OMB No. 0925-0001 and 0925-0002 (Rev. 10/15 Approved Through 10/31/2018)

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Starmer, Amy Jost

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

POSITION TITLE: Assistant Professor of Pediatrics

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 *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Haverford College, Haverford, PA	B.S.	1995-1999	Molecular Biology
University of Chicago, Pritzker School of Medicine	M.D.	1999-2004	Medicine
Harvard School of Public Health, Boston, MA	M.P.H.	2008-2010	Public Health

A. Personal Statement

I am a general academic pediatrician with a research interest in the comparative effectiveness of strategies to improve patient safety and provider communication. Specifically, my areas of focus involve the study and implementation of strategies to improve handoffs of care, quality improvement, and medical education curriculum development. I served as Project Leader for both a single-institution (Starmer et al JAMA 2013) and multi-institution (Starmer et al NEJM 2014) research study examining the impact of an inpatient handoff improvement bundle – I-PASS - on medical errors, rates of miscommunications, and resident workflow patterns. As a K12 research scholar I identified associations between perceptions of provider safety culture and rates of preventable adverse events in the hospital setting. I subsequently served as Principal Investigator on an intervention study examining the impact of an I-PASS handoff bundle for nurses in the intensive care unit which found implementation to be associated with significant improvements in verbal handoff communications and reduced frequency of interruptions without a significant change in the median handoff duration. Additionally, I serve as Project Leader and Co-PI respectively of the SHM and CRICO I-PASS Mentored Implementation Projects which are actively adapting and disseminating the inpatient I-PASS handoff intervention for additional settings, specialties, and provider types across 39 hospitals. Preliminary analyses from 16 of these hospitals have shown significant improvements in handoffs processes (an increase from 14% to 70% of verbal handoffs including all key data elements) as well as a 52% reduction in handoff related adverse events. In addition, I am a co-investigator and Chair of the Quality Improvement Subcommittee of the Patient and Family Centered I-PASS Study which is examining the impact of a program to improve communication between healthcare providers and patients in the inpatient setting. Preliminary analyses found that following implementation of Patient and Family Centered I-PASS, systematically measured rates of preventable adverse events fell by 36% and parent experience improved significantly. My close collaborations through these prior roles with many of the co-investigators on the current submission offer significant direct relevance to the proposal.

In addition to my work on I-PASS, I serve as the Director of Primary Care Quality Improvement, the Associate Medical Director of Quality, and as a practicing primary care pediatrician in the Department of Medicine at Boston Children's Hospital (BCH). I have also served multiple leadership and committee roles for national academic and medical professional organizations addressing topics related to quality improvement, education, and research. Through my interconnected activities of clinical care, quality improvement activities, and research, I seek to improve the safety and quality of our nation's hospitals and the quality of care in the ambulatory setting. My experiences leading the development, implementation, dissemination, and adaptation of communication programs and systemic interventions to improve patient safety make me well suited to serve as a Faculty Advisor on the current proposal.

B. Positions and Honors

Positions and Employment

2002-2003 Howard Hughes Medical Institute National Institutes of Health Research Scholars Program
2004-2007 University of North Carolina Children's Hospital, Chapel Hill, NC, Pediatric Resident
2007-2008 Children's Hospital of Boston, Fellow in General Academic Pediatrics
2008-2010 Harvard Pediatric Health Services Research Fellowship, Children's Hospital Boston
2010-2011 Children's Hospital Boston / Harvard Medical School, Instructor of Pediatrics
2011-2013 Oregon Health and Science University Comparative Effectiveness Research K12 Scholar
2011-2014 Children's Hospital Boston, Associate Scientific Researcher
2011-2014 Oregon Health and Science University, Assistant Professor of Pediatrics
2014-2015 Children's Hospital Boston / Harvard Medical School, Lecturer in Pediatrics
2015-present Children's Hospital Boston / Harvard Medical School, Assistant Professor of Pediatrics
2014-present Director of Primary Care Quality Improvement, Boston Children's Hospital
2014-present Associate Medical Director of Quality, Department of Medicine, Boston Children's Hospital

