

Vanessa Luming Reynolds Hale
The Ohio State University, Department of Veterinary Preventive Medicine
A196 Sisson Hall, 1920 Coffey Road, Columbus, OH 43210
Phone: 614-88-8377 Email: hale.502@osu.edu

EDUCATION

Purdue University, West Lafayette, IN

PhD - Ecology, Evolution, Environmental Biology August 2014

Dissertation: *Co-evolution of gut microbes in colobine monkeys*

Advisors: Dr. Richard D. Howard, Dr. Chia L. Tan

DVM - College of Veterinary Medicine May 2012

Western New Mexico University, Gallup, NM

Master of Arts - Teaching, Secondary May 2007

University of Georgia, Athens, GA

Bachelor of Science - Biology, Bachelor of Arts - English May 2004

Minor in Chinese

Magna Cum Laude, High Honors

PROFESSIONAL APPOINTMENTS

Executive Advisory Board Member – OSU Center of Microbiome Science Jan. 2020-present

Co-Director – Infectious Diseases Institute Microbial Communities Program Aug. 2018-present

Assistant Professor – The Ohio State University College of Veterinary Medicine Aug. 2017-present

Postdoctoral Research Fellow – Mayo Clinic Microbiome Program Dec. 2014-July 2017

High School Biology and English Teacher – Crownpoint High School Aug. 2004-May 2007

PUBLICATIONS

Refereed Journal Articles

M. Kim, E. Vogtmann, D.A. Ahlquist, M.E. Devens, J.B. Kisiel, W.R. Taylor, B.A. White, **V.L. Hale**, J.

Sung, N. Chia, R. Sinha, J. Chen. 2020. Fecal metabolomic signatures in colorectal adenoma patients are associated with gut microbiota and early events of colorectal cancer pathogenesis.

mBio. DOI: [10.1128/mBio.03186-19](https://doi.org/10.1128/mBio.03186-19).

J.C. Yu, **V.L. Hale**, H. Khodadadi, B. Baban. 2019. Whole body vibration-induced omental macrophage

polarization and fecal microbiome modification in a murine model. *International Journal of Molecular Sciences*. 20: 3125. DOI: [10.3390/ijms20133125](https://doi.org/10.3390/ijms20133125).

V.L. Hale, C.L. Tan, K. Niu, Y. Yang, Q. Zhang, R. Knight, K.R. Amato. 2019. Gut microbiota in wild

and captive Guizhou snub-nosed monkeys, *Rhinopithecus brelichi*. *American Journal of*

Primatology. 8: e22989. DOI: [10.1002/ajp.22989](https://doi.org/10.1002/ajp.22989). **Feature article of Primate Microbiome special issue.**

G.B. Saffouri, R. Shields-Cutler, J. Chen, Y. Yang, H.R. Lekatz, **V.L. Hale**, J.M. Cho, E.J. Battaglioli, Y.

Bhattarai, K.J. Thompson, K.K. Kalari, G. Behera, J.C. Berry, S.A. Peters, R. Patel, A.N. Schuetz,

J.J. Faith, M. Camilleri, J.L. Sonnenburg, G. Farrugia, J.R. Swann, M. Grover, D. Knights, P.C.

Kashyap. 2019. Small intestinal microbial composition is more relevant than quantitative small

intestinal culture in patients with gastrointestinal symptoms. *Nature Communications*. 10: 2012.

DOI: [10.1038/s41467-019-09964-7](https://doi.org/10.1038/s41467-019-09964-7).

G.M. Sindberg, S.E. Callen, S. Banerjee, J. Meng, **V.L. Hale**, R. Hegde, P.D. Cheney, S. Buch, S. Roy.

2019. Morphine potentiates dysbiotic microbial and metabolic shifts in SIV infection. *Journal of*

Neuroimmune Pharmacology: 14:200-2014. DOI: [10.1007/s11481-018-9805-6](https://doi.org/10.1007/s11481-018-9805-6).

