

CURRICULUM VITAE
Sarhattama Sen, M.D.

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EDUCATION

Undergraduate	The Pennsylvania State University, State College, PA, BS Science, 1998
Medical School	Jefferson Medical College, Philadelphia, PA, MD, 2002

POSTDOCTORAL TRAINING

Residency	The Children's Hospital of Philadelphia, Philadelphia, PA (Pediatrics) 6/02 – 6/05
Fellowship	The Children's Hospital of Philadelphia, Philadelphia, PA (Neonatal/Perinatal Medicine) 1/06 – 12/08

POSTGRADUATE HONORS AND AWARDS

Travel award, American Academy of Pediatrics, Platform presentation: "Obesity through the generations: molecular mechanisms that may lead to offspring obesity." 2007

Research Conference Young Investigator, Society for Pediatric Research, chosen as one of twenty young investigators to attend "Interplays Between Early Nutrition, GI Microbial Ecology, the Immune system and Subsequent Health?" 2007

Travel Award, Society for Pediatric Research, Platform presentation: "Mechanisms by which Maternal Obesity Induces Obesity in Offspring." 2007

Young Investigator Award nominee, Eastern Society for Pediatric Research, One of three young investigator nominees for platform presentation: "Mechanisms by which Maternal Obesity Induces Obesity in Offspring." 2007

Recipient/PI, NIH Loan Repayment Program, Maternal Obesity and Offspring Immune Dysregulation, 2008-16

Travel Award, Society for Pediatric Research, “Offspring obesity can be ameliorated by maternal dietary intervention with antioxidants.” 2008

Poster Award, American Society of Nutrition, Co-investigator “Maternal Obesity Impairs Maternal-fetal Iron Transport” 2011

Young Investigator Award, Perinatal Research Society, Chosen to attend an NICHD sponsored grant-writing workshop and elected as an associate member of The Perinatal Research Society 2013

Travel Award, Mead Johnson, Perinatal Research Society Grant Writing Workshop, 2013

Samuel J. Fomon Young Physician Award, The American Society for Nutrition, for a young physician who has made a significant contribution to pediatric and infant nutritional research, 2014

40 under 40 Healthcare Innovators, Medtech Boston, For early career physicians and scientists poised to have an impact on healthcare, 2017

Featured Keynote Early Career Speaker, United States Developmental Origins of Health and Disease Society, Keynote speaker for an early career investigator who has made a significant contribution to the understanding of developmental programming, 2022

Teaching Honor Roll, Harvard Neonatal-Perinatal Fellowship, Selected by fellows as top teaching faculty for fellowship program across four Harvard teaching NICUs, 2022, 2023

Emerging Leader in Women’s Careers Nominee, Harvard Medical School, nominated for this award for a mid-career individual who has fostered, guided and established systems to support women’s careers locally and regionally, 2022

Professionalism Award, Brigham and Women’s Hospital, awarded to an outstanding clinician who fosters collaboration, teamwork, and promotes an inclusive professional environment, supportive of Brigham and Women’s core values, culture of respect, and interest in the wellbeing of all employees, 2022

PROFESSIONAL LICENSES AND BOARD CERTIFICATION

Commonwealth of Pennsylvania, 2002-2010

Commonwealth of Massachusetts, 2008-2023

Rhode Island Department of Health 2024-

American Board of Pediatrics, General Pediatrics 2005, 2015

American Board of Pediatrics, Neonatal-Perinatal Medicine 2010, 2017

ACADEMIC APPOINTMENTS

Clinical Instructor of Pediatrics, The University of Pennsylvania School of Medicine, 2002- 2005

Assistant Professor of Pediatrics, Tufts University School of Medicine, 2009-2014

Assistant Professor of Pediatrics, Harvard Medical School, 2013-2023

Associate Professor of Pediatrics, Harvard Medical School, 2023-

Associate Professor of Pediatrics, The Warren Alpert Medical School of Brown University

HOSPITAL APPOINTMENTS

2009-2014	Attending Neonatologist	Pediatrics	The Floating Hospital for Children at Tufts Medical Center
2009-2014	Attending Neonatologist	Pediatrics	Metrowest Medical Center
2009-2014	Attending Neonatologist	Pediatrics	Melrose Wakefield Hospital
2014-2016	Attending Neonatologist	Pediatrics	St. Elizabeth Medical Center
2014-2023	Attending Neonatologist	Pediatric Newborn Medicine	Brigham and Women's Hospital & Newton Wellesley Hospital
2024-	Attending Neonatologist	Pediatrics	Women and Infants' Hospital of Rhode Island

OTHER APPOINTMENTS

2009-	Adjunct Scientist	Nutritional Immunology Lab	The Jean Mayer USDA Human Nutrition Research Center on Aging, Boston, MA
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HOSPITAL COMMITTEES

Local

2016-18	Director, Department of Pediatric Newborn Medicine Research Works in Progress	Brigham and Women's Hospital
2018	Course Director, Neonatal Hypoglycemia Conference	Harvard Medical School
2018-	Director, Pediatric Newborn Medicine Grand Rounds	Brigham and Women's Hospital
2020-	Chair, Pediatric Newborn Medicine Faculty Council	Brigham and Women's Hospital
2020	Workshop Director, Neonatal Hypoglycemia: Advances and Controversies (deferred due to COVID)	Pediatric Academic Society
2021-	Director of Faculty Development, Department of Pediatric Newborn Medicine	Brigham and Women's Hospital

HOSPITAL & UNIVERSITY COMMITTEES

Local

2010-2012	Pediatric Resident Education Committee	The Floating Hospital for Children at Tufts Medical Center
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2010-2012	Neonatal Fellowship Selection Committee	The Floating Hospital for Children at Tufts Medical Center
2015-	Neonatal Hypoglycemia Clinical Practice Guideline	BWH, Department of Pediatric Newborn Medicine
2015-	2015- Scholarship Oversight Committees for four Harvard neonatal perinatal medicine fellows	Team Leader Harvard Neonatal Perinatal Medicine Fellowship Program
2017- 2020	Partners Institutional Review Board	Brigham and Women's Hospital
2021-	Connors Center for Women-Brigham Research Institute Advisory Committee	Brigham and Women's Hospital
2021-	Research Executive Committee	Brigham and Women's Hospital Department of Pediatric Newborn Medicine
2022-	Faculty Development Leadership Committee	Brigham and Women's Hospital

National

2013-2014	CTSA Child Health Oversight Committee	NIH
2017-	Breastmilk Composition Advisory Panel	NIH, HHS and USDA Member
2017-	2017-	
2019-	Environmental Influences on Child Health (ECHO)	National Institutes of Health, Pregnancy and Perinatal working group member

MEMBERSHIP IN SOCIETIES

2013-2016	The Perinatal Research Society	Associate Member
2014-2016	The American Society for Nutrition	Member, Maternal Perinatal Research Interest Group
2014-2016	2014-2016	
2017-	The Pediatric Academic Society/Society for Pediatric Research	Member
2022-	American Academy of Pediatrics Neonatal Hypoglycemia Policy Statement Invited Expert	Policy leadership group
2024-	American Pediatric Society	Member

PUBLICATIONS LIST

ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS

(* indicates co-first or last authorship; ** indicates trainee)

1. **Sen S**, Simmons RA. Maternal Antioxidant Supplementation Prevents Adiposity in the Offspring of Western Diet-fed Rats. *Diabetes*. 2010; 59: 3058-3065. PMID: 20823102. PMCID: PMC2992766.

