

Lee J. Pinnell, PhD

Veterinary Education, Research, and Outreach Program
School of Veterinary Medicine and Biomedical Sciences
Texas A&M University
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EDUCATION

- 2019 **PhD in Marine Biology**, Department of Life Sciences
Texas A&M University–Corpus Christi, Corpus Christi, Texas, USA
- 2012 **MSc in Microbial Ecology**, Department of Biology
University of Waterloo, Waterloo, Ontario, Canada
- 2009 **BSc in Biology**, Department of Biology
University of Waterloo, Waterloo, Ontario, Canada

APPOINTMENTS

- 2021 – present **Postdoctoral Research Associate**, Veterinary Education, Research, and Outreach Program
Texas A&M University, Canyon, Texas
- 2019 – 2021 **Postdoctoral Scientist**, Molecular & Microbial Ecology Group
John G. Shedd Aquarium, Chicago, Illinois
- 2014 – 2015 **Research Technician II**, Gastroenterology, Hepatology, and Nutrition
SickKids Hospital, Toronto, Ontario
- 2013 – 2014 **Research Technician I**, Gastroenterology, Hepatology, and Nutrition
SickKids Hospital, Toronto, Ontario

FUNDING

Awarded during postdoctoral training: Total funding \$341,223

- \$99,990 **USDA-NIFA**. 2022-2024. Within-host *Mycoplasma bovis* strain diversity in the respiratory tract of cattle.
PI: Robert Valeris-Chacin, Co-investigator: Lee Pinnell
- \$171,824 **Grayson-Jockey Club Research Foundation, Inc.** 2022-2023. Does antibiotic treatment in horses change
the microbial resistome? PI: Paul Morley, Co-investigator: Lee Pinnell
- \$49,409 **AZA Saving Animals From Extinction Grant**. 2021-2023. Investigating shell disease and its associated
pathobiome in Western Pond Turtles. PI: Tim Storms, Co-PI: Lee Pinnell
- \$20,000 **Texas Comprehensive Research Fund**. 2020 – 2021. From microbes to mosaics: Understanding coral
responses to and recovery from climatic threats. PI: Keisha Bahr, Co-PI: Lee Pinnell

Awarded during graduate program: Total funding \$129,711

- \$63,000 **Natural Sciences and Engineering Research Council of Canada Postgraduate Doctoral Scholarship**.
2016 – 2019. PI: Lee Pinnell, mentor: Jeffrey Turner
- \$45,284 **Texas General Land Office Coastal Management Program**. Assessing the fate of plastic debris in
marine environments. 2016 – 2018. PI: Jeffrey Turner, Co-PI: Lee Pinnell
- \$1,887 **Texas Sea Grant Grants-in-aid of Research**. 2017 – 2018. PI: Lee Pinnell, mentor: Jeffrey Turner

- \$18,600 **Texas A&M University-Corpus Christi Graduate Research Assistantship.** 2016-2018. PI: Lee Pinnell, mentor: Jeffrey Turner
- \$1,000 **Texas Sea Grant Grants-in-aid of Research.** 2015 – 2016. PI: Lee Pinnell; mentor: Jeffrey Turner

PUBLICATIONS

35 peer-reviewed publications; 947 citations; i10-index of 15; Google Scholar Profile: <https://scholar.google.com/ljpinnell>