Honors

1999 Phi Beta Kappa
1999 Graduation with High Honors in Molecular Biology
1999 Magna Cum Laude
2007 Outstanding Teaching Resident Award, UNC Department of Pediatrics
2011 American Pediatric Association Ray E. Helfer Award for Innovation in Medical Education Research
2011-2013 NIH Loan Repayment Program
2012 AAMC Readiness for Reform (R4R) Health Care Innovation Challenge Honorable Mention
2013 Leading Practice Award (co-recipient), Accreditation Canada / Agora (awarded for Innovation and Creativity in Healthcare Delivery, for I-PASS handoff program)
2015 Advancement of Safety and Quality Improvement Award (co-recipient), Pediatric Hospital Medicine
2014 Cox Award, Health Acceleration Challenge (co-recipient) - Harvard Business School / Harvard Medical School

Other Experience and Professional Memberships

2004-present Member, American Academy of Pediatrics
2005-2010 American Academy of Pediatrics Section on Medical Students, Residents and Fellowship Trainees (SOMSRFT) – Executive Committee Member
- Assistant District Coordinator 2005-06, District Coordinator 2006-07, Subcommittee on Education and Quality Chair 2006-07, Section Vice Chair 2007-08,Section Chair 2008-09, Section Immediate Past Chair 2009-2010

2006-2007 American Board of Pediatrics Residency Review and Redesign in Pediatrics Project Group
2007-2009 American Academy of Pediatrics PediaLink Resident Center Review Committee
2007-2009 American Academy of Pediatrics Community Pediatrics Training Initiative (CPTI) Competencies Workgroup
2008-present Initiative for Innovation in Pediatric Education Oversight Committee Member
2008-2010 American Academy of Pediatrics Committee on Pediatric Education
2008-2010 American Academy of Pediatrics Vision of Pediatrics 2020, Task Force Member
2009 TeamSTEPPS Certification: Master Trainer
2009-present American Academy of Pediatrics Quality Improvement iNnovation Network (QuIIN) Steering Committee Member
2010-2011 American Academy of Pediatrics Section on Young Physicians Executive Committee Member
2010-2014 Project Leader and Education Executive Committee co-chair, I-PASS Study Group
2011-present American Academy of Pediatrics Longitudinal Study of Pediatricians Project Advisory Committee
2012-2014 Academic Pediatric Association Continuity Research Network (CORNET) Regional Research Chair
2014-present Project Leader, Society for Hospital Medicine I-PASS Mentored Implementation Project
2014-present Chair, Quality Improvement Subcommittee, Patient and Family I-PASS Study Group
2015-present Region Chair, Region I, Academic Pediatric Association

C. Contribution to Science

1. Medical errors are known to be a leading cause of morbidity and mortality in healthcare settings. I have led assessments of the impact of patient safety interventions on rates of medical errors and other outcomes. Most notably, I served as the Project Leader and lead author of both single institution and multi-institution research studies that demonstrated the impact of multi-faceted handoff interventions and were shown to be associated with significant reductions in rates of medical errors and preventable adverse events.
    a) **Starmer AJ**, Spector ND, Srivastava R, West DC, Rosenbluth G, Allen AD, Noble EL, Tse LL, Dalal AK, Keohane CA, Lipsitz SR, Rothschild JM, Wien MF, Yoon CS, Zigmont KR, O'Toole JK, Wilson KM, Bismilla Z, Coffey M, Mahant S, Blankenburg RL, Destino LA, Everhart JL, Patel SJ, Bale JF, Spackman JB, Stevenson AT, Calaman S, Cole FS, Hepps JH, Lopreiato JO, Yu CE, Sectish TC, Landrigan CP, and the I-PASS Study Group. Changes in Medical Errors after Implementation of a Handoff Program. *The New England Journal of Medicine*. 2014; 371:1803-1812. PMID: 26266461; PMCID: 26266461.
    b) **Starmer AJ**, Sectish TC, Simon DW, Keohane C, McSweeney ME, Chung EY, Yoon CS, Lipsitz SR, Wassner AJ, Harper MB, Landrigan CP. Rates of Medical Errors and Preventable Adverse Events Among Hospitalized Children Following Implementation of a Resident Handoff Bundle. *JAMA*. 2013; 310(21):2262-2270. PMID: 24302089; PMCID: 24302089.
    c) Siefkes HM, Hogan WJ, Flood SM, Ramsey KL, Reller MD, **Starmer AJ**, Phillipi CA. Impact of Educational Video on Critical Congenital Heart Disease. *Clinical Pediatrics*. 2014;53(8): 729 – 737. PMID: 24607664; PMCID: 24607664.
    d) **Starmer AJ**, Randolph G, and Steiner M. Direct observation of resident performance in continuity clinic: A controlled study of family satisfaction and resident perceptions. *Education for Health*. 2009 Dec; 22(3): 325. PMID: 20029767; PMCID: 20029767.