E.J. Battaglioli*, **V.L. Hale***, J. Chen, P. Jeraldo, C. Ruiz Mojica, B.A. Schmidt, V.M. Rekdal, L.M. Till,

L. Huq, S.A. Smits, W.J. Moor, Y. Jones-Hall, T. Smyrk, S. Khanna, D.S. Pardi, M. Grover, R.

- Patel, N. Chia, H. Nelson, J.L. Sonnenburg, G. Farrugia, P.C. Kashyap. 2018. *Clostridioides difficile* exploits a metabolic niche associated with dysbiosis in patients with diarrhea. *Science Translational Medicine*. 10:eeam7019. *co-first author DOI: [10.1126/scitranslmed.aam7019](https://doi.org/10.1126/scitranslmed.aam7019).
- V.L. Hale***, P. Jeraldo*, J. Chen, M. Mundy, J. Yao, S. Priya, G. Keeney, K. Lyke, J. Ridlon, B.A. White, A.J. French, S. Thibodeau, C. Diener, O. Resendis-Antonio, J. Gransee, T. Dutta, X.M. Petterson, R. Blekhman, L. Boardman, D. Larson, H. Nelson, N. Chia. 2018. Distinct Microbes, Metabolites, and Ecologies Define the Microbiome in Deficient and Proficient Mismatch Repair Colorectal Cancers. *Genome Medicine*. 10:78. DOI:[10.1186/s13073-018-0586-6](https://doi.org/10.1186/s13073-018-0586-6). *co-first author
- J.C. Yu, H. Khodadadi, A. Malik, B. Davidson, E. dS.L. Salles, J. Bhatia, **V.L. Hale**, B. Baban. 2018. Innate Immunity of Neonates and Infants: The status of innate lymphoid cells. *Frontiers in Immunology*. 9:1759. DOI:[10.3389/fimmu.2018.01759](https://doi.org/10.3389/fimmu.2018.01759).
- V.L. Hale**, P. Jeraldo, M. Mundy, J. Yao, G. Keeney, N. Scott, H. Cheek, J. Davidson, M. Green, C. Martinez, J. Lehman, C. Pettry, E. Reed, K. Lyke, B.A. White, C. Diener, O. Resendis-Antonio, J. Gransee, T. Dutta, X.M. Persson, L.A. Boardman, D. Larson, H. Nelson, N. Chia. 2018. Synthesis of multi-omic data and community metabolic models reveals insights into the role of hydrogen sulfide in colon cancer. *Methods*. 149:59-68. DOI:[10.1016/j.ymeth.2018.04.024](https://doi.org/10.1016/j.ymeth.2018.04.024).
- V.L. Hale**, C.L. Tan, K. Niu, Y. Yang, R. Knight, Q. Zhang, D. Cui, K.R. Amato. 2018. Diet vs. Phylogeny: A comparison of gut microbiota in captive colobine monkey species. *Microbial Ecology*. 75:515-527. DOI:[10.1007/s00248-017-1041-8](https://doi.org/10.1007/s00248-017-1041-8).
- L.R. Thompson, J.G. Sanders, D. McDonald et al. & the **Earth Microbiome Project Consortium** (300+ authors including **V. Hale**). 2017. A communal catalogue reveals Earth's multiscale microbial diversity. *Nature*. 551: 457-463: DOI:[0.1038/nature24621](https://doi.org/10.1038/nature24621).
- J.M. Allen, L.J. Mailing, J. Cohrs, C. Salmonson, J. Fryer, N. Vandana, MD, **V.L. Hale**, P. Kashyap, B. White, J.A. Woods. 2017. Exercise training-induced modifications of the gut microbiota can mediate host response to microbial colonization and colitis insult in gnotobiotic mice. *Gut Microbes*. 9:115-130. DOI:[10.1080/19490976.2017.1372077](https://doi.org/10.1080/19490976.2017.1372077).
- V.L. Hale**, S. Thompson, L. Corriveau, B. MacGowan, D. Huse. 2017. Radio transmitter application in the wild timber rattlesnake, *Crotalus Horridus*. *J. of Wildlife Diseases*. 53: 591-595. DOI:[10.7589/2016-08-186](https://doi.org/10.7589/2016-08-186).
- V.L. Hale***, J. Chen*, S. Johnson, T.C. Yab, S. Harrington, T.C. Smyrk, H. Nelson, L.A. Boardman, B.R. Druliner, T.R. Levin, D.K. Rex, D.J. Ahnen, P. Lance, D.A. Ahlquist, N. Chia. 2017. Shifts in the fecal microbiota associated with adenomatous polyps suggest a link between diet, gut microbes, and colorectal cancer. *Cancer Epidemiology Biomarkers & Prevention*. 26: OF1-OF10. DOI:[10.1158/1055-9965.EPI-16-0337](https://doi.org/10.1158/1055-9965.EPI-16-0337). *co-first author
- J. Sung*, **V. Hale***, A.C. Merkel, P.J. Kim, N. Chia. 2016. Metabolic modeling with Big Data and the gut microbiome. *Applied & Translational Genomics*. 10:10-15. DOI:[10.1016/j.atg.2016.02.001](https://doi.org/10.1016/j.atg.2016.02.001). *co-first author
- K.R. Amato, J.L. Metcalf, S.J. Song, **V.L. Hale**, J. Clayton, G. Ackermann, G. Humphrey, C. Tan, R. Knight, J. Braun. 2016. Using the gut microbiota as a novel tool for examining colobine primate GI health. *Global Ecology and Conservation*. 7: 225-237. DOI:[10.1016/j.gecco.2016.06.004](https://doi.org/10.1016/j.gecco.2016.06.004).
- V.L. Hale**, C.L. Tan, K. Niu, Y. Yang, D. Cui, H. Zhao, R. Knight, K.R. Amato. 2016. Effects of field conditions on fecal microbiota. *J. of Microbiological Methods*. 10: 180-188. DOI:[10.1016/j.mimet.2016.09.017](https://doi.org/10.1016/j.mimet.2016.09.017).
- V.L. Hale**, C.L. Tan, K.R. Amato. 2015. Effect of preservation method on spider monkey (*Ateles geoffroyi*) fecal microbiota over 8 weeks. *J. of Microbiological Methods*. 13:16-26. DOI:[10.1016/j.mimet.2015.03.021](https://doi.org/10.1016/j.mimet.2015.03.021).