2. Dao, MC* and **Sen S***, Iyer C, Klebenov D, Meydani SN. Obesity during Pregnancy and Fetal Iron Status: is Hepcidin the link? *The Journal of Perinatology*. 2013; 33: 177-81. PMID: 22722675.
3. **Sen S**, Iyer C**, Klebenov D, Histed A, Aviles J, Meydani SN. Obesity Impairs Cell Mediated Immunity during the Second Trimester of Pregnancy. *Am J Obstetrics and Gynecology*. 2013; 208: 139. e1-8. PMID: 23159744.
4. Correa PJ, Vargas F, **Sen S**, Illanes SE. Prediction of Gestational Diabetes early in Pregnancy: Targeting the long term complications. *Gynecologic and Obstetric Investigation*. 2014; 77(3):145-9. PMID: 24401480.
5. **Sen S**, Iyer C**, Meydani SN. Obesity During Pregnancy Alters Oxidant Balance and Micronutrient Status. *J Perinatology*. 2014 Feb; 34(2):105-11. PMID: 24355940.
6. Vishwanathan R, **Sen S**, Kuchan M, Johnson EJ. Lutein is the Predominant Carotenoid in the Infant Brain. *The Journal of Pediatric Gastroenterology and Nutrition*. 2014 March;59(5):659-65. PMID: 24691400.
7. Panagos P**, Vishwanathan R, Penfield-Cyr A, Shivappa N, Hebert J, Matthan N, **Sen S**. Breastmilk from Obese Mothers has pro-inflammatory properties and decreased neuroprotective factors. *J Perinatology*, 2016 Apr;36(4):284-90. PMID: 26741571; PMCID: PMC4888773.
8. **Sen S**, Rifas-Shiman S, Shivappa N, Wirth M, Hebert J, Gold D, Gillman M, Oken E. Inflammatory potential of diet during pregnancy, maternal systemic inflammation and pregnancy outcomes. *J Nutrition*, 2016;146(4):728-736. PMCID: PMC4807648.
9. Madore L**, Jumani T, Dengos A, **Sen S**. Growth and Neurodevelopment in ELBW Infants fed Donor Breast Milk. *Clinical Therapeutics*, 2017 Jun;39(6):1210-1220. PMID: 28576299.
10. **Sen S**, Penfield-Cyr A, Ebeling M, Hollis B, Howard C, Wagner C. Maternal Obesity, 25(OH)D Concentration and Bone Density in Breastfeeding Dyads. *The Journal of Pediatrics*, 2017 Aug;187:147-152.e1. PMID: 28549637; PMCID: PMC5679215.
11. **Sen S**, Rifas-Shiman SL, Shivappa N, Wirth MD, Hebert JR, Gold DR, Gillman MW, Oken E. Associations of prenatal and early life dietary inflammatory potential with childhood adiposity and cardiometabolic risk in Project Viva. *Pediatric Obesity*, 2018 May;13(5):292-300. PMID: 28493362; PMCID: PMC5681442.
12. Belfort MB, Benjamin C, Riley J, Heleba A, Drouin K, Gregory K, **Sen S**. Donor milk for healthy newborns: a regional survey of birth hospitals. *Breastfeeding Medicine*, 2018 Jan/Feb;13(1):34-41. PMID: 29064280; PMCID: PMC5770118.
13. **Sen S**, Benjamin D, Riley J, Heleba A, Drouin, Gregory K, Brown Belfort M. Donor Milk Utilization for Healthy Infants: Experience at a Single Academic Center. *Breastfeeding Medicine*, 2018 Jan/Feb;13(1):28-33. PMID: 29072928; PMCID: PMC5770134.
14. Madore L** and **Sen S**. Inconsistencies in Outcomes of Donor milk-fed Preterm Infants. *Clinical Therapeutics*, 2017 Dec;39(12):2451-2452. PMID: 29108836.
15. Smid MC, Mannuck T, Stuebe A, **Sen S**. Maternal obesity, fish intake and recurrent spontaneous preterm birth. *J Matern Fetal Neonatal Med*. 2018 Feb 21:1-7. 2019 Aug;32(15):2486-2492. PMID: 29415593; PMCID: PMC6438753.
16. Penfield-Cyr A**, Monthé-Drèze C, Smid MC, **Sen S**. Omega 6:3 Fatty Acid Ratio and Fetal Growth: Role of Maternal Body Mass Index. *Clinical Therapeutics*. 2018 Oct 40(10):1659-1667.

17. Monthé-Drèze C**, Rifas-Shiman S, Gold D, Oken E, **Sen S**. Maternal Obesity and Offspring Cognition: Role of Inflammation. *Pediatric Research*. 2018 13(5), 292-300. PMID: 30420706.
18. Monthé-Drèze C**, Penfield-Cyr A Smid MC **Sen S**. Maternal Pre-Pregnancy Obesity Attenuates Response to Omega-3 Fatty Acids Supplementation During Pregnancy. *Nutrients*. 2018 10(12). PMID: 30518052.
19. Gregory K., Turner D., Benjamin C., Monthé-Drèze C., Johnson L., **Sen S**. Evaluation of Dextrose Gel Administration to Infants with Asymptomatic Neonatal Hypoglycemia: A Single Center Experience. *Archives of Disease in Childhood, Fetal Neonatal Edition*. 2020 Jan; 105(1):45-49. PMID: 31079067.
20. Turner D**, Benjamin C, Monthe-Dreze C, Gregory K, **Sen S**. Maternal Obesity and Cesarean Section: Additional Risk Factors for Neonatal Hypoglycemia? *J Perinatology*. 2019 Aug;39(8):1057-1064. PMID: 31213637.
21. Hanson C, Rifas-Shiman SL, Shivappa N, Wirth MD, Hebert JR, Gold DR, Camargo CA, **Sen S**, Sordillo JE, Oken E, Litonjua AA. Associations of Prenatal Dietary Inflammatory Potential with Childhood Respiratory Outcomes in Project Viva. *The Journal of Allergy and Clinical Immunology*. 2019 Mar;8(3):945-952.e4. PMID: 31678301.
22. Drouin KH, Riley JF, Benjamin C, Gregory KE, **Sen S**, Belfort MB. Donor Milk Policies for Level 1 Newborn Care: A Descriptive Analysis. *Breastfeed Med*. 2019 Oct;14(8):592-596. PMID: 31393161
23. **Sen S**. Turner D, Monthe-Dreze C, Andrews C, Wachman E. Type of feeding provided with dextrose gel impacts hypoglycemia outcomes: comparing donor milk, formula, and breastfeeding. *J Perinatology*. 2020 Nov;40(11):1705-1711. PMID: 32792637.
24. Andrews C, Monthé-Drèze C, Sacks DA, Ma RCW, Tam WH, McIntyre HD, Lowe J, Catalano P, **Sen S**. Role of maternal glucose metabolism in the association between maternal BMI and neonatal size and adiposity. *Int J Obes*. 2021 Mar;45(3):515-524. PMID: 33161416.
25. Monthé-Drèze C, **Sen S**, Haguél-de Mouzon S, Catalano P. Effect of Omega-3 supplementation in pregnant women with obesity on newborn body composition, growth and length of gestation: A randomized controlled pilot study. *Nutrients*. 2020 (13):578. PMID: 327916127.
26. Enstad S**, Cheema S, Thomas R, Fichorova RN, Martin CR, O'Tierney-Ginn P, Wagner CL, **Sen S**. The impact of maternal obesity and breast milk inflammation on developmental programming of infant growth. *European Journal of Clinical Nutrition*. 2020 75, 180–188. PMID: 32814855. PMID: 32814855. PMID: 32814855. PMID: 32814855.
27. Sethna CB, Alanko D, Wirth MD, Shivappa N, Hebert JR, Khan S, **Sen S**. Dietary Inflammation and Cardiometabolic Health in Adolescents. *Pediatric Obesity*. 2021 Feb;16(2):e12706. PMID: 32776714.
28. Monthe-Dreze C**, Rifas-Shiman S, Aris IM, Hebert J, **Sen S**, Oken E. Maternal Diet in Pregnancy is Associated with Differences in Child Body Mass Index Trajectories from Birth to Adolescence. *The American Journal of Clinical Nutrition*. 2021; 113(4):895-904. PMID: 33721014.

