CURRICULUM VITAE

Sonja Entringer

Institute of Medical Psychology
Charité Center for Health and Human Sciences
Charité University Medicine Berlin
Luisenstraβe 57
10117 Berlin
Germany
Tel: +49 30 450 529 216
Fax: +49 30 450 529 990
Email: sonja.entringer@charite.de

UC Irvine Development, Health and Disease Research Program
University of California, Irvine, School of Medicine
Suite 1235, City Tower
333 City Blvd W
Orange, CA 92868
Ph: 714-456-8624
Email: sentring@uci.edu

POSITIONS

2016 - p	Adjunct Associate Professor, Department of Pediatrics, University of California, Irvine
2013 - p	Professor (W2), Department of Medical Psychology, Charité Universitätsmedizin, Berlin
2013 - p	Adjunct Assistant Professor, Department of Pediatrics, University of California, Irvine
2010 - 2013	Assistant Professor in Residence, Department of Pediatrics, University of California, Irvine
2007 - 2010	Postdoctoral Research Fellow, Department of Psychiatry and Human Behavior, University of California, Irvine
2005 - 2006	Research Associate, Department of Psychiatry and Human Behavior, University of California, Irvine (Prof. Pathik Wadhwa)
2003 - 2006	Research Associate, Department of Theoretical and Clinical Psychobiology, University of Trier (Prof. Dirk H. Hellhammer)
2002	Centre for Parental Counseling and Early Childhood Advancement, Trier, Germany, Psychological Internship
2001	University of California, Irvine, Department of Psychiatry and Human Behavior, Research Assistant, Behavioral Perinatology Research Program (Prof. Pathik Wadhwa)
2000 - 2003	University of Trier, Department of Psychobiology, Research Assistant (Prof. Dirk H. Hellhammer) and Teaching Assistant (Dr. Stefan Wuest)
2000	Department of Education, Rheinland-Pfalz, Test Administrator OECD Program for International Student Assessment (PISA)
1999 - 2000	University of Trier, Centre for Psychobiology and Psychosomatic Research, Research Internship, Behavioral Genetics (Prof. Dirk H. Hellhammer)

EDUCATION

2007 - 2010	Postdoctoral Research Fellow, Department of Psychiatry and Human Behavior, University of California, Irvine
2006	Ph.D. in Psychobiology, Department of Theoretical and Clinical Psychobiology, University of Trier, Germany

2003 - 2006	Doctoral studies in Psychobiology, Department of Theoretical and Clinical Psychobiology, University of Trier, Germany
1997 - 2003	Diploma in Psychology (equivalent to the US Master's degree), University of Trier, Germany

HONORS AND AWARDS

2015	Curt Richter Award of the International Society for Psychoneuroendocrinology (ISPNE) ("in recognition of distinguished early to mid career scientific contributions at the interface of health-related biological and psychological processes")
2011	Earlier Career R01 Recipient Invitation, American College of Neuropharmacology (ACNP)
2008	Young Investigator Travel Award, International Society for Psychoneuroendocrinology (ISPNE)
2008	American Psychosomatic Society (APS) Scholar Award
2007 - 2009	Postdoctoral Research Fellowship, German Research Foundation (Deutsche Forschungsgemeinschaft)
2005	Young Investigator Travel Award, International Society for Psychoneuroendocrinology (ISPNE)

TEACHING EXPERIENCE

Classes and Courses

2013 – p	Model Curriculum Human Medicine. *Gene-Environemnt Interactions in Psychiatric Disorders*. Seminar, Module 31, Charité Universitätsmedizin, Berlin, Germany
2013 - p	Model Curriculum Human Medicine. *Developmental Psychology*. Lecture, Module 6, Charité Universitätsmedizin, Berlin, Germany
2013 - p	Model Curriculum Human Medicine. *Stress and Coping*. Seminar, Module 6, Charité Universitätsmedizin, Berlin, Germany
2013 - p	Model Curriculum Human Medicine. *Neurobiological Correlates of Social Attachment*. Seminar, Module 22, Charité Universitätsmedizin, Berlin, Germany
2013 - p	Model Curriculum Human Medicine. *Early Life Programming of Disease*

	Susceptibility. Seminar, Module 6, Charité Universitätsmedizin, Berlin, Germany
2013 - p	Model Curriculum Human Medicine. *The Stressed Brain*. Seminar, Module 20, Charité Universitätsmedizin, Berlin, Germany
2013 - p	Model Curriculum Human Medicine. *Designerbabies*. Seminar, Charité Universitätsmedizin, Berlin, Germany
2013 - p	Bachelor Health Sciences. *Duties and Tasks of a Scientist*. Seminar, Charité Universitätsmedizin, Berlin, Germany
2010 - p	Research Mentor for Neonatal Fellows, Department of Pediatrics, University of California, Irvine
2010-p	Instructor: UCI Development, Health and Disease Lecture series for undergraduate, graduate and postgraduate students
2008	Instructor: *Developmental Programming of Health and Disease*, Lecture series for undergraduate students, University of California, Irvine, Spring quarter 2008
2007 - p	Preceptor: Directed Studies/ Special Studies (Bio Sci/Soc Eco 198/199) in psychobiology of pregnancy and fetal/infant development
2006	Instructor: *Psychobiological Research Methods*, University of Trier, Germany, Spring 2006 quarter
2005/2006	Instructor: *Selected Questions in Psychobiological Research*, University of Trier, Germany, Winter 2005/2006 quarter
2000 - 2003	Teaching Assistant: Psychobiology, University of Trier, Germany

Supervision of Students and Fellows

Medical Research Fellows

1. *Satoru Ikenoue*, University of California Irvine, Topic: Intrauterine Stress and Hepatic Blood Flow. Since June 2014 (co-supervisor).
2. *Masanao Ohashi*, University of California Irvine, Topic: Fetal Predictors of Infant Adiposity. December 2012 – June 2014 (co-supervisor).
3. *Kaeko Sumiyoshi*, University of California Irvine, Topic: Assessment of Fetal Adiposity Using Ultrasonography. June 2010 – December 2012 (co-supervisor).
4. *Annie Nguyen*, University of California Irvine, Topic: Quantification of Hepatic Fat in Newborns using Magnetic Resonance Imaging (MRI). December 2010 – June 2012 (co-supervisor).

Postdoctoral Fellows

5. *Dr. Karen Lindsay,* University of California Irvine, Department of Pediatrics. Topic: Metabolomic Changes over the Course of Pregnancy. Since January 2015 (co-supervisor).
6. *Dr. Molly Fox*, University of California Irvine, Department of Psychiatry and Human Behavior.

Topic: Intergenerational Transmission of the Effects of Acculturation on Health. February 2013 – November 2014 (co-supervisor).

7. *Dr. Jessica DeHaene*, University of California Irvine, Department of Psychiatry and Human Behavior. Topic: Maternal Nutrition During Pregnancy and Fetal Development. February 2010 – December 2012 (co-supervisor).
8. *Dr. Jerod Rasmussen*, University of California Irvine, Topic: Characterizing Neural Circuits that Control Energy Homeostasis. Since October 2016 (co-supervisor).
9. *Dr. Lauren Gyllenhammer*, University of California, Irvine, Topic: Metabolic function in children and associations with prenatal exposures

Doctoral Students

1. *Karin DePunder*, Charité University Medicine, Berlin, Department of Medical Psychology. Since January 2014. Topic: Validation of Stimulated Telomerase Activity as a Biomarker for Psychobiological Research (primary supervisor)
2. *Gergana Karaboycheva*, Charité University Medicine, Berlin, Department of Medical Psychology. Since June 2015. Topic: Early Life Stress and its Effects on the Microbiome in Children (co-supervisor)
3. *Jerod Rasmussen*, University of California Irvine, USA. Topic: Fetal Programming of Infant Neural Circuits that Underlie Appetite Regulation. June 2013 – September 2016 (co-supervisor)
4. *Claudia Lazarides,* Charité Universitätsmedizin Berlin*.* Topic: Prenatal Stress Exposure and Infant Cellular Aging (primary supervisor)
5. *Laura Scholaske,* Charité Universitätsmedizin Berlin. Topic: Intergenerational transmission of migration related stressors (primary supervisor)
6. *Glenn Verner,* Charité Universitätsmedizin Berlin. Topic: Prenatal influences on infant obesity risk in Offspring of Turkish Immigrants in Germany (primary supervisor)
7. *Sarah Krämer,* Charité Universitätsmedizin Berlin. Topic: Prenatal glucocorticoid exposure and placental aging (primary supervisor)

