

**BIOGRAPHICAL SKETCH**

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NAME: Johnson, Tricia J.

eRA COMMONS USER NAME (credential, e.g., agency login): TJOHNSON1

POSITION TITLE: Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	Completion Date MM/YYYY	FIELD OF STUDY
Coe College; Cedar Rapids, IA	BA	05/1993	Economics and Business Administration
The University of Iowa; Iowa City, IA	MA	05/1995	Hospital and Health Administration
Arizona State University, W. P. Carey College of Business; Tempe, AZ	MS	05/2001	Economics
Arizona State University, W. P. Carey College of Business; Tempe, AZ	PhD	12/2002	Economics

**A. Personal Statement**

I am one of the few human milk economists in the world with a research specialization in human milk provision, including economic outcomes, and policy application for at-risk infants in the neonatal intensive care unit (NICU). I have authored 120 peer-reviewed papers, including 28 on these topics, and have collaborated with ISRHML members since 2006 on research related to the economic implications of mother's own milk (MOM) feedings for very preterm and very low birth weight infants. I currently serve as multiple principal investigator (with Aloka Patel, MD) on three US federally funded studies that test the effectiveness and cost-effectiveness of a randomized intervention to mitigate economic barriers to MOM provision for mothers of very preterm infants in the NICU. Beyond this work, I have expanded my human milk research into two related areas. First is delineating the role of paid and unpaid work as determinants of MOM provision in mothers of preterm infants. Second, I have contributed to advancing the science of secretory activation in mothers of preterm infants by analyzing the impact of maternal "costs" of frequent breast pump use during early lactation. During these years-long collaborations, I have acquired considerable expertise in the questions and methods that drive basic science and translational research in human milk and lactation, broadening the skills that I would bring to the ISRHML presidency. Additionally, I have used these collaborations to leverage research opportunities for early career scholars and trainees of all disciplines, especially those from underrepresented backgrounds. My career has benefited from outstanding mentorship throughout my career, and I am committed to expanding global membership and career development opportunities within ISRHML.

My executive leadership roles over the past 20 years have equipped me with the leadership and management expertise to serve as ISRHML president. I have led the development and implementation of high-impact strategic initiatives and built strong interdisciplinary and inter-organizational collaborations. As chairperson of the Nutrition Economics Special Interest Group within the International Society of Pharmacoeconomics and Outcomes Research, I convened researchers at the intersection of nutrition and economic outcomes. In my position as Professor of Economics in the Department of Health Systems Management at Rush University, I have led organizational efforts to advance diversity and inclusion in research and career development, first as executive director of a public-private partnership to strengthen and diversify the healthcare workforce in underserved communities, and currently as co-lead of research initiatives for the Rush BMO Institute for Health Equity. As part of this role, I have launched and now oversee a health equity scholars program for early- and mid-career clinician-scientists and researchers. With my leadership

experience, research expertise, and commitment to mentoring, I am well-positioned to lead ISRHML by (1) **expanding global membership and reach** and connecting members across disciplines, interests, and geography to create new science and share discoveries; (2) **advancing career development** through new workshops, expanding exposure to health economics and economic evaluations, and facilitating regional and topical workshops between biennial conferences to foster cross-disciplinary collaboration; (3) **disseminating research findings within ISRHML and to external stakeholders** to accelerate translation of human milk and lactation science into practice and maximize its impact on health and public policy globally, and (4) **strengthening fundraising initiatives** to ensure organizational self-sustainability. My recent grant funding related to the economics of human milk and lactation science further supports this role:

R01HD119178

Patel & Johnson (MPI)

Neurodevelopmental, Health, and Economic Outcomes at Preschool Age in Former Very Preterm Infants Randomized to An Economic Intervention to Support Mother's Own Milk

09/2025 – 05/2030

NIH/National Institute of Child Health and Human Development

R56DE034473

Parker and Lorca (MPI)

Frequent Standardized Oral Care Using Human Milk to Reduce Gastrointestinal Dysbiosis and Inflammation to Improve Health Outcomes and Reduce Cost in Preterm Very Low Birth Weight Infants

08/2025 – 07/2027

NIH/National Institute of Dental and Craniofacial Research

GRANT14114411

Nelson (PI)

Point of Care Maternal Milk Concentration Device Optimizing Neonatal Growth with Targeted Nutrition Support: Establishing Clinical Evidence of Benefit as an Alternative to Milk Sourced Fortification

06/2025 – 06/2028

NIH/National Institute of Child Health and Human Development SBIR Phase IIb

Johnson & Patel (Multi PI)

Pilot Study of the Role of Work in the Intergenerational Transfer of Health and Economic Disparities from Mothers to Their Preterm Infants

