**CURRICULUM VITAE**

**Laura D. Brown, MD**

**Associate Professor of Pediatrics**

1. **Address**

University of Colorado Anschutz Medical Campus

Perinatal Research Center

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1. **Education**

1995, BA, University of Colorado, Boulder

1999, MD, University of Colorado School of Medicine

1999 – 2002

Pediatric Residency, University of Colorado School of Medicine

2002 - 2005

Neonatal-Perinatal Medicine Fellowship, University of Colorado School of Medicine

1. **Academic appointments**

2005 – 2007

Instructor,Department of Pediatrics,Section of Neonatology, University of Colorado School of Medicine

2007 – 2014

Assistant Professor, Department of Pediatrics,Section of Neonatology, University of Colorado School of Medicine

2014 – Present

**Associate Professor,** Department of Pediatrics,Section of Neonatology, University of Colorado School of Medicine

1. **Hospital, government or other professional positions**

2005 – Present

Neonatology Attending, Children’s Hospital Colorado, University of Colorado Hospital, Lutheran Medical Center, Parker Adventist Hospital, Highlands Ranch Hospital, Boulder Community Hospital

1. **Honors, special recognition and awards**

1995 Chancellor’s Recognition Award

1997 Academic Excellence, School of Medicine Promotions Committee

1999 Mosby Award for Outstanding Performance in Pediatrics

2002 Outstanding Clinical Teacher, voted by Medical Students

2002 Outstanding Resident of the Year, Neonatal Intensive Care Unit

2005 L. Joseph Butterfield Award in Perinatal Pediatrics

2005 Maxwell Rhys Murray Educational Scholarship Award

2005 Young Investigator Travel Award, Perinatal Research Society

2005 Aventis Metabolism Scholar Award, Western Society for Pediatric Research

2006 Outstanding Student Award, Clinical Research Training Program

2007 Elected Member, Western Society for Pediatric Research

2008 Elected Member, Perinatal Research Society

2008 Elected Member, Society for Pediatric Research

2009 Jacqueline Leaffer Travel Award,Center for Women’s Health Research

2010 Mead Johnson Travel Award, Western Society for Pediatric Research

2011 Poster Award, Women’s Health Research Day

2012 Delegate, Early Career Women Faculty Professional Development Seminar

2013 – 2015 Council Member, Perinatal Research Society

2014 Abbott Nutrition Young Investigator Award, Western Society for Pediatric Research

2014 Jacqueline Leaffer Travel Award,Center for Women’s Health Research

2014 – 2017 Council Member, Western Society for Pediatric Research

2015 Invited member speaker, Perinatal Research Society 2015 Annual Meeting

2016 – 2019 Invited Faculty Member, Annual Seminar on Neonatal-Perinatal Medicine, Abbott Nutrition and American Academy of Pediatrics

2019 President Elect, Perinatal Research Society

2020 President Elect, Western Society for Pediatric Research

1. **Membership in professional organizations**

2007 – Present American Academy of Pediatrics, Section of Perinatal Medicine

2007 – Present Western Society for Pediatric Research (Council member, President-Elect)

2008 – Present Society for Pediatric Research

2008 – Present Perinatal Research Society (Council member, President-Elect)

2013 – Present District VIII Section on Perinatal Pediatrics

2018 – Present US Developmental Origins of Adult Health and Disease

2019 – Present American Society for Nutrition

2019 – Present American Physiological Society

1. **Major committee and service responsibilities**

**National**

2011 – Present Member, Neonatal Nutrition and Metabolism Club Planning Committee, Pediatric Academic Societies

2014Member, NIH/NICHD Pre-B project: Evaluating the evidence base to support

guidelines for the nutritional care of preterm infants

**University of Colorado School of Medicine**

2005 – 2014 Co-director, Perinatal Ethics Rounds

2009 – 2020 Junior Faculty Affiliate, Center for Women’s Health Research, Center for Women’s Health Research (CWHR)

2016 – Present Member, National Conference on Women’s Health and Sex Differences Research Planning Committee, Center for Women’s Health Research (CWHR)

2016 – Present Member, Women’s Community Health Symposium Planning Committee, Center for Women’s Health Research (CWHR)

2018 – Present Member, Women in Medicine and Science Committee

2019 – Present Member, CWHR Grant Review Committee

2020 – Present Senior Faculty, CWHR

**Department of Pediatrics**

2007, 2015 Member, Neonatology Fellowship Applicant Review Committee

2007 – 2015 Interviewer, Children’s Hospital Colorado Pediatric Residency Selection

2007 – 2015 Director, Pediatric Resident Neonatal Resuscitation Program

2008 – 2011 Member, Scholarly Oversight Committee (fellows graduating in 2011)

2009 – 2012 Member, Scholarly Oversight Committee (fellows graduating in 2012)

2011 – Present Member, Child Maternal Health (CMH) Committee of the Colorado Clinical and Translational Sciences Institute (CCTSI)

2011 – 2014 Member, Neonatology Research Committee

2012 – 2015 Member, Scholarly Oversight Committee (fellows graduating in 2015)

2013 – Present Member, Neonatology Fellow Clinical Competencies Committee

2014 - Present Mentor, Pediatric Intern Mentorship Program

2014 – Present Lead organizer, Perinatal-Neonatal Weekly Research Conference

2016 – Present Member, Visiting Professors in Neonatology Committee

2017 – Present Advisor, Career Focused Educational Block for Pediatric Residents

**University of Colorado Hospital**

2005 – 2006 Task force member, Management of Pregnancies at Margins of Viability

**Children’s Hospital Colorado**

2005 – 2011Physician consultant, Fetal Concerns Program

2007 – Present Liaison, The Children’s Hospital Foundation

2019 Member, Child Health Research Enterprise strategic planning committee: Achieving Impact from Fundamental Science to Early Translation (T0-T1)