Master Students

1. *Glenn Verner,* Master of Public Health, École des Hautes Études en Santé Publique, Topic: Maternal psychological state during pregnancy and newborn telomere length; graduated in June 2016
2. *Lukas Fuhrmann, Master of Psychology,* Technische Universität Dresden Topic: Acute-phase proteins: Associations with heart rate and heart rate variability in response to psychosocial stress induction; graduated in August 2017

Supervision of Bio199 Students: 2010 – p

Examinations

1. January 2015, Opponent in dissertation defense, University of Maastricht, The Netherlands.
2. Since 2013, Examiner in defenses of theses for Medical Doctor Degrees, Charité University Medicine Berlin, Germany.
3. Since 2014, Evaluator of Master theses, Graduate School of Mind and Brain, Berlin

PROFESSIONAL SOCIETIES

International Society of Psychoneuroendocrinology (ISPNE)

Developmental Origins of Health and Disease (DOHaD)

RESEARCH INTEREST

- Developmental origins of behavior, health and disease
- Maternal-placental-fetal endocrinology and the biology of the stress response in pregnancy
- Child developmental and health outcomes
- Gene-environment interactions in human development
- Racial/ethnic disparities in health outcomes
- Ecological momentary assessment methodologies and applications in human pregnancy
- Prenatal origins of newborn and child body composition, energy balance and obesity risk
- Impact of early-life factors on stress physiology across the life-span
- Prenatal programming of telomere biology
- Stress and cellular aging

CONTRACTS, GRANTS AND RESEARCH AWARDS

Current Funding

Principal Investigator

1. ***Prenatal Stress and Programming of Newborn and Infant Telomere Biology and Cellular Aging***
   European Research Commission (ERC) Starting Grant
   ESR 678073
   € 1,483,720 direct costs
   10/2016 – 09/2021

2. ***Maternal Acculturation during Pregnancy and Newborn and Infant Adiposity in Mexican-Americans*** (Pathik Wadhwa, Co-PI)
   NIH/National Institute on Minority Health and Health Disparities
   R01 MD-010738
   $ 2,381,478 direct costs
   10/2016 – 09/2021

3. ***Social Disadvantage and Fetal Programming of Newborn-Infant Telomere Biology*** (Pathik Wadhwa, Hyagriv Simhan, Elissa Epel MPIs)
   NIH/National Institute of Aging
   R01 AG-050455
   $ 2,463,696 direct costs
   07/01/2016-06/30/2021

4. ***Intergenerational transmission of health disparities among Turkish-origin residents in Germany: role of maternal stress and stress biology during pregnancy***
   German Research Foundation (DFG)
   EN 851/2-1
   € 320,000 direct costs
   05/2015 – 04/2018

Co-Investigator

5. ***Understanding and Mitigating the Impact of Early-Life Stress on Disease Risk: Towards Developmental Programming of Lifelong Health (Kids2Health)*** (PI of 2 subprojects, Christine Heim PI of center grant)
   German Ministry of Science and Education
   € 4,714,452 (total costs)
   10/01/2017-09/30/2021

6. ***Pre- and Postnatal Exposure Periods for Child Health: Common Risks and Shared Mechanisms*** (Multiple PIs: Tom O'Connor, Pathik Wadhwa, Claudia Buss, Richard Miller and Hyagriv Simhan)
   NIH – Environmental influences on child health outcomes (ECHO)
   UG3 OD-O23349
   $ 18,353,773 total costs
   10/01/2016-09/30/2023

7. ***Intergenerational Effects of Maternal Childhood Trauma on the Fetal Brain*** (Claudia Buss and Pathik Wadhwa, PIs)
   NIH/National Institute of Mental Health (NIMH)
   R01 MH105538
   $ 2,488,650 direct costs
   07/2015 - 06/2020

8. ***Long-term effects of early nutrition on later health*** (Berthold Koletzko, PI)
   European Union Large Scale Collaborative Project
   KBBE.2011.2.2-03
   € 14,650,522 direct costs
   02/2012-01/2017
9. ***Biological Mechanisms of Transgenerational Transmission of Early Life Stress*** (Claudia Buss, PI)
   ERA-NET NEURON European Commission
   € 1,113,833 direct costs
   05/2014-04/2017

Completed

Principal Investigator

10. ***Prenatal Stress Biology, Infant Body Composition and Obesity Risk***
    NIH/National Institute of Child Health and Human Development
    R01 HD065825
    $ 1,965,485 direct costs

07/2010 – 06/2016 (including a 1-year no-cost extension)

11. ***Brown adipose tissue and its metabolic correlates in human newborns and infants*** (Claudia Buss, Co-PI)
    NIH/National Institute of Diabetes and Digestive and Kidney Diseases
    R21 DK098765
    $192,344 direct costs
    04/2013-03/2016 (including a 1-year no-cost extension)

12. ***Fetal Programming of Newborn and Infant Telomere Biology*** (Pathik D. Wadhwa, Co-PI)
    NIH/National Institute of Child Health and Human Development
    Type 3 R01 (competitive supplement) HD-060628
    $ 498,892 direct costs
    04/13 - 01/2015

13. ***National Children's Study Formative Research Study: Biological Moderators of Cortisol in Pregnancy***
    NIH/National Institute of Child Health and Human Development
    HHSN-275200503415C-QUEX-01/D
    $ 236,326 direct costs
    10/2010 – 03/2012

14. ***Effects of Exposure to Maternal Psychosocial Stress and Stress Hormones during Pregnancy on Endocrine, Cardiovascular, Metabolic and Immune Parameters in 6-7 year Old Children: a Prospective Cohort Study***
    German Research Foundation, Postdoctoral Research Fellowship (EN851/11)
    € 76,800 direct costs
    07/2007 – 06/2009

<u>Co-Investigator</u>

15. ***Ecological Momentary Assessment (EMA) of Biobehavioral Processes in Human Pregnancy*** (Pathik D. Wadhwa, PI)
    NIH/National Institute of Child Health and Human Development
    R01 HD-060628
    $ 2,364,828 direct costs
    02/2010-01/2015

16. ***Fetal Programming of the Newborn and Infant Human Brain*** (Claudia Buss, PI)
    NIH/ National Institute of Mental Health
    R01 MH-091351
    $ 2,402,334 direct costs
    12/2010-11/2016 (including a one-year no cost extension)

17. ***Validation of a measure of in-vitro stimulated telomerase expression as a stress-related biomarker for human studies*** (Christine Heim, PI)
    Neurocure Excellence Cluster, Charité Universitätsmedizin Berlin
    € 18.740 direct costs
    09/2014-12/2015

18. ***National Children's Study Formative Research Study: Self-Reported Stress and Cortisol Measurement. Development of an Optimized Measure of Chronic Stress in Pregnancy*** (Pathik Wadhwa, PI)
NIH/National Institute of Child Health and Human Development
HHSN-275200503415C
$172,949 direct costs
10/2010-09/2012

19. ***National Children's Study Formative Research Study: Self Report and Biological Measures of Maternal Stress Using Ecological Momentary Assessment (EMA) Methodology*** (Claudia Buss, PI)
NIH/National Institute of Child Health and Human Development
HHSN-275200503415C
$ 236,915 direct costs
10/2010-09/2012

PUBLICATIONS

H-Index: 33

Journal Articles, peer-reviewed

1. Wüst S, Federenko IS, Van Rossum EF, Koper JW, Kumsta R, Entringer S, Hellhammer DH. A psychobiological perspective on genetic determinants of hypothalamus-pituitary-adrenal axis activity. *Ann N Y Acad Sci,* 2004*,* 1032, 52-62.

2. Wüst S, Entringer S, Federenko IS, Schlotz W, Hellhammer DH. Birth weight is associated with salivary cortisol responses to psychosocial stress in adult life. *Psychoneuroendocrinology*, 2005, 30(6):591-98.

3. Kumsta R, Entringer S, Koper JW, van Rossum EF, Hellhammer DH, Wuest S. Sex Specific Associations between Common Glucocorticoid Receptor Gene Variants and Hypothalamus-Pituitary-Adrenal Axis Responses to Psychosocial Stress. *Biological Psychiatry,* 2007*,* 62(8):863-869.

