

Interplay of the Microbiome, Environmental Stressors, and Human Health

April 27-28, 2011

Washington, DC 20001

Reading List

Session 1: Your Microbiome

Benson AK, Kelly SA, Legge R, Ma F, Low SJ, Kim J, Zhang M, Oh PL, Nehrenberg D, Hua K, Kachman SD, Moriyama EN, Walter J, Peterson DA, and Pomp D.

Individuality in gut microbiota composition is a complex polygenic trait shaped by multiple environmental and host genetic factors Proc. Natl. Acad. Sci. USA 2 November 2010: 18933-18938. <http://www.pnas.org/content/107/44/18933.full>

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<http://pubs.acs.org/doi/abs/10.1021/cen-v088n050.p032>

Fujimura KE, Slusher NA, Cabana MD, Lynch SV. Role of the gut microbiota in defining human health. Exper Rev. Anti Infect. Ther 2010 Vol8(4) pp435-454

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2881665/?tool=pubmed>

Phillips, M.L. Gut Reaction: Environmental Effects on the Human Microbiota. EHP Vol 117 (5)

May 2009 <http://ehp03.niehs.nih.gov/article/info:doi%2F10.1289%2Fehp.117-a198>

The Human Microbiome Jumpstart Reference Strains Consortium. A catalog of reference genomes from the human microbiome. Science. Vol 328. 22 May 2010.

<http://www.sciencemag.org/content/328/5981/994.abstract>

Xu J. and JL Gordon. Honor thy symbionts. PNAS 100 (18) 2 Sept 2003.

<http://www.pnas.org/content/100/18/10452.full.pdf+html>

Zimmer C. How Microbes Defend and Define Us. New York Times. July 12, 2010

<http://www.nytimes.com/2010/07/13/science/13micro.html#>

Session 2: Influence of the Microbiome on Environmentally Related Disease

Sandoval DA and RJ Seeley. The Microbes Made me Eat It. Science

Vol. 328 no. 5975 pp. 179-180. April 9, 2010

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Turbaugh et al. A core microbiome in obese and lean twins. Nature Vol 45, 22 January 2009

<http://www.nature.com/nature/journal/v457/n7228/full/nature07540.html>

Emerging Science for Environmental Health Decisions

Vijay-Kumar M, Aitken JD, Carvalho FA, Cullender TC, Mwangi S, Srinivasan S, Sitaraman SV, Knight R, Ley RE, and Gewirtz AT. Metabolic Syndrome and Altered Gut Microbiota in Mice Lacking Toll-Like Receptor 5 *Science* 9 April 2010: 228-231.

<http://www.sciencemag.org/content/328/5975/228.full>

Session 3: Interplay of Environmental Exposures and the Microbiome

Lee YK and SK Mazmanian. Has the Microbiota Played a Critical Role in the Evolution of the Adaptive Immune System? *Science* 24 December 2010: Vol. 330 no. 6012 pp. 1768-1773

<http://www.sciencemag.org/content/330/6012/1768.full>

Li et al. Symbiotic gut microbes modulate human metabolic phenotypes. *PNAS* 12 Feb 2008; Vol 105 (6) pp 2117-2122 <http://www.pnas.org/content/105/6/2117.full.pdf+html>

Swann J, Wang Y, Abecia L, Costabile A, Tuohy K, Gibson G, Roberts D, Sidaway J, Jones H, Wilson ID, Nicholson J, Holmes E. Gut microbiome modulates the toxicity of hydrazine: a metabonomic study. *Mol Biosyst.* 2009 Apr;5(4):351-5. Epub 2009 Jan 23.

<http://www.ncbi.nlm.nih.gov/pubmed/19396371>

Van de Wiele T, Gallawa CM, Kubachka KM, Creed JT, Basta N, Dayton EA, Whitacre S, Du Laing G, Bradham K. Arsenic Metabolism by Human Gut Microbes upon in vitro Digestion of Contaminated Soils. *EHP.* Vol 118 (7) July 2010

<http://ehp03.niehs.nih.gov/article/lookupArticle.action?articleURI=info%3Adoi%2F10.1289%2Fehp.0901794>

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Sessions 4: Societal, Research, and Public Policy Implications

Cho MK and M Wolpert. Not yet in sequence. Clinical, technical, ethical questions linger over personal genomics. *Modern Healthcare* 22 Nov 2010

<http://cirge.stanford.edu/Modern%20Healthcare.pdf>

Mesline EM and MK Cho. Research ethics in the era of personalized medicine: updating science's contract with society. *Public Health Genomics*; 13:378-384

<http://www.ncbi.nlm.nih.gov/pubmed/20805701>

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Related Links

European Union. Metagenomics of the Human Intestinal Tract
www.metahit.edu

International Human Microbiome Consortium
<http://www.human-microbiome.org/>

National Institute of Health (NIH) Human Microbiome Project
<http://nihroadmap.nih.gov/hmp/>