29. Gill VR**, Liley HG, Erdei C, **Sen S**, Davidge R, Wright AL, Bora S. Improving the uptake of Kangaroo Mother Care in neonatal units: A narrative review and conceptual framework. *Acta Paediatrica*. 2021; 110(5):1407-1416. PMID: 33289201.
30. **Sen S**, Turner D, Abdulhayoglu E, Zupancic J. A graded Approach to IV Dextrose decreases blood glucose variability, length of NICU stay and cost of care for neonatal hypoglycemia. *J Pediatrics*. 2020 (20)31507-9. PMID: 33338495.
31. Riley J, Cherkerzian S, Benjamin C, Belfort MB, **Sen S**, Drouin K, Gregory K. Clinical Characteristics and Breastfeeding Outcomes in Term Dyads Following In-Hospital Supplementation with Pasteurized Donor Human Milk or Formula. *Breastfeed Med*. 2021; 16(9):717-724. PMID: 33872065.
32. Lee AC, Cherkerzian S, Olson IE, Ahmed S, Chowdhury NH, Khanam R; Rahman S; Andrews C; Baqui A.; Fawzi W; Oken E, **Sen S**, Fichorova R. Maternal Diet, Infection, and Risk of Cord Blood Inflammation in the Bangladesh Projahnmo Pregnancy Cohort. *Nutrients* 2021 13(11):3792. PMID: 34836049.
33. Andrews C, Toth-Castillo M, Aktas H, Fernandez MAL, Wong SK, **Sen S**, Halperin J. Plasma glycated CD59 as an early biomarker for gestational diabetes mellitus: Prospective cohort study protocol. *BMJ Open*. 2022 Apr 20;12(4):e054773. PMID: 35443950.
34. Ramadurai S**, Andrews C, Cheema S, Thomas R, Wagner C, **Sen S**. Maternal Predictors of Breast Milk Plasmalogens and Associations with Infant Body Composition and Neurodevelopment. *Clin Ther*. 2022 Jul;44(7):998-1009. PMID: 35909001.
35. Isesele P, Enstad S, Huong P, Thomas R, Wagner CL, **Sen S**, Cheema SK. Breast milk from lean women with a high omega-6 to omega-3 fatty acid ratio increases lipogenic gene expression in 3T3-L1 preadipocytes, but not from women with obesity suggesting adipocyte dysfunction. *Biomedicines*. 2022 May 13;10(5):1129. PMID: 35625866.
36. Ganeshalingam M, Enstad S, **Sen S**, Cheema S, Esposito F, Thomas R. Role of lipidomics in assessing functional lipid composition in breastmilk. *Front Nutr*. 2022 Sep 2;9:899401. PMID: 36118752.
37. **Sen S**, Westra S, Matute J, Sherwood J, High F, Kwan M. A Newborn Girl with Hypoglycemia. *N Engl J Med*. 2022 Sep 29;387(13):1218-1226. PMID: 36170504.
38. Monthe-Dreze C**, Rifas-Shiman S, Aris IM, Shivappa N, Hebert J, Oken E, **Sen S**. The role of prenatal psychosocial stress in the association between a pro-inflammatory diet in pregnancy and child adiposity and growth trajectories. *JAMA Netw Open*. 2023;6(1):e2251367.
39. Keyes M**, Andrews C, Midya V, Carrasco P, Guxens M, Jimeno-Romero A, Murcia M, Rodriguez-Dehli C, Romaguera D, Santa-Maria L, Vafeiadi M, Chatzi L, Oken E, Vrijheid, M, Valvi, D*, **Sen, S***. Mediators of the association between maternal body mass index and breastfeeding duration in three international cohorts. *American Journal of Clinical Nutrition*, 2023. DOI: 10.1016/j.ajcnut.2023.04.004.
40. Maya J, Selen D, Thaweethai T, Hsu S, Godbole D, James K, **Sen S**, Kaimal A, Hivert MF, Powe C. Gestational Glucose Intolerance and Birth Weight-Related Complications. *Obstet Gynecol*. 2023 Sep 1;142(3):594-602. doi: 10.1097/AOG.0000000000005278. Epub 2023 Aug 3. PMID: 37539973; PMCID: PMC10527009.

41. **Sen S**, Cherkerzian S, Oken E, Mcelrath M, Cantonwine D, Fichorova R, Herlihy M, Hacker M, Meydani S. Maternal Antioxidant Micronutrient Supplementation in Pregnant Women with Obesity: A Randomized Controlled Trial. *Int J Obes (Lond)*. 2024 Jun;48(6):796-807. doi: 10.1038/s41366-024-01472-z. Epub 2024 Feb 23. PMID: 38396126.
42. Atadye A, Kapoor N, Cherkerzian S, Olson I, Andrews C, Sermet C, Lee AC, **Sen S**, Bode L, Drouin K, Bell K, Inder TE, Belfort MB. Lactoferrin intake from maternal milk during neonatal hospitalization and preterm infant brain development. *Pediatr Res*. 2024 Jul;96(1):159-164. doi: 10.1038/s41390-023-03002-5. Epub 2024 Jan 8. PMID: 38191822.
43. Andrews C, Maya J, Schulte CM, Hsu S, Thaweethai T, James KE, Halperin J, Powe C*, **Sen S***. Maternal glucose intolerance and risk for neonatal hypoglycemia. *Diabetes Care*. 2024 Jul 1;47(7):1194-1201. doi: 10.2337/dc23-2239. PMID: 38787410; PMCID: PMC11208751.
44. Onuoha C, Schulte CCM, Thaweethai T, Hsu S, James K, **Sen S**, Kaimal A, Powe C. The simultaneous occurrence of gestational diabetes and hypertensive disorders of pregnancy affects fetal growth and neonatal morbidity. *m J Obstet Gynecol*. 2024 Mar 14:S0002-9378(24)00438-1. doi: 10.1016/j.ajog.2024.03.009. Epub ahead of print. PMID: 38492713.

OTHER PEER-REVIEWED PUBLICATIONS

45. Van der Burg JW, **Sen S**, Chomitz VR, Seidell JC, Leviton A, Dammann O. The role of systemic inflammation in linking maternal body mass index to neurodevelopment in children. *Pediatric Research*, 2016 Jan;79(1-1):3-12. PMID: 26375474.
46. Enstad S**, Cheema S, Thomas R, Fichorova RN, Martin CR, O'Tierney-Ginn P, Wagner CL, **Sen S**. Response to messaging and methodologic considerations when researching breastfeeding and obesity. *European Journal of Clinical Nutrition*. 2021 75(10):1526-1527. PMID: 33893448.
47. **Sen S**. Breast Milk and Breastfeeding: Benefits, Barriers, Maternal Predictors, and Opportunities for Innovation. *Clin Ther*. 2022 Feb;44(2):170-171. PMID: 35067384.
48. Peters S**, Andrews C, **Sen S**. Care of Infants Born to Women with Diabetes. *Curr Diab Rep*. 2020 20(8):39. PMID: 32699971
49. Rizzo G** and **Sen S**. Maternal Obesity and Immune Dysregulation in Mother and Infant: A Review of the Evidence. *Pediatric Respiratory Reviews*, 2014 (4):251-7. PMID: 25454382.
50. **Sen S**, Carpenter AH, Hochstadt J, Huddleston JY, Kustanovich V, Reynolds AA, Roberts S. Nutrition, Weight Gain and Eating Behavior in Pregnancy: A Review of Experimental Evidence for Long-term Effects on the Risk of Obesity in Offspring. *Physiol Behav*; 107: 138-45. PMID: 22546810.

BOOKS AND BOOK CHAPTERS

1. Lauren C, **Sen S**, Feemster K, Wood J, McKay C. Nephrology. In: Frank G., Shah S.S., Catalozzi M.C., Zaoutis L.B., (eds) *The Philadelphia Guide: Inpatient Pediatrics*. Malden, MA: Blackwell Publishing.

