ERIC SCOTT HALL, PHD, MBA, FAMIA

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EDUCATION

1995-2001	Bachelor of Science, Computer Engineering, Brigham Young University, Provo, Utah
2002-2003	Master of Science, Computer Science, Brigham Young University, Provo, Utah Mentor: Dr. Charles D. Knutson Thesis: Architecture of a wireless power-efficient smart card
2004-2008	Doctor of Philosophy, Biomedical Informatics, University of Utah, Salt Lake City, Utah Mentor: Dr. Sidney N. Thornton Dissertation: Knowledge discovery tools for extraction and analysis of practice patterns from labor and delivery data
2018-2022	Master of Business Administration, University of Cincinnati

ACADEMIC APPOINTMENTS

2004-2008	National Library of Medicine Fellow, Department of Biomedical Informatics, University of Utah, Salt Lake City, Utah
2008-2011	Research Instructor of Pediatrics-Affiliated, non-Tenure Research Track, University of Cincinnati, Cincinnati, Ohio
2011-2017	Assistant Professor of Pediatrics-Affiliated, non-Tenure Research Track, University of Cincinnati, Cincinnati, Ohio
2017-2020	Associate Professor of Pediatrics-Affiliated, non-Tenure Research Track, University of Cincinnati, Cincinnati, Ohio
2021-	Associate Professor of Informatics, Geisinger Commonwealth School of Medicine, Scranton, Pennsylvania

LEADERSHIP

2012-2019	Management within the Perinatal Institute, Cincinnati Children's Hospital, Cincinnati, Ohio *Supervised an Epic certified data warehouse analyst providing complex data extraction and data management supporting research faculty within the Perinatal Institute. Also provided mentoring and supervision to student interns within the Institute.*
2013-2018	Director of Data Analysis and Management, Cradle Cincinnati, Cincinnati, Ohio *Developed a data system and coordinated the team who managed data collection and monthly reporting for the HRSA-funded program. Also coordinated standard data definitions and collection efforts among community partners supporting Cradle Cincinnati reports.*

2018-2020   Associate Director for Clinical Informatics, Division of Biomedical Informatics, Cincinnati Children's Hospital, Cincinnati, Ohio

Served as the Cincinnati Children's Hospital honest broker and supervised the Biomedical Informatics Technology and Data Services Team who provided 100+ institution-wide investigators spanning three dozen research divisions with more than 150 IRB-approved data requests annually.

2018-2020   Co-Director, Biomedical Informatics Graduate Program, University of Cincinnati, Cincinnati, Ohio

Supervised the Program Coordinator for the Biomedical Informatics Graduate Program, developed program curricula, recruited graduate school candidates, mentored students, designed and taught the annual Introduction to Biomedical Informatics course.

2020-   Chief Research Information Officer, Geisinger, Danville, Pennsylvania

I lead the strategy for research informatics including alignment of research data and information systems with the institutional vision for research, education, and clinical operations. Roles include supervision of a team of 25+ members supporting Research Data Core services and research data infrastructure. The team includes analysts, database architects, a technical director and an operations manager who coordinate intake for research core service requests, support REDCap survey and database development, and provide complex phenotype development as well as research data reporting capabilities. I also supervise a junior faculty member providing institutional support for implementation and evaluation of research programs and interventions. Finally, I co-chair Geisinger's Artificial Intelligence, Informatics Education, and Evaluation and Implementation Steering Committees.

2022-   Associate Dean for Informatics, Geisinger Commonwealth School of Medicine, Danville, Pennsylvania

I lead the strategy for coordinating informatics efforts among the Geisinger Clinic, Geisinger Research Institute, and Geisinger Commonwealth School of Medicine.

AWARDS AND HONORS

2001   Third Place – IEEE Computer Society International Design Competition

2001   Keynote Speaker – Bluetooth Developer's Conference, San Francisco, California

2002   Semifinalist – Brigham Young University's Business Plan Competition

2002   Recipient – Phi Kappa Phi's Best Senior Paper from the College of Physical and Mathematical Sciences at Brigham Young University

2004-2008   Fellow – National Library of Medicine (NLM) Training Grant No. 1T15LM07124

2007   Nominee – American Medical Informatics Association (AMIA) Fall Symposium Nursing Informatics Working Group Award

2007   Finalist – American Medical Informatics Association (AMIA) Fall Symposium Student Paper Competition

2015   Top Item Writer – American Medical Informatics Association, Clinical Informatics Board Review Course Item Writing Committee

