

DUKE UNIVERSITY MEDICAL CENTER

CURRICULUM VITAE

for
 Permanent Record
 and the
 Appointments and Promotions Committee

Date Prepared: February 21, 2019

Name:	Matthew Kelly, MD, MPH
Primary Academic Appointment:	Assistant Professor
Primary Academic Department:	Department of Pediatrics
Present Academic Rank and Title:	Assistant Professor of Pediatrics
Date and Rank of First Duke Faculty Appointment:	July 1, 2016 Assistant Professor of Pediatrics
Medical Licensure:	
License #:	194411
Date:	04/09/2018
Specialty Certification and Dates:	Pediatrics (#194411), 10/18/2011 Pediatric Infectious Diseases (#1602), 11/14/2017
Date of Birth:	April 9, 1980
Place:	Erie, Pennsylvania, United States
Citizen of:	United States of America

Education	Institution	Date (Year)	Degree
High School	Appleton West High School (Appleton, WI)	1994-1998	HS
College	Washington University (St. Louis, MO)	1998-2002	BA
Medical School	Harvard Medical School (Boston, MA)	2002-2007	MD
Public Health School	Harvard School of Public Health (Boston, MA)	2006-2007	MPH

Professional Training and Academic Career

Institution	Position/Title	Dates
Boston Children's Hospital Boston Medical Center	Pediatric Resident	07/2007 – 06/2010
Boston Children's Hospital	Pediatric Hospitalist	07/2010 – 06/2011
Children's Hospital of Philadelphia	Africa Fellow, David N. Pincus Pediatric Global Health Fellowship	07/2011 – 06/2013
Duke University	Clinical Fellow, Pediatric Infectious Diseases	07/2013 – 06/2016
Duke University	Assistant Professor of Pediatrics, Division of Pediatric Infectious Diseases	07/2016 – Present
Duke University	Associate Program Director, Pediatric Infectious Diseases Fellowship	01/2017 – 06/2018
Duke University	Program Director, Pediatric Infectious Diseases Fellowship	07/2018 – Present
Duke University	Assistant Director, Duke Pediatric Research Scholars Program	07/2018 – Present
Duke University	Associate Program Director for Physician- Scientist Development, Office of Pediatric Education	11/2018 – Present

Publications:

Refereed Publications

1. Xiang Z, Liao R, **Kelly MS**, Spector M. Collagen-GAG scaffolds grafted onto myocardial infarcts in a rat model: a delivery vehicle for mesenchymal stem cells. *Tissue Eng.* 2006 Sep;12(9):2467-78.
2. **Kelly MS**, Conway M, Wirth K, Potter-Bynoe G, Billett AL, Sandora TJ. Moving CLABSI prevention beyond the intensive care unit: risk factors in pediatric oncology patients. *Infect Control Hosp Epidemiol.* 2011 Nov;32(11): 1079-85.
3. **Kelly MS**, Conway M, Wirth KE, Potter-Bynoe G, Billett AL, Sandora TJ. Microbiology and risk factors for central line-associated bloodstream infections among pediatric oncology outpatients: a single institution experience of 41 cases. *J Pediatr Hematol Oncol.* 2013 Mar;35(2):e71-6.
4. **Kelly MS**, Wirth KE, Madrigano J, Feemster KA, Cunningham CK, Arscott-Mills T, Boiditswe S, Shah SS, Finalle R, Steenhoff AP. The effect of exposure to wood smoke on outcomes of childhood pneumonia in Botswana. *Int J Tuberc Lung Dis.* 2015 Mar;19:349-55.
5. **Kelly MS**, Smieja M, Luinstra K, Wirth KE, Goldfarb DM, Steenhoff AP, Arscott-Mills T, Cunningham CK, Boiditswe S, Sethomo W, Shah SS, Finalle R, Feemster KA. Association

of respiratory viruses with outcomes of severe childhood pneumonia in Botswana. *PLoS One*. 2015 May;10(5):e0126593.

