

### Education and Training

University of Lethbridge	BS	1999	Biochemistry
University of Calgary	Ph.D.	2003	Bacterial Pathogenesis
NIH/NIAID, Rocky Mountain Laboratories	Post-doctoral fellow	2006	Bacterial Pathogenesis

### Employment

2003-2006	Postdoctoral fellow, Rocky Mountain Laboratories (NIH/NIAID)
2006-2012	Assistant Professor, Brigham Young University
2012-present	Associate Professor, Brigham Young University
2024-present	Professor, Brigham Young University

### Honors

2019-2020	Graduate Mentoring Award, Faculty of Graduate Studies
2025-present	Skaggs Distinguished Mentoring Fellowship, College of Life Sciences

### Personal Statement

My areas of expertise include bacterial pathogenesis, innate immunity, antimicrobials and resistance, virulence factors of *Yersinia*, *Pseudomonas*, *Escherichia coli* and other bacteria. I have focused on how zoonotic bacterial pathogens resist innate immune defenses, compete with other bacteria, and adapt to inhabit specific environments. I am heavily focused on teaching and involvement of students in research. Undergraduate students participate in all aspects of our work, from developing hypotheses and planning experiments, to synthesizing data and presenting their work in scientific conferences and publications. These mentoring experiences have been made possible through support through BYU internal grants and the NIH R15 program. Alumni have pursued graduate degrees in public health, immunology, cell biology, and bacterial pathogenesis, or M.D. programs. Students receive hands-on experience with genetic manipulation of pathogens, gene expression studies, functional screens, and the use of a variety of infection models.

### Funding Support

#### Recently Completed

2022-2025. AREA R15 Award National Institutes of Health, NIAID Role: Principal Investigator  
Title: Investigating virulence functions of mastitis-associated Extraintestinal pathogenic *Escherichia coli* relevant to human disease. NIH# 1R15AI159847-01A1 \$378,750  
2020-2021 Marcus E. Jensen Poultry Disease Research Endowment, BYU Role: Principal Investigator  
Title: Improving gallium efficacy against avian-associated *Escherichia coli* \$10,000  
2019-2020 Faculty of Graduate Studies Mentoring Award, BYU Role: Principal Investigator  
Title: Understanding diversity in *Escherichia coli* susceptibility to gallium \$14,040  
2012-2016 AREA R15 Award National Institutes of Health, NIAID Role: Co-Principal Investigator  
Title: Identification of Bacterial Resistance Mechanisms to Antimicrobial Chemokines NIH# 1R15AI1958-01 \$375,000

### Preprints

1. David Prince R.J., Bogati R., Lytle T., Collado-Silva A., LeBaron R.A., Sorge T., Olson M.A., Wilson E., **Erickson D.L.** 2025. Genetic control of Group 3 (K96) capsule synthesis and complement resistance in an extraintestinal pathogenic *Escherichia coli* ST69 strain. bioRxiv [Preprint]. 2025 Sep 19:2025.09.19.677278. doi: 10.1101/2025.09.19.677278.

**Select Peer-reviewed Publications (for a full list please see**

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1PUy03pFlrfki/bibliography/48935137/public/?sort=date&direction=ascending>.