4. Kumsta R, Entringer S, Hellhammer DH, Wuest S (2007) Cortisol and ACTH responses to psychosocial stress are modulated by corticosteroid binding globulin levels. *Psychoneuroendocrinology*, 2007, 32(8-10):1153-1157.

5. Rietschel M, Beckmann L, Strohmaier J, Georgi A, Karpushova A, Schirmbeck F, Boesshenz K, Schmäl C, Bürger C, Abou Jamra R, Schumacher J, Höfels S, Kumsta R, Entringer S, Krug A, Markov V, Propping P, Wüst S, Kircher T, Nöthen M, Cichon S, Schulze TG. G72 is associated with both major depression and neuroticism in large population-based samples from Germany. *American Journal of Psychiatry,* 2008*,* 165(6):753-62.

6. Kumsta R, Entringer S, Koper JW, Van Rossum EF, Hellhammer DH, Wüst S. Glucocorticoid receptor gene polymorphisms and glucocorticoid sensitivity of subdermal blood vessels and leukocytes. *Biological Psychology,* 2008*,* 79:179–184.

7. Schlotz W, Kumsta R, Layes I, Entringer S, Jones A, Wüst S. Covariance between psychological and endocrine responses to pharmacological challenge and psychosocial stress: a question of timing. *Psychosomatic Medicine*, 2008, 70:787–796.

8. Entringer S, Kumsta R, Hellhammer DH, Nelson E, Wadhwa PD, Wüst S. Influence of Prenatal Psychosocial Stress on Immune Function in Adult Women. *Developmental Psychobiology*, 2008, 50(6):579-587.

9. Entringer S, Wüst S, Kumsta R, Layes I, Hellhammer DH, Nelson E, Wadhwa PD. Prenatal psychosocial stress exposure is associated with insulin resistance in young adults. *American Journal of Obstetrics & Gynaecology*, 2008, 199(5), 498.e1-498.e7.

10. Entringer S, Kumsta R, Hellhammer DH, Wadhwa PD, Wüst S. Prenatal exposure to maternal psychosocial stress and HPA axis regulation in young adults. *Hormones and Behavior.* 2009*,* 55: 292-298.

11. Wüst S, Kumsta R, Treutlein J, Frank J, Entringer S, Schulze TG, Rietschel M. Sex-specific associations between the 5-HTT gene-linked polymorphic region and basal cortisol secretion. *Psychoneuroendocrinology*, 2009, 34(7): 972-82.

12. Entringer S, Buss C, Kumsta R, Hellhammer, Wadhwa PD, Wüst S. Prenatal psychosocial stress exposure is associated with subsequent working memory performance in young women. *Behavioral Neuroscience,* 2009*,* 123(4): 886-893.

13. Wadhwa PD, Buss C, Entringer S, Swanson J. Developmental origins of health and disease: brief history of the approach and current focus on epigenetic mechanisms. *Seminars in Reproductive Medicine*, 2009, 7:358-368.

14. Swanson J, Entringer S, Buss C & Wadhwa PD. Developmental Origins of Health and Disease and Environmental Exposures: Classes, Timing, Genetic Effects, and Documented Consequences. *Seminars in Reproductive Medicine*, 2009, 27:358-368.

15. Buss C, Entringer S, Cammack Al, Jonazary FR, Chicz-DeMet A, Sandman CA, Wadhwa PD. The maternal cortisol awakening response in human pregnancy is associated with the length of gestation. *American Journal of Obstetrics and Gynecology,* 2009, 201(4):398.e1-8.

16. van Leeuwen N, Kumsta R, Entringer S, de Kloet R, Zitman FG, DeRijk R, Wüst S. Functional MR gene variation influences the cortisol awakening response after dexamethasone. *Psychoneuroendocrinology*, 2010, Apr;35(3):339-349.

17. Kumsta R, Entringer S, Koper JW, Van Rossum EF, Hellhammer DH, Wüst S. Working memory performance is associated with common glucocorticoid receptor gene polymorphisms. *Neuropsychobiology*, 2010, 61(1):49-56.

18. Entringer S, Buss C, Shirtcliff EA, Yim IS , Cammack AL, MPH, Chicz-DeMet A, Sandman CA, Wadhwa PD. Attenuation of maternal psychophysiological stress responses and the maternal cortisol awakening response (CAR) over the course of human pregnancy, *Stress,* 2010, 13(3):258-68.

19. Hitze B, Hubold C, van Dyken R, Schlichting K, Lehnert H, Entringer S, Peters A. How the selfish brain organizes its supply and demand. *Frontiers in Neuroenergetics,* 2010, 2:7.

20. Entringer S, Buss C, Wadhwa PD. Prenatal stress and developmental programming of human health and disease risk: concepts and integration of empirical findings. *Current Opinion in Endocrinology, Diabetes and Obesity*, 2010, 17(6):507-16.

21. Entringer S, Buss C, Andersen J, DeMet A, Wadhwa PD. Ecological momentary assessment of maternal cortisol profiles over a multiple-day period predicts the length of human gestation. *Psychosomatic Medicine*, 2011, 73(6):469-74.

22. Cammack AL, Buss C, Entringer S, Hogue CJ, Hobel CJ, Wadhwa PD. The association between early life adversity and bacterial vaginosis during pregnancy. *American Journal of Obstetrics and Gynecology*, 2011, 204(5):431.e1-8.

23. Wadhwa PD, Entringer S, Buss C, Lu MC. The contribution of maternal stress to preterm birth: Issues and considerations. *Clinics in Perinatology,* 2011, 38(3):351-84.

24. Entringer S, Epel ES, Kumsta R, Lin J, Hellhammer DH, Blackburn EF, Wüst S, Wadhwa PD. Stress exposure in intrauterine life is associated with shorter telomere length in young adulthood. *Proceedings of the National Academy of Sciences USA,* 2011, 108(33):E513-8.

25. Kubera B, Hubold C, Zug S, Wischnath H, Wilhelm I, Hallschmid M, Entringer S, Langemann D, Peters A. The brain's supply and demand in obesity. *Front Neuroenergetics*, 2012, 10(4):4.

26. Entringer S, Buss C, Swanson JM, Cooper DM, Wing DA, Waffarn F, Wadhwa PD. Fetal programming of body composition, obesity, and metabolic function: The Role of Intrauterine Stress and Stress Biology. *Journal of Nutrition and Metabolism*, 2012: 632548

27. Buss C*/ Entringer S*, Davis EP, Hobel CJ, Swanson JM, Wadhwa PD, Sandman CA. Impaired Executive Function Mediates the Association between Maternal Pre-Pregnancy Body Mass Index and Child ADHD Symptoms. *PLoS ONE*. 2012, 7(6):e37758
*both authors contributed equally to the writing of this article.

28. Wadhwa PD, Simhan HN, Entringer S, Buss C, Smith R, Hobel CJ, Shimmin L, Hixson JE, Sing CF. Variation in the maternal corticotrophin releasing hormone-binding protein (CRH-BP) gene and birth weight in Blacks, Hispanics and Whites. *PLoS one*, 2012;7(9):e43931.

29. Buss C, Entringer S, Swanson JM, Wadhwa PD. The Role of Stress in Brain Development. *Cerebrum* (The Dana Foundation), 2012, April.

30. Buss C, Entringer S, Wadhwa PD. Fetal programming of brain development: intrauterine stress and susceptibility to psychopathology. *Science Signaling*, 2012, 5(245):pt7.

31. Kubera B, Hubold C, Otte S, Lindenberg AS, Zeiss I, Krause R, Steinkamp M, Klement J, Entringer S, Pellerin L, Peters A. Rise in plasma lactate concentrations with psychosocial stress: a possible sign of cerebral energy demand. *Obesity Facts*. 2012;5(3):384-92.

32. Entringer S, Buss C, Wadhwa PD. Prenatal stress, telomere biology, and fetal programming of health and disease risk. *Science Signaling*, 2012, 5(248):pt12.