Conference Proceedings

- V.L. Hale**. What's all the fuss about the microbiome?: Learning to embrace microbes within veterinary practice. 2019. Midwest Veterinary Conference. *Columbus, OH*.
- V.L. Hale**. One Health and the Microbiome. 2018. Minnesota Veterinary Medical Association Annual

Meeting. Rochester, MN.

Manuscripts Under Review or In Revision

- Book Chapter: K.R. Amato, J.B. Clayton, **V.L. Hale**. The colobine gut microbiota: New perspectives on the nutrition and health of a specialized subfamily of primates. *In revision*.
- H. Li, K. Vanarsa, T. Zhang, S. Soomro, P.A. Cicalese, V. Duran, **V.L. Hale**, S. Dasari, K.H. Lee, C. Pedroza, H. Qin, R. Braselier, N. Chia, C. Mohan. Comprehensive aptamer-base screen of 1317 proteins uncovers improved stool protein markers of colorectal cancer. *Science Advances*. *Submitted*.
- A.G. Arruda, L. Deblais, **V. Hale**, M. Pairis-Garcia, V. Srivastava, D. Kathayat, A. Kumar, G. Rajashekara. Nasal and gut microbiota for sows of different health status within six commercial swine farms from one swine production system. *BMC Veterinary Research*. *Submitted*.

AWARDS AND HONORS

- 2019 American Society of Microbiology Penny Cotter Travel Award
2016 Mayo Clinic Early Career Investigator Award - Brandt Family Scholars Fund
2006 National Leahmann Award for Excellence in Teaching - Regional Finalist
2004 Catrow Scholarship for Expanding Educational Opportunity

GRANTS, FELLOWSHIPS, SCHOLARSHIPS

- 2019 National Science Foundation BCS – 1921592 (\$247,983) Role: Co-PI
Ecoculturing the infant gut microbiome (1/1/2020 – 12/31/2022)
- 2019 Ohio State Univ. Infectious Disease Signature Program Postdoctoral Support (\$70K) Role: Co-PI
Launching the Ohio State University Companion Animal Fecal Bank Research Platform
- 2019 Columbus Zoo / Ohio State Cooperative Research Grant (\$12,497) Role: PI
Assessing seasonal changes in the healthy lorikeet cloacal microbiome
- 2019 Ohio State University College of Veterinary Medicine Canine Funds (\$24,951) Role: PI
Characterizing the microbiome in dogs with and without bladder cancer
- 2018 College of Public Health Collaborative Postdoctoral Research Program Award (\$65K) Role: Co-PI
Microbiome development in infants: An ecocultural perspective
- 2018 Foods for Health Research Team Grant for Math and the Microbiome Workshop (\$2K) Role: PI
- 2018 Infectious Diseases Institute Targeted Investment - Math and the Microbiome Workshop (\$10K)
Role: PI
- 2015 Mayo Clinic Metabolomics Resource Core Pilot and Feasibility Award (\$35K), Role: Co-I
NIDDK U24DK100469, CTSA UL1 TR000145
Using Metabolomics to Understand How Microbial Toxicity Drives Colon Cancer
- 2015 United European Gastroenterology Conference Travel Grant, Mayo Clinic
- 2015 Big Data to Knowledge Fellowship - Computational Medicine, Mayo Clinic
- 2014 Purdue University Yeunkyung Woo Achieve Excellence Travel Grant
- 2014 Purdue University Research Foundation Grant
- 2013-2014 Margot Marsh Biodiversity Foundation Grant (\$10K) Role: PI
An assessment of gut microbes in Chinese snub-nosed monkeys to improve in- and ex-situ conservation
- 2013 WISP - Women in Science Programs Travel Grant, Purdue University
- 2013 Andrews / Blosser Environmental Travel Grant, Purdue University
- 2011-2012, 2007-2008 Andrews Graduate Fellowship (\$23K), Purdue University
- 2012 Indiana Animal Health Foundation Scholarship, Purdue University
- 2010 Association for Women Veterinarians Foundation Scholarship, Purdue University
- 2010 Morris Animal Foundation (MAF) Veterinary Student Scholarship, Purdue University