1. **Licensure and board certification**

1997 United States Medical Licensure Examination I

1998 United States Medical Licensure Examination II

2000 United States Medical Licensure Examination III

2002 – 2009 Diplomate of the American Board of Pediatrics

2005 – Present Subspecialty Certification in Neonatal-Perinatal Medicine

1. **Review and referee work**

**Ad hoc Peer review**

2006 – Present American Journal of Physiology – GI and Liver Physiology

2008 – Present American Journal of Physiology – Endocrinology and Metabolism

2009 – Present Neonatology

2010 – Present Pediatric Research

2010 – Present American Journal of Physiology - Heart and Circulatory Physiology

2010 – Present Molecular and Cellular Endocrinology

2011 – Present Metabolism

2012 – Present Journal of Pregnancy

2012 – Present Journal of Nutrition

2012 – Present Free Radical Research

2013 – Present American Journal of Physiology - Regulatory, Integrative, and Comparative

2013 – Present Reproductive Sciences

2013 – Present Journal of Animal Science and Biotechnology

2014 – Present Journal of Endocrinology

2014 – Present Pediatric Obesity

2015 – Present European Journal of Nutrition

2017 – Present Nutrients

2017 – Present American Journal of Perinatology

2018 – Present Journal of Perinatology

2019 – Present Journal of Developmental Origins of Health and Disease

2019 – Present Domestic Animal Endocrinology

2020 – Present Journal of Pediatrics

**Grant review and study sections**

2011 – 2019 Child Maternal Health Pilot Grant Program, Colorado Clinical Translational Sciences Institute (CCTSI), University of Colorado School of Medicine

2012 Nazarbayev University Center of Life Sciences

2014 PSI Foundation, Toronto, ON

2015 Ad hoc member, NIH Pregnancy Neonatology Study Section

2016 Pre-K Grant Review, CCTSI

2017 Ad hoc member, NIH Pregnancy Neonatology Study Section

2018 Thrasher Research Fund

2018 Centers of Biomedical Research Excellence, University of Nebraska

2019 Building Interdisciplinary Research Careers in Women’s Health (NIH-K12) Scholar Applications, University of Colorado School of Medicine

2019 K-to-R Grant Review, CCTSI

2019 Center for Women’s Health Research (CWHR) Pilot grant reviews

2020 Medical College of Wisconsin Advancing a Healthier Wisconsin Endowment

**Thesis review**

2018 University of Auckland, New Zealand

**Ad hoc abstract review and session moderation for national scientific meetings**

2008 Western Society for Pediatric Research Meeting, Carmel, CA

2011 Western Society for Pediatric Research Meeting, Carmel, CA

2012 Pediatric Academic Societies Meeting, Boston, MA.

2013 Western Society for Pediatric Research Meeting, Carmel, CA

2013 Pediatric Academic Societies Meeting, Washington D.C.

2015 Western Society for Pediatric Research Meeting, Carmel, CA

2015 Pediatric Academic Societies Meeting, San Diego, CA

2016 Western Society for Pediatric Research Meeting, Carmel, CA

2017 Western Society for Pediatric Research Meeting, Carmel, CA

2018 Western Society for Pediatric Research Meeting, Carmel, CA

2019 Western Society for Pediatric Research Meeting, Carmel, CA

2015 Western Society for Pediatric Research Meeting, Carmel, CA

2019 Pediatric Academic Societies Meeting, Baltimore, MD

1. **Invited extramural lectures, presentations and visiting professorships**

**International**

1. Challenges in Nourishing the IUGR Infant. Invited Science Program Session “Special nutritional considerations for the critically ill preterm neonate.” Pediatric Academic Societies Meeting, Vancouver, Canada. May 5, 2014.
2. The Most Controversial Topic in Neonatal Nutrition: Should we, and if so, how should we, feed ELBW preterm infants to grow like the normal human fetus, as recommended by the AAP? – A practical pro and con discussion. Invited Science Program Session “Protocolized vs. Personalized Nutrition: a pro and con discussion.” Pediatrics Academic Societies Meeting, Toronto, Canada. May 6, 2018.
3. Adaptations in branched-chain amino acid metabolism that reduce skeletal muscle growth in the IUGR fetus. Federation of American Societies for Experimental Biology (FASEB) 2020 Virtual Science Research Conference Series. Nutrient Sensing and Metabolic Signaling Conference, Nova Scotia, Canada (Virtual secondary to Covid-19 pandemic). August 11, 2020.