33. Entringer S, Epel ES, Lin J, Buss C, Shahbaba B, Blackburn EH, Hyagriv SN, Wadhwa PD. Maternal psychosocial stress during pregnancy is associated with newborn leukocyte telomere length. *American Journal of Obstetrics and Gynecology*. 2013;208(2):134.e1-7

34. Entringer S. Impact of stress and stress physiology during pregnancy on child metabolic function and obesity risk. *Curr Opin Clin Nutr Metab Care*. 2013 May;16(3):320-7.

35. Shalev I, Entringer S, Wadhwa PD, Wolkowitz OM, Puterman E, Lin J, Epel ES. Stress and telomere biology: a lifespan perspective. *Psychoneuroendocrinology*. 2013;38(9):1835-42.

36. Entringer S, Wadhwa PD. Developmental programming of obesity and metabolic dysfunction: role of prenatal stress and stress biology. *Nestle Nutritional Institute Workshop Series.* 2013;74:107-20.

37. Voellmin A, Entringer S, Moog N, Wadhwa PD, Buss C. Maternal positive affect over the course of pregnancy is associated with the length of gestation and reduced risk of preterm delivery. *J Psychosom Res*. 2013;75(4):336-40.

38. Rasmussen JM, Entringer S, Nguyen A, van Erp TGM, Guijarro A, Oveisi F, Swanson JM, Piomelli D, Wadhwa PD, Potkin SG/Buss C. Brown adipose tissue quantification in human neonates using water-fat separated MRI. *PLoS ONE*. 2013 Oct 30;8(10):e77907

39. Entringer S, Epel ES, Lin J, Blackburn EH, Buss C, Simhan HN, Wadhwa PD. Maternal estriol (E3) concentrations in early gestation predict infant telomere length. *J Clin Endocrinol Metab*. 2015 Jan;100(1):267-73.

40. Entringer S, Buss C, Wadhwa PD. Prenatal stress, development, health and disease risk: A psychobiological perspective - 2015 Curt Richter Award Paper. *Psychoneuroendocrinology*. 2015;62:366-375.

41. Entringer S, Epel ES, Lin J, Blackburn EH, Buss C, Shahbaba B, Gillen DL, Venkataramanan R, Simhan HN, Wadhwa PD. Maternal folate concentration in early pregnancy and newborn telomere length. *Ann Nutr Metab*. 2015;66(4):202-8. doi: 10.1159/000381925.

42. Graham AM, Buss C, Rasmussen JM, Rudolph MD, Demeter DV, Gilmore JH, Styner M, Entringer S, Wadhwa PD, Fair DA. Implications of newborn amygdala connectivity for fear and cognitive development at 6-months-of-age. *Dev Cogn Neurosci*. 2016 Apr;18:12-25.

43. Lee K, Cherel M, Budin F, Gilmore J, Consing KZ, Rasmussen J, Wadhwa PD, Entringer S, Glasser MF, Van Essen DC, Buss C, Styner M. Early Postnatal Myelin Content Estimate of White Matter via T1w/T2w Ratio. *Proc SPIE Int Soc Opt Eng*. 2015;9417. pii: 94171R. Epub 2015 Mar 17.

44. Lindsay KL, Hellmuth C, Uhl O, Buss C, Wadhwa PD, Koletzko B, Entringer S. Longitudinal Metabolomic Profiling of Amino Acids and Lipids across Healthy Pregnancy. *PLoS One*. 2015 Dec 30;10(12):e0145794.

45. Fox M, Entringer S, Buss C, DeHaene J, Wadhwa PD. Intergenerational transmission of the effects of acculturation on health in Hispanic Americans: a fetal programming perspective. *Am J*

Public Health. 2015 Jul;105 Suppl 3:S409-23.

46. Short SJ, Stalder T, Marceau K, Entringer S, Moog NK, Shirtcliff EA, Wadhwa PD, Buss C. Correspondence between hair cortisol concentrations and 30-day integrated daily salivary and weekly urinary cortisol measures. *Psychoneuroendocrinology*. 2016 May 10;71:12-18.

47. Ross KM, Miller G, Culhane J, Grobman W, Simhan HN, Wadhwa PD, Williamson D, McDade T, Buss C, Entringer S, Adam E, Qadir S, Keenan-Devlin L, Leigh AK, Borders A. Patterns of peripheral cytokine expression during pregnancy in two cohorts and associations with inflammatory markers in cord blood. *Am J Reprod Immunol*. 2016 Sep 12. doi: 10.1111/aji.12563. [Epub ahead of print]

48. Entringer S, Buss C, Heim C. Early-life stress and vulnerability for disease in later life. *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz*. 2016 Sep 7. [2016 Oct;59(10):1255-61.

49. Moog NK, Buss C, Entringer S, Shahbaba B, Gillen DL, Hobel CJ, Wadhwa PD. Maternal Exposure to childhood trauma is associated during pregnancy with placental-fetal stress physiology. *Biol Psychiatry*. 2016 May 15;79(10):831-839. doi: 10.1016/j.biopsych.2015.08.032. Epub 2015 Sep 3.

50. Hellmuth C, Lindsay KL, Uhl O, Buss C, Wadhwa PD, Koletzko B, Entringer S. Association of maternal pre-pregnancy BMI with metabolomic profile across gestation. *International Journal of Obesity (Lond)*. 2017 Jan;41(1):159-169.

51. Moog NK, Entringer S, Heim C, Wadhwa PD, Kathmann N, Buss C. Influence of maternal thyroid hormones during gestation on fetal brain development. *Neuroscience*. 2017 Feb 7;342:68-100.

52. Streit F, Akdeniz C, Haddad L, Kumsta R, Entringer S, Frank J, Yim IS, Zänkert S, Witt SH, Kirsch P, Rietschel M, Wüst S. Sex-specific association between functional neuropeptide S receptor gene (NPSR1) variants and cortisol and central stress responses. *Psychoneuroendocrinology*. 2017 Feb;76:49-56.

53. Rasmussen JM, Kruggel F, Gilmore JH, Styner M, Entringer S, Consing KN, Potkin SG, Wadhwa PD, Buss C. A novel maturation index based on neonatal diffusion tensor imaging reflects typical perinatal white matter development in humans. *Int J Dev Neurosci*. 2017 Feb;56:42-51.

54. Girchenko P, Lahti M, Tuovinen S, Savolainen J, Lahti J, Binder E, Reynolds R, Entringer S, Buss C, Wadhwa PD, Hämäläinen E, Kajantie E, Pesonen AK, Villa PM, PREDO Study group, Laivuori H, Räikkönen K. Prediction and Prevention of Preeclampsia and Intrauterine Growth Restriction (PREDO) Study. *International Journal of Epidemiology*. 2016 Sep 17. pii: dyw154.

55. Ikenoue S, Waffarn F, Sumiyoshi K, Ohashi M, Ikenoue C, Buss C, Gillen DL, Simhan HN, Entringer S, Wadhwa PD. Association of ultrasound-based measures of fetal body composition with newborn adiposity. *Pediatr Obes*. 2017 Aug;217(2):204.e1-204.e8.

56. Entringer S, Buss C, Rasmussen JM, Lindsay K, Gillen DL, Cooper DM, Wadhwa PD. Maternal cortisol during pregnancy and infant adiposity: a prospective investigation. *J Clin Endocrinol Metab*. 2017 Apr 1;102(4):1366-1374.

57. Toepfer P, Heim C, Entringer S, Binder E, Wadhwa P, Buss C. Oxytocin pathways in the intergenerational transmission of maternal early life stress. *Neurosci Biobehav Rev*. 2017 Feb;73:293-308.

58. Lindsay K, Buss C, Wadhwa PD, Entringer S. The interplay between maternal nutrition and stress during pregnancy: Issues and considerations. *Ann Nutr Metab*. 2017 2017;70(3):191-200.

59. Qiu A, Shen M, Buss C, Chong YS, Kwek K, Saw SM, Gluckman PD, Wadhwa PD, Entringer S, Styner M, Karnani N, Heim CM, O'Donnell KJ, Holbrook JD, Fortier MV, Meaney MJ; the GUSTO study group. Effects of antenatal maternal depressive symptoms and socio-economic status on neonatal brain development are modulated by genetic Risk. *Cereb Cortex*. 2017 Mar 18:1-13.