PATENTS

P.C. Kashyap, E.J. Battaglioli, **V.L. Hale**. 2019. Methods and materials for using biomarkers which predict susceptibility to *Clostridium difficile* infection. U.S. Patent 20190216861, filed September 22, 2016, issued July 18, 2019.

J. Yu, B. Baban, **V. Hale**. 2019. Compositions and methods for treating diabetes. U.S. Patent 20190240100, filed February 2, 2018, issued August 8, 2019.

PRESENTATIONS

Invited Talks

A take of two Clostridia: Colonization Resistance and the gut microbial empire. 2020. Purdue EcoLunch Seminar – *West Lafayette, IN*.

May the Microbes be Ever in Your Favor: Enteritis and the Gut Microbiome. 2020. Midwest Veterinary Conference – *Columbus, OH*.

Finding your niche: *C. difficile* and the microbiome. 2019. Ohio Branch of the American Society for Microbiology – *Elyria, OH*.

What's all the fuss about the microbiome? 2019. Midwest Veterinary Conference – *Columbus, OH*.

What could possibly go wrong?: Everything you never wanted to know about the microbiome. 2018 American Association for Laboratory Animal Science National Meeting – *Baltimore, MD*.

One Health and the Microbiome. 2018 Minnesota Veterinary Medical Association Annual Meeting - *Rochester, MN*.

The Microbiome in Animal Health and Disease. 2017 Purdue University College of Veterinary Medicine Grand Rounds – *West Lafayette, IN*.

Conference Presentations

Accepted Poster: M.V. Evans[#], B. Piperata, J. Lee, **V.L. Hale**. 2020. *Pathogenic and commensal gut bacteria shared between humans, animals, and environmental samples in two Latin American countries*. ASM Microbe – *Chicago, IL*. (Cancelled)

Accepted Poster: **V.L. Hale**, R. Mrofchak, M.V. Evans, C. Madden, D. Dhawan, N. Chia, D.W. Knapp. 2020. *Urine and Stool Microbiota in Dogs with Bladder Cancer*. ASM Microbe – *Chicago, IL*. (Cancelled)

Accepted Poster: C. Madden[#], D. Minich[#], K. French-Kim, M.V. Evans[#], G.A. Ballash, S. Paul, M. Martinez, J. Hausmann, R.E. Junge, **V.L. Hale**. 2020. *Using the microbiota to predict susceptibility to Clostridium perfringens infection in lorikeet enteritis*. ASM Microbe – *Chicago, IL*. (Cancelled)

V. Hale, D. Minich[#], C. Madden, P.M. Dennis, D.J. Barr, K. Poulsen. *Characterizing the gut microbiota of farmed and wild white-tailed deer (Odocoileus virginianus) in relation to Chronic Wasting Disease*. 2019. Purdue Microbiome Symposium – *West Lafayette, IN*.

V. Hale *How to approach a microbiome study*. 2018 International Primatological Society Congress – *Nairobi, Kenya*.

Poster: **V.L. Hale**, P. Jeraldo, M. Mundy, J. Yao, G. Keeney, K. Lyke, B.A. White, S.N. Thibodeau, A. French, C. Diener, O. Resendis-Antonio, J. Gransee, T. Dutta, X-M. Persson, L. Boardman, D. Larson, H. Nelson, N. Chia. *Deficient mismatch repair in colorectal cancer associated with distinct microbial community and metabolic profile*. 2018 Keystone Symposium: Microbiome, Host Resistance and Disease – *Banff, Canada*.