2015   Graduate – Rapid Cycle Improvement Collaborative (RCIC) Certification, Cincinnati Children's Hospital Medical Center

| 2016 | Top Item Writer – American Medical Informatics Association, Clinical Informatics Board Review Course Item Writing Committee |
| 2020 | Fellow of AMIA (FAMIA) – American Medical Informatics Association |

RESEARCH AND SCHOLARLY ACTIVITIES

I am particularly interested in the integration and novel analyses of health data sets including electronic health records, vital records, genomics data, and community measures representing social determinants which inform health treatments and improvements in health outcomes. I am passionate about research which drives innovation in clinical practice and aim to convene and facilitate highly collaborative, interdisciplinary, clinical and population health research spanning a broad range of health outcomes, to support the evaluation of public health interventions, and to inform policy makers.

GRANTS AND CONTRACTS

Current

Robert Wood Johnson Foundation Award #79175 (Hall)   **12/01/2021-11/30/2022**
Providing data for RWJF's Health Data for Action research program -- Geisinger Clinic, 2022
Research related – peer reviewed   Total direct costs = $100,000
10% effort

The purpose of this effort is to foster collaboration by providing Geisinger's rich clinical data to external researchers enabling innovative analyses. Efforts focused on long-term effects of treatment for gestational diabetes in rural settings as well as the clinical impact of CONUT scores in cystectomy patients.
Role: Principal Investigator

CDRN-1306-04912 (Kirchner)   **01/01/2022-12/31/2024**
Patient-Centered Outcomes Research Institute
PaTH to Health: PCORnet Clinical Research Network
Research related – peer reviewed   Total direct costs = $418,489
10% effort

PaTH is a network infrastructure grant to establish and maintain a common data model. The goal is to foster the ability to execute retrospective and large pragmatic trials.
Role: Co-Investigator

R01HG011799-01 (Williams)   **08/10/2021-05/31/2026**
NIH – National Human Genome Research Institute
Real-Time Genetic Diagnosis at the Point of Care
Research related – peer reviewed   Total direct costs = $842,922
10% effort

The burden on patients and caregivers when complex diseases arise creates a taxing toll for both families and healthcare systems. Multiple inpatient hospitalizations and various testing procedures often bring more

unknowns and grief to an already difficult situation. Hospital visits disrupt patient schedules, and also place unnecessary burdens on a healthcare system whose purpose is to maximize the health outcomes of the patients. These complex diseases utilize extra visits and unnecessary testing. We want to develop a system that would identify patients who could benefit from accessing their existing genetic information. To realize this vision, we have identified three areas that we would like to address. Identification of patients with a candidate condition in real time, followed by a concurrent bioinformatic analysis of the genomic sequence data. Finally, we want to address returning the genetic test result to the provider and patient so that both parties have the appropriate information to guide condition-specific care.
Role: Co-Investigator

Complete

HHSN275200800018C (Kahn)   **02/22/2011-09/25/2011**
NIH - National Institute of Child Health and Human Development
Neonatal Research Networks Terminology Harmonization
Research related – peer reviewed   Total direct costs = $16,669
                                                                       20% effort

The purpose of the Neonatal Research Networks Terminology Harmonization project was to develop a vetted, harmonized set of standardized neonatal concepts to facilitate the exchange and aggregation of research data from various neonatal research networks and to develop use cases for the terminology.
Role: Site Principal Investigator

HHSN275200800018C (Dabelea)   **01/1/2012-03/31/2012**
NIH - National Institute of Child Health and Human Development
Neonatal Terminology Harmonization Extension Project
Research related – peer reviewed   Total direct costs = $7,410
                                                                       5% effort

The purpose of this extension project was to develop and evaluate alternative research use cases that exploit the Neonatal Research Network Terminology and to develop and pilot a set of policies, procedures, methodologies and tools for creating sharable research-quality data definitions and terminologies to accelerate data exchange, sharing, and reuse in future child health research programs.
Role: Site Principal Investigator

G1213070343 (Marsolo)   **09/23/2011-06/30/2012**
Ohio Department of Jobs and Family Services
MEDTAPP-BEACON Data Infrastructure project
Research related – peer reviewed   Total direct costs = $486,886
                                                                       10% effort

The major goal of the study was to build and evaluate a data infrastructure to support MedTAPP directed and BEACON supported Quality Improvement projects.
Role: Key Personnel

