

## Jordan E. Bisanz

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### Employment

<b>Pennsylvania State University</b>	<b>State College PA, USA</b>
Assistant Professor of Biochemistry and Molecular Biology Dorothy Foehr and J. Lloyd Huck Early Career Chair in Host-Microbiome Interactions	2021-
<b>University of California San Francisco</b>	<b>San Francisco CA, USA</b>
Postdoctoral Scholar and Fellow Principal Investigator: Peter Turnbaugh	2015-2021

### Training and Education

<b>Doctor of Philosophy</b>	<b>London ON, Canada</b>
Department of Microbiology and Immunology, University of Western Ontario Graduate Advisor: Gregor Reid	2010-2015
<b>Institut Pasteur de Lille</b>	<b>Lille, France</b>
Visiting Student Collaborators: Bruno Pot and Benoit Foligné	2015
<b>National Institute of Medical Research</b>	<b>Mwanza, Tanzania</b>
Visiting Student Collaborators: Joseph Mwanga and John Chagalucha	2012
<b>Bachelor of Medical Sciences</b>	<b>London ON, Canada</b>
Schulich School of Medicine and Dentistry, University of Western Ontario Honors Specialization in Microbiology and Immunology with Distinction Western Scholars Honors Society	2006-2010

### Research Funding, Fellowships and Awards

<b>R35 GM151045 (PI: Bisanz)</b>	
National Institute of General Medical Science Project title: Decoding Microbial Diversity in the Human Gut Microbiome.	2023-2028
<b>R00 AI147165 (PI: Bisanz)</b>	
National Institute for Allergy and Infectious Disease Project title: Diet-microbe interactions modulating host energy balance.	2021-2023
<b>Young Investigator Grant in Probiotics Research (PI: Bisanz)</b>	
Global Probiotics Council / Danone and Yakult Project title: In with the good, out with the bad: engineering the microbiome to modulate dietary metal absorption.	2023
<b>R35 ES035027 (PI: Patterson, Co-I Bisanz)</b>	
National Institute of Environmental Health Sciences Project title: Environmental Chemical Impact on the Host-Microbiome Interaction	2023-2031

**R01 DK133334 (PI: Singh, Co-I Bisanz)**

National Institute of Diabetes and Digestive and Kidney Diseases

2023-2028

Project title: Interplay of processed diet, gut microbiota, and interferon-linked mucosal immunity in the onset and prevalence of inflammatory bowel disease.

**K99 AI147165-01 (PI: Bisanz)**

National Institute for Allergy and Infectious Disease

2020-2022

Project title: Diet-microbe interactions modulating host energy balance.

Application received impact score of 10.

**NSERC Postdoctoral Fellowship**

Natural Sciences and Engineering Research Council of Canada

2015-2017

180 awarded internationally, ranked in top 15% of applications

**Alexander Graham Bell Doctoral Canada Graduate Scholarship**

Natural Sciences and Engineering Research Council of Canada

2012-2015

261 awarded nationally, ranked in top 15% of applications

**Ontario Graduate Scholarship**

Ontario Ministry of Training, Colleges and Universities, declined 2013

2011-2013

**Students for Development Grant**

Canadian International Development Agency

2012

**Publications****Total publications: 55****Total as a first author: 12****Total as a corresponding author: 8****Total manuscripts with PSU affiliation: 17****Citations: 27,785\* H-index: 37\* I-10 index: 46\***

\*Data collected from Google Scholar 25 July, 2025

Underlined individuals represent direct trainees from PSU

Tian S, MS Kim, J Zhao, K Heber, F Hao, D Koslicki, AD Patterson and **JE Bisanz**. 2025. A synthetic microbiota designed through meta-analysis provides insight to community function in *Clostridioides difficile* resistance. **Cell Host & Microbe**. 33(3):373-387.

Heber K, S Tian, D Betancurt-Anzola, H Koo, and **JE Bisanz**. 2025. StrainR2 accurately deconvolutes strain-level abundances in synthetic microbial communities. **Bioinformatics**. doi:10.1093/bioinformatics/btaf440.

Li X, L Xu, B Demaree, C Noecker, **JE Bisanz**, DW Weisgerber, C Modavi, PJ Turnbaugh and A Abate. 2025. Microbiome single cell atlases generated with a commercial instrument. **Advanced Science**. e2409338.

DiMattia ZS, J Zhao, F Hao, S Koshkin, **JE Bisanz**, AD Patterson, JA Fleming, PM Kris-Etherton, and KS Petersen. Effect of varying quantities of lean beef as part of a mediterranean-style dietary pattern on gut microbiota and plasma, fecal, and urinary metabolites: a randomized crossover controlled feeding trial. **Journal of the American Heart Association**. 14:e041063.

Riley TM, T Wright, R Lamendella, **JE Bisanz**, JC See, K Kanani, P Kris-Etherton, K Petersen. 2025. Nighttime pistachio consumption alters stool microbiota diversity and feature abundance compared to education to

consume 1-2 carbohydrate exchanges (15-30g) over 12 weeks in adults with prediabetes: a secondary analysis from a randomized cross over trial. **Current Developments in Nutrition**. 9(7):107481.