Poster: **V. Hale**, J. Yao, S. Johnson, P. Jeraldo, C. Seto, N. Goldenfeld, B. White, D. Larson, H. Nelson, N. Chia. *Microbial and Metabolic Shifts Associated with Colorectal Cancer*. 2017 Keystone Symposia: Microbiome in Health and Disease – *Keystone, CO*.

V. Hale, J. Yao, S. Johnson, P. Jeraldo, C. Seto, N. Goldenfeld, B. White, D. Larson, H. Nelson, N. Chia. *Microbial and Metabolic Shifts Associated with Colorectal Cancer*. 2016 Balfour Surgery Research Symposium – *Rochester, MN*.

V. Hale, J. Chen, S. Johnson, S. Harrington, T. Yab, T. Smyrk, H. Nelson, L. Boardman, B.R. Druliner, D. Ahlquist, N. Chia. *Shifts in the fecal microbiota associated with adenomatous polyps suggest a link between diet, gut microbes, and colorectal cancer*. 2016 Mayo Clinic Individualizing Medicine Conference – *Rochester, MN*.

- Poster: **V. Hale**, J. Chen, S. Johnson, T. Yab, T. Smyrk, H. Nelson, L. Boardman, D. Ahlquist, N. Chia. Shifts in the fecal microbiota associated with adenomatous polyps suggest a link between diet, gut microbes, and colorectal cancer. 2016 International Symposium on Microbial Ecology – *Montreal, Canada*.
- Poster: **V. Hale**, J. Chen, S. Johnson, T. Yab, T. Smyrk, H. Nelson, L. Boardman, D. Ahlquist, N. Chia. Shifts in the fecal microbiota associated with adenomatous polyps suggest a link between diet, gut microbes, and colorectal cancer. 2016 Keystone Symposia: Gut Microbiota, Metabolic Disorders and Beyond – *Newport, RI*.
- Poster: **V. Hale**, J. Chen, S. Johnson, T. Yab, T. Smyrk, H. Nelson, L. Boardman, D. Ahlquist, N. Chia. Shifts in the fecal microbiota associated with adenomatous polyps suggest a link between diet, gut microbes, and colorectal cancer. 2016 Mayo Clinic Young Investigator Research Symposium – *Rochester, MN*.
- V. Hale**, J. Chen, V. Rekdal, B. Schmidt, S. Khanna, P. Jeraldo, C.D. Enriquez-Sarano, D. Pardi, M. Grover, H. Nelson, N. Chia, G. Farrugia, P. Kashyap. A Subset of Patients with Non-Infectious Diarrhea have altered Gut Microbiota similar to *C. difficile* Infection. 2015 United European Gastroenterology – *Barcelona, Spain*.
- V. Hale**, E. Battaglioli, J. Chen, L. Huq, V. Rekdal, B. Schmidt, E. Rodriguez, S. Khanna, P. Jeraldo, C.D. Enriquez-Sarano, D. Pardi, M. Grover, H. Nelson, N. Chia, G. Farrugia, P. Kashyap. A Subset of Patients with Non-Infectious Diarrhea have altered Gut Microbiota similar to *C. difficile* Infection. 2015 Mayo Clinic Individualizing Medicine Conference – *Rochester, MN*.
- V. Hale**, Gut Microbes in Colobine Monkeys: Health and Co-evolution. 2014 Mayo Clinic Microbiome Program - *Rochester, MN*
- V. Hale**, C.L. Tan, K. Niu, Y. Yang, R. Knight, Q. Zhang, D. Cui, K.R. Amato. Diet vs. Phylogeny: A comparison of gut flora in captive colobine monkey species. 2014 International Symposium on Microbial Ecology - *Seoul, South Korea*
- V. Hale**, C.L. Tan, K. Niu, Y. Yang, Q. Zhang, K.R. Amato. Secrets from the Gut: Gut Microbes in Wild and Captive Snub-Nosed Monkeys, *Rhinopithecus brelichi*. 2014 International Primatological Society Congress - *Hanoi, Vietnam*
- V. Hale**, S. Thompson, L. Corriveau, B. MacGowan, D. Huse. Post-surgical meloxicam use in *Crotalus horridus*. 2013 Association of Reptile and Amphibian Veterinarians Conference - *Indianapolis, IN*
- V. Hale**, History of Microbiology: Past and Future. 2013 Zhejiang Institute of Microbiology - *Hangzhou, China*
- V. Hale**, C.L. Tan, K. Niu, Y. Yang Gut Microbes in Snub-Nosed Monkeys. 2013 Fanjingshan National Nature Reserve - *Guizhou, China*
- Poster: **V. Hale**, C.L. Tan, R. Howard. Evaluation of methods for preserving fecal microbial DNA from primates. 2013 Purdue Sigma Xi Poster Competition **V. Hale**, Fluid Therapy in Wildlife – Mammals and Birds. 2013 Wildcat Creek Wildlife Center Wildlife Rehabilitation Training - *Delphi, IN*
- Hooten Prize** - Best Student Poster: **V. Hale**, C. Tan, T.L. Lin, C.C. Wu. Evaluation of methods for preserving fecal microbial DNA from the spider monkey. 2011 American Association of Physical Anthropologists Conference - *Minneapolis, MN*
- 2nd Place Ballard Award** - Poster: **V. Hale**, C. Tan, Y. Yang, T.L. Lin, C.C. Wu. Evaluation of methods for preserving fecal microbial DNA from primates. 2011 Morris Animal Foundation Veterinary Scholars Symposium on Wildlife - *New Orleans, LA*
- Poster Award**: **V. Hale**, T.L. Lin, C.C. Wu. Preservation of monkey fecal specimens for DNA extraction and metagenomic analysis. 2010 Merck Merial NIH Veterinary Scholars Symposium - *Athens, GA*
- V. Reynolds**, C. Gilmore. Student Judiciary Training. 2004 National Association of Student Judicial Affairs Conference - *Clearwater, FL*
- Poster: **V. Reynolds**, R. Matthews. Host selection and competition in *Melittobia digitata*. 2004 University of Georgia Center for Undergraduate Research Opportunities Conference - *Athens, GA*
- V. Reynolds**, S. Mathur, S. Sheldon, L. Cartier, S. Brown. Losartan fails to block angiotensin pressor response in cats. 2003 American College of Veterinary Internal Medicine Forum - *Dallas, TX*

