13. Kim J, Jung Y, Ryu S, and **Jeon B***, Contribution of carbon metabolism to aerotolerance in *Campylobacter jejuni*, 47th Annual Meeting & International Symposium organized by the Korean Society for Microbiology and Biotechnology, e-Conference, South Korea, September 2020. (Award for Outstanding Poster Presentation)
14. Kim J, Hwang BK, Choi H, Wang Y, Choi S, Ryu S, and **Jeon B***, Characterization of *mcr-1*-harboring plasmids from pan drug-resistant *Escherichia coli* strains isolated from retail chicken in South Korea, International Symposium and Annual Meeting of Korean Society of Food Science and Technology, Gwangju, South Korea, June 2020. (Award for Outstanding Poster Presentation)
15. Ahn E, Kim J, **Jeon B***, and Ryu S, Effects of the acquisition of *mcr-1*-harboring plasmids on virulence in pathogenic *Escherichia coli*, International Symposium and Annual Meeting of Korean Society of Food Science and Technology, Gwangju, South Korea, June 2020.
16. Kim J, Hur JI, Ryu S, and **Jeon B***, Transcriptomics and proteomics analysis of aerosensitive and hyper-aerotolerant strains of *Campylobacter jejuni* under aerobic stress conditions, International Symposium and Annual Meeting of Korean Society of Food Science and Technology, Incheon, South Korea, June 2019.
17. Kim J, Park H, Kim J, Kim JH, Jung JI, Cho S, Ryu S, and **Jeon B***, Comparative profiling of *Campylobacter jejuni* isolates from chicken and duck meats in South Korea, CHRO 2019 - the 20th *Campylobacter, Helicobacter* and Related Microorganisms conference, Belfast, Northern Ireland. September 2019.
18. Kim J, Hur JI, Ryu S, and **Jeon B***, Transcriptomics and proteomics changes in aerosensitive and hyperaerotolerant *Campylobacter jejuni* isolates after exposure to aerobic stress, International Symposium and Annual Meeting of Korean Society of Food Science and Technology, Incheon, South Korea, June 2019.
19. Kim J, Hur JI, Ryu S, and **Jeon B***, Transcriptomics and proteomics analysis of aerosensitive and hyper-aerotolerant strains of *Campylobacter jejuni* under aerobic stress conditions, 46th Annual Meeting & International Symposium organized by the Korean Society for Microbiology and Biotechnology, Jeju, South Korea, June 2019.
20. Kim, J., Hwang, B.K., Choi, H., Choi, S.H., Ryu., S., **Jeon, B.***, Isolation and characterization of the *mcr-1*-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
21. 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
22. 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
23. 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.
24. 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.

25. 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.
26. 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.
27. 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.
28. 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.
29. 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.
30. 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.
31. **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
32. **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
33. **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
34. 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
35. **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
36. 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
37. **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
38. 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
39. **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.
 40. **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

- **North Central Avian Disease Conference**, Minneapolis, USA, Title: Live-attenuated vaccines to control *Campylobacter* in poultry, April 2023.
- **FAO Research Conference on AMR/AMU in Food Animals in the Asia Pacific Region**, Bangkok, Thailand, Title: *Campylobacter* control in poultry using *Campylobacter*. The conference was virtual, Feb 2023.
- **International Symposium and Annual Meeting of Korean Society of Food Science and Technology**, Gwangju, South Korea. Title: Survival strategies for *Campylobacter* under stress conditions, June 2020..
- **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

- **Foodborne Hazards** (PubH 6100, 2-credit), Spring in 2021, 2022, 2023, Sole instructor
- **Agents of Disease** (CVM 6913), Spring in 2020, co-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

- Surveillance for Foodborne Diseases and Food Safety Hazards (PubH 6181/VMED 5165), University of Minnesota, Fall in 2019, 2020, 2021, 2022.
- 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.