Kyaw TS, M Sandy, K Trepka, JJN Goh, K Yu, V Dimassa, EN Bess, **JE Bisanz\*** and PJ Turnbaugh\*. **2024**. Human gut Actinobacteria boost drug absorption by secreting P-glycoprotein ATPase inhibitors. **iScience**. 27(6):110122. **\*Corresponding Authors**

Anderson BD, DE Sepulveda, R Nachnani, A Cortez, A Beckett, **JE Bisanz\***, JJ Kellogg\*, WM Raup-Konsavage\*. **2024**. High cannabigerol hemp extract moderates colitis and modulates the microbiome in an inflammatory bowel disease model. **Journal of Pharmacology and Experimental Therapeutics**. 390(3):331-341. **\*Corresponding Authors**

McCurry MD, GD D'Agostino, JT Walsh, **JE Bisanz**, I Zalosnik, J Korzenik, X Dong, DJ Morris, JR Korzenik, AG Edlow, EP Balskus, PJ Turnbaugh, JR Huh, and AS Devlin. **2024**. Gut bacteria convert glucocorticoids into progestins in the presence of hydrogen gas. **Cell**. 187(12):2952-2968.

Zhao J, YW Sun, KM Chebn, C Aliaga, **JE Bisanz**, and K El-Bayoumy. **2024**. Black raspberry modulates cecal and oral microbiome at the early stage of a dibenzo[def,p]chrysene-induced murine oral cancer model. **Cancer Prevention Research**. 18(1):11-21.

Tian Y, B Rimal, **JE Bisanz**, W Gui, TM Wolfe, I Koo, IM Murray, SK Nettleford, S Yokoyama, F Dong, KS Prabhu, PJ Turnbaugh, ST Walk, GH Perdew, and AD Patterson. **2024**. Early-life exposure to a potent aryl hydrocarbon receptor ligand results in persistent changes to the microbiota and host glucose homeostasis. **Environmental Health Perspectives**. 132(8):087005.

Sepulveda DE, KE Vrana, JJ Kellogg, **JE Bisanz**, D Desai, NM Grazaine, WM Raup-Konsavage. **2024**. The Potential of Cannabichromene (CBC) as a Therapeutic Agent. **Journal Pharmacology and Experimental Therapeutics**. 391(2):206-213.

Mulisa G, R Pero-Gascon, V McCormack, **JE Bisanz**, FR Talukdar, T Abebe, M De Boevre and S De Saeger. **2024**. Multiple mycotoxin exposure assessment through human biomonitoring in an esophageal cancer case-control study in the Arsi-Bale districts of Oromia region of Ethiopia. **International Journal of Hygiene and Environmental Health**. 362:114466.

Rimal B, SL Collins, CE Tanes, ER Rocha, MA Granda, S Solanki, NJ Hoque, EC Gentry, I Koo, ER Reilly, F Hao, D Paudel, V Singh, T Yan, MS Kim, K Bittenger, JP Zackular, KW Krausz, D Desai, S Amin, JP Coleman, YM Shah, **JE Bisanz**, FJ Gonzalez, JP Vanden Heuvel, GD Wu, PC Dorrestein, EE Weinert, and AD Patterson. **2024**. Bile Acids are Hydrolase Catalyses Formation of Amine-Conjugated Bile Acids. **Nature**. 626(8000):859-863.

Carmody RC and **JE Bisanz**. **2023**. Roles of the gut microbiome in weight management. **Nature Reviews Microbiology**. 21(8):535-550.

Kim MS, and **JE Bisanz**. **2023**. Meta-organismal Metabolism in Cardiovascular Disease. **Cell Host & Microbe**. 31(1):1-2.

Anderson BD and **JE Bisanz**. **2023**. Challenges and Opportunities of Strain Diversity in Gut Microbiome Research. **Frontiers in Microbiology**. 14:1117122.

Upadhyay V, R Suryawanshi, P Tasoff, M McCavitt-Malvido, G Kumar, V Murray, C Noecker, **JE Bisanz**, Y Hswen, C Ha, B Sreekumar, I. hen, S Lynch, M Ott, S Lee, and PJ Turnbaugh. 2023. Mild SARS-CoV-2 infection results in long-lasting microbiota instability. **mBio**. 14(4):300889-23.

Noecker C, J Sanchez, **JE Bisanz**, V Escalante, M Alexander, K Trepka, A Heinken, Y Liu, D Dodd, I Thiele, B DeFelice, and PJ Turnbaugh. 2023. Systems biology elucidates the distinctive metabolic niche filled by the human gut microbe *Eggerthella lenta*. **PLoS Biology**. 21(5):e3002125.

Tian S, and **JE Bisanz**. 2022. Making Gut Microbiomes from Scratch. **Cell Host & Microbe**. 30(11):1508-1509.

Collins SL, JG Stine, **JE Bisanz**, CD Okafor, and AD Patterson. 2022. Bile acids and the gut microbiome: metabolic interactions and impacts on disease. **Nature Reviews Microbiology**. 21(4):236-247.

Paik D, L Yao, Y Zhang, S Bae, GD D'Agostino, E Kim, EA Franzosa, J Avila-Pacheco, **JE Bisanz**, CK Rakowski, H Vlamakis, RJ Xavier, PJ Turnbaugh, RS Longman, MR Krout, CB Clish, C Huttenhower, JR Huh, and AS Sloan. 2022. Human gut bacteria produce T<sub>H</sub>17-modulating bile acid metabolites. **Nature**. 603(7903):907-912.