V. Reynolds, S. Mathur, S. Sheldon, L. Cartier, S. Brown. Cozaar fails to block pressor response in cats. 2002 University of Georgia Center for Undergraduate Research Opportunities Conference - Athens, GA

#Trainee in the Hale lab

Campus / Departmental / Local Presentations

C. difficile, diarrhea, and the gut microbiome. 2019. eMicro Monthly Seminar. Ohio State University.
What could possibly go wrong?: Everything you never wanted to know about the microbiome in lab animal medicine. 2018. Laboratory Animal Medicine Monthly Seminar. Ohio State University.
To infect or not to infect: *C. difficile*, diarrhea, and the gut microbiome. 2018. Microbiology Research Seminar. Ohio State University.
Chronic Wasting Disease in White-tailed Deer. 2018. Farm Science Review – London, OH.
Dysbiosis and GI disease. 2017. OSU Food Animal Health Research Program Seminar. Ohio State University.
Living in a Microbial World: The Interplay between Diet, Pathogens and GI disease. 2017 College of Veterinary Medicine Research Seminar. Ohio State University.
The Role of the Microbiome in Animal Health. 2016 Department of Comparative Medicine Department Meeting. Mayo Clinic.
The Role of the Microbiome in Animal Health. 2016 Department of Comparative Medicine Clinical Conference. Mayo Clinic.
A Subset of Patients with Non-Infectious Diarrhea have altered Gut Microbiota similar to *C. difficile* Infection. 2015. Clinical Enteric Neuroscience Translational and Epidemiological Research Meeting. Mayo Clinic.
Secrets from the Colon: Gut Microbes in Colobine Monkeys. 2014 Purdue Ecolunch Seminar Series. Purdue University.

