

Kristopher Parker, PhD

Curriculum vitae

Colorado State University
College of Veterinary Medicine and Biomedical Sciences
Department of Environmental and Radiological Health Sciences
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EDUCATION/CAREER

Aug 2009-May 2013:

*Bachelor of Science: Biology, Pittsburg State University

Aug 2013-Sep 2018:

*Doctor of Philosophy: Molecular and Cellular Life Sciences,
University of Wyoming

Oct 2018-current:

*Postdoctoral Researcher: Environmental and Radiological Health
Sciences, Colorado State University

PUBLICATIONS

Published

Correspondence/Commentary/Opinion

1. **Parker, KD**, JP Gigley, NL Ward. 2016. Paths to GI research in the wild west: tales from Wyoming. *Cell Mol Gastroenterol Hepatol* 2(5):560-562.

Primary Research

1. **Parker, KD**, SE Albeke, JP Gigley, AM Goldstein, NL Ward. 2018. Microbiome composition in both wild-type and disease model mice is heavily influenced by mouse facility. *Front Microbiol*. doi: 10.3389/fmicb.2018.01598. [Link](#).
2. Nealon NJ*, **KD Parker***, P Labaie, H Ibrahim, AK Maurya, K Raina, EP Ryan. 2019. *Bifidobacterium longum*-fermented rice bran and rice bran supplementation affects the gut microbiome and metabolome. *Beneficial Microbes*. doi: 10.3920/BM2019.0017. [Link](#).
*co-first authors

Submitted

Primary Research

1. Baxter, BA, **KD Parker**, MJ Nosler, S Rao, R Craig, C Seiler, EP Ryan. 2019. Metabolite profile comparisons between ascending and descending colon tissue in healthy adults. *World J Gastroenterol*.
2. **Parker, KD**, M Westfal, NL Ward, AM Goldstein. 2019. Longitudinal characterization of fecal microbiota changes in patients with Hirschsprung-associated enterocolitis. *Neurogastroenterol Motil*.

In preparation

Primary Research

1. **Parker, KD**, AK Maurya, MN Beale, H Ibrahim, S Rao, R Kant, R Agarwal, K Raina, EP Ryan. 2019. Human rice bran diet modified gut microbial consortia confer protection from inflammation-induced colon carcinogenesis. Target: *Cancer Discovery*.
2. K Raina, **Parker, KD**, AK Maurya, H Ramseier, R Kant, H Ibrahim, B Raina, R Agarwal, EP Ryan. 2019. Microbe-dependent metabolism of rice bran elicits protection from colon carcinogenesis in a murine model. Target: *Cancer Cell*.
3. **Parker, KD**, AK Maurya, H Ramseier, NJ Nealon, H Ibrahim, S Rao, R Kant, R Agarwal, K Raina, EP Ryan. 2019. Murine fecal microbiota colonization dynamics following dietary rice bran intake. Target: *Mol Cancer Research*.
4. Beale, MN, HJ Leach, **Parker, KD**, BA Baxter, HV Smith, EP Ryan. 2019. Relationships between objectively measured physical activity and stool metabolome and microbiome composition in individuals at high risk for colorectal cancer. Target: *J Phys Act Health*.
5. **Parker, KD**, LC Cheng, AM Goldstein, NL Ward. 2020. A multi-facility pilot study: antibiotic depletion followed by fecal microbiota transplantation in C57BL/6J mice. Target: *PLOS One*.

RESEARCH

Undergraduate development

Dec 2014-Jul 2015. Kyle Bochanski: Microbiology/Environmental & Natural Resources

Aug 2015-May 2016. Reid Olson: Zoology

Dec 2015-Dec 2018. Bailey Hamann: Molecular Biology/Microbiology

Feb 2017-May 2018. Martha Wenger: Microbiology/Spanish

Sep 2017-Sep 2018. Marcus Manzanares: Biology/Molecular Biology

Graduate development

Jun 2019-Oct 2019. Melanie Beale: Health and Exercise Science.