1. Parveen N., Durrant S., Olson M.A., Shakespear E.P., Jones T.R., David Prince R.J., Wilson E., **Erickson D.L.** 2025. Opposing roles for iron transport systems in gallium tolerance in extraintestinal pathogenic *Escherichia coli*. *J. Bacteriol.* 207:e00349-25
2. Olson M.A., Cullimore C., Hutchison W.D., Grimsrud A., Nobrega D., De Buck J., Barkema H.W., Wilson E., Pickett B., **Erickson D.L.** 2024. Genes associated with fitness and disease severity in the pan-genome of mastitis-associated *Escherichia coli* *Frontiers in Microbiology* 29;15:1452007.
3. Gahlot D.K., Wai S.N., **Erickson D.L.**, Francis M.S. 2022. Cpx-signalling facilitates Hms-dependent biofilm formation by *Yersinia pseudotuberculosis*. *NPJ Biofilms and Microbiomes* 8: 13. PMID: 35351893
4. Craft J., Eddington H., Christman N.D., Pryor W., Chaston J.M., **Erickson D.L.**, Wilson E. 2022. Increased Microbial Diversity and Decreased Prevalence of Common Pathogens in the Gut Microbiomes of Wild Turkeys Compared to Domestic Turkeys. *Appl Environ Microbiol* 8;88(5):e0142321 PMID: 35044852
5. Olson M.A., Grimsrud A., Richards A.C., Mulvey M.A., Wilson E., **Erickson D.L.** 2021. Bile Salts Regulate Zinc Uptake and Capsule Synthesis in a Mastitis-Associated Extraintestinal Pathogenic *Escherichia coli* Strain. *Infect Immun* Sep 16;89(10):e0035721 PMID:34228495
6. Calder J.C., Christman N.C., Hawkins J.M., **Erickson D.L.** 2020. A trimeric autotransporter enhances biofilm cohesiveness in *Yersinia pseudotuberculosis* but not in *Yersinia pestis*. *J. Bacteriol.* 202(20):e00176-20. PMID: 32778558
7. Schachterle J.K., Stewart R.M., Schachterle M.B., Calder J.T., Kang H., Prince J.T., **Erickson D.L.** *Yersinia pseudotuberculosis* BarA-UvrY Two-Component Regulatory System Represses Biofilms via CsrB. 2018. *Front. Cell. Infect. Microbiol.* 18(8):323 PMID: 30280093
8. Olson MA, Siebach TW, Griffiths JS, Wilson E, **Erickson DL.** 2018. Genome-wide identification of fitness factors in mastitis-associated *Escherichia coli*. *Appl Environ Microbiol* 84(2):e02190-17 PMID: 29101196
9. Hoffman JM, Sullivan S, Wu E, Wilson E, **Erickson DL.** 2017. Differential impact of lipopolysaccharide defects caused by loss of RfaH in *Yersinia pseudotuberculosis* and *Yersinia pestis*. *Sci Rep.* 7(1):10915. PMID: 28883503
10. **Erickson DL**, Lew CS, Kartchner B, Porter NT, McDaniel SW, Jones NM, Mason S, Wu E, Wilson E. 2016. Lipopolysaccharide Biosynthesis Genes of *Yersinia pseudotuberculosis* Promote Resistance to Antimicrobial Chemokines. *PLoS One* 11(6):e0157092. PMID: 27275606
11. Zhou W., Johnson K.L., Mortensen R.D, **Erickson D.L.** 2012. Gene expression analysis of *Xenopsylla cheopis* fleas suggests a role for reactive oxygen species in response to *Yersinia pestis* infection. *J. Med. Entomol* 49(2):363-70 PMID: 22493856
12. Vogt S.L., Green C., Stevens K.M., Day B., **Erickson D.L.**, Woods D.E. and Storey D.G. 2011. The stringent response is essential for *Pseudomonas aeruginosa* virulence in the rat lung agar bead and *Drosophila melanogaster* feeding models of infection. *Infect. Immun.* 79:4094-104 PMID: 21788391
13. **Erickson D.L.** Anderson N.A., Cromar L.M., Jolley A. 2009. Bacterial Communities Associated with Flea Vectors of *Yersinia pestis*. *J. Med. Entomol.* 46:1532-1536 PMID: 19960708
14. **Erickson D.L.** and Hinnebusch B.J. 2008. *Yersinia pestis* biofilm in the flea vector and its role in the transmission of plague. *Curr. Top. Microbiol. Immunol.* 322:229-48 PMID: 18453279
15. **Erickson D.L.**, Jarrett C.O., Callison J.A., Fischer E.R., Hinnebusch B.J. 2008. Loss of a biofilm-inhibiting glycosyl hydrolase during the emergence of *Yersinia pestis*. *J. Bacteriol.* 190:8163-70. PMID: 18931111
16. **Erickson D.L.**, Waterfield N.R., Vadyvaloo V., Long, D., Fischer E.R., Ffrench-Constant R.H., Hinnebusch B.J. 2007. Acute oral toxicity of *Yersinia pseudotuberculosis* towards *Xenopsylla cheopis*: implications for the evolution of flea-borne transmission of *Yersinia pestis*. *Cell. Microbiol.*

**9:2658-66** [PMID: 17587333](#)

17. **Erickson D.L.**, Endersby R., Kirkham A., Stuber K., Vollman D.D., Mitchell I., Rabin H.R., and Storey D.G. 2002. *Pseudomonas aeruginosa* quorum-sensing systems may control virulence factor expression in the lungs of patients with cystic fibrosis. *Infect. Immun.***70**:1783-1790.