Student/Research Staff Supervision

I. Principal Advisor for Thesis-Based Students and Research Staffs

- Myungseo Park Postdoc 2020 - 2022 Biofilm formation in pathogenic bacteria
- Kanghee Ryu PhD 2018 - 2019 Survival mechanisms in *Campylobacter*
- Jeong A Han Visiting scholar 2017 - 2019 Stress tolerance in *Campylobacter*
She is a visiting scholar from the Korea Food and Drug Administration (KFDA) with a support from the Korean government
- Euna Oh Postdoc 2012 - 2019 Stress resistance in *Campylobacter*
- Junghee Bae Research Associate 2012 - 2019 Antibiotic resistance in foodborne pathogens
- Megan Beaudry MSc 2016 - 2018 Microbial safety of stormwater
- Katelyn Andrew Intern student 2017 - 2018 Antibiotic resistance in MRSA
- Migma D. Tamang Postdoc 2016 - 2017 Antibiotic resistance in bovine mastitis
- Jinyong Kim PhD 2014 - 2016 Foodborne pathogens in wastewater
- Kuan-Lin Li MSc 2013 - 2017 Biofilms in *Listeria monocytogenes*
- Jong-Chul Kim Postdoc 2013 - 2016 Antibiotic resistance in foodborne pathogens
- Tingting Liu BSc intern 2016 Isolation of *Campylobacter* from poultry
- Jaewoo Bai Intern from Korea 2015 Isolation of bacteriophages infection *Salmonella*
Jaewoo was a visiting graduate student from Korea in a support from the Brain Korea (BK) program
- Xin Han Intern from China 2015 Detection of quinolone resistance genes in *Salmonella* human isolates
Xin was an international intern student from West China Medical School at Sichuan University
- Qianru Yang Intern from China 2014 Isolation of enterococci from poultry
Qianru was an international intern student from West China Medical School at Sichuan University with a support from the China Scholarship Council

II. Principal Advisor for Course-Based Students

- Norah Bin Jumaiah MPH in Environmental Health Sciences, UMN 2022 - present

- Saeed Almansour MPH in Environmental Health Sciences, UMN 2022 - present
- Hannah Worley MPH in Environmental Health Sciences, UMN 2021 - present
- Alero Olu MPH in Environmental Health Sciences, UMN 2021 - present
- Shanique Killingbeck MPH in Food Safety , UofA 2018 - 2019
- Taiwo Olobatuyi MPH in Food Safety, UofA 2017 - 2019
- Iyla So MPH in Food Safety, UofA 2016 - 2018
- Olusegun Motajo MPH in Environmental Health, UofA 2013 - 2017
- Elizabeth Rydz MPH in Environmental Health,UofA 2013 - 2015

III. Co-advisor for Thesis-Based Students

- Eunbyeol Ahn PhD 2021 - present Effects of antibiotic-resistant plasmids on the virulence of EHEC
Co-advising with Dr. Sangryeol Ryu at Seoul National University
- Jeong In Hur PhD 2020 - present Cold-stress tolerance of *Campylobacter*
Co-advising with Dr. Sangryeol Ryu at Seoul National University
- Jinshil Kim PhD 2016 - 2021 Isolation and characterization of high-risk *Campylobacter* from retail poultry in Korea

Jinshil is a PhD student at Seoul National University, South Korea. Although I am a co-advisor for her through my adjunct professorship at the University, her research is supported by my research grant in Korea, and I direct and advise her entire project.

- Hyeeyun Park MSc 2017 - 2019 Extended spectrum β -lactamase (ESBL)-producing *E. coli* from retail poultry in Korea

Hyeeyun is an MSc student at Seoul National University, South Korea. Although I am a co-advisor for her through my adjunct professorship at the University, her research is supported by my research grant in Korea, and I advise her entire project.

- Tunchanok Saisom PhD 2015 - 2016 Control measures to reduce *Campylobacter* contamination of poultry

I co-supervised her with Dr. Taradon Luangtongkum at Chulalongkorn University, Thailand, for my collaborative research project with his advisor regarding oral-attenuated vaccines of *Campylobacter* for poultry.

- Sunyoung Hwang PhD 2009 - 2010 Stress response of *Campylobacter*
Postdoc 2010 - 2012 Regulation of oxidative stress in *Campylobacter*

I co-supervised her research project with Dr. Sangryeol Ryu, Seoul National University. I received a Korean funding from National Research Foundation of Korea by designating her as PI for the project; the funding allowed a postdoc to become PI. The grant supported my project on *Campylobacter*.