2. **Sen S.** Oxidative Stress and Pregnancy Outcome. Chapter in Oxidative Stress and Women's Health. Editor: Yves Menezes. EKSA Publishing, 2016. Pages 175-191.
3. **Sen S.** Andrews C. Monthe-Dreze C. Hanson C. Litonjuua A. Chapter in Health Effects of Dietary Inflammation. Editor: James Hebert. 2021.
4. **Sen S.** Harding J. Neonatal Hypoglycemia and Brain Injury. Chapter in "Neonatology: Questions and Controversies" Edited by Jeffrey Perlman MBChB and Terrie Inder, MBChB. 2024.
5. **Sen S.** Volpe JJ. Harding J. Neonatal Hypoglycemia. Chapter in "Neurology of the Newborn" Edited by JJ Volpe and Terrie Inder, MBChB. 2024.
6. Tiwari P. **Sen S.** Neonatal Care of Infants of Mothers with Diabetes. Chapter in The American Diabetes Association "Diabetes in Pregnancy". 2024.

PUBLICATIONS SUBMITTED OR IN PREPARATION

1. Andrews C, Olson I, Bode L, Drouin K, Belfort MB, Lee AC*, **Sen S***. Predictors of human milk lactoferrin in rural Bangladesh. In submission to J Nutrition (Submitted 5/15/24).
2. Andrews C, Ahmed S, Chowdhury NH, Khanam R; Rahman S; Baqui A.; Fawzi W; Martin C, Lee AC*, **Sen S***. Human milk metabolome in rural Bangladesh and child growth and neurodevelopmental outcomes. In submission to The American Journal of Clinical Nutrition (submitted 4/1/24).
3. Bhushan B, Monthe-Dreze C, Andrews C, Ahmed S, Chowdhury NH, Khanam R; Rahman S; Baqui A.; Fawzi W; Lee AC*, **Sen S***. Predictors of human milk metabolome in rural Bangladesh. In submission to Metabolism (submitted 4/15/24).
4. Andrews C, Lawandy I, Vodapally S, Angelidou A, Friedman S, Martin C, **Sen S.** Protocol for the Maternal and Infant Microbiome and Metabolome study. In submission to Plos One (submitted 6/1/24).
5. Kalluri N**, Padilla-Garza E, Kehoe T, Andrews C, Olson I, Schantz-Dunn J, Riley J, Pomerleau M, Lee AC*, **Sen S***. Implementation of inpatient language- and culturally concordant lactation support for Spanish-speaking birthing parents at a large, academic medical center: Outcomes from The Mama Sana Program (in preparation to JAMA Pediatrics).
6. Kalluri N, Padilla-Garza E, Kehoe T, Andrews C, Olson I, Schantz-Dunn J, Riley J, Pomerleau M, Lee AC*, **Sen S***. Implementation of Mama Sana "Healthy Mother," a Spanish-language lactation support program (in preparation to Pediatrics).
7. **Sen S,** Tiwari P, Martin CR. Glucose Management in At-Risk Infants \geq 35 Weeks of Gestation (American Academy of Pediatrics Clinical Report) (in preparation to Pediatrics).

ABSTRACTS (past 3 years)

1. Andrews C**, Monthé-Drèze C**, Sacks DA, Ma RCW, Tam WH, McIntyre HD, Lowe J, Catalano P, Sen S. Role of maternal glucose metabolism in the association between maternal BMI and neonatal size and adiposity. Accepted as a Poster Presentation at The Pediatric Academic Society Meeting, 2020 (meeting cancelled due to COVID).
2. Gill V**, Erdei C., Lilley H., Davidge R, Sen S., Bora S. Where and what can I learn about Kangaroo Mother Care? A systematic review and Content analysis of Smartphone Applications.

- Accepted as a Poster Presentation at The Pediatric Academic Society Meeting, 2020 (meeting cancelled due to COVID).
3. Sen S., Turner D, Monthé-Drèze C**, Andrews C, Wachman E. Type of feeding provided with dextrose gel impacts hypoglycemia outcomes. Accepted as an oral platform presentation, 2020 (meeting cancelled due to COVID).
 4. Monthé-Drèze C**, Izzuddin A., Rifas-Shiman S., Sen S., Oken E. Specific Maternal Dietary Patterns in Pregnancy are Associated with Child BMI-Z score Trajectories from Birth to Adolescence. Accepted as an oral platform presentation, 2020 (meeting cancelled due to COVID).
 5. Ramadurai S.**, Andrews C., Cheema S., Thomas R., Wagner CL., Sen S. Maternal Predictors of Breast Milk Plasmalogens and Associations with Infant Body Composition and Neurodevelopment. Accepted as a poster presentation at The Pediatric Academic Society Meeting, 2021.
 6. Keyes M**, Andrews C., Midya V., Oken E., Valvi D*, Sen S*. Maternal Body Mass Index and Breastfeeding Outcomes: Examining Associations Across Three International Cohorts. Accepted as a poster presentation at The Pediatric Academic Society Meeting, 2021.
 7. Monthé-Drèze C**, Izzuddin A., Rifas-Shiman S., Sen S., Oken E. Psychosocial stress modifies associations of pro-inflammatory diet in pregnancy with trajectories of body composition and growth. Accepted as a highlighted poster presentation at The Pediatric Academic Society Meeting, 2021.
 8. Kalluri N**, Padilla-Garza E, Kehoe T, Andrews C, Lee AC*, Sen S*. The Mama Sana program: Outcomes from language-concordant & culturally tailored lactation support. Poster walk presentation, New England Pediatric Society 2023, Newport, R.I.
 9. Castellanos M, Moncada D, Guyol G, Walter K, Hansen R, Andrews C, Lawandy IJ, Vodapally S, Martin C, Sen S, Angelidou A. Prevalence of anxiety/depression in pregnancy and post-partum: a matter of population or documentation? Poster presentation, Pediatric Academic Societies 2023. Washington, D.C.
 10. North K**, Andrews C, Olson IE, Ahmed S, Baqui AH, Chowdhury N, Khanam R, Rahman S, Sen S*, Lee AC*. The association of human milk macronutrient content with early childhood growth and neurodevelopment in rural Bangladesh. Oral presentation, Pediatric Academic Societies 2023. Washington, D.C.
 11. Olson IE**, Andrews C**, Atayde A, Ahmed S, Chowdhury NH, Khanam R, Rahman S, Cherkerzian S, Bode L, Belfort M, Sen S*, Lee AC*. Associations of human milk lactoferrin with child neurodevelopment in rural Bangladesh. Poster presentation, Pediatric Academic Societies 2023. Washington, D.C.
 12. Kalluri N**, Padilla-Garza E, Kehoe T, Andrews C, Olson I, Schantz-Dunn J, Riley J, Pomerleau M, Lee AC*, Sen S*. Implementation of inpatient language- and culturally concordant lactation support for Spanish-speaking birthing parents at a large, academic medical center: Outcomes from The Mama Sana Program. Oral presentation, Pediatric Academic Societies 2023. Washington, D.C.
 13. Andrews C**, Olson I, Atayde A, Ahmed S, Baqui A, Chowdury N, Khanam R, Rahman S, Bode L, Belfort M, Lee AC*, Sen S*. Predictors of Human Milk Lactoferrin Concentrations in Rural Bangladesh. Oral presentation, Pediatric Academic Societies 2023. Washington, D.C.
 14. Andrews C**, Maya J, Schulte CCM, Hsu S, Thaweethai T, James KE, Halperin J, Powe C, Sen S. Risk of neonatal hypoglycemia in infants of mothers with gestational glucose intolerance. Poster presentation, Pediatric Academic Societies 2023. Washington, D.C.