TEACHING EXPERIENCE

Guest Instructor – Microbial Pathogenesis (BSGP 7400) Fall 2019
Co-Instructor – College of Vet Med Graduate Seminar (VETPREV 8891) Fall 2018-Spring 2020
Instructor and Developer – QIIME Workshop for Microbial Community Analysis Summer 2019
Ohio State University, Columbus, OH
Instructor and Developer – Microbiome in Health and Disease Workshop August 2018
One Health Summer Institute, Addis Ababa, Ethiopia
Instructor and Developer – Microbiome and Health Elective April, August 2016
Mayo Clinic Medical School, Center for Individualized Medicine, Rochester, MN
Teaching Assistant - Biology 115 and Ecology 585 August 2013-May 2014
Purdue University, West Lafayette, IN
Sole Instructor - 4 sections of a BIOL 115 and 1 lab section of ECOL 585
Instructor - Super Saturday Mini Meds (6 weeks, 3rd / 4th graders) February 2013-April 2013
Purdue University, West Lafayette, IN
Teacher - High School Biology and English (Teach For America) August 2004-May 2007
Crownpoint High School - Crownpoint, NM

ADVISING

Primary Advisor

Masters Student

Ryan Mrofchak, 2019-Present: Characterizing the stool and urine microbiome in canine bladder cancer

Veterinary Students

David Minich, 2018-Present: Examining gut microbiota in wildlife disease

Accepted for oral presentation: D. Minich, C. Madden, K. French-Kim, M.V. Evans, R. Mrofchak, G.A. Ballash, S. Paul, M. Martinez, J. Hausmann, R.E. Junge, **V.L. Hale**. September 2020. *Examining necrotic enteritis in lorikeets*. American Association of Zoo Veterinarians Conference, Nashville, TN.

Poster: D. J. Minich, C. madden, G.A. Ballash, Randall E. Junge, **V.L. Hale**. Investigating lorikeet enteritis: Is *Clostridium perfringens* the culprit? National Veterinary Scholars Symposium, Worcester MA. July 2019.

Presentation: Prions, poop, and “zombie deer”: Chronic Wasting Disease and the gut microbiome. Applied Field Epidemiology Program Monthly Seminar. Columbus, OH. June 2019.

Poster: D. Minich, C. Madden, E. Kim, P. Boyaka, P. Dennis, **V.L. Hale**. Examining routes of prion entry into the gut of white-tailed deer, *Odocoileus virginianus*. Purdue Microbiome Symposium, West Lafayette, IN. May 2019.

Poster: D. Minich, C. Madden, E. Kim, P. Boyaka, P. Dennis, **V.L. Hale**. Examining routes of prion entry into the gut of white-tailed deer, *Odocoileus virginianus*. National Veterinary Scholars Symposium, College Station, TX. August 2018.

Hailey Curtis, 2018: Canine urothelial carcinoma and the stool and urinary microbiome

Research Associate

Christopher Madden, 2018-Present.

Accepted (conference cancelled): C. Madden, D. Minich, K. French-Kim, M.V. Evans, G.A. Ballash, S. Paul, M. Martinez, J. Hausmann, R.E. Junge, **V.L. Hale**. June 2020. *Using the microbiota to predict susceptibility to Clostridium perfringens infection in lorikeet enteritis*. ASM Microbe, Chicago, IL.

Co-Advisor

Postdoctoral Researcher

Morgan Volker Evans, 2019-Present: Gut metagenomics and enteric pathogens.

Received Infectious Disease Institute Trainee Enrichment Award (\$575). May 2020.

Accepted (conference cancelled): M.V. Evans[#], B. Piperata, J. Lee, **V.L. Hale**. June 2020.

Pathogenic and commensal gut bacteria shared between humans, animals, and environmental samples in two Latin American countries. ASM Microbe, Chicago, IL.

Visiting PhD Student (1 year)

Kilmer Soares, 2020-Present: The effect of antimicrobials on the bee microbiome. Home Institution: Federal University of Paraiba, Brazil. Primary Advisor: Celso Oliveira

Committee Member

PhD Students

Erin Connors, 2020-Present: Salmonella pathogenesis. PI: Brian Ahmer. The Ohio State University College of Medicine.

Tessa Cannon, 2019-Present: SIV and primate gut microbiota. PI: Scott McGraw. The Ohio State University Arts and Sciences College

Audra Crouch, 2019-Present. The microbiome and eukaryome of Native American on traditional diets. PI: Matthew Anderson. The Ohio State University Arts and Sciences College.

Chiranjit Mukherjee, 2018-2019: High resolution analysis of the human oral microbiome in health and disease. PI: Gene Leys. The Ohio State University College of Medicine.