2. Miscommunication and handoff failures are well established to be a leading root cause of the high frequency of medical errors. I have led the development of interventions to improve communication and handoff skills among healthcare providers. Most specifically, I served as co-chair of the I-PASS Study Group Education Executive Committee (responsible for oversight and development of all aspects of the I-PASS Handoff Bundle) for the original inpatient I-PASS study. This leadership role led to the development of a highly regarded educational intervention that has been made available to the public on the I-PASS Handoff Study website and published as a series of modules on the AAMC repository of pee-reviewed educational materials, MedEdPORTAL. In fact, since November 2016, there have been over 3500 downloads of the curriculum from over 500 unique institutions across 50 states and 58 countries.
    a) **Starmer AJ,** O'Toole, JK, Rosenbluth G, Calaman S, Balmer D, West DC, Bale JF, Yu CE, Noble EL, Tse LL, Srivastava R, Landrigan CP, Sectish TC, Spector ND; and members of the I-PASS Study Group. Development, Implementation, and Dissemination of the I-PASS Handoff Curriculum: A Multi-Site Educational Intervention to Improve Patient Handoffs. Academic Medicine 2014; 89(6): 876-884. PMID: 24871238; PMCID: 24871238.
    b) O'Toole JK, West D, **Starmer A**, Yu C, Calaman S, Rosenbluth G, Hepps J, Lopreiato J, Landrigan C, Sectish T, Spector N. Placing Faculty Development "Front and Center" in a Multi-site Educational Initiative: Lessons from the I-PASS Handoff Study. Academic Pediatrics. 2014 May-Jun;14(3):221-4. PMID: 24767774; PMCID: 24767774.
    c) Calaman S, Hepps JH, Bismilla Z, Carraccio C, Englander R, Feraco A, Landrigan CP, Lopreiato JO, Sectish TC, **Starmer AJ**, Yu CE, Spector ND, West DC. The Creation of Standard-Setting Videos to Support Faculty Observations of Learner Performance and Entrustment Decisions. Acad Med. 2016 Feb; 91(2):204-9. PMID: 26266461; PMCID: 26266461.
    d) Spector ND (co-first), **Starmer AJ** (co-first), Allen A, Bale J, Bismilla Z, Calaman S, Coffey M, Cole F, Destino L, Everhart J, Hepps J, Kahana M, Lopreiato J, McGregor R, O'Toole J, Patel S, Rosenbluth G, Srivastava R, Stevenson A, Tse L, Yu C, West D, Sectish T, Landrigan C. I-PASS Handoff Curriculum: Core Resident Workshop. *MedEdPORTAL*; 2013. Available from: www.mededportal.org/publication/9311

3. Although the future of healthcare is uncertain, the organizations that lead each specialty, and the professionals who practice within it, have embraced the notion that the medical community must anticipate and lead change to ultimately improve the health of children and adolescents. In order to support national

medical organizations to help healthcare providers to proactively prepare for a variety of conceivable futures, I have collaborated with national pediatric organizations to lead assessments of the impact of trends in the workforce such as increasing rates of mental health concerns, educational debt, and increasing medical complexity on the future of the profession of pediatrics.