**National**

1. Effect of Amino Acids on the Regulation of Signal Transduction in the Late Gestation Ovine Fetus. Mead Johnson Nutritionals 32nd Aspen Conference on Perinatal Research, Aspen, CO. June 6, 2004.
2. Independent and interactive effects of insulin and amino acids in the regulation of fetal skeletal muscle growth pathways *in-vivo* and *in-vitro.* Aspen Perinatal Biology Symposium, Aspen, CO. August 28, 2007.
3. Decreased skeletal muscle growth in IUGR: A lifelong problem. “Let’s Talk Science” Conference, Oregon Health Sciences University, Portland, OR. March 23, 2011 **(*invited professorship*).**
4. Improving lean mass growth in IUGR. State of the Art Speaker, Western Society for Pediatric Research Meeting, Carmel, CA. January 26, 2013.
5. The effect of amino acid infusion on fetal development. Aspen Perinatal Biology Symposium, Snowmass, CO. August 25, 2013.
6. Targeting myoblast proliferation to improve skeletal muscle growth in IUGR. Research Seminar Series, University of Texas Health Science Center at San Antonio. December 5, 2013 **(*invited professorship*).**
7. Targeting myoblast proliferation to improve skeletal muscle growth in IUGR. Abbott Nutrition Young Investigator, Plenary session, Western Society for Pediatric Research Meeting, Carmel, CA. January 24, 2014.
8. Neonatal Nutrition: Nuts and Bolts. Grand Rounds Series, Wyoming Medical Center, Casper, WY. March 11, 2014.
9. Challenges in nourishing the IUGR infant: from bedside to bench. Newborn Education Day Conference, Medical College of Wisconsin, Milwaukee, WI. July 9, 2014 (*invited professorship*).
10. Challenges in nourishing the IUGR infant. Controversies in Standards of Care: Treatment Advances for the High-Risk Neonate. HCA Midwest Health Conference. Kansas City, KS. November 14, 2014.
11. Neonatal Nutrition: Nuts and Bolts. Grand Rounds Series, Cheyenne Regional Medical Center, Cheyenne, WY. December 11, 2014.
12. Nutrigenomics: Insights from the IUGR neonate. Invited Topic Symposium “Nutrigenomics: Understanding and Defining Nutritional Efficacy for the Preterm Infant” Pediatric Academic Societies Meeting, San Diego, CA. April 25, 2015.
13. Brain vs. Brawn: Insights into fetal skeletal muscle growth restriction. Johns Hopkins Member Lecture, Perinatal Research Society Annual Meeting 2015, Englewood, CO. September 20, 2015.
14. Challenges in nourishing the IUGR neonate. Neonatal Nutrition: Assessment, Intervention & Management. University of Minnesota and the Academy of Neonatal Nursing Conference. Minneapolis, MN. October 9, 2015.
15. Hindlimb substrate metabolism. No Name Society Meeting. Nassau, Bahamas. November 10-13, 2015.
16. Brain vs. Brawn: Insights into fetal skeletal muscle growth in IUGR. 39th Annual Seminar on Neonatal-Perinatal Medicine. Controversies in Neonatal-Perinatal Medicine: Evidence for Current Practice. Santa Fe, NM. June 8, 2016.
17. IUGR Consequences and Treatments in Human. American Diabetes Association Annual Meeting. New Orleans, LA. June 14, 2016.
18. Brain vs. Brawn: Insights into fetal skeletal muscle growth in IUGR. Sex Differences Across the Lifespan: A Focus on Metabolism. National Conference on Women’s Health Research. Colorado Springs, CO. September 28-30, 2016.
19. Fetal skeletal muscle protein metabolism. No Name Society Conference. Estes Park, CO. October 20-23, 2016.
20. Poor growth in the NICU: What can we do? American Academy of Pediatrics/Mead Johnson Nutrition Central Conference on Perinatal Research. Louisville, KY. March 9, 2017.
21. Poor growth in the NICU: What can we do? American Academy of Pediatrics/Abbott Nutrition 40th Annual Seminar on Neonatal-Perinatal Medicine. Santa Fe, NM. June 7, 2017.
22. Reduced fetal skeletal muscle growth in IUGR: A metabolomics approach to understanding mechanism. University of Arizona, Tucson, AZ, February 26-27, 2018 (*invited professorship*).
23. Poor growth in the NICU: What can we do? American Academy of Pediatrics/Abbott Nutrition 41th Annual Seminar on Neonatal-Perinatal Medicine. Santa Fe, NM. June 6, 2018.
24. Reduced fetal skeletal muscle growth in IUGR: A metabolomics approach to understanding mechanism. Keynote speaker, US Developmental Origins of Health and Disease, Raleigh/Durham, NC. October 1, 2018.
25. Reduced skeletal muscle growth in IUGR and potential therapeutic strategies. Grand Rounds, University of Missouri, Columbia, MO. November 16, 2018 (*invited professorship*).
26. Reduced fetal skeletal muscle growth in IUGR: A metabolomics approach to understanding mechanism. Nebraska Center for the Prevention of Obesity Related Diseases 11th Annual Retreat, University of Nebraska, Lincoln, NE. April 17th, 2019.
27. Assessment of preterm infant growth: Are we missing the mark? American Academy of Pediatrics/Abbott Nutrition 42th Annual Seminar on Neonatal-Perinatal Medicine. Santa Fe, NM. June 5, 2019.
28. Adaptations in BCAA metabolism that reduce skeletal muscle growth in the IUGR fetus. Knight Cardiovascular Institute Let’s talk Science Conference. Oregon Health & Sciences University, Portland, OR (virtual). September 16, 2020.