Sbierski-Kind J, S Grenkowitz, S Schlickeiser, A Sandforth, M Friedrich, D Kunkel, R Glauben, S Brachs, K Mai, A Thürmer, A Radonić, O Drechsel, PJ Turnbaugh, **JE Bisanz**, HD Volk, and R Jumpertz von Schwartzberg. 2022. Effects of caloric restriction on the gut microbiome are linked with immune senescence. **Microbiome**. 10(1):57.

Jumpertz von Schwartzberg R\*, **Bisanz JE\***, S Lyalina, P Spanogiannopoulos, QY Ang, J Cai, S Dickman, M Friedrich, S.-Y. Liu, SL Collins, D Ingebrigsten, S Miller, JA Turnbaugh, AD Patterson, KS Pollard, K Mai, J Spranger, and PJ Turnbaugh. 2021. Caloric restriction disrupts the microbiota and colonization resistance. **Nature**. 595:272-277. *\*Equal contributions*.

Lam KN, P Spanogiannopoulos, P Soto-Perez, A Alexander, MJ Nalley, **JE Bisanz**, FB Yu, and PJ Turnbaugh. 2021. Phage-delivered CRISPR-Cas9 for strain-specific depletion and genomic deletions in the gut microbiota. **Cell Reports**. 37(5):109930.

Ang QY, DL Alba, V Upadhyay, **JE Bisanz**, J Cai, HL Lee, E Barajas, G Wei, AD Patterson, SK Koliwad, and PJ Turnbaugh. 2021. Difference in the gut microbiomes of distinct ethnicities within the same geographic area are linked to host metabolic health. **eLife**. e70349.

C Mirzayi, A Renson, Genomic Standards Consortium, Massive Analysis and Quality Control Society, F Zohra, S Elsafoury, L Geistlinger, LJ Kasselmann, K Eckenrode, J van de Wijkert, A Loughman, FZ Marques, DA MacIntyre, M Arumugam, R Azhar, F Beghini, K Bergstrom, A Bhatt, **JE Bisanz**, J Braun, H Corrada Bravo, GA Buck, F Bushman, D Casero, G Clarke, M Carmen Collado, PD Cotter, JF Cryan, RT Demmer, S Devkota, E Elinav, JS Escobar, J Fettweis, RD Finn, AA Fodor, S Forslund, A Franke, C Furlanello, J Gilbert, E Grice, B Haibe-Kains, S Handley, P Herd, S Holmes, JP Jacobs, L Karstens, R Knight, D Knights, O Koren, DS Kwon, M Langille, B Lindsay, D McGovern, AC McHardy, S McWeeney, NT Mueller, L Nezi, M Olm, N Palm, E Pasolli, J Raes, MR Redinbo, M Rühlemann, R Balfour Sartor, PD Schloss, L Schriml, E Segal, M Shardell, T Sharpton, E Smirnova, H Sokol, JL Sonnenburg, S Srinivasan, LB Thingholm, PJ Turnbaugh, V Upadhyay, RL Walls, P Wilmes, T Yamada, G Zeller, M Zhang, N Zhao, L Zhao, W Bao, A Culhane, V Devanarayan, J Dopazo, X Fan, M Fischer, W Jones, R Kusko, CE Mason, TR Mercer, SA Sansone, A Scherer, L Shi, S Thakkar, W Tong, R Wolfinger, C Hunter, N Segata, C Huttenhower, JB Dowd, HE Jones, and L Waldron. 2021. Reporting guidelines for human microbiome research: the STORMS checklist. **Nature Medicine**. 27:1885-1892.

**Bisanz JE**, P Soto Perez, C Noecker, AA Aksenov, KN Lam, EN Bess, HJ Haiser, TS Kyaw, FB Yu, VM Rekdal, CWY Ha, S Devkota, EP Balskus, PC Dorrestein, E Allen-Vercoe, and PJ Turnbaugh. **2020**. A genomic toolkit for the mechanistic dissection of intractable human gut bacteria. **Cell Host & Microbe**. 27(6):1001-1013.

Bess EN, **JE Bisanz**, F Yarza, A Bustion, B Rich, X Li, S Kitamura, E Waligurski, QY Ang, D Alba, P Spanogiannopoulos, S Nayfach, S Koliwad, D Wolan, A Franke, and PJ Turnbaugh. **2020**. Genetic basis for the cooperative bioactivation of plant lignans by *Eggerthella lenta* and other human gut bacteria. **Nature Microbiology**. 5(1):56-66.

Man K, V Escalante, C Bowman, Y Tian, **JE Bisanz**, J Nikkanen, K Ganeshan, B Wang, AD Patterson, PJ Turnbaugh, and A Chawla. **2020**. A thermogenic fat-epithelium axis regulates intestinal tissue tolerance. **PNAS**. 117(50):32029-32037.

Greenstein RA, RR Barrales, N Sanchez, **JE Bisanz**, S Braun, and B Al-Sady. **2020**. Set1/COMPASS repels heterochromatin invasion at euchromatic sites by disrupting Suv39/Clr4 activity and nucleosome stability. **Genes and Development**. 34(1-2):99-117.

Rekdal VM, Bernardino PN, Luescher MU, Kiamehr S, Le C, **JE Bisanz**, PJ Turnbaugh, EN Bess, and EP Balskus. **2020**. A widely distributed metalloenzyme class enables gut microbial metabolism of host- and diet-derived catechols. **eLife**. 9:e50845.