a) **Starmer AJ**, Frintner MP, Freed GL. Work-Life Balance, Burnout, and Satisfaction of Early Career Pediatricians. *Pediatrics*. 2016 Apr; 137(4). PMID: 27020792; PMCID: 27020792.
b) Byrne BJ, Frintner MP, Abraham HN, **Starmer AJ**. Attitudes and Experiences of Early and Midcareer Pediatricians With the Maintenance of Certification Process. Academic Pediatrics. 2017 Feb 23. [Epub ahead of print] PMID:28238591
c) Frintner MP, Cull WL, Byrne BJ, Freed GL, Katakam SK, Leslie LK, Miller AA, **Starmer AJ**, Olson LM. A Longitudinal Study of Pediatricians Early in Their Careers: PLACES. *Pediatrics*. 2015 Aug; 136(2):370-80. PMID: 26216329; PMCID: 26216329.
d) **Starmer AJ**, Duby JC, Slaw KM, Edwards A, Leslie LK; Members of Vision of Pediatrics 2020 Task Force. Pediatrics in the year 2020 and beyond: preparing for plausible futures. *Pediatrics* 2010 Nov; 126(5): 971-81. PMID: 20956424; PMCID: 20956424.

4. Hospitals and ambulatory care settings are increasingly recognizing the abundance of opportunity and need for increased oversight of quality improvement (QI) activity and innovation. As both a local quality improvement leader within my home institution and someone who has led the integration of QI methodologies into muti-site clinical research trials, I have had the opportunity to oversee a wide variety of improvement initiatives and methodologies.

a) Simon TD, **Starmer AJ**, Conway P, Landrigan CP, Shah SS, Shen MW, Sectish TC, Spector ND, Tieder JS, Srivastava R, Willis LE, Wilson K on behalf of Pediatric Research in Inpatient Settings (PRIS) Network. Quality Improvement in Pediatric Health Care and the role of the Pediatric Research in Inpatient Settings (PRIS) network. *Academic Pediatrics*. 2013 Nov-Dec; 13 (6 Suppl):S54-60. PMID: 24268086; PMCID: 24268086.
b) Auger KA, Simon TD, Cooperberg D, Gay J, Kuo DZ, Saysana M, Stille CJ, Fisher ES, Wallace S, Berry J, Coghlin D, Jhaveri V, Kairys S, Logsdon T, Shaikh U, Srivastava R, **Starmer AJ,** Wilkins V, Shen M. Summary of STARNet: Seamless Transitions and (Re)admissions Network. *Pediatrics*. 2015 Jan;135(1):164-75. PMID: 25489017; PMCID: 25489017.
c) **Starmer AJ**, Ginsburg A, Chen Z, Satterwhite S, Guise J, and Landrigan CP. Association between Safety Culture and Rates of Preventable Adverse Events. Platform presentation at Pediatric Academic Societies Annual Meeting, 2016
d) Khan A, Coffey M, Litterer KP, Baird JD, Furtak SL, Garcia BM, Ashland MA, Calaman S, Kuzma NC, O'Toole JK, Patel A, Rosenbluth G, Destino LA, Everhart JL, Good BP, Hepps JH, Dalal AK, Lipsitz SR, Yoon CS, Zigmont KR, Srivastava R, **Starmer AJ**, Sectish TC, Spector ND, West DC, Landrigan CP; and the Patient and Family Centered I-PASS Study Group. Families as Partners in Hospital Error and Adverse Event Surveillance. JAMA Pediatr. 2017 Apr 1;171(4):372-381.