**Regional**

1. Considerations for infants at the margin of viability. Annual Perinatal Clinical Update, Children’s Hospital Colorado, Aurora, CO. May 6, 2005.
2. Hypoglycemia in neonates. Annual Perinatal Clinical Update, Children’s Hospital Colorado, Aurora, CO. May 4, 2007.
3. Best practices: Parenteral nutrition in the NICU. Front Range Association of Neonatal Nurse Practitioners Annual Conference, Keystone, CO. Oct. 23, 2007.
4. Predicting neurodevelopmental outcomes in the preterm infant. Annual Perinatal Clinical Update, Children’s Hospital Colorado, Aurora, CO. May 7, 2009.
5. Skeletal muscle growth in intrauterine growth restriction (IUGR). Leinwand Laboratory, Department of Molecular, Cellular, and Developmental Biology, University of Colorado Boulder, Boulder, CO. April 28, 2010.
6. The impact of IUGR on fetal skeletal muscle development. Annual Diabetes in Pregnancy Study Group West, Denver, CO. May 13, 2011.
7. Improving muscle growth in IUGR. Leinwand Laboratory, Department of Molecular, Cellular, and Developmental Biology, University of Colorado Boulder, Boulder, CO. April 25, 2012.
8. Fetal Origins of Adult Disease: Applications in Clinical Practice. 11th Annual Women’s Cardiovascular Health Symposium, Aurora, CO. March 16, 2013.
9. Targeting myoblast proliferation to improve fetal muscle growth in IUGR. Frontiers in Pregnancy Conference, Department of OB/GYN and March of Dimes, University of Colorado Anschutz Medical Campus, Aurora, CO. September 25, 2013.
10. Fetal origins of adult metabolic disease. Invited speaker at The Guild of the Children’s Diabetes Foundation and the Barbara Davis Center for Childhood Diabetes monthly meeting. Englewood, CO. March 10, 2014.
11. Targeting myogenesis to improve fetal muscle growth in IUGR. Leinwand Laboratory, Department of Molecular, Cellular, and Developmental Biology, University of Colorado Boulder, Boulder, CO. August 20, 2014.
12. Neonatal Nutrition: Nuts and Bolts. Neonatal Medical Staff Education, Longmont United Hospital, Longmont, CO. February 12, 2015.
13. Nutritional Challenges in the Neonatal ICU. 36th Annual Perinatal Clinical Update. Children’s Hospital Colorado Anschutz Medical Campus, Aurora, CO. May 8, 2015.
14. Challenges in Feeding the Infant with IUGR: A Nutrigenomics Approach. 6th Annual Neonatal Advanced Practice Conference. Children’s Hospital Colorado Anschutz Medical Campus, Aurora, CO. June 26, 2015.
15. Brain vs. Brawn: Insights into fetal skeletal muscle growth in IUGR. Leinwand Laboratory, Department of Molecular, Cellular, and Developmental Biology, University of Colorado Boulder, Boulder, CO. March 2, 2016.
16. Brain vs. Brawn: Insights into fetal skeletal muscle growth in IUGR. Animal Reproduction and Biotechnology Laboratory Seminar Series. Colorado State University, Ft. Collins, CO. November 7, 2016.
17. Fetal muscle metabolism: Physiology informing molecular analysis. Leinwand Laboratory, Department of Molecular, Cellular, and Developmental Biology, University of Colorado Boulder, Boulder, CO. November 9, 2016.
18. Reduced fetal skeletal muscle growth in IUGR: A metabolomics approach to understanding mechanism. Leinwand Laboratory, Department of Molecular, Cellular, and Developmental Biology, University of Colorado Boulder, Boulder, CO. February 28, 2018.
19. Nutritional challenges in the neonate. Updates in Clinical Nutrition Conference, Children’s Hospital Colorado, Aurora, CO. November 1, 2019.