Peer-reviewed Publications

1. **Pinnell LJ**, Kuiper G, Huebner KL, Doster E, Parker JK, Alekozai N, Powers JG, Wallen RL, Belk KE, Morley PS. (*In revision*). More than an anthropogenic phenomenon: antimicrobial resistance in ungulates from pristine and agriculture environments. *Science of the Total Environment*
2. Doster E, **Pinnell LJ**, Noyes NR, Parker JK, Anderson CA, Booker CW, Hannon SJ, McAllister TA, Gow SP, Belk KE, Morley PS. (*In revision*). Evaluating the effects of antimicrobial drug use on the ecology of antimicrobial resistance and microbial community structure in beef feedlot cattle. *Frontiers in Microbiology*
3. Bonin N, Doster E, Worley H, **Pinnell LJ**, Bravo JE, Ferm P, Marini S, Prosperi M, Noyes N, Morley PS, Boucher C. (*In revision*). MEGARes and AMR++, v3.0: An updated comprehensive database of antimicrobial resistance determinants and an improved software pipeline for classification using high-throughput sequencing. *Nucleic Acids Research*
4. **Pinnell, LJ**, Morley PS. 2022. The microbial ecology of liver abscesses in cattle. *Veterinary Clinics of North America. Food Animal Practice* In press.
5. Crosby WB, **Pinnell LJ**, Richeson JT, Wolfe CA, Loy JD, Gow SP, Seo KS, Capik SA, Woolums AR, Morley PS. 2022. Does swab type matter? Comparing methods for *Mannheimia haemolytica* recovery and upper respiratory microbiome characterization in feedlot cattle. *Animal Microbiome* 4: 1-17
6. **Pinnell LJ**, Conkle JM, Turner JW. 2022. Microbial succession during the degradation of bioplastic in coastal marine sediment favors sulfate reducing microorganisms. *Frontiers in Marine Science* 9: 945822
7. Vann Bonn W, Oliaro FJ, **Pinnell LJ**. 2022. Whale associated microbial communities remain stable despite massive water community disruption in a managed artificial marine environment. *Oceans* 3: 289-302
8. Kwasek K, Patula S, Oliaro FJ, Cabay C, **Pinnell LJ**. 2022. Does exposure of broodstock to dietary soybean meal affect its utilization in the offspring of zebrafish (*Danio rerio*)? *Animals* 12:1475
9. **Pinnell LJ**, Reyes AA, Wolfe CA, Weinroth MG, Metcalf JL, Delmore RL, Belk KE, Morley PS, Engle TE. 2022. Bacteroidetes and Firmicutes drive differing microbial diversity and community composition between micro-environments in the bovine rumen. *Frontiers in Veterinary Science* 9: 897996
10. Vann Bonn W, Oliaro FJ, **Pinnell LJ**. 2022. Ultraviolet light alters experimental aquarium water microbial communities. *Zoo Biology*: 1-9
11. **Pinnell LJ**, Weissend CW, Huebner KL, Bryant TC, Martine J, Belk KE, Morley PS. 2022. Not all liver abscesses are created equal: the impact of tylosin and antibiotic alternatives on bovine liver abscess microbial communities, and a first look at Bacteroidetes dominated communities. *Frontiers in Microbiology* 13: 882419
12. Di Cesare A*, **Pinnell LJ***, Brambilla S*, Elli G*, Sabatino R, Sathicq MB, Corno G, O'Donnell C, Turner JW. 2021. Bioplastic accumulates antibiotic and metal resistance genes in coastal marine sediments. *Environmental Pollution* 291: 118161 *first authors contributed equally
13. Powers NC, **Pinnell LJ**, Wallgren HR, Marbach S, Turner JW. 2021. Water quality dynamics in response to rainfall along an estuarine ecocline. *Environmental Science & Technology Water* 1: 1503-1514