07/2023 – 06/2024

Rush University College of Health Sciences

PCORI AD-2020C3-21231

Borders (PI)

Clinically Integrated Breastfeeding Peer Counseling to Promote Breastfeeding Equity

02/2022 – 01/2028

PCORI

K01 HS027906

Keenan-Devlin (PI)

06/2022 – 05/2027

Optimizing Utilization of Lay Health Workers to Address Maternal and Child Health Disparities: A Comprehensive Evaluation of a Clinically Integrated Breastfeeding Peer Counseling Program  
Agency for Healthcare Research and Quality

R01HD107348

Patel & Johnson (MPI)

09/15/2022 – 05/31/2027

Early Childhood Neurodevelopmental, Economic and Nutritional Outcomes among Former Very Low Birth Weight Infants from the Reducing Disparity in Mother's Own Milk (ReDiMOM) Trial  
 Eunice Kennedy Shriver National Institute of Child Health and Human Development

R01MD013969

Patel & Johnson (Multi PI)

04/2020 – 12/2024

Reducing Disparity in Receipt of Mother's Own Milk in Very Low Birth Weight Infants, An Economic Intervention to Improve Adherence to Sustained Maternal Breast Pump Use

National Institute of Minority Health and Health Disparities

Citations include:

- a. **Johnson TJ**, Patel AL, Jegier BJ, Engstrom JL, Meier PP. Cost of morbidities in very low birth weight infants. *J Pediatr.* 2013;162(2):243-49.e1.
- b. **Johnson TJ**, Patel AL, Schoeny ME, Meier PP. Cost savings of mother's own milk for very low birth weight infants in the neonatal intensive care unit. *Pharmacoeconomics - Open.* 2022;6(3):451-460.
- c. **Johnson TJ**, Meier PP, Robinson DT, Suzuki S, Kadakia S, Garman AN, Patel AL. The role of work as a social determinant of health in mother's own milk feeding decisions for preterm infants: A state of the science review. *Children.* 2023;10:416.
- d. **Johnson TJ**, Medina-Poeliniz C, Meier PP, Parker LA, Hoban R. Pumping behaviors, pumped milk volume, and maternal opportunity cost for breast pump-dependent mothers of preterm infants in the first 14 postpartum days. *Breastfeed Med.* 2025;20(7):502-511.

## **B. Positions, Scientific Appointments, and Honors**

### **Positions**

2023 – Present	Co-Chairperson, Research Initiatives, Rush BMO Institute for Health Equity, Rush University, Chicago, IL
2016 – Present	Professor, Department of Health Systems Management, Rush University, Chicago, IL
2013 – 2020	Executive Director, Building Healthy Urban Communities, Rush University Medical Center
2011 – 2020	Associate Chairperson of Education and Research, Department of Health Systems Management, Rush University, Chicago, IL (Acting Associate Chairperson, 2011-2012)
2009 – 2016	Associate Professor, Department of Health Systems Management, Rush University, Chicago, IL
2006 – 2020	Director, Rush Center for Health Management & Policy Research, RUMC, Chicago, IL
2002 – 2009	Assistant Professor, Department of Health Systems Management, Rush University, Chicago, IL
1998 – 2002	Research Associate, School of Health Administration and Policy, Arizona State University, Tempe AZ

### **Scientific Appointments and Honors**

2023 – Present	Executive Committee Member, International Society for Research in Human Milk and Lactation
2022 – 2025	Member, Agency for Healthcare Research and Quality (AHRQ) Health Care Research Training Study Section
2021 – Present	Past Chairperson / Chairperson / Incoming Chairperson, International Society of Pharmaceutical and Outcomes Research Nutrition Economics Special Interest Group
2018 – 2021	Full Member, International Society for Research in Human Milk and Lactation
2012 – 2021	Member, AHRQ Health Care Research Training Study Section
2009	Fulbright Scholar to Austria, Austrian-American Educational Commission
2003	Program Chair, Workers' Compensation Research Group Spring Meeting
2003	Fellowship, NIA Summer Institute on Aging Research
2003	Fellowships, RAND MiniMedical School for Social Scientists and RAND Summer Institute for Demography, Epidemiology and Economics of Aging
2001	Emeriti Professor Award for the Outstanding Ph.D. Student in Economics
1999 – 2001	Preparing Future Faculty Scholar
1998 – 2001	University Graduate Scholar

**C. Contributions to Science** (Total Publications = 120 original research papers, 5 invited book chapters, 1 book)

1. Economic impact of mother's own milk (MOM) in reducing the risk of neonatal complications in very low birth weight (VLBW) infants. One of my principal scientific contributions is translational research focused on the cost implications of MOM in reducing the risk of potentially modifiable complications of prematurity in VLBW infants, who are among the most expensive hospitalized patients. Using rigorous micro-level costing methods, I have systematically measured the economic impact of MOM across three costly and potentially modifiable complications: late onset sepsis, necrotizing enterocolitis, and bronchopulmonary dysplasia. This body of work demonstrates that cost savings vary substantially by type of complication, reflecting distinct biological mechanisms and clinical pathways through which MOM confers protection. These findings provide hospital administrators and policymakers with precise, evidence-based estimates to support investment in lactation programs and inform value-based care decisions for this vulnerable population.