15. Monthé-Drèze C**; Sen S; Grant E; Holsen LM; Smyser TA; Inder TE, MD; England SK; Rogers CE; Barch DM; Warner B; Luby JL; Smyser CD. Maternal pre-pregnancy obesity and sex-specific associations with neonatal brain volumes in regions that modulate cognition and behavior. Poster Presentation, PAS 2023
16. Monthé-Drèze C**; Sen S; Grant E; Holsen LM; Smyser TA; Inder TE, MD; England SK; Rogers CE; Barch DM; Warner B; Luby JL; Smyser CD. A prenatal diet rich in unsaturated fatty acids and low in saturated fats is associated with higher regional grey matter volumes in infants born to mothers with pre-pregnancy obesity. Poster Presentation, PAS 2023
17. Andrews C**, Monthe-Dreze C, Bhushan B, Olson I, Perng W, Baye E, Baqui A, Ahmed S, Khanam R, Rahman S, Sheridan P, Michelotti G, Martin C, Lee AC*, Sen S*. Associations of human milk metabolomics and infant growth in rural Bangladesh. Poster presentation, American Society of Nutrition 2023. Boston, MA.
18. Andrews C**, Monthe-Dreze C, Berger P, Vodapally S, Lawandy I, Angelidou A, Martin C, Sen S*. Associations of infant feeding type and mode with frequency and volume. Poster presentation, American Society of Nutrition 2023. Boston, MA.
19. Monthé-Drèze C**, Andrews C, Berger P, Vodapally S, Lawandy I, Angelidou A, Martin C, Sen S. Associations of maternal BMI with infant feeding characteristics and eating behaviors. Presentation, American Society of Nutrition 2023. Boston, MA.
20. Berger P**, Andrews C, Monthé-Drèze C, Vodapally S, Lawandy I, Angelidou A, Martin C, Sen S. Associations of feeding type and mode with infant appetitive traits and body weight in the first 6 months. Presentation, American Society of Nutrition 2023. Boston, MA.
21. Bhushan B**, Andrews C, Monthé-Drèze C, Olson I, Perng W, Baye E, Ahmed S, Baqui A, Chowdury N, Khanam R, Rahman S, Sheridan P, Michelotti G, Martin C, Lee AC*, Sen S*. Associations of Maternal Body Mass Index With Human Milk Metabolome in Exclusively Breastfeeding Rural Bangladeshi Women. Presentation, American Society of of Nutrition 2023. Boston, MA.

SCHOLARLY WORK PUBLISHED IN OTHER MEDIA

2011	10 Scary Reasons To Fight Obesity Before Pregnancy	Co-presenter	CommonHealth.WBUR.org
2011	Obesity in Pregnancy Hinders a Woman's Ability to Fight Infections	Contributor	Sciencedaily.com
2012	Programmed for Weight Gain	Interview	Tufts Now
2012	Obese Mothers Risk Giving Birth to Babies with Low Iron Levels	Interview	Medicaldaily.com
2012	Newborns' Iron Status Compromised by Mom's Obesity?	Interview	Scope Blog, Stanford School of Medicine
2013	Health Problems in Newborns of Obese Mothers	Radio interview	Australian Broadcasting Corporation

2013	Pregnancy and Nutrition: Managing Your Weight and Eating Right for Pregnancy and For Life	Webinar	Isis Parenting
2023	Program aims to help Hispanic mothers embrace breastfeeding	Television interview	NBC and Telemundo

INVITED PRESENTATIONS

Local

2010	Maternal Obesity and Offspring Asthma/ Invited Speaker Neonatology Pulmonary Conference Tufts Medical Center, Boston, MA		
2011	Consequences of Maternal Obesity: Influence on Immune Function, Micronutrient Balance and Iron Homeostasis in Mother and Infant/Invited speaker Tufts Medical Center Mother Infant Research Conference, Boston, MA		
2013	Maternal Obesity: Opportunities for Intervention/Grand rounds Metrowest Medical Center Obstetrics		
2014	Maternal Obesity: A Global Threat in the First 1,000 days /Invited speaker World Health Day Tufts University School of Public Health		
2015	Maternal obesity: Consequences for mother and infant and opportunities for intervention/Grand Rounds Brigham and Women’s Division of Maternal Fetal Medicine		
2015	Maternal obesity-related inflammation: consequences for mother and infant/Invited speaker Beth Israel Deaconess Medical Center Neonatal Epidemiology Conference		
2015	Optimizing Nutritional Supplementation in Pregnant and Lactating Obese Women/ Invited speaker Brigham and Women’s Hospital Discover Brigham Day		
2016	Nutrient Supplementation during pregnancy and lactation: Does one size fit all?/ Invited speaker Brigham and Women’s Pediatric Newborn Medicine Grand Rounds		
2017	Neonatal Hypoglycemia: New strategies for evaluation and management/ Invited speaker Beth Israel Deaconess Medical Center Epidemiology Conference		
2017	Neonatal Hypoglycemia: Neonatal and Obstetric Perspectives/ Invited speaker, Holy Family Hospital Perinatal Conference		
2017	Neonatal Hypoglycemia: Improving outcomes with evidence-based strategies Breastfeeding in the Bay State / Invited speaker Massachusetts Breastfeeding Coalition		
2019	Maternal Obesity: Metabolic Consequences and Opportunities for Intervention/ Grand Rounds Boston Children’s Hospital Neonatal Research Grand Rounds		
2020			

- Neonatal Hypoglycemia: Opportunities for advances in clinical care/ Invited speaker
- 2022 Beth Israel Deaconess Medical Center Epidemiology Conference
Neonatal Hypoglycemia New England Journal of Medicine Case Presentation/Invited Speaker
- 2022 Massachusetts General Hospital Pediatric Grand Rounds
Limitations in evaluation of neonatal hypoglycemia/Invited speaker
- 2022 Wyss Institute Biotechnology Incubator
Neonatal hypoglycemia: limitations in technology and opportunities for collaboration/Invited speaker
Wyss Institute University of Twente Study Tour
- 2023 Improving outcomes for Spanish Speaking parents and infants at BWH/Invited speaker
Connors Center Women's Health Interdisciplinary Stress Program of Research (WHISPR) Symposium
- 2024 The Postpartum period as a window into the metabolic health of the dyad/Invited speaker
Hasbro Children's Hospital Research Seminar
- Regional
- 2012 Maternal Obesity: Consequences for Future Generations /Invited speaker
March of Dimes Colloquium
Brandeis University, Waltham, MA
- 2012 Maternal Obesity Alters Micronutrient Concentration and Oxidative Stress/selected oral abstract
New England Perinatal Society, Chatham, MA
- 2013 Effect of Maternal Obesity on Breastmilk Composition/ selected oral abstract,
New England Perinatal Society, Chatham, MA
- 2014 Obesity, Pregnancy and Inflammation: Consequences for offspring and opportunities for intervention/Research Seminar/ Invited speaker
Women and Infant's Hospital of Rhode Island, Providence, RI.
- 2015 Maternal Obesity: Repercussions for mother and infant/ Invited speaker,
Brown University/Women and Infants' Hospital of Rhode Island Neonatology Research Conference
- 2018 Neonatal Hypoglycemia: Bridging the evidence and evaluating outcomes of practice change/ Invited speaker
Boston Medical Center Pediatrics Grands Rounds
- 2018 Maternal Obesity and Offspring Health: Opportunities to Improve Outcomes/
Invited speaker
Tufts Medical Center Mother Infant Research Institute Research Seminar
- 2020 In Utero and Lactational Programming of Offspring Health Outcomes/ Invited Speaker
Hasbro Children's Hospital Grand Rounds Providence, RI.
- 2023 Programming child health in the first 1,000 days/Invited Speaker
Women and Infants' Hospital of Rhode Island Grand rounds
- 2023 Mama Sana: Improving perinatal health equity in Spanish Speaking Patients/Invited Speaker