14. Kwasek K, Wojno M, Patula S, Oliaro FJ, Cabay C, **Pinnell LJ**. 2021. The effect of fist feeding exposure of larval largemouth bass to a formulated soybean meal-based or soy saponin-supplemented diet on fish growth performance and gut microbiome. *North American Journal of Aquaculture* 83: 312-326
15. Patula S, Wojno M, **Pinnell LJ**, Oliaro FJ, Cabay C, Kwasek K. 2021. Nutritional programming with dietary soybean meal and its effect on gut microbiota in zebrafish (*Danio rerio*). *Zebrafish* 18: 125-138
16. Dibona E, **Pinnell LJ**, Heising-Huang A, Giest S, Turner JW, Seeman F. 2021. A holistic assessment of polyethylene fiber ingestion in larval and juvenile Japanese Medaka fish. *Frontiers in Physiology* 12: 668645
17. **Pinnell LJ**, Oliaro FJ, Van Bonn, W. 2020. Host-associated microbiota of yellow stingrays (*Urobatis jamaicensis*) is shaped by their environment and life history. *Marine and Freshwater Research* 72: 658-667
18. **Pinnell LJ**, Turner JW. 2020. Temporal changes in water temperature and salinity drive the formation of a reversible plastic-specific microbial community. *FEMS Microbiology Ecology* 96: fiae230
19. Huang I, **Pinnell LJ**, Turner JW, Abdulla HA, Boyd L, Linton E, Zimba P. 2020. Preliminary assessment of cyanobacterial community structure of wind-tidal algal flats in the Laguna Madre, Texas, USA. *Biology* 9: 183
20. **Pinnell LJ**, Turner JW. 2019. Shotgun metagenomics reveals the benthic microbial community response to plastic and bioplastic in a coastal marine environment. *Frontiers in Microbiology* 10: 1252
21. Elledge NC, Eytan RI, **Pinnell LJ**, Pray R, Joyner J, Ware J, Sutherland K, Lipp E, Turner JW. 2019. Draft genome sequences of 38 *Serratia marcescens* isolates associated with acroporid serratiosis. *Microbiology Resource Announcements* 8: e00194-19.
22. Turner JW, Tallman JJ, Macias A, **Pinnell LJ**, Elledge NC, Nasr-Azadani D, Nilsson WB, Paranjypte RN, Armbrust EV, Strom MS. 2018. Comparative genomic analysis of *Vibrio diabolis* and six taxonomic synonyms: a first look at the distribution and diversity of the expanded species. *Frontiers in Microbiology* 9: 1893
23. Moreno E, Parks M, **Pinnell LJ**, Tallman JJ, Turner JW. 2017. Draft genome sequence of a *Vibrio harveyi* strain associated with vibriosis in Pacific White Shrimp. *Genome Announcements* 5: e01662-16
24. Collin B, **Pinnell LJ**, Tallman JJ, Turner JW. 2016. Draft genome sequences of one marine and one clinical *Vibrio parahaemolyticus* strain, both isolated in Sweden. *Genome Announcements* 4: e01196-16
25. Vong L, Yeung CW, **Pinnell LJ**, Sherman PM. 2016. Adherent-invasive *Escherichia coli* exacerbates antibiotic-associated intestinal dysbiosis and neutrophil extracellular trap activation. *Inflammatory Bowel Diseases* 22: 42-54
26. Vong L, **Pinnell LJ**, Määttänen P, Yeung CW, Lurz E, Sherman PM. 2015. Selective enrichment of commensal gut bacteria protects against *Citrobacter rodentium*-induced colitis. *American Journal of Physiology-Gastrointestinal and Liver Physiology* 309: G181-G192
27. Yusta B, Baggio LL, Koehler J, Holland D, Cao X, **Pinnell LJ**, Johnson-Henry KC, Yeung W, Surrete MG, Bang KW, Sherman PM, Drucker DJ. 2015. GLP-1 receptor (GLP-1R) agonists modulate enteric immune responses through the intestinal intraepithelial lymphocyte GLP-1R. *Diabetes* 64: 2537-2549
28. Howe KL, Lorentz R, Assa A, **Pinnell LJ**, Johnson-Henry K, Sherman PM. 2015. Transforming growth factor beta-1 protects against intestinal epithelial barrier dysfunction caused by hypoxia-reoxygenation. *Shock* 41: 483-489
29. Assa A, Vong L, **Pinnell LJ**, Rautava J, Avitzur N, Johnson-Henry KC, Sherman PM. 2014. Vitamin D deficiency predisposes to adherent-invasive *Escherichia coli*-induced epithelial barrier dysfunction and experimental colitis. *Inflammatory Bowel Diseases* 21: 297-306
30. Rautava J, **Pinnell LJ**, Vong L, Askeer N, Assa A, Sherman PM. 2014. Oral microbiome compositions changes in mouse models of colitis. *Journal of Gastroenterology and Hepatology* 30: 521-527