- a. Patel AL, **Johnson TJ**, Engstrom JL, Fogg LF, Jegier BJ, Bigger HR, Meier PP. Impact of early human milk on sepsis and health-care costs in very low birth weight infants. *J Perinatol.* 2013;33(7):514-9.
- b. **Johnson TJ**, Patel AL, Bigger HR, Engstrom JL, Meier PP. Cost savings of human milk as a strategy to reduce the incidence of necrotizing enterocolitis in very low birth weight infants. *Neonatology,* 2015;107(4):271-6.
- c. Patel AL, **Johnson TJ**, Robin B, Bigger HR, Buchanan A, Christian E, Nandhan V, Shroff A, Schoeny M, Engstrom JL, Meier PP. Influence of own mother's milk on bronchopulmonary dysplasia and costs. *Arch Dis Child Fetal Neonatal Ed,* 2017; 102(3):F256-F261.
- d. **Johnson TJ**, Patel AL, Schoeny ME, Meier PP. Cost savings of mother's own milk for very low birth weight infants in the neonatal intensive care unit. *Pharmacoecon Open.* 2022;6(3):451-460.

2. Measurement of costs and consequences of MOM and donor human milk. A central thread of my research focuses on measuring the economic and operational dimensions of human milk provision in the neonatal intensive care unit. I have systematically quantified the institutional costs of acquiring MOM and donor human milk, capturing both direct expenses and indirect costs associated with comprehensive lactation programs. This work extends beyond simple cost accounting to examine quality indicators for human milk use and to measure the temporal investment required from mothers—demonstrating how pumping patterns vary by sociodemographic and clinical factors. Collectively, these studies provide evidence-based metrics to support policy decisions regarding MOM provision and to identify opportunities for optimizing lactation systems.

- a. Jegier BJ, **Johnson TJ**, Engstrom JL, Patel AL, Loera F, Meier P. The institutional cost of acquiring 100 mL of human milk for very low birth weight infants in the neonatal intensive care unit. *Journal of Human Lactation.* 2013;29(3):390-9.
- b. Bigger H, Fogg L, Patel A, **Johnson TJ**, Engstrom J, Meier P. Quality indicators for human milk use in very low birthweight infants: Are we measuring what we should be measuring? *Journal of Perinatology.* 2014;34(4):287-91.
- c. **Johnson TJ**, Berenz A, Wicks J, Esquerra-Zwiers A, Sulo KS, Gross ME, Szotek J, Meier P, Patel AL. The economic impact of donor milk in the neonatal intensive care unit. *J Pediatr.* 2020;224:57-65.e4.
- d. Patel AL, Tan A, Bucek A, Janes J, McGee K, Mulcahy D, Meier P, **Johnson TJ**. Where does the time go? Temporal patterns of pumping behaviors in mothers of very preterm infants vary by sociodemographic and clinical factors. *Front Nutr.* 2024;11:1278818.

3. The role of economic determinants in achieving secretory activation. The first two postpartum weeks represent a critical window that determines long-term MOM provision, yet this period has received limited empirical attention. My emerging research addresses this gap by characterizing the biological, behavioral, and economic factors that influence secretory activation in breast pump dependent mothers of preterm infants. Through an integrative review, colleagues and I identified key milk biomarkers that signal successful secretory activation and predict subsequent milk production trajectories. Building on this foundation, I have quantified the temporal and economic burden mothers face during this vulnerable period, measuring pumping behaviors, milk volumes, and maternal opportunity costs in the first 14 postpartum days. Recognizing that early lactation cessation is multifactorial, my interdisciplinary team has developed a conceptual framework that integrates biological mechanisms, behavioral patterns, and economic barriers to guide both future research and clinical practice. This work establishes secretory activation as a measurable, modifiable process—providing new opportunities for targeted interventions that support lactation establishment when it matters most.

