

Suggested Readings

General Background (provided in briefing materials and available online at [<https://drive.google.com/folderview?id=0B6Pq0IFe5Gy4ckdPa2JRQUhuMnc&usp=sharing>] until January 30th)

Betts K. A Study in Balance: How Microbiomes Are Changing the Shape of Environmental Health. *Environmental Health Perspectives*. August 2011; 119(8): A341-A346. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3237378/pdf/ehp.119-a340.pdf>

Dietert RR, and Silbergeld EK. Biomarkers for the 21st Century: Listening to the Microbiome. *Toxicological Sciences*. 2015; 144(2) 208-216. <http://www.ncbi.nlm.nih.gov/pubmed/25795652>

Mani, S., Boelsterli, U.A., and Redinbo, M.R. Understanding and Modulating Mammalian-Microbial Communication for Improved Human Health. *Annual review of Pharmacology and Toxicology*. 2014; 54:559-580.

NAS. March 2012. Newsletter: Implications of the Microbiome for Environmental Health. <http://nas-sites.org/emergingscience/files/2011/05/microbiome-nl-FINAL-080712.pdf>

Redinbo. The Microbiota, Chemical Symbiosis, and Human Disease. *J Mol Biol*. Nov 2014; 426(23): 3877-3891.

The White House. November 2015. Life Sciences Subcommittee of the National Science and Technology Council. Executive Summary: Report of the Fast-track Action Committee on Mapping the Microbiome. https://www.whitehouse.gov/sites/default/files/microsites/ostp/NSTC/ftac-mm_report_final_112015_0.pdf

Session 1 – Interactions Between the Microbiome and Environmental Exposures: State of Knowledge

Cai J, Zhang L, Jones RA, Correll JB, Hatzakis E, Smith PB, Gonzalez FJ, Patterson AD. The Anti-Oxidant Drug Tempol Promotes Functional Metabolic Changes in the Gut Microbiota. *J Proteome Res*. 2015 Dec 23. <http://www.ncbi.nlm.nih.gov/pubmed/26696396>

Lu K., Mahbub, R., et al. Gut Microbiome Phenotypes Driven by Host Genetics Affect Arsenic Metabolism. *Chemical Research in Toxicology*. 2014; 27:172-174.

Lu K., Abo R.P., et al. Arsenic Exposure Perturbs the Gut Microbiome and Its Metabolic Profile in Mice: An Integrated Metagenomics and Metabolomics Analysis. *Environmental Health Exposures*. March 2014; 122(3): 284-291.

Patterson AD, and Turnbaugh PJ. Microbial Determinants of Biochemical Individuality and Their Impact on Toxicology and Pharmacology. *Cell Metabolism*. August 2014; 20(5): 761-768. http://ac.els-cdn.com/S1550413114003106/1-s2.0-S1550413114003106-main.pdf?_tid=51cf3950-9222-11e5-815b-0000aab0f26&acdnat=1448311360_ebb20f1333d11db20d34ab950c5a0c6c

Wilson, I.D., and Nicholson, J.K. The Modulation of Drug Efficacy and Toxicity by the Gut Microbiome. *Molecular and Integrative Toxicology*. September 2014; 323-341.

Zhang et al. Persistent Organic Pollutants Modify Gut Microbiota–Host Metabolic Homeostasis in Mice Through Aryl Hydrocarbon Receptor Activation 2015. *Environmental health perspectives*. (Adv pub.)

EMERGING SCIENCE FOR ENVIRONMENTAL HEALTH DECISIONS
Environment and Health: What's the Human Microbiome Have to Do With It?

Session 2 – What Does the Microbiome Contribute to Interindividual Variability and Susceptibility to Environmental Exposures?