31. Johnson-Henry KC, **Pinnell LJ**, Waskow AM, Irrazabal T, Martin A, Hausner M, Sherman PM. 2014. Short-chain fructo-oligosaccharide and inulin modulate inflammatory responses and microbial communities in Caco2-bbe cells and in a mouse model of intestinal injury. *Journal of Nutrition* 144: 1725-1733
32. **Pinnell LJ**, Dunford E, Ronan P, Hausner M, Neufeld JD. 2014. Recovering glycoside hydrolase genes from active cellulolytic bacteria. *Canadian Journal of Microbiology* 60: 469-476
33. Assa A, Vong L, **Pinnell LJ**, Avitzur N, Johnson-Henry KC, Sherman PM. 2014. Vitamin D deficiency promotes epithelial barrier dysfunction and intestinal inflammation. *Journal of Infectious Diseases* 210: 1296-1305
34. Cheng J, **Pinnell LJ**, Engel K, Neufeld JD, Charles TC. 2014. Versatile broad-host-range cosmids for construction of high quality metagenomic libraries. *Journal of Microbiological Methods*. 99: 27-34
35. Engel K, **Pinnell LJ**, Cheng J, Charles TC, Neufeld JD. 2012. Nonlinear electrophoresis for purification of soil DNA for metagenomics. *Journal of Microbiological Methods*. 88: 35-40

Book Chapters

1. **Pinnell LJ**, Charles TC, Neufeld JD. 2011. Stable-isotope probing and metagenomics. In: *Stable Isotope Probing and Related Technologies*. Whiteley A, Murrel JC (Eds). ASM Press.

Manuscripts in Preparation

1. **Pinnell LJ**, Wolfe CA, Castle J, Morley PS. Effectiveness of stabilization methods for the short-term preservation of bovine fecal and respiratory tract genomic DNA. In preparation for *FEMS Microbiology Letters*
2. **Pinnell LJ**, Oliaro FJ, Van Bonn W. Drivers of microbial diversity and community structure in a large artificial marine habitat over a five-year period. In preparation for *mSphere*
3. Murphy MM, **Pinnell LJ**, Wolfe CA, Castle J, Lombard JE, Machado V, Baker L, Morley PS. Characterizing the developing microbiome and resistome in young dairy calves without antimicrobial influence. In preparation for *Frontiers in Microbiology*
4. McAtee TB, Howledge SA, **Pinnell LJ**, Morley PS, Richeson JT. Effects of respiratory vaccination and bovine respiratory disease on the respiratory microbiome of high-risk, newly received cattle. In preparation for *Frontiers in Microbiology*
5. **Pinnell LJ**, Rice EA, Weinroth MD, Doster E, Noyes NR, Parker JK, Anderson C, Crone K, Belk KE, Nair MN, Morley PS. Evaluating the impact of avian, bovine, and porcine fecal microbial communities on antimicrobial resistance in subsequent environments throughout production. In preparation for *Microbiome*

AWARDS & HONOURS

\$8,000	Texas Higher Education Board Good Neighbor Scholarship. 2018 – 2019
\$940	International Society for Microbial Ecology Student Travel Award. 2018
\$8,000	Texas A&M University-Corpus Christi Student Success Scholarship. 2015
\$2,000	Texas A&M University-Corpus Christi Graduate Scholarship. 2015-2016
\$2,000	University of Waterloo Graduate Scholarship. 2010 – 2011
\$1,000	University of Waterloo Graduate Entrance Scholarship. 2009

TEACHING EXPERIENCE

Graduate/Undergraduate Courses:

MARB-6596/BIOL-4396/CMSS-6596/BIMS-4396 **DNA Sequencing Informatics** – Co-instructed a course offered to graduate and undergraduate students that gave students a chance to analyze and assemble original sequence data. Course was taught in Fall 2018.