Research grants and funding

1. "Mining the mouse microbiome." Undergraduate: Bailey Hamann. Advisor: Naomi Ward. Mentor: Kristopher Parker. Wyoming EPSCoR Undergraduate Fellowship. First award: Jan. 2016-Jul. 2016. Amount: \$5,300. Second award: Aug. 2016-May 2017. Amount: \$5,000.
2. "Rebuilding the barrier to inflammation." Undergraduate: Bailey Hamann. Advisor: Naomi Ward. Mentor: Kristopher Parker. Wyoming NASA Space Grant Consortium, Undergraduate Fellowship. Jun. 2017-May 2018. Amount: \$2,500.
3. "Rice bran microbial metabolism for colon chemoprevention." PI: EP Ryan and K Raina. NIH Administrative Supplement (PA-18-817). Project number: 3R01CA201112-04SI. Amount: \$146,264. [Link](#).

TEACHING EXPERIENCE

Pittsburg State University

- Fall 2012/Spring 2013: Undergraduate Teaching Assistant, BIOL371 and BIOL372, General Microbiology. (2 semesters total)
- Spring 2013: Undergraduate Teaching Assistant, BIOL571, Pathogenic Bacteriology. (1 semester total)

University of Wyoming

- Fall 2015: Graduate Teaching Assistant, MOLB1101, The Neanderthal and the Nucleus. (1 semesters total)
- Fall 2015-Winter 2018: Distinguished Guest Lecturer, MICR2021, General Microbiology. Focus: Human and Earth microbiomes. (6 semesters total)
- Summer 2016-Summer 2017: Teaching Fellowship, Summer Institute on Active Learning.
- Fall 2016/Spring 2017: Graduate Teaching Assistant, MICR2021, General Microbiology. (2 semesters total)
- Winter 2017: Instructor Certification, Data and Software Carpentry.

Colorado State University

- Spring 2019: Guest Lecturer, ERHS569, Immunotoxicology. Focus: introduction to the human microbiome.

SERVICE

University

- Sep 2016: Panel Member, Graduate Teaching Assistant Workshop, Ellbogen Center for Teaching and Learning. UW.
- Jul 2017: Guest Mentor, Summer Institute on Active Learning, Science Initiative's Learning Actively Mentoring Program (LAMP). UW.

- Sep 2017-Feb 2018: Mentor, General Microbiology (MICR2021) Undergraduate Teaching Assistants. UW.
- Jan 2018-Feb 2018: Graduate Reviewer, Wyoming INBRE Undergraduate Fellowship Proposals. UW.
- Jan 26, 2018: Poster Judge, 21st Annual College of Veterinary Medicine and Biomedical Sciences (CVMBBS) Research Day. CSU.

Community

- Jul 2014-Feb 2018: Big Brother, Big Brothers Big Sisters of Laramie, Wyoming.
- May 2016-present: Registration Coordinator, Gowdy Grinder, Pedal House Bicycle Shop and Laramie Racing.
- Jun 2016-Aug 2017: Registration Coordinator, Laramie Mountain Bike Series, Laramie Racing.
- May 2017-Aug 2017: Volunteer Coordinator, The Laramie Enduro, Laramie Racing.
- Apr 2017: State Competition Judge, Wyoming History Day, American Heritage Center.
- Apr 2018: State Competition Judge, Wyoming History Day, American Heritage Center.
- Apr 2019: Grand Awards Judge, 64th Annual Colorado Science and Engineering Fair, Colorado State University.
- Upcoming: Nov 2019: I am a microbiome scientist, Ask Me Anything, 20th Anniversary of Climate Action Celebration, City of Fort Collins.

PRESENTATIONS

* = presenting author

Invited Seminars

1. **Parker, KD**, SE Albeke, AM Goldstein, NL Ward*. The role of gastrointestinal microbiota in Hirschsprung-associated enterocolitis and the challenges of replication. National Science Foundation Symposium on Sensing and Computational Biology. Colorado State University, Fort Collins, CO, USA. June 12-13, 2017.
2. ***Parker, KD**, The Human Superorganism: A brief tour of our microbial world. Pre-Health Orientation. Pittsburg State University. Pittsburg, KS, USA. October 10, 2017.
3. ***Parker, KD**, Diet, cancer, and the microbiome. 70th American Association for Laboratory Animal Science (AALAS) National Meeting. Denver, CO, USA. October 13-17, 2019.