- a. Parker LA, Hoban R, Bendixen MM, Medina-Poeliniz C, **Johnson TJ**, Meier PP. Milk biomarkers of secretory activation in breast pump-dependent mothers of preterm infants: An integrative review. *Breastfeed Med.* 2024;19(1):3-16.
  - b. Bookhart LH, Devane-Johnson S, Esquerra-Zwiers A, Golan Maor Y, Gomez J, Kivlighan KT, Medina Poeliniz C, Walker R, **Johnson TJ**, Parker LA. Integrating biological, behavioral, and economic factors in the practice and study of early, unplanned lactation cessation. *Breastfeed Med.* 2025;20(7):460-469.
  - c. **Johnson TJ**, Medina-Poeliniz C, Meier PP, Parker LA, Hoban R. Pumping behaviors, pumped milk volume, and maternal opportunity cost for breast pump-dependent mothers of preterm infants in the first 14 postpartum days. *Breastfeed Med.* 2025;20(7):502-511.
4. MOM and post-discharge outcomes in VLBW and very preterm infants. A critical limitation of research on the effectiveness of MOM feedings is the focus on short-term, NICU-based outcomes. My collaborative work addresses this gap by following VLBW infants beyond NICU discharge to measure the longer term impact of MOM feedings on neurodevelopmental and health outcomes. Using dose-response analyses, we have demonstrated that greater volumes of MOM during the NICU stay are associated with improved neurodevelopmental scores and reduced healthcare utilization in the first two years of life—including fewer rehospitalizations and decreased use of pediatric subspecialists and specialized therapies. This work extends beyond measuring immediate clinical outcomes to capture MOM's sustained benefits across the critical early childhood period. Collectively, these studies establish important associations between NICU feeding practices and childhood health trajectories, though experimental studies are needed to establish causation.
- a. Patra K, Hamilton M, **Johnson TJ**, Greene M, Dabrowski E, Meier PP, Patel AL. NICU human milk dose and 20-month neurodevelopmental outcome in very low birth weight infants. *Neonatology.* 2017;112:330-6.
  - b. **Johnson TJ**, Patra K, Greene MM, Hamilton M, Dabrowski E, Meier PP, Patel AL. NICU human milk dose and health care use after NICU discharge in very low birth weight infants. *J Perinatol.* 2019;39:120-8.
  - c. David J, Wambach CG, Kraemer M, **Johnson TJ**, Greene MM, Lee E, Patra K. Impact of the COVID-19 pandemic on early intervention utilization and need for referral after NICU discharge in VLBW infants. *J Perinatol.* 2024;24(1):40-45.
  - d. Larsen N, **Johnson TJ**, Patel AL, Dyrland M, Fischer C, Dobies K, Meier PP, Kadakia S. Racial disparities in mother's own milk feedings persist after discharge from the neonatal intensive care unit. *Breastfeed Med.* 2025;20(3):187-193.
5. Quantifying and addressing disparities in MOM initiation and maintenance. Significant socioeconomic and racial disparities exist in MOM feedings, but the mechanisms driving these inequities remain poorly understood. My research quantifies disparities in MOM provision across the continuum from initiation through sustained feeding, identifying work as a critical but overlooked social determinant of health that affects mothers' feeding decisions. Using national data, I have measured how MOM provision varies by gestational age over the first 12 weeks of life, revealing specific time points when disparities emerge and widen. The ReDiMOM randomized trial was developed to test whether an economic intervention can improve adherence to sustained breast pump use among mothers at highest risk for early lactation cessation. This body of work moves beyond simply documenting disparities to measuring the effectiveness of targeted interventions, employing rigorous methodologies including inverse probability of treatment weighting for causal inference and implementation science frameworks to assess real-world program delivery.
- a. **Johnson TJ**, Meier PP, Schoeny ME, Bucek A, Janes JE, Kwiek JJ, Zupancic AF, Keim SA, Patel AL. Study protocol for reducing disparity in receipt of mother's own milk in very low birth weight infants (ReDiMOM): A randomized trial to improve adherence to sustained maternal breast pump use. *BMC Pediatrics.* 2022;22(1):27.
  - b. **Johnson TJ**, Meier PP, Robinson DT, Suzuki S, Kadakia S, Garman AN, Patel AL. The role of work as a social determinant of health in mother's own milk feeding decisions for preterm infants: A state of the science review. *Children.* 2023;10:416. PMID: 36979974
  - c. Keenan-Devlin LS, Hughes-Jones JY, **Johnson T**, Hirschhorn L, Borders AEB. Implementation of a clinically integrated breastfeeding peer counselor program. *J Perinatol.* 2024;44(11):1584-1590.
  - d. Patel AL, Wilson J, Holmes M, **Johnson TJ**. Mother's own milk provision over the first 12 weeks of life by gestational age in U.S. infants. *JAMA Netw Open.* 2025;8(3):e250024. PMID: 40042846

**A full list of my publications is available at:**

<https://www.ncbi.nlm.nih.gov/myncbi/tricia.johnson.1/bibliography/public/>