- Massachusetts Breastfeeding Society
- 2023 Sweet Child of Mine: Evidence based approaches to evaluation and management of hypoglycemia/Invited Speaker
17th Annual Neonatal Conference, Bay State Medical Center
- 2023 Leveraging the window of lactation to improve maternal child health/Invited speaker
Boston Children’s Hospital Neonatal Grand Rounds
- National
- 2007 Obesity through the generations: molecular mechanisms that may lead to offspring obesity/Selected oral abstract, Eastern Society for Pediatric Research
- 2007 Mechanisms by which maternal obesity induces obesity in the offspring/ Selected oral abstract, Society for Pediatric Research: Research Conference, Houston, TX
- 2008 Offspring obesity can be ameliorated by maternal dietary intervention with antioxidants/ Selected oral abstract
Society for Pediatric Research, Honolulu, HI
- 2011 Obesity in pregnancy alters maternal immune function/ Selected oral abstract
Society for Pediatric Research, Denver, CO
- 2012 Obesity During Pregnancy Alters Oxidant Balance and Micronutrient Status/Selected oral abstract
Experimental Biology, Washington DC and Society for Pediatric Research, Boston, MA
- 2012 Obesity in Pregnancy impairs fetal iron status/Selected oral abstract,
Experimental Biology, Washington DC
- 2012 Obesity in pregnancy and maternal-fetal iron transport/ Selected Oral Abstract,
Society for Pediatric Research, Boston, MA
- 2013 Pregnancy, Obesity and Inflammation: Consequences for Mother and Infant and Opportunities for Intervention /Invited speaker
Johns Hopkins University Integrated Research Center for Fetal Medicine
- 2013 Obesity-Related Inflammation in Pregnancy/ Invited speaker
University of Pennsylvania Center for Reproduction and Women’s Health
- 2016 Maternal BMI and vitamin D concentrations in Mother and Infant/ Invited Speaker
Medical University of South Carolina Vitamin D Symposium, Charleston, SC.
- 2018 Maternal Obesity: Consequences for Mother and Infant and Opportunities for Intervention/ Invited speaker
The American Academy of Pediatrics Chatham Conference in Perinatal Medicine, Chatham, MA.
- 2018 Hypoglycemia and the developing brain/ Invited Speaker
Newborn Brain Symposium, Boston, MA.
- 2018 Neonatal Hypoglycemia: reviewing the evidence and evaluating guidelines/Invited Speaker
Pacific Coast Lactation foundation, Los Angeles, CA.

- 2018 Treatment of Neonatal Hypoglycemia with feeding, gel and fluids/ Invited Speaker, Neonatal Hypoglycemia Conference, Boston, MA.
- 2019 Maternal obesity and breastmilk composition/ Invited Speaker Colorado Children's Hospital Perinatal Research Group, Denver, CO.
- 2020 Role of maternal health and metabolism in offspring health outcomes/ Invited Speaker Columbia University Obesity Medicine CME course, New York, NY.
- 2020 Maternal Dietary Inflammation and Perinatal Outcomes: Results from Project Viva/ Invited Speaker Environmental Exposures and Child Health Outcomes Working group (NIH webinar).
- 2021 Epidemiology of Neonatal Hypoglycemia/ Invited Plenary Speaker American Diabetes Association (held virtually due to COVID)
- 2022 Glucose: Highs and Lows/Invited Speaker Neoprep board review course (held virtually due to COVID)
- 2022 Neonatal Hypoglycemia evaluation and management/ Invited Speaker Endocrine Society, Atlanta GA
- 2022 Maternal metabolism and breastmilk composition: role of lactational programming in child health outcomes/Invited speaker Emory University Hospital Neonatology Grand Rounds, Atlanta, GA
- 2022 Perinatal & Developmental Medicine Symposium/ Invited Speaker: i) Breastmilk as a maternal-infant messenger; ii) Neonatal hypoglycemia: at the nexus of maternal and child health care innovation, Aspen, CO
- 2022 United States Developmental Origins of Health and Disease/Invited early career speaker: Maternal obesity and dysmetabolism in the first 1,000 days: laying the foundation for lifelong health
- 2024 University of Pennsylvania Endocrinology Grand Rounds Invited Speaker: Lactation as a window into the metabolic health of the dyad
- 2024 Children's Hospital of Philadelphia Neonatology Research Seminar: (Don't) pour some sugar on me: Evolution in evaluation and management of neonatal hypoglycemia
- International
- 2020 Lactational programming and Infant Health/Invited Speaker European and International Congress on Obesity, Dublin, Ireland.
- 2023 Maternal Lifestyle Intervention and Breastmilk Composition Diabetes and Pregnancy Study Group, Poznan, Poland
- 2024 Neurophysiological Sequelae of Neonatal Glycemia Pediatric Academic Society Hyperglycemia Workshop Invited Speaker, Toronto, Canada

GRANTS

Report of Funded and Unfunded Projects

Funding Information

Past

- 2007-08 Effect of Maternal Antioxidant and Methyl Donor Supplementation on Offspring of Obese Dams
iNO Therapeutics Research Grant
PI (\$5,000)
The central hypothesis of this study was that providing a maternal antioxidant or methyl-donor supplement to obese dams would improve offspring outcome. Results showed that pups born to obese dams fed an antioxidant cocktail had decreased adiposity and improved metabolic outcomes.
- 2010-11 Maternal Obesity and Offspring Immune Dysregulation
Tufts Medical Center Research Grant
PI (\$50,000)
The central hypothesis of this translational study was that maternal obesity is associated with immune dysregulation in the mother and infant. We found that obesity confers specific alterations to the maternal immune system, predisposing obese pregnant women to infection.
- 2010-11 Oxidant Balance in Maternal Obesity
Natalie V. Zucker Foundation for Women Scholars Grant
PI (\$5,000)
The central hypothesis of this study was that obese pregnant women have increased inflammation and oxidative stress and impaired nutritional antioxidant defenses compared to lean women.
- 2012-15 Effect of Maternal Obesity on Breastmilk Composition and Infant Growth
Susan Saltonstall Grant for Pediatric Research
PI (\$12,000)
The central hypothesis of this translational study is that pre-pregnancy obesity and excessive weight gained during pregnancy are associated with differences in macronutrient and micronutrient composition of breastmilk, which can affect growth trajectories of infants. Results show marked differences in proteins, fatty acids and micronutrients which are critical for infant neurodevelopment.

- 2013-2015 BMI-Based Prenatal Vitamin to Ameliorate Oxidative Stress in Obese Pregnancy
Charles H. Hood Foundation Grant
PI (\$150,000)
The central hypothesis of this study is that administration of a BMI-based PNV in obese pregnancy will decrease oxidative stress and improve outcomes in obese pregnant women and their infants. This was tested in an RCT of obese pregnant women receiving either a standard or BMI-based PNV. Primary manuscript from trial is currently under review.
- 2013-2018 BMI-Based Prenatal Vitamin to Ameliorate Oxidative Stress in Obese Pregnancy
1K23HD074648-01A1
PI (\$625,000)
The central hypothesis of this study is that administration of a BMI-based PNV in obese pregnancy will decrease oxidative stress and improve outcomes in obese pregnant women and their infants. This was tested in an RCT of obese pregnant women receiving either a standard or weight based PNV.
- 2015-2017 Prenatal Antecedents of Autism: Exploring the contribution of maternal obesity, micronutrient status and oxidative stress
Alden Foundation Grant
PI (\$15,000)
The central hypothesis of this study is that pregnant women with the highest inflammatory and pro-oxidant environment and the lowest nutritional antioxidant defenses will have the highest risk of autism in their children. This will be tested in a case-control study of autistic and typically developing children, by measuring markers of inflammation and oxidative stress in their mothers' archived prenatal blood samples at 9-13 weeks gestation.
- 2016-2018 Safe and effective delivery of supplemental iron to healthy volunteers
Bill and Melinda Gates Foundation, OPP1139998
Co-investigator (multi-PIs: Meydani and Combs)
The purpose of this project was to understand whether different formulations of enteral iron alter vulnerability to infections. My role was to lead the pediatric arm of the study, to determine applicability of the adult model to the pediatric population.
- 2017-18 Breastmilk composition in rural Bangladesh
Brigham Research Institute
Multi-PIs (Other PI: Anne Lee) (\$5,000)
This grant provides materials for collection of breastmilk and measurement of breastmilk composition in 300 participants in an ongoing longitudinal pre-birth cohort in Bangladesh