Oral Presentations

Research

1. *Hamann, B.J., **KD Parker**, NL Ward. Mining the mouse microbiome. 1st Annual Wyoming INBRE Conference: Wyoming Undergraduate Research Day. University of Wyoming, Laramie, WY, USA. April 29-30, 2016.
2. *Hamann, B.J., **KD Parker**, NL Ward. Mining the mouse microbiome. 2nd Annual Wyoming INBRE Conference: Wyoming Undergraduate Research Day. University of Wyoming, Laramie, WY, USA. April 28-29, 2017.
3. ***Parker, KD**, SE Albeke, JP Gigley, AM Goldstein, NL Ward. Microbiome composition in both wild-type and disease model mice is heavily influenced by mouse facility. American Society for Microbiology Tri-Branch Conference. Durango, CO, USA. April 6-7, 2018.
4. ***Parker, KD**, H Ramseier, AK Maurya, NJ Nealon, R Kant, H Ibrahim, B Raina, R Agarwal, K Raina, EP Ryan. Fermenting agricultural waste with a probiotic: a mouse gut-centered journey. CSU Microbiome Seminar Series. Fort Collins, CO, USA. February 20, 2019.

Outreach

1. ***Parker, KD**, The human body as an ecosystem: expanding the definition of human health. Shepard Symposium on Social Justice: 'Rebel Health: Wellness Without Borders.' University of Wyoming, Laramie, WY, USA. April 5-8, 2017. [Presentation link](#).
2. ***Parker, KD**, 2017: A Microbiome Odyssey - a tale of replication and reproducibility. National Science Olympiad National Tournament. Colorado State University, Fort Collins, CO, USA. May 18, 2018.

Poster Presentations

Undergraduate (PSU)

1. *Woodruff, R., K Nickell*, **KD Parker***, P Conley, PA Harries. The effect of calreticulin knockout on plasmodesmatal gating in *Physcomitrella patens*. 11th Annual K-INBRE Symposium. Kansas State University, Manhattan, KS, USA. January 2013.

Graduate (UW)

1. ***Parker, KD**, P LaBreck, AM Goldstein, AR Horwsill, NL Ward. Unusually abundant coagulase-negative staphylococci in the GI tract of endothelin receptor B-null mice. 16th International Symposium on Staphylococci and Staphylococcal Infections (ISSSI). Chicago, IL, USA. August 2014.
2. ***Parker, KD**, K Bochanski, JP Gigley, AM Goldstein, NL Ward. The role of GI microbiota in Hirschsprung-associated enterocolitis. American Society for Microbiology Tri-Branch Conference. Fort Lewis College, Durango, CO, USA. April 24-25, 2015.
3. ***Parker, KD**, K Bochanski, JP Gigley, AM Goldstein, NL Ward. The challenges of reproducibility in mouse microbiomes. American

Society for Microbiology Rocky Mountain Regional Branch Meeting.
Denver, CO, USA. November 2016.

4. ***Parker, KD**, SE Albeke, AM Goldstein, NL Ward. The role of GI microbiota in Hirschsprung-associated enterocolitis and the challenges of replication. Keystone Symposium: Microbiome in Health and Disease. Keystone, CO, USA. February 5-9, 2017.
5. ***Parker, KD**, SE Albeke, AM Goldstein, NL Ward. The role of GI microbiota in Hirschsprung-associated enterocolitis and the challenges of replication. Microbiomics Symposium. Santa Fe, NM, USA. March 16-17, 2017.
6. *Hamann, B.J., **KD Parker**, NL Ward. Mining the mouse microbiome. 2nd Annual Wyoming INBRE Conference. University of Wyoming, Laramie, WY, USA. April 28-29, 2017.
7. *Hamann, B.J., **KD Parker**, NL Ward. Rebuilding the barrier to inflammation. NIH IDeA Western Regional Conference. Jackson, WY, USA. October 18-20, 2017.
8. ***Parker, KD**, SE Albeke, JP Gigley, AM Goldstein, NL Ward. Assessing multi-facility reproducibility in mouse microbiomes. NIH IDeA Western Regional Conference. Jackson, WY, USA. October 18-20, 2017.
9. ***Parker, KD**, SE Albeke, JP Gigley, AM Goldstein, NL Ward. Microbiome composition in both wild-type and disease model mice is heavily influenced by mouse facility. Keystone Symposium: Microbiome Host Resistance and Disease. Banff, AB, Canada. March 4-8, 2018.