6. **Kelly MS**, Crotty EJ, Rattan MS, Wirth KE, Steenhoff AP, Cunningham CK, Arscott-Mills T, Boiditswe S, Chimfwembe D, David T, Finalle R, Feemster KA, Shah SS. Chest radiographic findings and outcomes of pneumonia among children in Botswana. *Pediatr Infect Dis J*. 2016;35(3):257-62.
7. **Kelly MS**, Wirth KE, Steenhoff AP, Cunningham CK, Arscott-Mills T, Boiditswe S, Patel MZ, Shah SS, Finalle R, Makone I, Feemster KA. Treatment failures and excess mortality among HIV-exposed, uninfected children with pneumonia. *J Pediatric Infect Dis Soc*. 2015 Dec;4(4):e117-26.
8. **Kelly MS**, Benjamin DK, Puopolo KM, Laughon MM, Clark RH, Mukhopadhyay S, Benjamin Jr DK, Smith PB, Permar SR. Postnatal cytomegalovirus infection and the risk of bronchopulmonary dysplasia. *JAMA Pediatr*. 2015 Dec 7;169(12):e153785.
9. **Kelly MS**, Wynn JL, Benjamin DK, Clark RH, Greenberg R, Benjamin Jr DK, Smith PB. Timing of multi-organ dysfunction among hospitalized infants with fatal fulminant sepsis. *Am J Perinatol*. 2016. DOI: 10.1055/s-0036-1597130.
10. Salerno S, Hornik CP, Cohen-Wolkowicz M, Smith PB, Ku LC, **Kelly MS**, Clark R, Gonzalez D, on behalf of Best Pharmaceuticals for Children Act - Pediatric Trials Network Steering Committee. Use of population pharmacokinetics and electronic health records to assess piperacillin safety in infants. *Ped Infect Dis J*. 2017. doi: 10.1097/INF.0000000000001610.
11. **Kelly MS**, Surette MG, Smieja M, Pernica JM, Rossi L, Luinstra K, Steenhoff AP, Feemster KA, Goldfarb DM, Arscott-Mills T, Boiditswe S, Rulaganyang I, Muthoga C, Mazhani T, Cunningham CK, Rawls JF, Shah SS, Seed P. The nasopharyngeal microbiota of children with respiratory infections in Botswana. *Ped Infect Dis J*. 2017;36(9):e211-e218.
12. Pernica J, Steenhoff AS, Mokomane M, Moorad B, Lechiile K, Smieja M, Mazhani L, Cheng J, **Kelly MS**, Loeb M, Stordal K, Goldfarb DM. Rapid enteric testing to permit targeted antimicrobial therapy, with and without *Lactobacillus reuteri* probiotics, for paediatric acute diarrhoeal disease in Botswana: a pilot, randomized, factorial, controlled trial. *PLoS One*. 2017 Oct 9;12(10):e0185177. doi: 10.1371/journal.pone.0185177.
13. **Kelly MS**, Zheng J, Boiditswe S, Steenhoff AP, Feemster KA, Arscott-Mills T, Seme B, Ratshaa B, Rulaganyang I, Patel MZ, Mantzor S, Shah SS, Cunningham CK. Investigating mediators of the poor pneumonia outcomes of HIV-exposed, uninfected children. *J Pediatric Infect Dis Soc*. 2017 Nov 20. doi: 10.1093/jpids/pix092.
14. **Kelly MS***, Spees L*, Vinesett R, Stokhuyzen A, McGill L, Proia AD, Jenkins K, Arshad A, Seed PC, Martin PL. Utility of autopsy among pediatric allogeneic hematopoietic stem cell transplant recipients: one last chance to learn? *Biol Blood Marrow Transplant* (in press).
* these authors contributed equally to this work