**Local**

1. Inborn Errors of Metabolism. Neonatal Noon Conference, Department of Pediatrics. January 13, 2005.
2. Considerations for infants at the margin of viability. Neonatal Noon Conference, Department of Pediatrics. January 20, 2005.
3. Considerations for infants at the margin of viability: Ethical and Legal Considerations. Prenatal Diagnosis Conference, Department of Obstetrics and Gynecology. June 5, 2005.
4. Metabolomics: A technique to study metabolic changes in IUGR.Proteomics and Metabolomics Research Symposium, Department of Anesthesia. December 2, 2005.
5. Guidelines for management of extremely low birth weight infants. Neonatal Noon Conference, Department of Pediatrics. March 23, 2006.
6. Nutrient Regulation of Skeletal Muscle Signal Transduction in an Ovine Model of IUGR. Perinatal Research Conference, Department of Pediatrics. October 20, 2006.
7. Nutrient Regulation of Skeletal Muscle Signal Transduction in an Ovine Model of IUGR. Pediatric Heart Lung Conference, Department of Pediatrics. December 7, 2006.
8. Postprandial plasma concentrations of galactose suggest a postnatal ductus venosus shunt in newborns. Perinatal Research Conference, Department of Pediatrics. March 2, 2007.
9. Independent and interactive effects of insulin and amino acids in the regulation of fetal skeletal muscle growth pathways *in-vivo* and *in-vitro.* Perinatal Research Conference, Department of Pediatrics. August 24, 2007.
10. Techniques in primary myocyte culture. Perinatal Research Conference, Department of Pediatrics. September 7, 2007.
11. Predicting neurodevelopmental outcomes in the preterm infant: Assessment in the NICU and in follow-up care. Neonatal Noon Conference, Department of Pediatrics. November 15, 2007
12. Inositol and Mannose Utilization in the Late Preterm Neonate. Perinatal Research Conference, Department of Pediatrics. January 25, 2008.
13. Fetal effects of prolonged maternal amino acid infusion in late gestation pregnant sheep: In vivo and in vitro correlates. Perinatal Research Conference, Department of Pediatrics. October 1, 2008.
14. Functional adaptations of fetal skeletal muscle to nutrient and anabolic hormone deficiencies in IUGR Part 1. Building Interdisciplinary Careers in Women’s Health Research Scholarly Oversight Committee, Department of Medicine. January 6, 2009.
15. Total Parenteral Nutrition: It is not all glucose, protein and fat. Neonatal Noon Conference, Department of Pediatrics. February 26, 2009.
16. Functional adaptations of fetal skeletal muscle to nutrient and anabolic hormone deficiencies in IUGR Part 2. Building Interdisciplinary Careers in Women’s Health Research Scholarly Oversight Committee, Department of Medicine. July 13, 2009.
17. Can we improve lean body mass growth in IUGR? A review of proposed specific aims. Perinatal Research Conference, Department of Pediatrics. December 2, 2009.
18. How can we improve lean body mass growth in IUGR: Specific Aims. Metabolism Club, Department of Medicine. January 7, 2010.
19. Can we improve skeletal muscle growth in IUGR? A developmental approach. Building Interdisciplinary Careers in Women’s Health Research Scholarly Oversight Committee, Department of Medicine. February 22, 2010.
20. Gene expression in IUGR muscle. Friedman Laboratory, Department of Pediatrics. July 12, 2010.
21. Inflexibility of leucine disposal to nutrient reintroduction in the IUGR fetus. Building Interdisciplinary Careers in Women’s Health Research Scholarly Oversight Committee, Department of Medicine. October 12, 2010
22. K08 critique rebuttal. Friedman Laboratory, Department of Pediatrics. January 31, 2011.
23. The role of carbohydrates and polyols in neonatal nutrition and health. Neonatal Noon Conference, Department of Pediatrics. February 2, 2011.
24. Nutrient and hormone resistance to growth in IUGR muscle: a lifelong problem. Perinatal Research Conference, Department of Pediatrics. February 9, 2011.
25. 6th Edition Guidelines for Neonatal Resuscitation Program. Neonatal Noon Conference, Department of Pediatrics. March 30, 2011.
26. Project planning. Building Interdisciplinary Careers in Women’s Health Research Scholarly Oversight Committee, Department of Medicine. July 14, 2011.
27. The effect of insulin on myoblast growth. Friedman Laboratory, Department of Pediatrics. October 12, 2011.
28. Improving lean mass growth in intrauterine growth restriction. Pediatric Research Seminar Series, Department of Pediatrics. January 31, 2012.
29. American Diabetes Association Career Development Award Submission. Friedman Laboratory, Department of Pediatrics. May 21, 2012.
30. Fetal Origins of Adult Disease: Applications in Clinical Practice. Neonatal Noon Conference, Department of Pediatrics. March 13, 2013.
31. The effects of amino acid supplementation during pregnancy on fetal growth. Pediatric Research Seminar Series, Department of Pediatrics. October 1, 2013.
32. Challenges in Nourishing the IUGR Infant. Neonatal Noon Conference, Department of Pediatrics. January 22, 2014.
33. Targeting myogenesis to improve fetal skeletal muscle growth in IUGR. Program in Reproductive Sciences (PiRS) Seminar, Department of OB/GYN. February 4, 2014.
34. Regulation of fetal skeletal muscle growth in IUGR. R01 resubmission plans. Friedman Laboratory, Department of Pediatrics. April 21, 2014.
35. Targeting myogenesis to improve fetal skeletal muscle growth in IUGR. Center for Women’s Health Research Scientific Advisory Council Meeting, Department of Medicine. April 25, 2014.
36. Assessment of fetal skeletal muscle protein kinetics. Friedman Laboratory, Department of Pediatrics. November 24, 2014.
37. Diabetes and heart disease risk: Influences of early life nutrition. Center for Women’s Health Research Medicine Cabinet Meeting, Department of Medicine. December 3, 2014.
38. Physiology informing molecular analysis. Perinatal-Neonatal Research Conference, Department of Pediatrics. September 22, 2016.
39. Reduced amino acid uptake and protein synthesis rates in the skeletal muscle of the IUGR fetus. Building Better Babies Symposium. Departments of OB/GYN and Pediatrics. May 31st, 2017.
40. Reduced fetal skeletal muscle growth in IUGR: A metabolomics approach to understanding mechanism. Pediatric Nutrition Seminar Series, Department of Pediatrics. February 22, 2018.
41. Diabetes and Heart Disease: Influences of growth in the womb. University of Colorado Center for Women’s Health Research Annual Luncheon Kick-off. Denver Museum of Nature and Science. August 29, 2018.
42. Assessment of preterm infant growth: Are we missing the mark? Neonatal Noon Conference, Department of Pediatrics. September 19, 2018
43. The impact of IUGR on myoblast function. Perinatal-Neonatal Research Conference, Department of Pediatrics. December 13, 2018.
44. Assessment of preterm infant growth: Are we missing the mark? Nutrition Seminar Series, Department of Pediatrics. February 7, 2019.
45. Enteral nutrition in the NICU: Human milk, donor milk and the late preterm infant. Children’s Hospital Colorado sponsored continuing medical education event in Centennial, CO. Nutrition for the preterm infant: Beyond the NICU. April 2, 2019.
46. Bridging the gap between fetal and neonatal growth assessment. OB/GYN Grand Rounds, Department of Obstetrics and Gynecology. September 4, 2019.
47. Metabolic adaptations to energy deficiency in fetal skeletal muscle. Exercise and Muscle Lab Group, Department of Medicine. November 18, 2019.
48. Metabolic adaptations to energy deficiency in fetal skeletal muscle: Discussion of proposed specific aims. Fetal Origins Laboratory Group. November 18, 2019.
49. The use of metabolomics in the pathophysiology, diagnosis and treatment of intrauterine growth restriction. Genetics and Metabolism Grand Rounds. October 7, 2020.
50. **Teaching record**