Postdoc (CSU)

1. ***Parker, KD**, H Ramseier, AK Maurya, NJ Nealon, R Kant, H Ibrahim, B Raina, P Lahaie, R Agarwal, K Raina, EP Ryan. Fermentation of rice bran with the probiotic *Bifidobacterium longum* modifies gut microbiota composition and metabolite profile for protection against colon carcinogenesis. University of Colorado Cancer Center - Molecular and Cellular Oncology Retreat. Boulder, CO, USA. March 4, 2019.
2. ***Parker, KD**, H Ramseier, AK Maurya, NJ Nealon, R Kant, H Ibrahim, B Raina, P Lahaie, R Agarwal, K Raina, EP Ryan. Fermentation of rice bran with the probiotic *Bifidobacterium longum* modifies gut microbiota composition and metabolite profile for protection against colon carcinogenesis. University of Colorado Anschutz - Cancer Control and Prevention Retreat. Denver, CO, USA. March 26, 2019.
3. ***Parker, KD**, H Ramseier, AK Maurya, NJ Nealon, R Kant, H Ibrahim, B Raina, P Lahaie, R Agarwal, K Raina, EP Ryan. Fermentation of rice bran with the probiotic *Bifidobacterium longum* modifies gut microbiota composition and metabolite profile for protection against colon carcinogenesis. 1st Annual Front Range Microbiome

Symposium. Colorado State University. Fort Collins, CO, USA. April 18-19, 2019.

4. *Nealon, NJ, **Parker, KD**, P Lahaie, H Ibrahim, AK Maurya, K Raina, EP Ryan. Host and gut microbial metabolism of *Bifidobacterium longum*-fermented rice bran in healthy mice and bioavailability of colorectal cancer-protective compounds. 1st Annual Front Range Microbiome Symposium. Colorado State University. Fort Collins, CO, USA. April 18-19, 2019.
5. ***Parker, KD**, H Ramseier, AK Maurya, NJ Nealon, R Kant, H Ibrahim, B Raina, P Lahaie, R Agarwal, K Raina, EP Ryan. Rice Bran and *Bifidobacterium longum*-fermented Rice Bran Modulate Gut Microbial Metabolism to Increase Bioavailability of Health Promoting Metabolites. American Society for Microbiology: Microbe 2019 Conference. San Francisco, CA, USA. April 18-19, 2019. June 20-24, 2019.
6. ***Parker, KD**, NJ Nealon, AK Maurya, H Ramseier, H Ibrahim, R Kant, B Raina, P Lahaie, R Agarwal, K Raina, EP Ryan. Rice bran and *Bifidobacterium longum*-fermented rice bran modulate gut microbial metabolism to increase bioavailability of health promoting metabolites. 7th Annual CCTSI Summit on AI and Machine Learning in Biomedical Research. Denver, CO, USA. August 14. 2019.
7. *Baxter, BA, **KD Parker**, MJ Nosler, S Rao, R Craig, C Seiler, EP Ryan. Ascending and descending colon tissue metabolite analysis reveals differences between normal, overweight, and obese adults with relevance to colon cancer risk. 7th Annual CCTSI Summit on AI and Machine Learning in Biomedical Research. Denver, CO, USA. August 14. 2019.
8. Upcoming: ***Parker, KD**, AK Maurya, MN Beale, H Ibrahim, S Rao, R Kant, R Agarwal, K Raina, EP Ryan. Rice bran modified microbial consortia from a colorectal cancer survivor confers protection from inflammation-associated colon carcinogenesis in a murine model. iBRIGHT 2019 Conference. Houston, TX, USA, November 11-13, 2019.

HONORS/AWARDS

- Spring 2010, Spring 2011, Fall 2012: Dean's Scholastic Honors, Pittsburg State University.
- Fall 2012: Lowell Depp and Dorothy Crews-Eubank Scholarship (Chemistry), Pittsburg State University.
- 2016 Big of the Year (Laramie), Big Brothers Big Sisters of Laramie, Wyoming.
- Summer 2016-Summer 2017: Summer Institute on Active Learning Teaching Fellowship, Science Initiative's Learning Actively Mentoring Program (LAMP), University of Wyoming. [Link](#).
- Summer 2019: Peggy Cotter Travel Award. American Society of Microbiology (ASM).

- Fall 2019-Fall 2020: Sustainability Leadership Fellowship, School of Global Environmental Sustainability (SoGES), Colorado State University. [Link](#).