NAS. February 2013. Newsletter: Biologic Factors That Underlie Individual Susceptibility. <http://nas-sites.org/emergingscience/files/2015/01/biovariability-newsletter-final1.pdf>

Thaiss CA, Levy M, and Elinav E. Chronobiomics: The Biological Clock as a New Principle in Host—Microbial Interactions. PLoS pathog. 2015; 11(10): e1005113.
<http://www.plospathogens.org/article/fetchObject.action?uri=info:doi/10.1371/journal.ppat.1005113&representation=PDF>

Suez, J., Korem, T., Elinav, E., et al. Artificial sweeteners induce glucose intolerance by altering the gut microbiota. Nature. October 2014; 514:181-186.

Ursell, L.K., Haiser, H.J., Treuren, W.V., Garg, N., Reddivari, L., Vanamala, J., Dorrestein, P.C., Tumbaugh, P.J., and Knight, R. The Intestinal Metabolome: An Intersection Between Microbiota and Host. Gastroenterology. 2014; 146:1470-1476.

Zeise, L., Bois, F.Y., Chiu, W.A., Hattis, D., Rusyn, I., and Guyton, K.Z. Addressing Human Variability in Next-Generation Human Health Risk Assessments of Environmental Chemicals. Environ Health Perspect. Jan 2013; 12(1):23-31.

Session 3 – The Effect of Early Life Exposures on Development and Later-Life Outcomes

Carignan, C.C., Karagas, M.R., Punshon, T., Gilbert-Diamond, D., and Cottingham, K.L. Contribution of breast milk and formula to arsenic exposure during the first year of life in a US prospective cohort. Journal of Exposure Science and Environmental Epidemiology. November 2015.

Cox, L.M., Yamanishi, S., Sohn, J., Alekseyenko, A.V., Leung, J.M., Cho, I., Kim, S.G., Li, H., Gao, Z., Mahana, D., Rodriguez, J.G.Z., Rogers, A.B., Robine, N., Loke, P., and Blaser, M.J. Altering the Intestinal Microbiota during a Critical Developmental Window Has Lasting Metabolic Consequences. Cell. August 2014; 158:705-721.

Cox, L.M., and Blaser, M.J. Antibiotics in early life and obesity. Nat Rev Endocrinol. March 2015; 11(3):182-190.

Mueller, N.T., Bakacs, E, Combellick, J., Grigoryan, Z., Dominguez-Bello, M.G. The infant microbiome development: mom matters. Trends Mol Med. Feb. 2015; 21(2) 109-117.

NRC Newsletter: <http://nas-sites.org/emergingscience/files/2011/05/inutero-newsletter-final11.pdf>

Schulfer A., and Blaser M.J. Risks of Antibiotic Exposure Early in Life on the Developing Microbiome. PLOS Pathogens. July 2015; 11(7): e1004903.

Winterbottom, E.F., Fei, D.L., Koestler, D.C., Giambelli, C., Wika, E., Capobianco, A.J., Lee, E., Marsit, C.J., Karagas, M.R., and Robbins, D.J. GLI3 Links Environmental Arsenic Exposure and Human Fetal Growth. EBioMedicine. 2015; 2(6):536-543.

EMERGING SCIENCE FOR ENVIRONMENTAL HEALTH DECISIONS
Environment and Health: What's the Human Microbiome Have to Do With It?

Session 4 – Mapping a Research Strategy for the Next Decade

Human Microbiome Project, National Institutes of Health

<http://commonfund.nih.gov/hmp/overview>

National Institute of Environmental Health Sciences. Advancing Science, Improving Health: A Plan for Environmental Health Research: National Institute of Environmental Health Sciences Strategic Plan 2012 – 2017.

https://www.niehs.nih.gov/health/materials/niehs_20122017_strategic_plan_frontiers_in_environmental_health_sciences_booklet_508.pdf

The White House. November 2015. Life Sciences Subcommittee of the National Science and Technology Council. Report of the Fast-track Action Committee on Mapping the Microbiome.

https://www.whitehouse.gov/sites/default/files/microsites/ostp/NSTC/ftac-mm_report_final_112015_0.pdf