**Presentations**

*Residents and Fellows*

1. Considerations for infants and the margin of viability. Pediatric Resident Teaching Conference, January 20, 2005.
2. Panel discussant for career development. Children’s Hospital Colorado Fellow’s Retreat, May 18, 2006.
3. Case review: Severe respiratory distress syndrome and pneumothoraces. Neonatology Fellow Teaching Conference. September 20, 2009.
4. Hydrocephalus and other congenital brain abnormalities. Neonatology Fellow Teaching Conference, January 11, 2007; September 24, 2008; September 11, 2013.
5. Hyperbilirubinemia in the Neonate. St. Anthony’s Family Medicine Residency Lecture Series. January 22, 2008
6. Neonatal Catheter Related Complications. Pediatric Resident Teaching Conference, October 13, 2008.
7. Neonatal Nutrition Basics. Neonatology Fellow Teaching Conference, September 15, 2010; July 20, 2011.
8. Neonatal Resuscitation Guidelines. Obstetrical/Gynecology Resident Orientation, June 20, 2011; June 22, 2013; June 19, 2014.
9. Total Parenteral Nutrition Basics: Standing lecture given while on clinical service at University of Colorado Hospital.
10. Brain Injury in Preterm Infants and Neurodevelopmental Outcomes. Standing lecture given while on clinical service at University of Colorado Hospital.
11. How to Build a Curriculum Vitae. Neonatology Fellow Teaching Conference, September 18, 2013.
12. Hypoglycemia in the Neonate. Neonatal Nurse Practitioner New Graduate Education Program, February 12, 2014.
13. How to give an elevator speech. Neonatology Fellow Teaching Conference, September 9, 2015.
14. Neurodevelopmental Outcomes for Preterm Infants: Can they be predicted? Perinatal Physiology Course for MFM and Neonatology Fellows, January 23, 2015.
15. Neurodevelopmental Outcomes for Preterm Infants: Can they be predicted? Child Neurology Residency Program, February 11, 2016.
16. Optimizing neurodevelopment in the preterm infant: prenatal and postnatal nutrition. Physiology Course for MFM Fellows, May 2, 2018.
17. Intrauterine growth restriction. Neonatology Fellow Teaching Conference, May 15, 2019.

*Nurses*

1. Non-immune hydrops fetalis. University of Colorado Hospital Neonatal Nursing Staff Education Conference, June 20, 2004.
2. Hypoglycemia in neonates. Regis Neonatal Nurse Practitioner Training Program. May 5, 2006.
3. Brain Injury in Preterm Infants and Neurodevelopmental Outcomes. New Graduate Nursing Education Series, Children’s Hospital Colorado. January 11, 2012; November 26, 2012; May 15, 2013; November 6, 2013; December 2, 2014; August 27, 2015; December 14, 2016
4. Poor growth in the NICU: What can we do? New Graduate Nursing Education Series, Children’s Hospital Colorado. December 13, 2017; August 1, 2018; November 13, 2019.

*Junior faculty*

1. CV review session. Women’s Leadership Training, University of Colorado School of Medicine. January 18, 2018; February 10, 2020
2. Building Better Biosketches. Center for Women’s Health Research Researcher Training, University of Colorado School of Medicine. November 20, 2019.

**Administrative positions**

2003 – Present Neonatal Resuscitation Program Instructor

2007 – 2015 Director, Pediatric Resident Neonatal Resuscitation Program Education

2007 – Present Faculty Member, NIH T32 Training Grant in Perinatal Medicine and Biology (HD07186, PI, Paul Rozance)

**Mentoring**

2008 **Primary mentor,** Michelle Crispo, MD - Undergraduate. Contributing author publication and abstract presentation; Now Emergency Medicine attending at Maine Medical Center

2008 – 2011 **Primary mentor,** Susan Soto, MD - Neonatology fellow; first author publication

and several abstract. Now attending Neonatologist at Denver Health Medical Center

2009 – 2012 **Primary mentor,** Anne Hall, MD - Neonatology fellow; first author publication and several abstracts. Funded by K12 at University of Minnesota. Now Instructor at University of Colorado School of Medicine.

2011 **Co-mentor,** Carola Buscemi, MD - Medical student; data collection and thesis.

2013 **Primary mentor,** Natalia Garza - Undergraduate, Department of Pediatrics Summer Student Research Program; contributing author publication.

2012 – 2015 **Primary mentor,** Sandra Wai, MD - Neonatology fellow; first author publication, several abstracts, Pediatric Academic Societies travel award 2014 and 2015. Attending Neonatologist at Oakland Children’s Hospital.

2010 – 2016 **Primary mentor,** Amy Blake, MD - Neonatology fellow; first author publication, several abstracts, Pediatric Academic Societies House Officer Research Award 2013. Assistant Professor at University of Massachusetts, Baystate.

2015 – 2016 **Primary mentor,** Laura Zastoupil, MD - Pediatric resident; Contributing author publication; abstracts; Pediatric Academic Societies House Officer Research Award 2015. Now Assistant Professor, University of Colorado School of Medicine.

2016 **Primary mentor,** Candice Song - Regis University Masters in Biomedicine, Department of Pediatrics Summer Student Research Program.

2016 **Primary mentor,** K’ara Locke - Regis University Masters in Biomedicine, Department of Pediatrics Summer Student Research Program. Now medical student at Meharry Medical College.