Pröbstel AK, L Schirmer, X Zhou, K Kim, R Baumann, A Ramesh, AL Greenfield, R Dandekar, S Vistnes, RD Schubert, OL Rojas, S Singh, EB Tran, P Barba, **JE Bisanz**, PJ Turnbaugh, LR Shiow, J Graves, BAC Cree, SL Hauser, JL Gommerman, MR Wilson, and SE Baranzini. Gut microbiota-specific B cells traffic to the brain in active multiple sclerosis. **Science Immunology**. 5(53):eabc7191.

**Bisanz JE**, V Upadhyay, JA Turnbaugh, and PJ Turnbaugh. **2019**. Meta-analysis reveals reproducible gut microbiome alterations in response to a high-fat diet. **Cell Host & Microbe**. 26(2):265-272.

Soto Perez P\*, **JE Bisanz\***, JD Berry, KN Lam, J Bondy-Denomy, and PJ Turnbaugh. **2019**. CRISPR-Cas system of a prevalent human gut bacterium reveals hyper-targeting against phages in a human virome catalog. **Cell Host & Microbe**. 26(3):325-335. *\*Equal contributions*.

Carmody RN, **JE Bisanz**, CF Maurice, S Lyalina, BP Bowen, KB Louie, D Treen, K Chaideh, VM Rekdal, EN Bess, P Spanogiannopoulos, KC Bauer, TW Balon, KS Pollard, TR Northen, and PJ Turnbaugh. **2019**. Cooking shapes the structure and function of the gut microbiome. **Nature Microbiology**. 4(12):2052-2063.

Rekdal VM, EN Bess, **JE Bisanz**, PJ Turnbaugh, and EP Balskus. **2019**. Discovery and inhibition of an interspecies gut bacterial pathway for Levodopa metabolism. **Science**. 364(6645):eaau6323.

Chagwedera DN, QY Ang, **JE Bisanz**, K Ganeshan, J Cai, AD Patterson, PJ Turnbaugh, and A Chawla. **2019**. Nutrient sensing in CD11c cells alters the gut microbiome to regulate food intake and body mass. **Cell Metabolism**. 30(2):364-373.

E Bolyen, JR Rideout, MR Dillon, NA Bokulich, CC Abnet, GA Al-Ghalith, H Alexander, EJ Alm, M Arumugam, F Asnicar, Y Bai, **JE Bisanz**, K Bittinger, A Brejnrod, CJ Brislawn, CT Brown, BJ Callahan, AM Caraballo-Rodríguez, J Chase, EK Cope, R Da Silva, C Diener, PC Dorrestein, GM Douglas, DM Durall, C Duvallet, CF Edwards, M Ernst, M Estaki, J Fouquier, JM Gauglitz, SM Gibbons, DL Gibson, A Gonzalez, K Gorlick, J Guo, B Hillmann, S Holmes, H Holste, C Huttenhower, GA Huttley, S Janssen, AK Jarmusch, L Jiang, BD



Kaehler, KB Kang, CR Keffe, P Keim, ST Kelley, D Knights, I Koester, T Kosciulek, J Kreps, MGI Langille, J Lee, R Ley, YX Liu, E Loftfield, C Lozupone, M Maher, C Martoz, BD Martin, D McDonald, LJ McIver, AV Melnik, JL Metcalf, SC Morgan, JT Morton, AT Naimey, JA Navas-Molina LF Nothias, SB Orchanian, T Pearson, SL Peoples D Petras, ML Preuss, E Pruesse, LB Rasmussen, A Rivers, MS Robeson, P Rosenthal, N Segata, M Shaffer, A Shiffer, R Sinha, SJ Song, JR Spear, AD Swafford, LR Thompson, PJ Torres, P Trinh, A Tripathi, PJ Turnbaugh, S Ul-Hasan, JJJ van der Hooft, F Vargas, Y Vásquez-Baeza, E Vogtmann, M von Hippel, W Walters, Y Wan, M Wang, J Warren, KC Weber, CHD Williamson, AD Willis, ZZ Xu, JR Zaneveld, Y Zhang, Q Zhy, R Knight, and JG Caporaso. **2019.** Reproducible, interactive, scalable and extensive microbiome data science using QIIME 2. **Nature Biotechnology.** 37(8):852-857.

**Bisanz JE**, P Spanogiannopoulos, LM Pieper, AE Bustion, and PJ Turnbaugh. **2018.** How to determine the role of the microbiome in drug disposition. **Drug Metabolism and Disposition.** 46(11):1588-1596.

Koppel N, **JE Bisanz**, ME Pandelia, PJ Turnbaugh, and EP Balskus. **2018.** Discovery and characterization of a prevalent human gut bacterial enzyme sufficient for the inactivation of a family of plant toxins. **eLife.** 7:e33953.

Al KF, **JE Bisanz**, GB Gloor, G Reid, and JP Burton. **2018.** Evaluation of sampling and storage procedures on preserving the community structure of stool microbiota: a simple at-home toilet-paper collection method. **Journal of Microbiological Methods.** 144:117-121.

Daisley BA, M Monachese, M Trinder, **JE Bisanz**, JA Chmiel, JP Burton, and G Reid. **2019.** Immobilization of cadmium and lead by *Lactobacillus rhamnosus* GR-1 mitigates apical-to-basolateral heavy metal translocation in a Caco-2 model of the intestinal epithelium. **Gut Microbes.** 10(3):321-333.