- Minkyong Kim MSc 2010 - 2011 PerR regulation in *Campylobacter*

I co-supervised Minkyong with Dr. Sangryeol Ryu, Seoul National University.

Graduate Student Examination Committees

- Leanne Teslak (MSc student), School of Public Health, University of Alberta, final exam, September 2018
- Colin Reynolds (MSc student), School of Public Health, University of Alberta, final exam, February 2018
- Sydney Rudko (PhD student), School of Public Health, University of Alberta, candidacy exam, January 2018
- Lingxiao Zhang (MSc student), Department of Agricultural, Food and Nutritional Science, University of Alberta, final exam, December 2017
- Seongok Kim (PhD student), Department of Agricultural Biotechnology, Seoul National University, final exam, June 2016
- Ziyi Hu (PhD student), Department of Agricultural, Food and Nutritional Science, University of Alberta, candidacy exam, January 2016
- Katie Satchwell (PhD student), Department of Agricultural, Food and Nutritional Science, University of Alberta, candidacy exam, March 2015
- Andrea Balutis (MSc student), Department of Agricultural, Food and Nutritional Science, University of Alberta, final exam, September 2014
- Jiasong Xie (PhD student), Department of Biological Sciences, University of Alberta, University of Alberta, candidacy exam, September 2014
- Suraksha Rajagopal (MSc student), Department of Agricultural, Food and Nutritional Science, University of Alberta, final exam, January 2014
- Xiaoji Liu (PhD student), Department of Agricultural, Food and Nutritional Science, University of Alberta, candidacy exam (December 2012), final exam (June 2014)
- Conrado Franco-Villalobos (MSc student), School of Public Health, University of Alberta, final exam, September 2013
- Luke Price (MSc student), School of Public Health, University of Alberta, final exam, September 2013
- Ghada Ebead (PhD student), Department of Biomedical Sciences, University of Prince Edward Island, final exam, January 2011
- Sutaporn Bunyajetpong (PhD student), Department of Biomedical Sciences, University of Prince Edward Island, final exam, August 2011
- Jennifer Cuillerier (PhD student), Department of Biomedical Sciences, University of Prince Edward Island, candidacy exam, June 2011

Graduate Studies Committees

- Colin Reynolds (MSc student), School of Public Health, University of Alberta, 2016 - 2018
- Qianying Tao (MSc student), Department of Agricultural, Food and Nutritional Science, University of Alberta, 2014 - 2016

- Jennifer Cuillerier (PhD student), Department of Biomedical Sciences, University of Prince Edward Island, 2010 - 2011
- Emilie Laurin (MSc student), Department of Pathology and Microbiology, University of Prince Edward Island, 2010 - 2011

SERVICE

University Committees & Administrative Duties

Nov. 2022 - present	Admissions Committee , Environmental Health Sciences, School of Public health, University of Minnesota
Sep. 2021 - present	The Appointment, Promotion, and Tenure (APT) Committee , School of Public health, University of Minnesota
Sep. 2021 - present	Research and Infrastructure Committee , Environmental Health Sciences, School of Public health, University of Minnesota
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

Associate Editor	Frontiers in Microbiology (2021 - present) Pathogens (2019 – present) Microbiology and Immunology (2011-2015)
Editorial Board Member	Scientific Reports (2018 – present)
Review Editor	Frontiers in Microbiology (2015-present)
Reviewer (since 2010)	<ul style="list-style-type: none">• Food Microbiology• 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 USDA, Antimicrobial Resistance Panel Review Panel (2021)• The USDA, Preharvest Interventions/Poultry Review Panel (2021)• The Wellcome Trust DBT India Alliance Fellowship (2021)• The University of Leuven, Belgium, Impulse Fund Project (2020)• 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)
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- Welcome Trust Sir Henry Postdoctoral Fellowship, UK (2015)
- Nova Scotia Health Research Foundation, Canada (2014)
- The United States-Israel Binational Agricultural Research & Development Fund (2013)

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.

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