- Current position: Postdoctoral Researcher, NASA Jet Propulsion Laboratory, Biotechnology and Planetary Protection Group, Pasadena, CA

Dipak Kathayat, 2018-Present: Small molecule inhibitors for the control of APEC infections in poultry. PI: Gireesh Rajashekara. The Ohio State University, CFAES

Masters Students

- Andrea Aplasca, 2020-Present. Hellbender skin microbiome and skin disease. PI: Mark Flint, The Ohio State University, CVM.
- Andrew Vaughn, 2019-2020. Environmental Prevalence of Shiga toxin-producing *Escherichia coli* in a Veal Production System in Northeast Ohio. PI: Gregory Habing. The Ohio State University, CVM.
- Madeline Lewis 2019-2020. Development of a Method to Modulate the Dose-Response Model of *Clostridioides difficile* for Pre-Exposure Antibiotic Use on the Human Host. PI: Mark Wier. The Ohio State University, CPH.
- Diana Cruz Pulido, 2018-2020: Comparative host genome profiling of human and pig intestinal epithelial cells during zoonotic delta coronavirus infections. PI: Scott Kenney. The Ohio State University, CFAES.
- Michael Abundo, 2017-2019: Bacterial microbiota in the upper and lower respiratory tract and standardization of sample collection methods in clinically healthy poultry. PI: Chang-Won Lee. The Ohio State University, CFAES
- Current position: Research Associate at the OSU Food Animal Health Research Program
- Sarah Lauterbach, 2017-2020: Filling a gap in influenza A surveillance in wild, migratory mallard ducks – Winous Point March Conservancy, Port Clinton, Ohio. PI: Andrew Bowman. The Ohio State University, CVM

SERVICE

- Member** - Ohio State University Infectious Diseases Institute Education Committee 2018-Present
- Member** - College of Veterinary Medicine Council for Research Committee 2018-Present
- Co-Organizer** - Math and the Microbiome Workshop October 2018
Co-sponsored by Ohio State University's Mathematical Biosciences Institute (\$10K) and the Infectious Diseases Institute (\$10K). Additional support from Foods for Health (\$2K) and ThermoFisher (\$500).
- Member** - Wildlife and Ecosystem Health Faculty Search Committee 2018-2019

Reviewer for:

Scientific Reports, Gut Microbes, ISME, Microbial Ecology, J. of Experimental Biology, Scientific Methods, Microbiology, J. of Microbiological Methods, PeerJ, American J. of Physical Anthropology, American J. of Primatology, International J. of Primatology, Topics in Companion Animal Medicine, Global Ecology and Conservation, J. of Animal Science, J. of Ecology and the Natural Environment, Microorganisms, Evolutionary Applications, The Cleft-Plate Craniofacial J., Frontiers, Biotropica.

MEDIA COVERAGE

- [Whole body vibration shakes up microbiome, reduces inflammation in diabetes.](#) 2019. *Medical College of Georgia at Augusta University*. Article picked up by 20 other news outlets and 4 blogs.
- [Math and the Microbiome: IDI Leaders Host Creative Interdisciplinary Workshop.](#) Emily Richardson. 2019. *Infectious Diseases Institute News*.
- [Colorectal Cancer Microbiomes May Differ with Mismatch Repair Status.](#) 2018 *GenomeWeb*.
- [Predicting C. Difficile with 5 Key Factors.](#) Rachel Lutz. 2018. MD Magazine.
- [Cluster of factors could help predict C.diff.](#) Misti Crane. 2018. *Ohio State Research News*.
Article picked up by 8 other news outlets and 3 science blogs.
- [Why some people may be more susceptible to deadly C. difficile infections.](#) Tina Saey. 2018. *Science News*. Article picked up by 3 other news outlets.
- [The Microbes We Can't Ignore.](#) Vanessa Hale. 2018. *Laboratory Animal Science Professional Magazine*.
- [How to store microbiome samples without losing or altering diversity.](#) WuDan Yan. 2016. *The Scientist*.

COMMUNITY INVOLVEMENT

Advisor – Poetry for Veterinarians Club, Ohio State University	2018-2019
High School Student Mentor - Columbus City Schools	2018-2020
Judge - Local/Regional Science Fairs	2010, 2013-2018
Volunteer - InSciEd Out, K-12 Science Education	2014-2017
Volunteer - Quarry Hill Nature Center Volunteer	2014-2017
Graduate Women in Science Programs	2007-2014

PROFESSIONAL SOCIETIES

American Society for Microbiology	2019-Present
Ohio Veterinary Medical Association	2018-Present
International Primatological Society	2013-2014, 2018
Southeastern Minnesota Veterinary Medical Association	2015-2017
American Veterinary Medical Association Member	2008-2017
International Society for Microbial Ecology	2014, 2017
American Association of Wildlife Veterinarians	2011-2014
Indiana Veterinary Medical Association	2012-2014