5. A key finding of the I-PASS Study Group has been the learning of the importance and need to rigorously and regularly assess handoff communications between providers for purposes of generating quality improvement data and offering formative feedback to further drive improvement. As the lead developer of the I-PASS Study Group Handoff Assessment tools, I applied and developed skills in measurement theory, psychometrics, and biostatistics.

a) **Starmer AJ**, Landrigan CP, Srivastava R, Wilson K, Allen AD, Mahant S, Blank J, Sectish TC, Spector ND, West DC. I-PASS handoff curriculum: Faculty observation tools. MedEdPORTAL; 2013. Available from: www.mededportal.org/publication/9570
b) Rosenbluth G, Bale JF, **Starmer AJ**, Spector ND, Srivastava R, West DC, Sectish TC, Landrigan CP. A Needs Assessment for the Printed Handoff Document: Variation in Practice and Recommended Best Practices. *Journal of Hospital Medicine* 2015; 10(8): 517-524. PMID: 26014471; PMCID: 26014471.
c) Calaman S, Hepps JH, Bismilla Z, Carraccio C, Englander R, Feraco A, Landrigan CP, Lopreiato JO, Sectish TC, **Starmer AJ**, Yu CE, Spector ND, West DC, and the I-PASS Study Education Executive Committee. Creation of Standard Setting Videos to Support Faculty Observations of Learner Performance and Entrustment Decisions. *Academic Medicine* 2016; 91(2): 204-209. PMID: 26266461; PMCID: 26266461.

d) Feraco AM, **Starmer AJ**, Sectish TC, Spector ND, West DC, Landrigan CP. Reliability of the Verbal Handoff Tool and Verbal Patient Handoff Quality Before and After Implementation of a Resident Handoff Bundle. *Academic Medicine* 2016. Revised and resubmitted. 2016: 16(6): 524-531. PMID: 27090858; PMCID: 27090858.

List of Published Work
https://www.ncbi.nlm.nih.gov/pubmed/?term=amy+j+starmer

Research Support

Current Projects

2014-2017 Co-investigator Patient Centered Outcomes Research Institute
Bringing I-PASS to the Bedside: a Communication Bundle to Improve Patient Safety and Experience
(PI: Christopher P. Landrigan, MD, MPH)
The purpose of this grant is to test the effects of incorporating I-PASS, a bundle of interventions to improve communication between providers, into morning family-centered rounds and in communication with families throughout the day. We will then evaluate our hypothesis that implementing family-centered I-PASS will lead to 1)Reductions in medical errors, 2) Improved communication during morning family-centered rounds, 3) Better shared understanding of the care plan by families, nurses, and doctors, and 4) Improvements in family, physician, and nurse experience and satisfaction

2014-2017 Project Leader, Co-investigator Agency for Healthcare Research and Quality
Disseminating Safe Handoffs: Mentored Implementation of the I-PASS Program
(PI: Christopher P. Landrigan, MD, MPH)
The purpose of this grant is to partner with the Society of Hospital Medicine (SHM) and the Pediatric Research in Inpatient Settings (PRIS) network in order to facilitate the dissemination of the I-PASS Handoff Program to 16 pediatric and 16 adult teaching hospitals.

2016-2017 PI Program for Patient Safety and Quality
Ensuring High Reliability Communication between Ambulatory Care Settings and the Emergency Department to Improve Patient Safety
The purpose of this study is to establish an evidence-based standard for high reliability communication when transferring patients from ambulatory care settings into the emergency department (ED) at Boston Children's Hospital.

2014-2017 Co-PI , Project Leader CRICO
I-PASS: Improved Handoffs for Safer Care at CRICO Hospitals
This grant is studying the effects of adapting I-PASS for use across diverse types of handoffs (e.g. between-unit, perioperative, and emergency department transitions) in five CRICO-insured hospitals.

Completed Projects (selected from 8 previously funded studies)

2013-2014 Co-investigator Health Resources and Services Administration (HRSA)
The DATA Initiative
(PI: Scott Fields, MD)
The purpose of this collaborative grant between the Department of Family Medicine (DFM) and the Division of General Pediatrics (DGP) at OHSU is to develop the infrastructure to create and utilize a system of quality analytics, design the educational programs necessary to prepare physicians to manage and analyze information and processes of continuous quality improvement, and build a partnership between clinicians and researchers to study the effectiveness of data-based interventions and delivery system improvements on quality care.