60. Buss C, Entringer S, Moog NK, Toepfer P, Fair DA, Simhan HN, Heim CM, Wadhwa PD. Intergenerational Transmission of Maternal Childhood Maltreatment Exposure: Implications for Fetal Brain Development. *J Am Acad Child Adolesc Psychiatry*. 2017 May;56(5):373-382

61. Ikenoue S, Waffarn F, Ohashi M, Sumiyoshi K, Ikenoue C, Buss C, Gillen DL, Simhan HN, Entringer S, Wadhwa PD. Prospective Association of Fetal Liver Blood Flow at 30 Weeks Gestation with Newborn Adiposity. *Am J Obstet Gynecol*. 2017 Aug;217(2):204.e1-204.e8.

62. Miller GE, Culhane J, Grobman W, Simhan H, Williamson DE, Adam EK, Buss C, Entringer S, Kim KY, Felipe Garcia-Espana J, Keenan-Devlin L, McDade TW, Wadhwa PD, Borders A. Mothers' childhood hardship forecasts adverse pregnancy outcomes: Role of inflammatory, lifestyle, and psychosocial pathways. *Brain Behav Immun*. 2017 Oct;65:11-19.

63. Rasmussen JM, Entringer S, Kruggel F, Cooper DM, Styner M, Gilmore JH, Potkin SG, Wadhwa PD, Buss C. Newborn insula gray matter volume is prospectively associated with early life adiposity gain. *Int J Obes (Lond)*. 2017 Sep;41(9):1434-1439.

64. Entringer S, Rasmussen J, Cooper DM, Ikenoue S, Waffarn F, Potkin SG, Wadhwa PD, Buss C. Association between supraclavicular brown adipose tissue composition at birth and adiposity gain from birth to 6 months age. *Pediatr Res*. 2017 Jul 19. doi: 10.1038/pr.2017.159. [Epub ahead of print]

65. Van den Bergh BRH, van den Heuvel MI, Lahti M, Braeken M, de Rooij SR, Entringer S, Hoyer D, Roseboom T, Räikkönen K, King S, Schwab M. Prenatal developmental origins of behavior and mental health: The influence of maternal stress in pregnancy. *Neurosci Biobehav Rev*. 2017 Jul 28. pii: S0149-7634(16)30734-5. doi:10.1016/j.neubiorev.2017.07.003.

66. Moog NK, Heim CM, Entringer S, Kathmann N, Wadhwa PD, Buss C. Childhood maltreatment is associated with increased risk of subclinical hypothyroidism in pregnancy. *Psychoneuroendocrinology*. 2017 Oct;84:190-196. doi: 10.1016/j.psyneuen.2017.07.482. Epub 2017 Jul 20.

67. Graham AM, Rasmussen JM, Rudolph MD, Heim CM, Gilmore JH, Styner M, Potkin SG, Entringer S, Wadhwa PD, Fair DA, Buss C. Maternal systemic interleukin-6 during pregnancy Is associated with newborn amygdala phenotypes and subsequent behavior at 2 years of age. *Biol Psychiatry*. 2017 Jun 19. pii: S0006-3223(17)31670-0. doi:10.1016/j.biopsych.2017.05.027. [Epub ahead of print]

68. Moog NK, Entringer S, Rasmussen JM, Styner M, Gilmore JH, Kathmann N, Heim CM, Wadhwa PD, Buss C.Intergenerational effect of maternal exposure to childhood maltreatment on newborn brain anatomy. *Biol Psychiatry*. 2017 Jul 21. pii: S0006-3223(17)31809-7. doi: 10.1016/j.biopsych.2017.07.009. [Epub ahead of print]

69. Calvi JL, Chen FR, Benson VB, Brindle E, Bristow M, De A, Entringer S, Findlay H, Heim C, Hodges EA, Klawitter H, Lupien S, Rus HM, Tiemensma J, Verlezza S, Walker CD, Granger DA. Measurement of cortisol in saliva: a comparison of measurement error within and between international academic-research laboratories. *BMC Res Notes*. 2017 Sep 13;10(1):479. doi: 10.1186/s13104-017-2805-4.

70. de Punder K, Heim C, Przesdzing I, Wadhwa PD, Entringer S. Characterization in humans of in vitro leukocyte maximal telomerase activity capacity (mTAC) and association with stress. *Philosophical Transactions B (accepted for publication).*

71. Entringer S, de Punder K, Buss C, Wadhwa PD. The Fetal Programming of Telomere Biology Hypothesis: An Update. *Philosophical Transactions B (accepted for publication).*

Books and Book Chapters, peer-reviewed

1. Entringer S. Exposure to Prenatal Psychosocial Stress: Implications for Long-Term Disease Susceptibility. Cuvillier: Goettingen, 2007.

2. Entringer S, Wadhwa PD. Developmental Programming of Telomere Biology: Role of Stress and Stress Biology. In: *Stress and Developmental Programming of Health and Disease: Beyond Phenomenology*. Editors: Zhang, L, Longo LD, Nova Science Publisher, New York. 2014; 633-650.

3. Entringer S, Heim C. Early Programming of Disease Vulnerability (in German). In: *The Social Brain.* Editors: Fink, H., Rosenzweig, R. Mentis, Münster, 2015: 87-97.

4. Entringer S, Heim C. Consequences of Stressful Experiences during Early Life for Health and Disease Risk (in German). In: *Does Early Childhood Set the Course*? Editor: Nationales Zentrum Frühe Hilfen (NZFH), Bundeszentrale für gesundheitliche Aufklärung (BZgA), Köln. 2015: 44-49.

5. Entringer S, Heim C. Biological Principles (in German). In: *Behavioral Medicine*. Editor: Ehlert, U. Springer, Berlin Heidelberg. 2016: 14-41.

6. Entringer S, de Punder K, Verner G, Wadhwa PD. Fetal Programming of Telomere Biology – Role of Maternal Nutrition, Obstetric Risk Factors and Suboptimal Birth Outcomes. In: *Diet, Nutrition, and Fetal Programming From the Womb to Adulthood*. Editors: Patel VB, Preedy VR, Rajendram R. Springer Berlin Heidelberg (in press).

Published Abstracts, peer-reviewed

1. Federenko I, Nagamine M, Hellhammer DH, Entringer S, Kumsta R, Philippsen C, Timmerhinrich M, Uhde A, Wießmann T, Wüst S. Heritability of hypothamalus-pituitary-adrenal axis reactivity to pharmacological and repeated psychosocial stimulation. *Stress,* 2002*,* 5 (Suppl.):71.

2. Federenko I, Nagamine M, Hellhammer DH, Entringer S, Kumsta R, Philipsen C, Timmerhinrich M, Wiessmann T, Wust S. Heritability of hypothalamus-pituitary-adrenal axis reactivity to pharmacological and psychosocial stimulation. *Psychosomatic Medicine*, 2002, 64(1):95.

3. Entringer S, Federenko I, Hellhammer DH, Wüst, S. Enhanced adrenocortical reactivity in subjects with preterm birth or low birthweight. *Journal of Psychophysiology,* 2003, 17(3):142.

4. Entringer S, Federenko IS, Hellhammer DH, Kirschbaum C, Bartels M, Schlotz W, Wüst S. Impact of genetic factors on the variability of perceived stress. *Journal of Psychophysiology*, 2004, 18(4):199.

5. Wüst S, Federenko IS, Koper JW, Entringer S, Kumsta R., & Helhammer DH. Impact of genetic factors on hypothalamus-pituitary-adrenal axis reactions to psychosocial stress. *Der Nervenarzt*, 2004, 75, Supplement 2:104.

6. Kumsta R, Entringer S, Koper JW, Hellhammer DH, Wüst S. GR gene haplotypes and hypothalamus-pituitary-adrenal (HPA) axis responses to stress. *Pharmacopsychiatry*, 2005, 38:257.

7. Entringer S, Kumsta R, Hellhammer DH, Wadhwa PD, Wüst S. Prenatal Psychosocial Stress Alters Immune Cell Population after a Psychosocial Stress Test in Women. *Pediatr Res*, 2005, 58:1008-1132.

8. Wust S, Federenko I, Van Rossum EFC, Koper JW, Kumsta R, Entringer S, Hellhammer DH. Genetic factor have an impact on cortisol and ACTH responses to psychosocial stress. *European Psychiatry*, 2005, 20, Suppl. 1, S102.