2017-18	<p>BMI-Based Prenatal Vitamin to Ameliorate Oxidative Stress in Obese Pregnancy 1K23HD074648 S1 (NCE) PI (\$100,000) Administrative supplement to measure additional cytokines, placental markers and gene expression from the parent trial.</p>
2018	<p>Neonatal Hypoglycemia Regional Conference Brigham Research Institute PI (\$5,000) This grant will provide \$5,000 to host a regional conference on Neonatal Hypoglycemia at Brigham and Women’s Hospital.</p>
2019-21	<p>Rapid Nutritional Analysis of Breast Milk for Neonatal Intensive Care Units R43HD098944 (Phase I SBIR) Multi PI (Other PI: Avni Arjun, Ph.D. at Giner Inc.) (\$26,507) The goal of this project is to develop a bedside assay to measure total protein from whole breastmilk.</p>
2019-21	<p>Maternal obesity, fatty acids and child health Brigham Research Institute Fund to Maintain Research Excellence PI (\$100,000) This grant provides funding to maintain the PI’s research endeavors to bridge the career development and independent research funding. The grant provides funding to develop preliminary data to support a resubmission of an R01.</p>
2021-23	<p>Maternal Child Metabolome and Microbiome in Lactation Outcomes DNA Genotek Expand into Multiomics Grant Role: PI (\$50,000 direct costs) The goal of this grant is to identify the multi-omic (microbiome, metabolome, lipidome) predictors of lactation intensity.</p>
2022-23	<p>Outcomes related to provision of Spanish language pre-, peri- and postnatal nutrition and lactation care Cooking Matters Foundation Role: Co-investigator (PI: Childs) The overarching objective of this grant is to provide Spanish language “wrap-around” care and track outcomes related to this program.</p>
Current 2023-24	<p>Developing patient-centered nutritional tools for Spanish-speaking pregnant and postpartum women Cooking Matters Foundation PI (\$50,000)</p>

Together with a community organization and Spanish-speaking clinical partners, we will develop literature and digital tools to provide nutritional education to Spanish-speaking pregnant and post-partum women.

- 2023-26 The Perinatal Systems Biology Center of the Lactation Lab
Massachusetts Life Sciences Center
Multi- PI (Other PI: Martin) (\$1.4 million direct costs)
The Perinatal Systems Biology Center will develop analytic pipelines to fully leverage the Lactation Lab cohorts and data to stimulate discovery in maternal and child health.
- 2020-23 The Lactation Lab: Improving the Health of Two Generations through Optimizing Breastfeeding
Massachusetts Life Sciences Center
Multi- PI (Other PI: Martin) (\$1.1 million direct costs)
The overarching objective of this grant is to build a durable infrastructure for lactation and breastmilk research in New England and to elucidate the metabolic and dietary underpinnings of lactation outcomes and breastmilk composition.
- 2021-23
(NCE) The Lifestyle Intervention in Preparation for Pregnancy (LIPP) Trial
1R01HD088061-01A1
Site PI (Overall PI: Catalano) (\$210,000 direct costs)
The LIPP trial seeks to determine if weight loss through lifestyle modification before pregnancy improves subsequent maternal, perinatal and neonatal outcomes. BWH serves as a recruitment and clinical site for LIPP and the lead site for LIPP Lactation, which examines the impact of the intervention on lactation outcomes.
- 2020-28 Blood Levels of Glycated CD59, a Novel Biomarker to Assess Pregnancy-induced Glucose Intolerance
R01 DK118528 and renewal application
Co-investigator (PI: Halperin)
The goal of this proposal is to validate glycated CD59 (GCD59) in human blood as a novel biomarker to screen for studies of pregnancy-induced glucose intolerance. My role is to lead investigation of the associations of GCD59 with pregnancy and neonatal outcomes.
- 2022-24 The Glucose and Brain Injury Study: Improving the identification and treatment of neonatal hypoglycemia
CRICO foundation
Role: PI (\$200,000 direct costs)
The goal of this grant is to develop proximal neurophysiologic tools (near

infra-red spectroscopy) to predict neurodevelopmentally relevant hypoglycemia, measured with continuous glucose monitoring, in neonates.

- 2022-24 Maternal Post-partum Lifestyle Intervention and Lactation Outcomes
R21 HD108571-01
Role: Multi-PI (Other PI Catalano) (\$275,000 direct costs)
The objective of this grant is to determine the effect of the LIPP Intervention on lactation outcomes, breastmilk composition and infant growth.
- 2023-28 The GROWTH Study, Glycemia Range and Offspring Weight and adiposity in response To Human milk
R01 HD109260-01
Role: Site PI (mPIs Robinson, Josefson, Gregg) (\$1.03 million direct costs)
This study aims to determine the association between maternal glycemia and breastmilk composition and subsequent child adiposity and growth. I will lead maternal and infant follow up for New England (Boston and Providence) sites, conducting home visits for sample collection and measurements. In addition, I will lead analyses specific to maternal body composition.
- 2024-26 Developing a neonatal interstitial glucose sensor
Abbott Diabetes Care Division, Investigator Initiated grant
Role: PI (\$650,000 direct costs)
The goal of this study is to develop a continuous interstitial glucose monitor tailored to neonatal physiology and needs.

Training Grants and Mentored Trainee Grants

- 2017-18 Maternal Obesity, Inflammation and Early Markers of Neurodevelopment
American Academy of Pediatrics Marshall Klaus Award
Role: Mentor for Carmen Monthe-Dreze
The objective of this grant was for Dr. Monthe-Dreze to investigate the effect of the mentor's BMI-based prenatal vitamin supplementation trial on early markers of neurodevelopment.
- 2017-19 Pre- and Perinatal Predictors of Childhood Obesity: Nutrition-Stress Interactions
R01 HD034568 Supplement (PI: Oken)
Role: Mentor for Carmen Monthe-Dreze
The diversity supplement will contribute to our understanding of the role of maternal nutrition in longitudinal offspring growth and provide novel evidence regarding the intersection of psychosocial stress in these associations.
- 2020-23 The interaction of maternal stress and diet in child neurodevelopment
NIH Loan Repayment program
Role: Mentor for Carmen Monthe-Dreze

The objective of this study is to determine the joint associations of maternal dietary quality and stress in child neurodevelopment and executive function outcomes.

- 2020-23 Maternal Obesity and Specialized Pro-resolving Lipid Mediators (SPMs) at the Maternal/Child Interface
Nutrition Obesity Research Consortium at Harvard
Role: Mentor for Carmen Monthe-Dreze
The goal of this project is to characterize the association of maternal body mass index with placental SPMs, a PUFA derivative with inflammation resolving properties, placental nutrient transport and inflammatory gene expression and fetal growth.
- 2021-23 The role of Specialized Pro-resolving Lipid Mediators in Maternal and Infant Health
Harvard Medical School Office of Diversity, Inclusion and Community Partnership
Faculty Fellowship Award
Role: Mentor for Carmen Monthe-Dreze
This award will support Dr. Monthe-Dreze to develop her academic and research portfolio to advance her career in academic medicine.
- 2024-29 The neurobiological underpinnings of intergenerational obesity
NIH (NIDDK)
Role: co-primary mentor (PI: Monthe-Dreze)
I will serve as a co-primary mentor (together with Dr. Emily Oken), supporting and guiding Dr. Monthe-Dreze in achieving her scientific goals and developing her career as an independent physician-investigator.
- Submitted June, 2024 Human milk miRNA at the intersection of maternal health and child immune development
NIH (NICHD) K08 award
Role: mentor (PI: Barry)
I will serve as a mentor for Dr. Barry in the field of human milk composition and child growth and development. I will also support her academic and career development in the transition from mentored to independent physician scientist.