Sinha R, G Abu-Ali, E Vogtmann, AA Fodor, B Ren, A Amir, E Schwager, J Crabtree, S Ma, **The Microbiome Quality Control Project Consortium**, CC Abnet, R Knight, O White, and C Huttenhower. **2017.** Assessment of variation in microbial community amplicon sequencing the Microbiome Quality Control (MBQC) project consortium. **Nature Biotechnology.** 35(11):1077-1086.

Harvie RM, AW Chisholm, **JE Bisanz**, JP Burton, P Herbison, K Schultz, and M Schultz. **2017.** Long-term irritable bowel syndrome system control with reintroduction of selected FODMAPs. **World Journal of Gastroenterology.** 23(25):4632-4643.

**Bisanz JE**, P Suppiah, M Thomson, T Milne, N Yeoh, A Nolan, G Ettinger, G Reid, GB Gloor, JP Burton, M Cullinan, and S Stebbings. **2016.** The oral microbiome of patients with axial spondyloarthritis compared to healthy individuals. **PeerJ.** 4:e2095.

**Bisanz JE**, MK Enos, G PrayGod, S Seney, JM Macklaim, S Chilton, D Willner, R Knight, C Fusch, G Fusch, GB Gloor, JP Burton, and G Reid. **2015.** The microbiota at multiple body sites during pregnancy in a rural Tanzanian population and the effects of Moringa supplemented probiotic yogurt. **Applied and Environmental Microbiology.** 81(15):4965-4975.

Trinder M, **JE Bisanz**, JP Burton, and G Reid. **2015.** Probiotic lactobacilli: a potential prophylactic treatment for reducing pesticide absorption in humans and wildlife. **Beneficial Microbes.** 6(6):841-847.

McMillan A, S Rulisa, M Sumarah, JM Macklaim, J Renaud, **JE Bisanz**, GB Gloor, and G Reid. **2015.** A multi-platform metabolomics approach identifies highly specific biomarkers of bacterial diversity in the vagina of pregnant and non-pregnant women. **Scientific Reports.** 5:14174.

**Bisanz JE**, MK Enos, J Mwanga, J Changalucha, JP Burton, GB Gloor, and G Reid. **2014**. Randomized open-label pilot study of the influence of probiotics and the gut microbiome on toxic metal levels in Tanzanian pregnant women and school children. **mBio**. 5(5):e01580-14.

**Bisanz JE**, JM Macklaim, GB Gloor, and G Reid. **2014**. Bacterial metatranscriptome analysis of a probiotic yogurt using an RNA-Seq approach. **International Dairy Journal**. 39(2):284-292.

**Bisanz JE**, S Seney, A McMillan, R Vongsa, D Koenig, GB Gloor, M Sumarah, B Ford, D Herman, JP Burton, and G Reid. **2014**. A systems biology approach investigating the effect of *Lactobacillus rhamnosus* GR-1 and *L. reuteri* RC-14 on the vaginal microbiome and host responses in a double blind, placebo-controlled clinical trial of postmenopausal women with intermediate Nugent scores. **PLoS ONE**. 9(8):e104511.

Reid JN, **JE Bisanz**, M Monachese, JP Burton, and G Reid. **2013**. The rationale for probiotics improving reproductive health and pregnancy outcomes. **American Journal of Reproductive Immunology**. 69(6):558-566.

Hummelen R\*, JM Macklaim\*, **JE Bisanz\***, JA Hammond, A McMillan, R Vongsa, D Koenig, GB Gloor, and G Reid. **2011**. Vaginal microbiome and epithelial gene array in post-menopausal women with moderate to severe dryness. **PLoS ONE**. 6(11):e26602. *\*Equal contributions*.

**Bisanz JE**, and G Reid. **2011**. Unraveling how probiotic yogurt works. **Science Translational Medicine**. 3(106):106ps41

Macphée RA, R Hummelen, **JE Bisanz**, WL Miller, and G Reid. **2010**. Probiotic strategies for the treatment and prevention of bacterial vaginosis. **Expert Opinion on Pharmacotherapy**. 11(18):2985-2995.

### Manuscripts in Progress

**Total manuscripts in progress: 7**

**Total currently in review/revision/preprint: 5**

**Total in preparation/submission: 3**

**Total as corresponding author: 4**

Kim MS and **JE Bisanz**. Design and application of synthetic human gut microbial communities. **Gut Microbes**. Invited Review. *In Review*.

Mulisa G, J Zhao, G Lelissat, G Lelissa, IJ Ademola-Popoola, A Diaz, LS Weyrich, A Mihret, T Gemechu, A bane, R Pero-Gascon, S De Saeger, T Abebe, and **JE Bisanz**. Oral microbiota predicts esophageal cancer in a rural Ethiopian cohort with low behavioral risk factors. *In Revision*.

Koo H, K Heber, S Tian, F Hao, J Zhao, B Swencki-Underwood, AD Patterson, GE Townsend and **JE Bisanz**. A synthetic gut microbiota provides understanding of the maintenance and functional impact of phage. *In Review*. *bioRxiv*:

Zhao J, A Sandforth, S Tian, J Spranger, F Hao, AD Patterson, PJ Turnbaugh, R Jumpertz von Schwartzberg, and **JE Bisanz**. Short-term caloric restriction rapidly alters microbiome composition to increase colonization resistance by mucus layer depletion. *In Submission*.