15. Patel SM, Spees L, Smieja M, Luinstra K, Steenhoff AP, Feemster KA, Arscott-Mills T, Boiditswe S, Patel MZ, Shah SS, Cunningham CK, **Kelly MS**. Predictors of poor outcomes among infants with respiratory syncytial virus-associated acute lower respiratory infection in Botswana. *Ped Infect Dis J* (in press).
16. **Kelly MS**, Surette MG, Smieja M, Rossi L, Luinstra K, Steenhoff AP, Goldfarb DM, Pernica JM, Arscott-Mills T, Boiditswe S, Mazhani T, Rawls JF, Cunningham CK, Shah SS, Feemster KA*, Seed PC*. Pneumococcal colonization and the nasopharyngeal microbiota of children in Botswana. *Pediatr Infect Dis J*. 2018. doi: 10.1097/INF.0000000000002168.
* these authors contributed equally to this work
17. Spees L, Martin PL, Kurtzberg J, Stokhuyzen A, McGill L, Prasad VK, Driscoll TA, Parikh SH, Page KM, Vinesett R, Severyn C, Sung AD, Proia AD, Jenkins K, Arshad M, Steinbach WJ, Seed PC, **Kelly MS**. Reduction in mortality after umbilical cord blood transplantation in children over a 20-year period (1995-2014). *Biol Blood Marrow Transplant* 2018. doi: 10.1016/j.bbmt.2018.11.018.

Non-Refereed Publications

1. **Kelly MS**, Benjamin DK Jr, Smith PB. The Epidemiology and Diagnosis of Invasive Candidiasis Among Premature Infants. *Clin Perinatol*. 2015 Mar;42(1):105-117.

Chapters in Books

1. **Kelly MS**, Sandora TJ. Community-acquired pneumonia. *Nelson's Textbook of Pediatrics*, 20th Edition. Editors: Kliegman RM, Stanton BF, St. Geme J, Schor N. Philadelphia, PA: Elsevier; 2015.
2. **Kelly MS**, Sandora TJ. Community-acquired pneumonia. *Nelson's Textbook of Pediatrics*, 21st Edition. Editors: Kliegman RM, Stanton BF, St. Geme J, Schor N. Philadelphia, PA: Elsevier; 2018.
3. **Kelly MS**, McKinney RE. HIV and sexually transmitted diseases. *Clinical Care Paths in Neonatal-Perinatal Medicine*. New York, NY: McGraw Hill Education; *in press*.
4. **Kelly MS**, Rutstein RM, Steenhoff AP. The HIV-exposed and HIV at-risk infant. *Pediatric Infectious Diseases: Essentials for Practice*, 2nd Edition. Shah SS, Ratner AJ, Kemper A. New York, NY: McGraw-Hill Professional; *in press*.
5. **Kelly MS**, Silverman M. Microbiome implications in transplantation and oncology. *Pediatric Transplant and Oncology Infectious Diseases*. Philadelphia, PA: Elsevier; *in press*.