2016 – Present **Primary mentor,** Jane Stremming, MD - Neonatology fellow; first author publication and several abstracts. Now Instructor of Pediatrics, University of Colorado School of Medicine

2016 – 2018 **Primary Mentor,** Leanna Nyugen, MS - Regis University Masters in Biomedicine. Abstract; Now Professional Research Associate at University of Colorado School of Medicine.

2016 – Present **Co-mentor,** Mingua Tang, PhD - Assistant Professor of Pediatrics, University of Colorado School of Medicine; K01 Award.

2017 – 2019 **Co-mentor,** Stephanie Chassen, MD - Assistant Professor of Pediatrics, University of Colorado School of Medicine; NIH CCTSI Pilot Grant.

2017 **Primary Mentor,** Elizabeth Gilje, MD - Pediatric resident; abstract; Western Society of Pediatric Research Outstanding resident research award 2018. Now Hospitalist in Casper, WY.

2017 **Primary Mentor,** Drew Navarro, MD - Undergraduate, Department of Pediatrics Summer Student Research Program; abstract, Western Student and Resident Research Forum (WSMRF) Outstanding Oral Presentation Award. Now medical student.

2017 – Present **Primary Mentor,** Eileen Chang, PhD - Post-doctoral fellow. Two first author publications, several abstracts, Society of Reproductive Investigation travel award.

2017 – 2019 **Co-mentor,** Dustin Yates, PhD - Assistant Professor of Stress Physiology University of Nebraska-Lincoln

2017 – 2019 **Primary Mentor,** Sara Heard - Undergraduate; two abstracts,Western Society for Pediatric Research Mead Johnson Nutrition Travel Award 2019. Now medical student at University of New England College of Osteopathic Medicine.

2018 – 2019 **Primary Mentor,** Whitley Hulse, MD - Pediatric resident; two abstracts. Now a Neonatology fellow at University of Utah.

2018 – Present **Co-mentor,** Ramon Lorca, PhD - Instructor, Department of Reproductive Sciences; American Heart Association (AHA) Career Development Award application.

2019 – Present **Primary mentor,** Hilary Hesse, MD - Pediatric resident. Abstract.

2019 **Primary mentor,** Tristan Dear, MD - Pediatric resident.

2019 – 2020 **Primary mentor,** Feruth Kidane - Regis University Masters in Biomedicine.

1. **Grant support**

**Current**

NIH R01HD079404 (PI: L Brown)4/1/2015 – 1/31/2021 (NCE)

“Regulation of fetal skeletal muscle growth in IUGR”

Role: Principal Investigator

**Pending**

NIH R01 (PI: S Limesand)

Restoring oxygen and glucose amends fetal metabolic adaptations of placental insufficiency

Role: Co-Principal Investigator

NIH R21 (PI: S Jonker)

Role of Birth on Microvasculature Development in Striated Muscle

Role: Co-Investigator

**Completed**

Shared Instrument Grant (SIG) Program (S10)

“UV-visible HPLC with PCX Pinnacle post column reaction module”

2017 – 2018

Role: Principal Investigator

Colorado Clinical and Translational Sciences Institute Microgrant Award

“Changes in plasma concentrations of sugars and sugar alcohols after a milk feeding”

2016 – 2017

Role: Principal Investigator

NIH R01-DK088139 (PI: R Rozance)

“Nutrient coordination of pancreatic islets and beta-cells”

2011 – 2016

Role: Co-Investigator

Bridge Funding

Academic Enrichment Fund, University of Colorado School of Medicine

“Regulation of fetal skeletal muscle growth in IUGR”

2012 – 2013

Role: Principal Investigator

Grand Challenges Explorations (OPP1061082, PI: WW Hay, Jr.)

**“**Novel Nutritional Strategies to Treat IUGR”

Bill & Melinda Gates Foundation

2012 – 2013

Role: Co-investigator

Gerber Foundation Grant

“Mannose requirements in preterm and IUGR neonates”

2011 – 2013

Role: Principal Investigator

NIH Building Interdisciplinary Research Careers in Women's Health Career Development Scholar

Award (K12 HD057022 PI: Judith Regensteiner)

“Functional and structural adaptations of fetal skeletal muscle to nutrient and anabolic hormone

deficiencies under conditions of placental insufficiency and IUGR”

2008 – 2012

Role: Principal Investigator

Center for Women’s Health Research Award, University of Colorado School of Medicine

“Mitogenic effects of IGF‐I on fetal skeletal muscle growth in intrauterine growth restriction”

2011 – 2012

Role: Principal Investigator

Children’s Hospital Colorado Research Institute Scholar Award

“Nutrient Regulation of Skeletal Muscle Signal Transduction in IUGR”

2006 – 2008

Role: Principal Investigator

University of Colorado Center for Human Nutrition Pilot Study

“Nutrient Regulation of Skeletal Muscle Signal Transduction in IUGR”

2006 – 2008

Role: Principal Investigator

NIH Training Grant (T32-HD07186, University of Colorado School of Medicine, PI: WW Hay, Jr)

2002 – 2006

Role: Trainee

NIH Research Project Grant (RO1 DK52138)

“Fetal Glucose and Amino Acid Deprivation”

2002 – 2006

Role: Co-Investigator

NIH Research Project Grant (5 R01 HD034837)

“Fetal Velocimetry and Amino Acid Transport in Pregnancy”