Liu Q, Y Tian, B Rimal, ER Reilly, L Sallam, F Hao, I Koo, N Yan, L Sun, **JE Bisanz**, FJ Gonzalez, and AD Patterson. Farnesoid X receptor agonists directly impact the gut microbiota. *In Submission*.

Babdor J, RK Patel, B Davidson, C Noecker, M Rahim, **JE Bisanz**, I Tenvooren, D Marquez, M Calvo, V Johri, E MacCarthy, A Shaheed, C Ekstrand, AM Weakley, FB Yu, O Fiehn, PJ Turnbaugh, AJ Combes, GK Fragiadakis, and MH Spitzer. Coordinated variation in the immune systems and microbiomes of healthy humans is linked to tonic interferon states. **Cell. In Revision.**

Birkenfeld AL, C Herrmann, C Chen, DM Wilmes, T Schumann, A DiFrancesco, MS Kim, **JE Bisanz**, A Müller, M Scholz, F Fava, M Ulaszewska-Tarantino, A Sinha, KM Tuohy, SK Forslund-Startceva, DM Müller, N Stefanm, R DeCabo, M Bernier, SR Bornstein, M Solimena, CP Martinez-Jimenez, R Jumpertz von Schwartzberg, JJ Holst, A Fritsche, TD Müller, and S Speier. The role of GLP-1 and GIP in Beta Cell Function During Healthy Aging. **Nature Metabolism. In Revision.**

## Patents

**Bisanz JE**, S Tian, E Weinert, B Underwood. A synthetic microbiota and related processes and apparatuses. US Provisional Patent Application 63/760,164.

**Bisanz JE**, G Reid, M Monachese, JET Van Hylckama Vlieg, T Smokvina, and JP Burton. Food grade bacteria for the removal of toxic compounds. EU Patent #EP2833898B1, US Patent # US10487305, Canada Patent #CA 2869566 , Chinese Patent #CN 104755090B.

**Bisanz JE**, G Reid, M Monachese, JET Van Hylckama Vlieg, T Smokvina, and JP Burton. *Lactobacillus rhamnosus* CNCM I-4716 food grade bacteria. US Patent #US9540609B2, EU Patent #EP3031931B1.

## Oral Presentations

Ohio State University Department of Microbiology	Columbus OH, USA – 2025
University of Utah Department of Pathology Seminar	Salt Lake UT, USA – 2024
Trends Microbiology Metagenomic Approaches in Microbiome Research	Online Webinar – 2024
American Chemical Society World Microbiome Day	Online Webinar – 2024
NCCIH Workshop on Endocrine-Disrupting Chemicals	Bethesda MD, USA – 2024
Qiagen Human Microbiome Webinar Series	Online Webinar – 2024
AdventHealth Translational Research Institute	Orlando FL, USA – 2024
Microbiome Data Congress	Boston MA, USA – 2023
Leibniz Institute for Natural Product Research and Infection Biology	Jena, Germany – 2023
U Penn Big Data in Biomedical and Population Health Sciences	Philadelphia PA, USA – 2022
American Association of Pharmaceutical Scientists PharmSci 2022	Boston MA, USA – 2022
Microbiome and Probiotic R&D Forum	Miami FL, USA – 2022
International Conference on the Bioscience of Lipids	Online Webinar – 2022
Penn State Nutritional Sciences Colloquium	State College PA, USA – 2022
Penn State Department of Food Science Seminar	State College PA, USA – 2022
Penn State Microbiome Center Seminar Series	State College PA, USA – 2021
ETH Zurich Institute of Food, Nutrition and Health Seminar	Zurich, Switzerland– 2021
UC Berkeley CCB/SPH Bioinformatics Seminar	Berkeley CA, USA – 2020
PSU Biochemistry and Molecular Biology Seminar	State College PA, USA – 2020
University of Illinois UC Microbial Systems Initiative Seminar	Urbana IL, USA – 2020
UC Irvine Molecular Biology and Biochemistry Seminar	Irvine CA, USA – 2020
University of Washington Microbiology Seminar	Seattle WA, USA – 2020
Chan Zuckerberg Microbiome Initiative Symposium	San Francisco CA, USA – 2020
Dartmouth Microbiology and Immunology Seminar	Lebanon NH, USA – 2019
UC Davis Innovation Institute for Food & Health Summit	Davis CA, USA – 2019



## Curriculum Vitae

Jordan E Bisanz

Infectious Disease Association of California Winter Symposium	Oakland CA, USA – 2019
UCSF Diabetes and Obesity Retreat	Santa Cruz CA, USA – 2018
Anaerobe Society of the Americas: Anaerobe 2018	Las Vegas NV, USA – 2018
UCSF Microbial Pathogenesis and Host Defense Seminar Series	San Francisco CA, USA – 2017
UCSF Research in Progress Seminars	San Francisco CA, USA – 2017
Charité Hospital Center for Cardiovascular Research Seminar	Berlin, Germany – 2016
Berchtesgaden Microbiome Science Days	Berchtesgaden, Germany – 2016
Beneficial Microbes Conference	The Hague, Netherlands – 2015
Institut Pasteur Seminar Series	Lille, France – 2015
International Union of Microbiological Societies	Montreal QC, Canada – 2014
International Scientific Association for Probiotics and Prebiotics	Aberdeen, Scotland – 2014
Exploring Human Host-Microbiome Interactions in Health and Disease	Cambridge, England – 2013
University of Reading: Whiteknights Guest Seminar	Reading, England – 2013
National Institute for Medical Research Guest Seminar	Mwanza, Tanzania – 2012
Canadian Society of Microbiologists Student Symposium Competition	St. John's NL, Canada – 2011