Selected Abstracts

1. **Kelly MS**, Wirth KE, Madrigano J, Feemster KA, Cunningham CK, Arscott-Mills T, Boiditswe S, Shah SS, Finalle R, Steenhoff AP. The effect of exposure to wood smoke on treatment outcome for childhood pneumonia in Botswana. 5th International Botswana HIV Conference, August 20-23, 2014, Gaborone, Botswana.
2. **Kelly MS**, Wirth KE, Arscott-Mills T, Madrigano J, Smieja M, Cunningham C, Feemster K, Steenhoff AP. The effect of exposure to wood smoke on treatment outcome for childhood pneumonia in Botswana. 45th Union World Conference on Lung Health, October 28 - November 1, 2014.
3. Agada N, Yin SM, Tam JS, **Kelly MS**, Markert L. Disseminated atypical mycobacterial infection in three patients with complete DiGeorge anomaly. American Academy of Allergy, Asthma and Immunology Annual Meeting, February 20-24, 2015.
4. **Kelly MS**, Smieja M, Wirth KE, Luinstra K, Goldfarb DM, Steenhoff AP, Cunningham CK, Arscott-Mills T, Shah SS, Finalle R, Feemster KA. Respiratory viruses among children with acute lower respiratory infection in Botswana. Pediatric Academic Societies Annual Meeting, San Diego, CA, April 25-28, 2015.
5. **Kelly MS**, Wynn JL, Benjamin DK, Clark RH, Benjamin, Jr. DK, Smith PB. Timing of cardiorespiratory deterioration preceding death among infants with sepsis. Pediatric Academic Societies Annual Meeting, San Diego, CA, April 25-28, 2015.
6. **Kelly MS**, Surette MG, Smieja M, Rossi L, Luinstra K, Steenhoff AP, Goldfarb DM, Arscott-Mills T, Boiditswe S, Rulaganyang I, Muthoga C, Lechiile K, Mazhani T, Rawls JF, Cunningham CK, Shah SS, Feemster KA, Seed PC. Pneumococcal colonization and the nasopharyngeal microbiota of children in Botswana. ID Week, San Diego, CA, October 4-8, 2017.
7. Fawole O, **Kelly MS**, Steenhoff AP, Feemster KA, Crotty EJ, Rattan MS, David T, Shah SS, Arscott-Mills T. Interpretation of Chest Radiographs by Non-Radiologist Clinicians in Botswana. Pediatric Academic Societies Annual Meeting, Toronto, Canada, May 5-8, 2018.
8. Patel SM, Spees L, Smieja M, Luinstra K, Goldfarb DM, Steenhoff AP, Cunningham CK, Arscott-Mills T, Shah SS, Feemster KA, **Kelly MS**. Predictors of treatment failure among infants with acute lower respiratory infection due to respiratory syncytial virus in Botswana. American Thoracic Society International Conference, San Diego, CA, May 18-23, 2018.
9. Moorthy G, Becken B, **Kelly MS**. Immune reconstitution syndrome in a child with tuberculous meningitis. Annual meeting of the North Carolina Pediatric Society, Myrtle Beach, NC, September 14-16, 2018.
10. Young RR, Jenkins K, Araujo-Perez F, Vicent Allende M, Seed PC*, **Kelly MS***. Long-term stability of microbiome diversity and composition in fecal samples stored in eNat® medium.

29th European Congress of Clinical Microbiology & Infectious Diseases. Amsterdam, Netherlands. April 13-16, 2019.

* these authors contributed equally to this work

11. Heston S, Akinboyo I, Young R, Martin PL, Vinesett R, Jenkins K, McGill L, Seed P, **Kelly MS**. Epidemiology of bloodstream infections in pediatric hematopoietic stem cell transplant recipients at a single center. Annual St. Jude/PIDS Pediatric Transplant ID Symposium, Memphis, TN, March 7, 2019.
12. Weimer K, Kelly MS, Permar S, Clark RH, Greenberg RG. Postnatal cytomegalovirus infection in very low birth weight infants and its associated morbidities. Pediatric Academic Societies Annual Meeting, Baltimore, MD, April 27, 2019.

Scholarly Societies

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| 2001 | Sigma Xi Research Society, Washington University in St. Louis |
| 2002 | Phi Beta Kappa Honor Society, Washington University in St. Louis |
| 2016- | Alpha Omega Alpha Honor Medical Society |
| 2016- | Fellows and Junior Faculty Section in the Society for Pediatric Research |