9. Entringer S, Kumsta R, Layes I, Hellhammer DH, Nelson E, Wadhwa PD, Wüst S. Exposure to maternal psychosocial stress *in utero* is associated with insulin resistance in adult life. *Journal of Psychophysiology,* 2006*,* 21(2):22.

10. Kumsta R, Entringer S, van Rossum EFC, Hellhammer DH, Koper JW, Wust S. GR gene variants, sensitivity to glucocorticoids and HPA axis responses to stress. *Journal of Psychophysiology*, 2006, 20(2): 111-111.

11. Wust S, Kumsta R, Skowronek M, Entringer S, Treutlein J, Hellhammer DH, Rietschel M. Sex-specific association between the 5HTT gene-linked polymorphic region and basal cortisol secretion. *Journal of Psychophysiology*, 2006, 20(2): 111-111.

12. Entringer S, Kumsta R, Layes I, Hellhammer DH, Nelson E, Wüst S, Wadhwa PD. Prenatal stress exposure predicts insulin resistance in adult life. *Early Human Development,* 2006, 82(8):541.

13. Entringer S, Wuest S, Kumsta R, Hellhammer DH, Wadhwa PD. Prenatal stress exposure and working memory performance in adult life. *Early Human Development*, 2007, 83:S115-S116.

14. Buss C, Entringer S, Cammack AL, Reyes JF, Chicz-Demet A, Sandman CA, Wadhwa PD. Attenuation of the cortisol awakening response (CAR) over the course of human gestation is

associated with gestational age at birth. *American Journal of Obstetrics & Gynecology*, 2008, 199(6):S23.

15. Entringer S, Buss C, Andersen J, Chicz-Demet A, Sandman CA, Wadhwa PD. Repeated ambulatory assessments of maternal cortisol over a multiple-day period predict length of gestation and birth weight. *American Journal of Obstetrics & Gynecology*, 2008, 199(6):S56.

16. Wust, S, Kumsta R, DeRijk RH, Entringer S; van Rossum EFC; Koper JW, Hellhammer DH. Corticosteroid receptor gene variants and stress reactivity: Implications for the development of depression. *Journal of Affective Disorders,* 2008, 107:S39-S39

17. Wust S, Kumsta R, DeRijk RH, Entringer S, van Rossum EFC, de Kloet ER, Hellhammer DH, Koper JW. Glucocorticoid and mineralocorticoid receptor gene variants are associated with ACTH, cortisol and cardiovascular responses to psychosocial stress. *International Journal of Psychology*, 2008, 43 (3-4):195-195.

18. Kumsta R, Schlotz W, Entringer S, Jones A, Hellhammer D, Wust S. Cross-correlation functions demonstrate offset effects in the covariance of endocrine and subjective-psychological responses to psychosocial stress. *International Journal of Psychology*, 2008, 43 (3-4): 501-501.

19. Entringer S, Buss C, Chicz-Demet A, Sandman CA, Wadhwa PD, Hobel CJ. Homeostatic Implications for a Relationship between Placental Corticotrophin-releasing hormone (PCRH) and Umbilical Artery Blood Flow in Human Pregnancy. *American Journal of Obstetrics & Gynecology*, 2009; 201(6):S117.

20. Buss C, Davis, EP, Entringer S, Wadhwa PD, Sandman CA. The impact of Maternal Prenatal Pregnancy-specific Anxiety on Infant and Child Neurodevelopmental Outcomes. *Longitudinal and Life Course Studies*, 2010; 1(3), Supplement.

21. Entringer S, De Haene J, Buss C, Mathew L, Stotland N, Havel P, Wadhwa PD*,* Culhane J, King J. Pre-pregnancy BMI, but not weight gain during pregnancy, is associated with maternal systemic inflammation during pregnancy in two independent cohorts. *Diabetes*, 2011;60 (Supplement 1):A118.

22. Entringer S, Buss C, Elysia D, Wadhwa PD, Sandman CA. Maternal pre-pregnancy body mass index is associated with ADHD symptoms and impaired inhibitory control in 6-9 year old children. *Neuropsychopharmacology*, 2011, 36:S237.

23. Sumiyoshi K, De Haene J, Buss C, Waffarn F, Sameshima H, Wadhwa PD, Entringer S. Human fetal body composition: effects of protective maternal dietary factors. *Ultrasound in Obstetrics & Gynecology*, 2012, 40 (S1), 288-288.

24. Entringer S, Epel ES, Lin J, Buss C, Blackburn EH, Simhan HN, Wadhwa PD. Prenatal programming of newborn and infant telomere length. *European Journal of Psychotraumatology*, Supplement 1, 2012, 3 - http://dx.doi.org/10.3402/ejpt.v3i0.19477.

25. Buss C, Entringer S, Davis EP, Hobel CJ, Swanson JM, Wadhwa PD. Maternal pre-pregnancy obesity and child ADHD symptoms, executive function and cortical thickness. *European Journal of Psychotraumatology*, Supplement 1, 2012, 3 - http://dx.doi.org/10.3402/ejpt.v3i0.19483.

26. Moog N, Buss C, Entringer S, Sandman CA, Wadhwa PD. Exposure to childhood trauma among pregnant women is associated with increased placental CRH production over gestation. *European Journal of Psychotraumatology*, Supplement 1, 2012, 3 - http://dx.doi.org/10.3402/ejpt.v3i0.19492.

27. de Punder K, Heim C, Entringer S. Validation of a measure of in-vitro stimulated telomerase expression as a stress-related biomarker for human studies. *Psychoneuroendocrinology*. 2015;61:67.

28. Zänkert S, Streit F, Haddad L, Akdeniz C, Trost H, Kumsta R, Entringer S, Yim IS, Witt S, Kirsch P, Rietschel M, Wüst S. Sex modulates the interaction between neuropeptide S gene variants and endocrine and central stress responses.*Psychoneuroendocrinology*. 2015;61:59.

29. Overfeld J, Entringer S, Rasmussen J, Consing KN, Gilmore JH, Styner M, Heim CM, Wadhwa PD, Buss C. Neonatal amygdala volume modulates the effects of the early caregiving environment on infant social development.*Psychoneuroendocrinology*. 2015;61:34-5.

30. Entringer S, Buss C, Wadhwa PD. Maternal cortisol concentrations during pregnancy and infant adiposity. *Psychoneuroendocrinology*. 2015;61:13.

31. Buss C, Graham AM, Rasmussen J, Entringer S, Gilmore JH, Styner M, Wadhwa PD, Fair DA. Lack of maternal stress dampening during pregnancy is associated with altered neonatal amygdala connectivity. *Psychoneuroendocrinology*. 2015;61:11-2.

32. DePunder K, Heim C, Entringer S. Plasma levels of lipopolysaccharide-binding protein in response to psychosocial stress induction: Association with sympathetic nervous system response. *Brain Behavior and Immunity* 57:e25: October 2016.

33. Buss C, Stalder T, Entringer S, Wadhwa PD. Maternal preconceptual and gestational stress, hair cortisol concentrations during pregnancy and newborn brain integrity. *Psychoneuroendocrinology* 71:72-73, September 2016.

34. DePunder K, Heim C, Wadhwa PD, Entringer S. In vitro stimulated leukocyte telomerase activity is associated with chronic stress exposure. *Psychoneuroendocrinology* 71:60-61,September 2016.

35. Toepfer P, Heim C, Entringer S, Buss C. A variation in the oxytocin receptor gene moderates the relationship between early maternal care in childhood and interleukin 6 (IL-6) concentrations during pregnancy. *Psychoneuroendocrinology* 71:15, September 2016.

36. Moog N, Heim C, Entringer S, Buss C. Exposure to childhood trauma is associated with increased risk for subclinical hypothyroidism in pregnancy. *Psychoneuroendocrinology* 71:59-60, September 2016.

37. Buss C, Moog N, Entringer S, Wadhwa PD. Brain structural alterations in newborns of mothers exposed to childhood trauma. *Psychoneuroendocrinology* 71:3, September 2016.

38. Entringer S, Epel E, Lin J, Buss C, Blackburn E, Simhan H, Räikkonen K, Wadhwa PD. Telomere biology as a mechanism in developmental programming of health and disease risk. *Psychoneuroendocrinology* 71:4, September 2016.