## Poster Presentations

Keystone Microbiome Symposium	Banff AB, Canada – 2018
International Scientific Association for Probiotics and Prebiotics	Washington DC, USA – 2015
Probiotics, Prebiotics and the Host Microbiome	New York NY, USA – 2013
Lawson Health Research Day	London ON, Canada – 2013
Lawson Health Research Day	London ON, Canada – 2011
Microbes for Health 2 <sup>nd</sup> International Symposium	Paris, France – 2011
International Human Microbiome Congress	Vancouver BC, Canada – 2011

## Teaching Experience

### Instructor (BMB 502 Critical Scientific Analysis)

2024-2025

Co-taught course focusing on critical thinking in the analysis of scientific manuscripts, poster presentations, and seminars.

### Instructor (BMB 521 Special Topics in Microbiology)

2024

Coordinated team-taught course focusing on recent developments in microbiology for graduate students.

### Instructor (MICRB 410 Principles of Immunology)

2023-2025

Department of Biochemistry and Molecular Biology PSU

Taught course employing active learning methodologies to cover major topics relevant to immunology with special section on interpretation of experimental data and developments in systems immunology.

### Guest Instructor (BMB 598 Special Topics in Microbiology)

2022

Department of Biochemistry and Molecular Biology PSU

Delivered 2 lectures on current topics in microbiome research and prepared student challenge problem.

### Instructor (Microbial Bioinformatics Workshop Series)

2020

Benioff Center for Microbiome Medicine

Prepared and co-taught sessions on BASH, package managers, cluster computing, QIIME2, R, and the Tidyverse. Developed in response to need for training opportunities during COVID-19 shelter-in-place order.

### Guest Instructor (BMS270/BMI219 The Human Microbiome)

2017-2021

Biomedical Science / Biological and Medical Informatics Programs (UC San Francisco)

Delivered lecture and tutorial for manipulating high-throughput DNA sequencing and exploratory data analysis of 16S rRNA amplicon sequencing data. Instructor evaluations: 4.5/5 (2018), 4.8/5 (2019).

Tutorial content: [jbisanz.github.io/BMS270\\_BMI219](https://jbisanz.github.io/BMS270_BMI219)

### **Lecturer/Teaching Assistant (Microbiology for Nursing 3820A) 2013-2014**

Department of Microbiology and Immunology, Western University

Delivered 1-hour lectures on prevention, diagnosis, and treatment of *Neisseria*, *Chlamydia*, and *Spirochetes* for 3<sup>rd</sup> year undergraduate course of 302 students. Prepared, administered, and graded randomized case studies comprising 25% of final grade.

### **Teaching Assistant (Introduction to Biology 1002B) 2014**

Department of Biology, Western University

Delivered 2-hour lectures and facilitated student discussion groups covering topics relating to scientific literacy and research.

### **Teaching Assistant (Genetics 2581A) 2013**

Department of Biology, Western University

Delivered 1.5-hour tutorial lectures on basic concepts in prokaryotic and eukaryotic genetics.

### **Teaching Assistant (Biology of Prokaryotes Lab Course) 2011**

Department of Microbiology and Immunology, Western University

Taught basic bacteriology lab skills including media preparation, culture, differential biochemical identification tests and API-20E identification.

## **Service**

**Associate Editor: Anaerobe 2021 – Present**

**Penn State Microbiome Center Executive Committee 2023 – Present**

**Ad hoc reviewer: Interspecies Microbial Interactions and Infections Study Section (IMII) 2025**

National Institutes of Health

**Ad hoc reviewer: Drug and Biological Disposition and Toxicity Study Section (DBDT) 2023 – 2024**

National Institutes of Health

**Ad hoc reviewer: Collaborative Program Grant for Multidisciplinary Teams (RM1) 2025**

National Institute of General Medical Sciences

**Ad hoc reviewer: Member Conflict- Applied Immunology and Disease Control 2025**

National Institute of General Medical Sciences

**Ad hoc reviewer: Directorate for Technology, Innovation and Partnership 2025**

Natural Science Foundation

**Ad hoc reviewer: Directorate for Biological Sciences 2025**

Natural Science Foundation

**Toxicology Search Committee 2024 – 2025**

Department of Veterinary and Biomedical Sciences/Institute for Energy and the Environment, PSU