Professional Awards and Special Recognitions

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| 2001 | Howard Hughes Medical Institute Summer Research Award |
| 2005 | Paul Dudley White Traveling Fellowship, Harvard Medical School |
| 2007 | Presidential Scholars Public Service Award, Harvard Medical School |
| 2008 | Von L. Meyer Travel Award, Children's Hospital Boston |
| 2013, 2015 | Pediatric Academic Societies (PAS) Young Investigator Travel Award |
| 2014 | First Prize Award, Duke Clinical Research Day Poster Competition |
| 2017 | Finalist, Society for Pediatric Research Physician Scientist Award |
| 2018 | Runner-up, Society for Pediatric Research Physician Scientist Award |
| 2019 | Duke Leadership Development Researchers (LEADER) Program |

Organizations and Participation

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| 2006- | Member, Physicians for Human Rights |
| 2007- | Member, American Academy of Pediatrics |
| 2013- | Member, Infectious Diseases Society of America |
| 2013- | Member, Pediatric Infectious Diseases Society |
| 2015- | Children's Hospital of Philadelphia Global Health Pilot Grant Committee |
| 2016 | World Health Organization Child Health Guideline Innovation Working Group |
| 2016- | Faculty Member, Duke Microbiome Center |
| 2018- | Member, NICHD INFORM – HIV FREE Project Technical Working Group |
| 2018 | Ad hoc reviewer for <i>Clinical Infectious Diseases</i> , <i>Journal of Pediatrics</i> , <i>Pediatrics</i> , <i>JAMA</i> , <i>JAMA Network Open</i> , <i>JAMA Pediatrics</i> , <i>Pediatric Infectious Disease Journal</i> , <i>Thorax</i> |

External Support

	<u>PI</u>	<u>% Effort</u>	<u>Purpose</u>	<u>Amount</u> <u>Duration</u>
<u>Past</u>				
Derfner Foundation	Kelly	0%	This project aimed to identify factors that influence the gut microbiome of children undergoing stem cell transplantation, and to evaluate whether gut dysbiosis precedes bloodstream infection and GVHD in these patients.	\$20,000 06/01/15 – 05/31/16
International AIDS Society CIPHER Grant Program	Kelly	0%	This study assessed the roles of in utero HIV exposure and antiretroviral therapy in mediating the poor clinical outcomes of HIV-exposed, uninfected children. This grant also built local capacity by supporting research training for a Masters student in Botswana and developing local capacity for respiratory virus detection.	\$150,000 09/01/13 – 08/31/16
Duke Center for AIDS Research Small Grant Program	Kelly	0%	This project gathered pilot data on the influence of the nasopharyngeal microbiota on the risks of <i>Streptococcus pneumoniae</i> colonization and lower respiratory infection among HIV-exposed, uninfected infants.	\$51,800 01/01/16 – 6/30/17
Duke GeMS Grants-In-Aid	Kelly	0%	This project examined associations between the intestinal microbiome, plasma biomarkers, and acute graft-versus-host disease in pediatric allogeneic stem cell transplant recipients	\$10,000 11/01/16 – 06/30/17
DMID 14-0079	Creech	2%	This project aims to compare the efficacy of 5 vs. 10 days of antibiotics for treatment of children with uncomplicated community-acquired pneumonia.	10/01/16 – 05/30/18
Burroughs-Wellcome Fund / ASTMH	Kelly	50%	This fellowship supported my salary as I continued my research examining the poor health outcomes of HIV-exposed, uninfected infants in Botswana.	\$130,000 07/01/16 – 06/30/18

Children's Miracle Network Research Award	Kelly	10%	This project aims to develop a panel of plasma biomarkers that predicts onset of acute graft-versus-host disease in pediatric allogeneic stem cell transplant recipients.	\$60,000 11/01/16 – 10/31/18
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Present				
ARLG Early Investigator Seed Grant	Kelly	5%	This project will identify clinical and microbial risk factors for acquisition of antibiotic-resistant bacteria in a high-risk population of children (pediatric stem cell transplant recipients).	\$50,000 12/01/17 – 11/30/18
IMPAACT 2018	Cunningham	5%	This project is evaluating the safety and efficacy of two novel vaccines for respiratory syncytial virus.	04/01/17 – current
1K23 AI135090	Kelly	80%	This project, involving mother-infant pairs in Botswana, will provide insight into the impact of the nasopharyngeal microbiome on the risk of childhood pneumonia. The project will also develop a novel approach for the application of conventional multivariable statistics to the analysis of longitudinal microbiome data.	\$933,033 05/23/18 – 04/30/23
Thrasher Early Career Award	Patel Mentors: Kelly, Zhang	0%	The effect of household air pollution on the health outcomes of infants in Botswana	\$27,500 TBD