UNIVERSITY TEACHING, ADVISING and MENTORING ROLES

Teaching of Students in Courses

2009	The Obesity Epidemic Undergraduate students	Tufts University Friedman School of Nutrition One hour weekly lectures for 10 weeks
2011-2015	Effect of Obesity on Immune Function Graduate Students	Tufts University Friedman School of Nutrition Four-90 minute lectures per semester
2010	Nutrition Immunology Lab Preceptor Post-doctoral scholars	Tufts University 4 hours/week

2011-2012	Nutrition Immunology Lab Preceptor Post-baccalaureate student	Tufts University 5 hours/week
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HOSPITAL TEACHING, ADVISING and MENTORING ROLES

Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs)

2010-2014	Pulmonary hypertension: Ventilator management Pediatric residents	Tufts Medical Center Division of Newborn Medicine One hour lecture monthly
2010-2014	Maternal fetal nutrition: Neonatal nutritional strategies Neonatal fellows	Tufts Medical Center Division of Newborn Medicine One hour lecture annually
2014-	Fluids, Electrolytes and Nutrition in Neonatal Management Pediatric residents	Boston Children’s Hospital One hour lecture monthly
2016-	Fetal and Neonatal Thermoregulation Neonatal fellows	Boston Children’s Hospital One hour lecture annually
2016-	Neonatal Hypoglycemia Neonatal fellows	Boston Children’s Hospital One hour lecture annually

Clinical Supervisory and Training Responsibilities

2010-2014	Supervised and provided bedside teaching to pediatric residents and Neonatal-Perinatal Medicine Fellows	Tufts Medical Center Division of Newborn Medicine 6 weeks/yr and on call (300 hrs/yr)
2014 -	Supervise and provide bedside teaching to pediatric residents and Neonatal-Perinatal Medicine Fellows	Brigham and Women’s Hospital Neonatal Intensive Care Unit 10 weeks/yr and on call (400 hrs/yr)

Research Supervisory and Training Responsibilities

2014-2016	Neonatology Research Preceptor Undergraduate students	Tufts Medical Center 5 hours/week
2015-18	Perinatal Nutrition Research Preceptor Undergraduate students 5 hours/week	Brigham and Women’s Hospital
2014-	Thesis and research mentorship for graduate students Undergraduate and graduate students	Tufts, Mater (AU), MemorialUniversity, CA

4 hours/trainee per month

2015- Research supervision of neonatology fellows, Harvard Combined Program
research fellows and junior faculty 2 hours/mentee per week

Mentored Trainees and Faculty

- 2009-2012 Chitra Iyer, M.D./Perinatologist, Obstetrix Medical Group of Texas.
Career stage: fellow. Mentoring role: Research Advisor. Accomplishments:
Published two manuscripts.
- 2011-2014 Patoula Panagos, M.D./Assistant Professor of Pediatrics, Rush University
Children's Hospital Chicago, IL.
Career stage: fellow. Mentoring role: Research Advisor. Accomplishments:
Published primary research in *J Perinatology*.
- 2012-2015 Laura Madore, M.D./Assistant Professor of Pediatrics, Baystate Medical
Center, Springfield, MA.
Career stage: fellow. Mentoring role: Research Advisor. Accomplishments:
Presented at four national meetings. Received Travel awards at The Society
for Pediatric Research, The American Society for Nutrition and The Eastern
Society for Pediatric Research. Received the Natalie V. Zucker Grant. Finalist
for the Dupont Postdoctoral Nutrition award at ASN 2014. Published primary
research in *Clinical Therapeutics*.
- 2015-2016 Giulia Rizzo, M.D./Surgery Resident, University of Massachusetts.
Career stage: Master's student in biomedical sciences. Mentoring role: Primary
thesis advisor. Accomplishments: Thesis was subsequently published in
Pediatric Respiratory Reviews.
- 2015- Carmen Monthe-Dreze, M.D./Instructor, Harvard Medical School.
Career Stage: Fellow, faculty. Mentoring role: Primary research mentor for
fellowship and ongoing research as physician scientist junior faculty (current).
Accomplishments: Received Marshall Klaus, NIH diversity supplement,
Nutrition Obesity Research Consortium, loan repayment program, HMS
Diversity and Inclusion Partnership awardee and T32 grants. Recipient of
Perinatal Research Society Early Career Award 2023. Has published seven first
author and four co-authored manuscripts. I serve as co-primary mentor for Dr.
Monthe-Dreze's NIDDK-funded K23.
- 2018-21 Samantha Enstad, M.D./Assistant Professor of Pediatrics, Florida State
University. Career Stage: fellow. Mentoring role: Primary mentor for
fellowship research. Accomplishments: Presented two platform presentations at
national meetings. Two first author and one co-authored manuscripts published.
- 2018-19 Annie Penfield-Cyr, B.S., M.S./Medical Student, Quinnipiac University.

- Career stage: Master's Student. Mentoring role: Primary mentor for master's thesis. Accomplishments: Presented abstracts at three national meetings, co-authored four manuscripts.
- 2018-19 Sydney Peters, B.S./Medical student, University of Rochester. Career stage: Undergraduate student. Mentoring role: Supervised and mentored authorship of review article. Accomplishment: Published review article in Current Diabetes Reports.
- 2018- Victoria Gill, B.S./Ph.D. Candidate, Pediatrics, Mater Research Institute, Australia. Career stage: Ph.D. candidate. Mentoring role: Member of thesis committee (current). Accomplishments: One accepted publication, two manuscripts under review, three presentations at international meetings.
- 2018- Chloe Andrews, B.S., M.S./Ph.D. Student, Tufts Friedman School of Nutrition. Career stage: Master's Student and Ph. D student. Mentoring role: I served as Ms. Andrew's primary mentor first as a master's student (2018-19), after which she worked as a research coordinator and program manager in my lab. I serve as the primary mentor for her Ph.D. dissertation research (current). Accomplishments: Presented abstract at The American Society for Nutrition National Meeting (2019), oral and poster presentations at Pediatric Academic Societies (2023). Two first author and three co-authored publications, three manuscripts in preparation.
- 2019-22 Madeline Keyes, M.D./ Neonatal-Perinatal Fellow, Harvard Fellowship in Neonatal-Perinatal Medicine. Career stage: Fellow. Mentoring role: Primary mentor for fellowship research, T32 and clinical and translational research academy. Accomplishments: Awarded T32, selected for translational research academy, abstract accepted at Pediatric Academic Society (2021), manuscript published in The American Journal of Clinical Nutrition, highlighted as an editor's choice manuscript.
- 2020-22 Saranya Ramadurai, B.S./ Medical student at University of Massachusetts. Career stage: Medical Student. Mentoring role: Primary supervisor for summer and year-long research project. Accomplishments: abstract accepted at Pediatric Academic Society (2021), manuscript published in Clinical Therapeutics.
- 2022- Mogan Tharsa Ganeshalingam, B.S., M.S./Ph.D. Candidate Memorial University, Newfoundland, Canada. Career stage: Ph.D. Student. Mentoring role: Monthly meetings to review progress towards Ph.D. completion and provide input on manuscripts and analyses. Co-author on manuscripts. Serve on thesis and mentoring committee (current). One published manuscript with two more in preparation.
- 2022- Brij Bhushan, Ph.D./BWH Post-doctoral fellow. Career stage: post-doctoral fellow. Mentoring role: Primary supervisor of post-doctoral research investigating the associations of maternal characteristics with milk composition (current). Abstract accepted for presentation at national meeting and manuscript in preparation.
- 2022- Nikita Kalluri, M.D./ Neonatal Perinatal Fellow Harvard Combined Program, Health Services Fellow Harvard Medical School. Career stage: Fellow. Mentoring role: Mentor for fellowship research (current). Accomplishments: Awarded T32, abstract presented at

New England Perinatal Society and accepted for oral presentation, awarded travel award and Best fellow abstract at Pediatric Academic Society (2023).

2024- Meagan Barry, M.D./Rhode Island Hospital Emergency Medicine Physician. Career stage: Junior faculty. Mentoring role: K08 mentor.

2024- Shayla Durfee, M.D./Women and Infants Hospital of Rhode Island Neonatal-Perinatal Fellow. Career stage: Fellow. Mentoring role: research mentor in health equity.