**Microbiology Search Committee 2024 – 2025**

Department of Biochemistry and Molecular Biology, PSU

**Department Head Search Committee 2022 – 2023**

Department of Biochemistry and Molecular Biology, PSU

## **Curriculum Vitae**

**Jordan E Bisanz**

### **Graduate Recruitment Committee**

**2021 – 2023**

Biochemistry, Microbiology, and Molecular Biology PhD Program, PSU

### **Climate and Diversity Committee**

**2021 – 2022**

Department of Biochemistry and Molecular Biology, PSU

**Ad hoc Reviewer (171 assignments from 50 journals)**

<b>Journal</b>	<b># Assignments</b>	<b>Years</b>
Nature Medicine	3	2022-2025
Cell	4	2023-2024
Nature Biotechnology	1	2024-2024
Cell Host & Microbe	5	2021-2025
Nature Immunology	3	2022-2023
Nature Microbiology	14	2021-2025
Nature Metabolism	2	2022-2024
Cell Metabolism	1	2025-2025
Science Translational Medicine	3	2020-2025
Nucleic Acid Research	1	2022-2022
Genome Biology	4	2022-2024
Nature Communications	3	2019-2024
Genome Medicine	4	2021-2023
Microbiome	27	2016-2021
Cell Reports Medicine	3	2022-2023
Environment International	2	2020-2020
Journal of Clinical Investigation	1	2024-2024
PNAS	2	2019-2024
Environmental Science and Technology	1	2015-2015
ISME J	3	2018-2023
Cell Reports	4	2019-2025
Microbiology Spectrum	3	2022-2023
Genome Research	1	2023-2023
eLife	5	2020-2024
NPJ Biofilms and Microbiomes	1	2023-2023
Gut Microbes	6	2023-2024
Computational and Structural Biotechnology	1	2022-2022
American Journal of Clinical Nutrition	1	2022-2022
Bioinformatics	1	2022-2022
mBio	6	2020-2023
mSystems	4	2021-2022
Frontiers in Nutrition	1	2019-2019
Communications Biology	2	2020-2020
International Journal of Food Microbiology	1	2015-2015
Journal of Agriculture and Food Chemistry	1	2022-2022
Nutrition Reviews	2	2024-2024
iScience	1	2022-2022
Nutrients	2	2017-2020
Beneficial Microbes	1	2016-2016
Applied and Environmental Microbiology	15	2016-2020
Microorganisms	1	2019-2019
Microbial Genomics	4	2021-2023
FEMS Microbiology Ecology	1	2021-2021
mSphere	1	2020-2020
Human Genomics	2	2023-2023
Frontiers in Microbiology	1	2021-2021
Nutrition Research	1	2017-2017
PLoS One	7	2014-2018
British Journal of Nutrition	2	2020-2020
Anaerobe	3	2023-2023

**Ad hoc Referee****2020 – Present**

Flanders Research Foundation (FWO) Postdoctoral Fellowship Committee, Graduate Women in Science Fellowship Committee, Benioff Microbiome Center Grant Reviewer, Austrian Science Fund, Polish National Science Center, Wellcome Trust

## Outreach

- Science, Microbes & Health Podcast** **2023**  
 International Scientific Association for Probiotics and Prebiotics  
 Interviewed to discuss the bacterial species concept and how it applies to microbiome research and probiotic applications. Available at: [isappscience.org/episode-31-microbial-species/](https://isappscience.org/episode-31-microbial-species/).
- Expert Interviewee** **2023**  
 TvN (South Korea)  
 Interviewed to discuss the human microbiome in metabolic health as part of the weekly TV show “The Power of Superfoods” shown on the major cable network TvN.
- Science Outreach Panelist** **2023**  
 State Theatre (State College PA, USA)  
 Part of an expert panel at a showing of the documentary “The Invisible Extinction” to answer audience questions about the human microbiome.
- Guest Speaker** **2022**  
 American Society for Microbiology Student Chapter  
 Delivered talk to PSU undergraduates on the microbiome research.
- Guest Speaker** **2019**  
 NutrigenomX/ Global Society for Genetics and Genome Biology (University of California Berkeley)  
 Delivered talk to UCB undergraduate students on the microbiota in health and its interactions with diet.
- Science Outreach Panelist** **2014**  
 London Public Library (London ON, Canada)  
 Part of an expert panel at a showing of the documentary Microbirth to answer audience questions about the human microbiome and probiotics.
- Students and Fellows Association Executive** **2013-2015**  
 International Scientific Association for Probiotics and Prebiotics  
 Co-organized conferences (Aberdeen 2014, Washington DC 2015) and led recruitment efforts for new members.
- Lawson Association of Fellows and Students Co-president** **2012-2013**  
 Lawson Health Research Institute, London ON, Canada
- Social Committee Co-Chair** **2011-2012**  
 Microbiology and Immunology Department, Western University
- Science Fair Judge** **2010-2011**  
 Evaluated high-school projects at local (Lucas Secondary London ON) and national level (Canada Wide Science Fair, Toronto ON).
- Science Fair Judge** **2010**  
 Junior high-school projects on green technologies  
 Lucas Secondary School, London ON, Canada



**Student Executive Members****2007-2010**

Western Heads East

Coordinating fundraising efforts for probiotics-based social microenterprise program.

**Orientation Week Leader****2007-2010**

Faculty of Science, University of Western Ontario

**Relevant Additional Training****Responsible Conduct of Research Course****2021**

UCSF Office for Postdoctoral Scholars

Over 8 one-hour sessions, this course addresses important issues including societal implications of scientific misconduct, entrepreneurship, collaborative science, responsible authorship, animal welfare, implications of genomic research, mentorship, and racism in science.

**Inclusive Research Mentorship Course****2020**

UCSF Office of Career and Professional Development

A 12 hour course covering topics relating to hiring, training, and supervising team members from diverse backgrounds.

**Scientific Leadership and Management Skills Course****2019**

Gladstone Institutes

Practical strategies and theories for beginning and leading research groups in an academic environment. 16-hours covering the following topics: motivating, managing conflict, strategic time and resource management, staffing, building lab culture, establishing a research program, vision and mission statements, and negotiation.

**Relevant Work Experience****London Public Health Laboratory****2008-2009**

Seasonal Laboratory Assistant

Ontario Ministry of Health/ Ontario Public Health Agency

Supervisors: Abdul Chagla, and Christine Fry.