Mentoring Activities

Junior Faculty	
Lauren McGill, MD (2017 – current)	Pediatric Bone Marrow Transplant Hospitalist, Duke University
Zaakir Patel, MBChB (2012 – 2018)	Department of Paediatrics and Adolescent Health, University of Botswana School of Medicine
Fellows	
Sweta Patel, MD (2017 – current)	Clinical Fellow, Pulmonary, Allergy, and Critical Care Medicine, Duke University Master of Science in Global Health, Duke University
Frances Saccoccio, MD, PhD (2017 – current)	Clinical Fellow, Pediatric Infectious Diseases, Duke University

Christopher Severyn, MD, PhD (2014 – 2017)	Clinical Fellow, Division of Pediatric Hematology- Oncology, Stanford University
Residents	
Stephanie Johannes, MD (2017 – current)	Pediatric Resident, Duke University
Tiny Mazhani, MD (2014 – 2016)	Department of Paediatrics and Adolescent Health, University of Botswana School of Medicine
Ganga Moorthy, MD (2018 – current)	Pediatric Resident, Duke University
Students	
Letang Gaofiwe, MPhil candidate (2013 – 2017)	Department of Biological Sciences, University of Botswana School of Medicine
John Tanaka, MD candidate (2017 – current)	Duke University School of Medicine
Lauren Hale, undergraduate student (2018 – current)	Department of Biological Sciences, Duke University

Invited Lectures and Presentations

- 09/2012 “Faces of Global Health Panel Discussion.”
5th Annual Pediatric Global Health Symposium, Philadelphia, PA.
- 09/2012 “Challenging Ethical Dilemmas in Global Health Panel Discussion.”
5th Annual Pediatric Global Health Symposium, Philadelphia, PA.
- 05/2014 “Carbapenemase-producing *Enterobacteriaceae*”
Duke University Pediatric Infectious Diseases Division Meeting
- 12/2015 “HIV-Related Pneumonia: Towards Elimination Beyond 2015”
The 46th Union World Conference on Lung Health, Cape Town, South Africa
- 11/2016 “Overview of Antiretroviral Therapy”
Annual Meeting of North Carolina Pediatric Infectious Diseases Social Workers
- 03/2017 “Mechanisms of Antibacterial Resistance”
Duke University Pediatric Infectious Diseases Division Meeting
- 10/2017 “Perspectives on Pediatric International Research”
Duke University Department of Pediatrics Grand Rounds
- 05/2018 “The Nasopharyngeal Microbiota: A Novel Target for Pneumonia Prevention?”
Society for Pediatric Research Presidential Plenary
Pediatric Academic Societies’ Annual Meeting, Toronto, Ontario, Canada
- 06/2018 “The Nasopharyngeal Microbiota: A Novel Target for Pneumonia Prevention?”
Duke Microbiome Center Microbial Genomics Lunch
- 11/2018 “Tuberculosis and TB-IRIS”
Duke Pediatrics Chair’s Conference

Clinical Activity

Type of Practice

Pediatric Infectious Diseases Inpatient and Outpatient Service

Time Commitment

2%

Personal Information

Faculty Member's Preferred Familiar Name:	Matt Kelly
Home Address	3504 Lyric Circle Hillsborough, NC 27278
Telephone Number:	(919) 530-0712
Email Address:	matthew.kelly@duke.edu