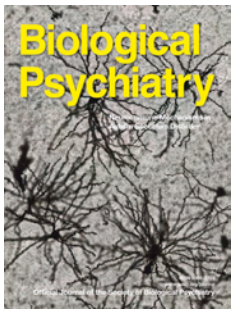
# Accepted Manuscript




Infant Gut Microbiome Associated with Cognitive Development

Alexander L. Carlson, Kai Xia, M. Andrea Azcarate-Peril, Barbara D. Goldman, Mihye Ahn, Martin A. Styner, Amanda L. Thompson, Xiujuan Geng, John H. Gilmore, Rebecca C. Knickmeyer

PII: S0006-3223(17)31720-1

DOI: 10.1016/j.biopsych.2017.06.021

Reference: BPS 13249

To appear in: *Biological Psychiatry*

Received Date: 21 November 2016

Revised Date: 31 May 2017

Accepted Date: 12 June 2017

Please cite this article as: Carlson A.L., Xia K., Azcarate-Peril M.A., Goldman B.D., Ahn M., Styner M.A., Thompson A.L., Geng X., Gilmore J.H. & Knickmeyer R.C., Infant Gut Microbiome Associated with Cognitive Development, *Biological Psychiatry* (2017), doi: 10.1016/j.biopsych.2017.06.021.

# TITLE PAGE

## Title: Infant Gut Microbiome Associated with Cognitive Development

## Short Title: Infant gut microbiome and cognition

**Authors:** Alexander L. Carlson[1], Kai Xia[2], M. Andrea Azcarate-Peril[3,4], Barbara D. Goldman[5,6], Mihye Ahn[7], Martin A. Styner[2,8], Amanda L. Thompson[9,10], Xiujuan Geng[11,12], John H. Gilmore[2], Rebecca C. Knickmeyer[2]*

**Affiliations:**

[1]Neuroscience Curriculum, University of North Carolina, Chapel Hill, NC, USA
[2]Department of Psychiatry, University of North Carolina, Chapel Hill, NC, USA
[3]Department of Medicine, University of North Carolina, Chapel Hill, NC, USA
[4]Microbiome Core Facility, University of North Carolina, Chapel Hill, NC, USA
[5]Department of Psychology and Neuroscience, University of North Carolina, Chapel Hill, NC, USA
[6]Frank Porter Graham Child Development Institute, University of North Carolina, Chapel Hill, NC, USA
[7]Department of Mathematics and Statistics, University of Nevada, Reno, NV, USA
[8]Department of Computer Science, University of North Carolina, Chapel Hill, NC, USA
[9]Department of Anthropology, University of North Carolina, Chapel Hill, NC, USA
[10]Department of Nutrition, University of North Carolina, Chapel Hill, NC, USA
[11]Department of Psychology Lab of Neuropsychology and Lab of Social Cognitive Affective Neuroscience, University of Hong Kong, Hong Kong
[12]State Key Lab of Brain and Cognitive Sciences, University of Hong Kong, Hong Kong

Correspondence to: Rebecca C. Knickmeyer, Department of Psychiatry, 343 Medical Wings C, Campus Box #7160, University of North Carolina, Chapel Hill NC 27599-7160, Email: rebecca_knickmeyer@med.unc.edu

**Key Words:** microbiota, infant, cognition, gut, brain, MRI

**Abstract Word Count:** 224
**Text Word Count:** 4000
**Number of Figures:** 5
**Number of Tables:** 1
**Supplemental Information:** 2 files
Supplement 1: PDF file (contains all supplemental material except Table S3)
Supplement 2: Excel file (contains Table S3 only)