2007 – 2008

Role: Collaborator

1. **Bibliography**

**Original Science, Peer-Reviewed Manuscripts**

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5. Arroyo JA, Brown LD, Galan HL. Placental Mammalian Target of Rapamycin and Related Signaling Pathways in an Ovine Model of Intrauterine Growth Restriction. Am J Obstet Gynecol. 2009 Dec;201(6):616.e1-7. PMC2789863
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7. Brown LD, Rozance PJ, Thorn SR, Friedman JE, Hay WW Jr. Acute Supplementation of Amino Acids Increases Net Fetal Protein Accretion in IUGR Fetal Sheep. Am J Physiol Endocrinol Metab. 2012 Aug;303(3):E352-64. PMC3423121
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Insulin Secretion but Adrenergic Antagonist Reveal Enhanced β-cell Responsiveness in an Ovine Model of Placental Insufficiency at 0.7 of Gestation. J Dev Orig Health Dis. 2013 Oct 1;4(5). PMC3864835

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**Book Chapters, Invited Articles, Reviews, and Case Reports**

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Collaborators: Abrams S, Kennedy T, Griffin IA, Carlson SE, Begany M, Blanco C, Denne S, Gura K, Schanler R, Handu D, Hay WW Jr, Anderson DM, Brown L, Carlson SJ, Greer F, Kim J, Taylor SN, Wolfram T, Neu J, Robbins S, Burrin DG, Jaksic T, Kerner J, Wessel J, Zyblewski S, Mujahed Kh, Georgieff MK, Groh-Wargo Sh, Fenton T, Atkinson S, Chumlea C, Ehrenkranz R, Martin C, O'Connor D, Moloney L, Anthony P, Bartholomew A, Beker L, Bier D, Brenna T, Davis T, Griebel D, Hderick T, Jadcherla SR, Lau Ch, Kennedy S, Mackey A, McDowell M, Porter A, Puder M, Raghavan K, Raiten DJ, Steiber A, Ziegler P. Working group reports: evaluation of the evidence to support practice guidelines for nutritional care of preterm infants-the Pre-B Project. Am J Clin Nutr. 2016 Feb;103(2):648S-78S.

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**Other publications**

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**Abstracts**

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16. Brown LD, Soto SM, Rozance PJ, Thorn SR, Hay WW Jr., Friedman JE. Intrauterine growth restriction results in increased insulin-stimulated proliferation but not hypertrophy in fetal myocytes. Western Society for Pediatric Research Annual Meeting 2010, Oral Platform Presentation.
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Substrate oxidation and Increased Lactate Parallel Hepatic Glucose Production in Fetal

Sheep with Intrauterine Grown Restriction. 2016 Society for Reproductive Investigation 63rd Annual Scientific Meeting. Poster Presentation.

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5. Navarro D, Rozance PJ, Wesolowski SR, Hay WW Jr., Brown LD. The effect of insulin infusion on myoblast proliferation in IUGR fetal sheep. Western Society for Pediatric Research Annual Meeting 2018, Platform Presentation.
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8. Russell E, Brown LD, Wesolowski SR, Hay WW, Rozance PJ and Boehmer B. Leucine potentiates glucose stimulated insulin secretion in the fetal sheep, but not in MIN6 cells. 2018. Western Society for Pediatric Research, Annual Meeting. Oral Presentation.
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10. BH Boehmer, LD Brown, SR Wesolowski, WW Hay, Jr., PJ Rozance. Chronic Leucine Supplementation Potentiates Glucose Stimulated Insulin Secretion in Fetal Sheep. 2018. Society for Reproductive Investigation, 65th Annual Meeting. Oral Presentation.
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23. Cilvik SN, Wesolowski SR, Brown LD, Rozance PJ. Late gestation fetal hyperglucagonemia results in lower fetal weight and decreased uteroplacental nutrient uptake. Western Society for Pediatric Research 2020 Annual Meeting. Platform Presentation.
24. Hesse H, Levek C, Wilcox A, Driver CE, Stellar J, Galan H, Hobbins J, Brown LD. Pathological fetal growth restriction results in the reduction in lean mass growth that persists into the neonatal period. Western Society for Pediatric Research 2020 Annual Meeting. Platform Presentation.
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26. Boehmer B, Brown LD, Wesolowski SR, Rozance PJ. A 9-day Fetal Leucine Infusion Increases Pancreatic Islet Size, Vascularity, and the Beta-cell Population; Insulin Secretion; and VEGFA and HGF Expression in Late Gestation Sheep", Abstract #1294, Society for Reproductive Investigation 67th Annual Scientific Meeting 2020, Poster Presentation.
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29. Stremming J, Armstrong M, Reisdorph N, Rozance PJ, Brown LD. Lower energy intermediates in skeletal muscle from late gestation IUGR fetal sheep. Society for Reproductive Investigation 67th Annual Scientific Meeting 2020, Platform Presentation.
30. Jones A, Nash M, Wang D, Brown LD, Rozance PJ, Wesolowski SR. Metformin Suppresses Glucose Production and Induces Transcriptional Responses in Metabolic and Stress Pathways in Fetal Hepatocytes. Abstract #F-088, Society for Reproductive Investigation 67th Annual Scientific Meeting 2020, Poster Presentation.
31. Bok R, Wennersten SA, Stabler SP, Brown LD, Roede JR, MacLean KN, Hurt KJ. Redox regulation of estrogen-stimulated uterine blood flow: a mechanism of fetal growth restriction? Society for Reproductive Investigation 67th Annual Scientific Meeting 2020, Poster Presentation.
32. Heard SN, Chang EI, Shaw SC, Heintz A, Rozance PJ, Jonker SS, Brown LD. One-week IGF-1 infusion increases myoblast proliferation in late gestation fetal sheep. Abstract #646. Pediatric Academic Society 2020, Annual Meeting. Poster Presentation.
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