39. Buss C, Borders A, Entringer S, Culhane J, Miller G, Grobman W, Adam E, Simhan H, Williamson

D, Kim KY, Keenan-Devlin L, Wadhwa PD. Maternal childhood trauma is associated with a pro-inflammatory state during pregnancy. *American Journal of Obstetrics & Gynecology* 216:1 (291), January 2017.

40. Miller ES, Grobman WA, Culhane J, Adam E, Buss C, Entringer S, Miller G, Simhan H, Wadhwa PD, Williamson D, Kim KY, Borders A. Do psychotropic medications reduce inflammation in women with antenatal depression/anxiety? *American Journal of Obstetrics & Gynecology* 216:1 (403-404), January 2017.

41. Graham A, Rasmussen JR, Entringer S, Rudolph M, Styner M, Gilmore JH, Potkin S, Wadhwa PD, Fair A, Buss C. Sex specific effects of maternal cortisol concentrations during pregnancy on the functional connectivity of the newborn limbic system. *Psychoneuroendocrinology* 83:6, September 2017.

42. Lazarides C, Epel ES, Lin J, Blackburn EH, Buss C, Simhan HN, Wadhwa PD, Entringer S. Prospective association between maternal pro-inflammatory state during pregnancy and newborn telomere length. *Psychoneuroendocrinology* 83:27, September 2017.

43. Rasmussen JM, Entringer S, Styner M, Gilmore JH, Graham A, Fair DA, Potkin SG, Wadhwa PD, Buss C. Maternal cortisol during gestation and sex specific prenatal programming of stress brain circuitry examined using diffusion tensor imaging. *Psychoneuroendocrinology* 83:6-7, September 2017.

44. Moog NK, Entringer S, Styner M, O'Donnell KJ, Gilmore JH, Meaney MJ, Binder EB, Heim CM, Wadhwa PD, Buss C. Interaction between maternal cortisol in pregnancy and infant FKBP5 genotype on newborn hippocampal volume and infant stress reactivity at 12 months. *Psychoneuroendocrinology* 83:26, September 2017.

45. Toepfer P, O'Donnell KJ, Heim CM, Lin DTS, MacIsaac JL, Kobor MS, Meaney MJ, Provencal N, Binder EB, Entringer S, Wadhwa PD, Buss C. Dynamic DNA methylation changes in the oxytocin locus (OXT) during pregnancy are associated with maternal parenting behavior. *Psychoneuroendocrinology* 83:25, September 2017.

46. de Punder K, Heim C, Przesdzing I, Wadhwa PD, Entringer S**.** Characterization of in vitro leukocyte maximal telomerase activity capacity (mTAC) as a stress-related measure for human studies. *Psychoneuroendocrinology, 83*, 51. September 2017

47. Scholaske L, Buss C, Brose A, Wadhwa PD, Entringer S. Acculturation is associated with interleukin-6 concentrations among Hispanic pregnant women. *Psychoneuroendocrinology* 83:27, September 2017.

48. Miller ES, Grobman WA, Culhane J, Adam E, Buss C, Entringer S, Miller G, Simhan H, Wadhwa PD, Williamson D, Kim KY, Borders A. Does maternal inflammation mediate the relationship between antenatal depression and adverse pregnancy outcomes? *American Journal of Obstetrics & Gynecology* 216:1 (404), January 2017.

49. Entringer S, Borders A, Buss C, Culhane J, Miller G, Grobman W, Simhan H, Adam E, Williamson D, Kim KY, Keenan-Devlin L, Wadhwa PD. Economic hardship during childhood is associated with immune hyperresponsiveness during pregnancy. *American Journal of Obstetrics & Gynecology* 216:1 (366), January 2017.

50. Kaminsky Z, Jones I, Bakker A, Wadhwa PD, Entringer S, Osborne L, Binder EB, Frokjaer V, Buss C, Payne J. Discovery, Replication, and Application of an Epigenetic Biomarker Model to the Prediction of Postpartum Depression and Neuroimaging Endophenotypes. *Biological Psychiatry* 81:10, May 2017.

51. Lindsay K, Hellmuth C, Uhl O, Buss C, Wadhwa PD, Koletzko B, Entringer S. Identification of metabolomic profiles that confer intergenerational transfer of obesity risk. American Journal of Obstetrics & Gynecology 216:1 (298-299), January 2017.

52. Lindsay K, Hellmuth C, Uhl O, Buss C, Wadhwa PD, Koletzko B, Entringer S. Prenatal interleukin-6 influences maternal amino acid profiles with implications for fetal programming of obesity. *American Journal of Obstetrics & Gynecology* 216:1 (299), January 2017.

53. Buss C, Borders A, Entringer S, Culhane J, Miller G, Grobman W, Adam E, Simhan H, Williamson D, Kim KY, Keenan-Devlin L, Wadhwa PD. Maternal childhood trauma is associated with a pro-inflammatory state during pregnancy. *American Journal of Obstetrics & Gynecology* 216:1 (291), January 2017.

54. Borders A, Keenan-Devlin L, Adam E, Miller G, Culhane J, Wadhwa PD, Buss C, Entringer S, Kuchta K, Kim KY, Simhan H, Williamson D, Grobman W. Maternal childhood disadvantage, hair cortisol, and small-for-gestational-age birth. *American Journal of Obstetrics & Gynecology* 216:1 (219), January 2017.

55. Thomas E, Graham A, Rudolph M, Rasmussen JM, Wadhwa PD, Entringer S, Gilmore JH, Styner M, Buss C, Fair DA. Implications of Newborn Amygdala Connectivity on Fear Vs. Negative Emotionality Development over the First Year of Life. *Biological Psychiatry* 81:10, May 2017.

56. Chen H, Budin F, Noel J, Prieto JC, Gilmore JH, Rasmussen JM, Wadhwa PD, Entringer S, Buss C, Styner M. White Matter Fiber-based Analysis of T1w/T2w Ratio Map. *SPIE Medical Imaging* 101330P-101330P-7, February 2017.

57. Kominiarek MA, Grobman W, Adam E, Buss C, Culhane J, Entringer S, Miller G, Simhan H, Wadhwa PD, Williamson D, Kim KY, Keenan-Devlin L, Borders A. Prenatal Stress and Gestational Weight Gain. Reproductive Sciences 24:125, March 2017.

Conference presentations, oral presentations

Severe maternal psychosocial stress during pregnancy and HPA axis function in adult life. 36th Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Montreal, Canada, September 24 – 27, 2005.

Impact of prenatal psychosocial stress on immune function in adult life. 3rd International Congress on the Developmental Origins of Health and Disease (DOHaD), Toronto, Canada, November 16 - 20, 2005.

Stress im Mutterleib und Insulinresistenz im Erwachsenenalter. Psychologie und Gehirn, Dresden, Germany, June 8 – 10, 2006.

Prenatal stress exposure predicts insulin resistance in adult life. 4th World Congress on the Developmental Origins of Health and Disease (DOHaD), Utrecht, The Netherlands, September 13 – 16, 2006.

Long-term effects of prenatal psychosocial stress on neuroendocrine, immune and metabolic function in human adults. 40th Annual Meeting of the International Society for Psychobiology, San Diego, CA, October 31 – November 3, 2007.

Prenatal psychosocial stress exposure and neuroendocrine, Immune and Metabolic Function in Human Adults. 66th Annual Scientific Conference of the American Psychosomatic Society Baltimore, MD, March 12-15, 2008.

The effects of pregnancy on maternal psychophysiological stress response. 39th Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Dresden, Germany, July 17-20, 2008.

Assessments of maternal cortisol awakening responses and diurnal cortisol profiles over a multiple-day period predict length of gestation. Data Blitz presentation at the 67th Annual Conference of the American Psychosomatic Society, Chicago, IL, March 4-7, 2009.

Prenatal stress is associated with leukocyte telomere shortness in young adults. Late breaking oral presentation. Society of Biological Psychiatry, 66th Annual Meeting, San Francisco, California, May 12-14, 2011.

Prenatal stress is associated with leukocyte telomere shortness in young adults. 41st Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Berlin, Germany, August 4-6, 2011.

Prenatal programming of newborn and infant telomere length. 42nd Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), New York, 11. - 14. September 2012.

Fetal Programming of Telomere Biology. The International Marcé Society Scientific Conference, Swansea, September 10-12, 2014.