Guest Lectures:

BIOL-1406 Biology I
BIOL-1407 Biology II
BIOL-2421 Microbiology
BIOL-2371 Evolution

Labs & Tutorials:

BIOL-1406 Biology I
BIOL-3401 Physiology
BIOL-5417 Microbial Ecology
BIOL-2416 Genetics
BIOL 110 Introductory Zoology
BIOL 130 Introductory Cell Biology
BIOL 211 Introductory Vertebrate Zoology
BIOL 240 Fundamentals of Microbiology
BIOL 308 Principles of Molecular Biology

ORAL PRESENTATIONS

Pinnell LJ (presenter), Kuiper G, Hueber K, Doster E, Parker J, Alekozai, Powers J, Wallen R, Belk KE, Morley PS. Antimicrobial resistance in ungulates from natural and agricultural environments. 16th International Symposium of Veterinary Epidemiology and Economics, Halifax, Nova Scotia, August 2022

Pinnell LJ (presenter), Doster E, Clawson ML, Loy JD, Wolfe CA, Woolums AR, Morley PS. Detecting strain-level shifts in *Mannheimia haemolytica* phylogeny and function via target-enriched metagenomics. Conference of Research Workers in Animal Diseases, Chicago, Illinois, December 2021

Pinnell LJ (invited speaker). The [mostly] wonderful world of microbial ecology. Environment & Sustainability Speaker Series, Chicago, Illinois, October 2020

Pinnell LJ (invited speaker). Microbial Ecology at Shedd Aquarium. National Conference of Biology Teachers, Chicago, Illinois, October 2019

Pinnell LJ (invited speaker), Turner JW. Nurdles for dinner? The microbial response to plastic and bioplastic. Texas Plastic Pollution Symposium, Corpus Christi, TX, October 2018

Pinnell LJ (presenter), Turner JW. Nurdles for dinner? The microbial response to plastic and bioplastic in coastal waters. American Association for the Advancement of Science Annual Meeting, Austin, TX, February 2018

Pinnell LJ (invited speaker), Nurdles for dinner? The microbial response to plastic and bioplastic in Texas' waters. Surfrider Foundation Coastal Bend chapter meeting, Corpus Christi, TX, October 2017

Pinnell LJ (presenter), Turner JW. A tale of two nurdles: plastic-microbe interactions in Texas' coastal waters. American Society for Microbiology Texas Branch Spring Meeting, New Braunfels, Texas, March 2017

Pinnell LJ (invited speaker), Plastic soup and the microbes that live in it. TAMU-CC American Cetacean Society chapter meeting, Corpus Christi, Texas, March 2017

Pinnell LJ (presenter), Turner, JW. Bacterial response to plastic in a lagoonal estuary. Marine Science Graduate Student Organization Student Research Forum, Corpus Christi, Texas, December 2016

Pinnell LJ (presenter), Turner, JW. Bacterial response to plastic debris in a lagoonal estuary. American Society for Microbiology Texas Branch Fall Meeting, Dallas, November 2016

Pinnell LJ (invited speaker), Characterizing the microbial response to plastic debris in the marine environment. Surfrider Foundation Coastal Bend chapter meeting, Corpus Christi, TX, May 2016

Rautava J (presenter), **Pinnell LJ**, Vong L, Askeer N, Assa A, Sherman PM. Mouse oral microbiome changes with colon inflammation. Toronto-McMaster-SickKids Research Day, Toronto, Ontario, February 2013

Pinnell LJ (presenter), Neufeld JD. Combining DNA-SIP and functional metagenomics to discover truly novel cellulases. University of Waterloo Graduate Research Conference, Waterloo, Ontario, April 2011

POSTER PRESENTATIONS

Pinnell LJ. (presenter), Turner JW. Does plastic debris enrich for *Vibrio*? International Conference on the Biology of Vibrios, Montreal, Quebec, Canada, November 2019

Pinnell LJ (presenter), Turner JW. Life on a nurdle: the benthic microbial response to plastic and bioplastic. Texas Sea Grant Research Symposium, College Station, TX, April 2019

Pinnell LJ (presenter), Turner JW. Bioplastic but not plastic promotes a significant shift in marine microbial diversity and functionality with implications for ecological processes. ISME 17, Liepzig, Germany, August 2018

Pinnell LJ (presenter), Turner JW. A tale of two nurdles: microbial response to plastic in coastal waters. Canadian Society for Microbiology Annual General Meeting, Waterloo, ON, Canada, June 2017

Pinnell LJ (presenter), Tallman J (presenter), Paranjpye R, Turner JW. Genomic analysis of attenuation in pandemic *Vibrio parahaemolyticus*. American Society for Limnology and Oceanography Ocean Science Meeting, New Orleans, Louisiana, February 2016

Vong L (presenter), Yeung W, **Pinnell LJ**, Sherman PM. Intestinal dysbiosis enhances gut microflora-induced neutrophil extracellular traps. Experimental Biology, San Diego, California, April 2014

Lin A (presenter), **Pinnell LJ**, Sherman PM, Inman RD. HLA-B27 Influence on The Gut Microbiome. American College of Rheumatology Annual Meeting, San Diego, California, October 2013

Pinnell LJ (presenter), Dunford E, Charles TC, Neufeld JD. Discovering novel cellulases with DNA-stable isotope probing coupled with functional metagenomics. American Society for Microbiology Annual General Meeting, New Orleans, Louisiana, May 2011

Pinnell LJ (presenter), Dunford E, Charles TC, Neufeld JD. Characterizing the active consortia of cellulolytic organisms in arctic tundra soil. Canadian Society for Microbiology Annual Meeting, Hamilton, Ontario, June 2010

SERVICE

Review Editor

Frontiers in Microbiology, Frontiers in Marine Science

Professional meeting co-organizer. Co-organizer for the TX Branch meeting of the American Society for Microbiology (TX-ASM) held at TAMU-CC, Fall 2018

TAMU-CC Student recruitment. Islander Orientation, 2018

Texas State Aquarium's Teen Science Café Program

Team member that implemented meeting focused on *Vibrio vulnificus*, 2017

***Third Coast Science for You* (a scientific outreach publication)**

Co-founder, Assistant Editor-in-Chief, 2016 – 2019

TAMU-CC Laguna Madre Field Station working group.

Member, 2016 – 2019

PRESS

FEMS news post about Pinnell's paper 'Temporal changes in water temperature and salinity drive the formation of a reversible plastic-specific microbial community' in *FEMS Microbiology Ecology*. #FEMSmicroBlog: **Some microbes like it hot!** <https://fems-microbiology.org/femsmicroblog-some-microbes-like-it-hot/>

Shedd Aquarium press release announcing the hiring of Pinnell. **Marine Microbial Ecologist Joins Shedd Aquarium.** <https://www.sheddaquarium.org/about-shedd/press-releases/marine-microbial-ecologist-joins-shedd-aquarium>

TAMU-CC press release reporting Pinnell's plastic pollution research. **Experiment seeks to ID plastic-eating microorganisms.** <https://tamucc.edu/news/2016/05/032416%20Plastic%20Capsule.html#.XPwuRKZ7kWp>

TAMU-CC press release reporting Pinnell's plastic pollution research. **Island university PhD student studies plastic-eating microbes.** http://www.tamucc.edu/news/2018/02/021918_Plastic_Research_Laguna_Madre.html#.XPwuaqZ7kWp