Entringer S, Buss C, Wadhwa PD. Maternal cortisol concentrations during pregnancy and infant adiposity. 45th Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Edinburgh, September 8-11, 2015.

Telomere Biology as a Mechanism in Developmental Programming of Health and Disease Risk. 46th Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Miami, September 8-11, 2016.

Prenatal programming of the telomere system and risk for aging-related disorders. Joint meeting of the German Societies for Medical Psychology and Medical Sociology, Berlin, Germany, September 28-30, 2016.

Conference presentations, posters

Enhanced adrenocortical reactivity in subjects with preterm birth or low birth weight. 29. Arbeitstagung für Psychobiologische Methodik, Würzburg, Germany, June 2003.

Impact of genetic factors on the variability of perceived stress. 30. Arbeitstagung für Psychobiologische Methodik, Freiburg, Germany, June 2004.

Adrenocortical responses to psychosocial stress are related to birth weight and length of gestation. 35th Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Glasgow, UK, July 2004.

Stress *in utero* and insulin resistance in adult life. 37th Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Utrecht, The Netherlands, September 2006.

Prenatal stress exposure and working memory performance in adult life". 5th International Congress on the Developmental Origins of Health and Disease (DOHaD), Perth, Australia, November 6 - 10, 2007.

Repeated ambulatory assessments of maternal cortisol over a multiple-day period predict length of gestation. 29th Annual Meeting of the Society of Maternal and Fetal Medicine, San Diego, CA, January 26 - 31, 2009.

Assessements of maternal cortisol awakening responses and diurnal cortisol profiles over a multiple-day period predict length of gestation. 40th Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), San Francisco, CA, July 23 - 26, 2009.

Pre-pregnancy BMI, but not weight gain during pregnancy, is associated with maternal systemic inflammation during pregnancy in two independent cohorts. 71st meeting of the American Diabetes Association, San Diego, CA, June 24-28th, 2011.

Maternal pre-pregnancy body mass index is associated with ADHD symptoms and impaired inhibitory control in 6-9 year old children. 50st meeting of the American College of Neuropsychopharmacology, Hawaii, HI, December 4-8th, 2011.

INVITED PRESENTATIONS

Prenatal stress and stress physiology in human pregnancy: Implications for fetal growth, development and child body composition and obesity risk. University of Trier, Germany, June 23rd, 2009.

Prenatal Stress, Health and Disease. Orange County Health Care Agency, Santa Ana, CA, May 2011.

Fetal programming of infant adiposity. National Research Fund Luxembourg (FNR). June 17th, 2011.

Developmental programming of body composition. For OC Kids Neurodevelopmental Center Seminar. Orange, CA, September 14th, 2011.

Exposure to stress in utero: Prenatal programming of Health and Disease. Workshop "Family cultures and mental and psychosomatic disorders". University of Ulm, Germany. October 4th, 2011.

Stress Biology and Fetal Programming of Health and Disease. Charité, University Medicine, Berlin, Germany. Februaury 14th, 2013.

Stress and Telomere Biology. Mental Health Platfrom, Charité, University Medicine, Berlin, Germany. December 3rd, 2013.

Maternal acculturation and fetal programming of health and diseas risk. PerinatBerlin meeting, Charité University Medicine Berlin, January 27th, 2014.

Prenatal stress, telomere biology and fetal programming of health and disease risk. 25th Annual Meeting of the German Society of Human Genetics
Essen, March 20st, 2014.

Fetal programming of telomere biology. Annual Meeting of the German Society for Psychosomatic Medicine and Psychotherapy, Berlin, March 28th, 2014.

Fetal programming: role of acculturation and stress biology. University of Bielefeld, Department of Epidemiology and International Public Health, April 25th, 2014.

Fetale Programmierung - Folgen pränataler Stresserfahrung für Gesundheit und Krankheitsrisiko. Turm der Sinne, Fürth, Symposium “Das soziale Gehirn,” September 25-27, 2014

Prenatal stress, telomere biology and fetal programming of health and disease risk. Diversity in Telomere Dynamics, Drymen, Scotland, November 17th-19th, 2014.

Prenatal Programming of Telomere Biology. IISBR Faculty Video Seminar Series, Arizona State University, December 10, 2014.

Consequences of exposure to prenatal stress for health and disease risk across the life span. 17th Annual Symposium of the Clinic for Psychosomatic and Psychotherapy, Dresden, Germany, September 18-19th, 2015.

Prenatal stress, telomere biology and programming of health and disease in later life. Symposium on “Prenatal Stress and Brain Disorders in Later Life”, Berlin, September 20-22, 2015.

Consequences of exposure to prenatal stress for later health and disease risk. Symposium on “Does early childhood set the course?”,Heidelberg, Germany, September 25-26, 2015.

Stress during pregnancy and programming of health and disease risk. Research Colloquium, University of Konstanz, January 12, 2016.

Materanal stress during pregnancy and programming of offspring health and disease risk. Invited Satellite Symposium, German Society for Psychosomatic Medicine and Psychothrapy, Potsdam, Germany, March 16-19, 2016.

Does pregnancy set the course? Fetal programming of health and disease. Symposium on Psychoneuroimmunology across the life course, Innsbruck, Österreich, 16.-18. September, 2016.

Fetal Programming of Health and Disease. DFG Network Neuroscientific Methods in Developmental Psychology, 5. Workshop, January 26-28, 2017, Erlangen.

Maternal hormones during pregnancy and infant metabolic programming and brain development. Dutch Nueroscience Conference 2017, Lunteren, The Netherlands, June 15-16, 2017.

Psychobiological Consequences of Trauma and Stress during Childhood. Symposium on “Trauma, Violence, Integration: Challenges and Changes of forced Migration“, Berlin Universitätsmedizin Berlin, Germany, June 22, 2017.

Fetal Programming of Health and Disease Risk: Role of Prenatal Stress and Telomere Biology. Health Psychology Colloquium, University of Erlangen, Germany, June 28, 2017.

Stress and stress hormones during fetal development: effects on disease susceptibility in later life. 28th Conference of the European Network of Teratology Information Services (ENTIS), September 2-5, 2017, Budapest, Hungary

Telomere length and early adversity. World Association for Stress Related and Anxiety Disorders (WASAD) Congress, 14 – 16 September 2017, Würzburg, Germany

INSTITUTIONAL SERVICE

Member, Ethical Board, Charité Universitätsmedizin Berlin

Member, Equal Opportunities Board, Charité Universitätsmedizin Berlin

REVIEWER, EDITORIAL BOARDS AND CONSULTATIONS

Manuscript Reviews

Acta Peadiatrica
American Journal of Preventive Medicine
American Journal of Obstetrics and Gynecology
Biological Psychology
Biological Psychiatry
BMC Pregnancy and Childbirth
Brain, Behavior and Immunity
Child Development
Developmental Psychobiology
Developmental Dynamics
Early Human Development
Environmental and Molecular Mutagenesis
Hormones and Behavior
JAMA Pediatrics
Journal of Clinical Endocrinology and Metabolism
Journal of Neural Transmission
Journal of Obesity
Journal of Pediatrics
Journal of Psychosomatic Research
Molecular and Cellular Endocrinology
Neuroscience & Biobehavioral Reviews
Pediatrics
Proceedings of the National Academy of Sciences
Psychological Medicine

Psychological Trauma: Theory, Research, and Practice
Psychoneuroendocrinology
Stress

Committees and Grant Reviews

Ad-Hoc Scientific Reviewer, National Institute on Drug Abuse (NIDA), NIH

Ad-Hoc Scientific Reviewer, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), NIH

Scientific Reviewer, Institute for Clinical and Translational Science (ICTS), University of California, Irvine

Scientific Reviewer, Medical Research Council, UK

Scientific Reviewer, Economic and Social Research Council (ESRC), UK

Scientific Reviewer, German Research Foundation (DFG)

Scientific Reviewer, Fund for Scientific Research – FNRS, Belgium

Scientific Reviewer, University of Wisconsin-Milwaukee Research Growth Initiative

Scientific Reviewer, German-Israeli Foundation for Scientific Research and Development

Scientific Reviewer, L'ORÉAL Fellowship for Young Scientists

Scientific Reviewer, Research Comission Charité Berlin

Scientific Advisory Committee, EarlyNutrition eAcademy

International Collaboration and Advisory Committee, EarlyNutrition

Updated September 2017