Place Outcomes Research Award (Bookman/Melton)   **07/01/2012-06/30/2014**
Cincinnati Children's Hospital Medical Center
Improvement in Outcomes for Neonates with Tongue-Based Airway Obstruction
Research related – peer reviewed   Total direct costs = $120,000
                                                                       5% effort

The major goal of the study was to automate the detection of infants with tongue-based airway obstructions to reduce the time until identification.
Role: Key Personnel

Place Outcomes Research Award (Goyal)   **07/01/2012-06/30/2014**
Cincinnati Children's Hospital Medical Center
Dosage Effect of Home Visitation on Neonatal Outcomes
Research related – peer reviewed   Total direct costs = $76,472
10% effort

The major goal of the study was to evaluate the effects of home visitation duration and intensity on infant outcomes including preterm birth.
Role: Co-Investigator

R21HD072883-01 (Solti)   **08/01/2012-07/31/2014**
NIH - National Institute of Child Health and Human Development
EHR-Based Patient Safety: Automated Error Detection in Neonatal Intensive Care
Research related – peer reviewed   Total direct costs = $275,000
5% effort

The major goal of the study was to evaluate latent and non-latent safety threats using the EHR and to automate error detection.
Role: Co-Investigator

P3020008 (Pies/Greenberg)   **03/01/2014-02/28/2015**
The W.K. Kellogg Foundation
Best Babies Zone (BBZ) Initiative
Service related – non peer reviewed   Total direct costs = $210,000
11% effort

The BBZ initiative project was an innovative, multi-sector approach to reducing infant mortality and racial disparities in birth outcomes and improving birth and health outcomes by mobilizing communities to address the social determinants that affect health. Three prototype community sites across the US, including Cincinnati, New Orleans, and Oakland were selected.
Role: Key Personnel

Place Outcomes Research Award (Bowers)   **07/01/2014-03/31/2015**
Cincinnati Children's Hospital Medical Center
The Impact of Home Visiting Services on the Recognition of Developmental Delays
Research related – peer reviewed   Total direct costs = $120,000
5% effort

The major goal of the study was to provide a foundation for improving and/or expanding delivery of home visiting services to improve early intervention service access and to prevent subsequent adverse developmental outcomes.
Role: Co-Investigator

G1213070561 (Wexelblatt)   **07/01/2012-12/31/2016**
Ohio Department of Job and Family Services
University Hospital Case Medical Center

The Ohio Children's Hospital Research Consortium: Neonatal Abstinence Syndrome
Research related – non peer reviewed

Total direct costs = $196,343
7.5% effort year 1-2
4% effort year 4

The major goal of the study was to standardize identification and improve treatment of Neonatal Abstinence Syndrome. The second phase of study sought to demonstrate the safety of methadone for treatment of neonatal abstinence syndrome by comparing the QT interval of infants treated with methadone to the QT of those receiving non-methadone opioid treatments.

R40MC29447 (Goyal)   **04/01/2016-03/31/2017**
Health Resources and Services Administration
Preventive Health Services and ED Utilization among At-Risk Infants
Research related – peer reviewed

Total direct costs = $64,103
5% effort

The major goal of the study was to evaluate the relationships between emergency department use and patterns of engagement across preventive care systems including home visiting and primary care for families with low socioeconomic status.
Role: Key Personnel

Trustee Grant Award (Beal)   **07/01/2015-06/30/2017**
Cincinnati Children's Hospital Medical Center
Understanding Health and Wellbeing among Adolescents in Protective Custody
Research related – peer reviewed

Total direct costs = $150,000
10% effort year 1
5% effort year 2

The major goals of the proposal are to establish rates of pregnancy, sexually transmitted infections, substance use, and healthcare utilization for youth in Hamilton County Job and Family Services custody and to examine differences in indicators of health based on characteristics of foster youth.
Role: Co-Investigator

Academic and Research Committee Award (Greenberg/Hall)   **03/17/2015-03/16/2018**
Cincinnati Children's Hospital Medical Center
Maternal and Infant Data Hub
Research related – peer reviewed

Total direct costs = $571,560
30% effort

The major project goal is to demonstrate feasibility of a population-based data resource defined by the linkage between vital statistics and delivery hospital electronic health records which incorporates individual level pediatric follow-up records as well as geographically defined area-level measures. The project was conceived as a phase one pilot for a regional lifespan data integration research repository.
Role: Co-Principal Investigator

H49MC27823 (Greenberg)   **09/01/2014-03/31/2019**
Health Resources and Services Administration
Healthy Start Cincinnati
Service related – peer reviewed

Total direct costs =
$2,706,497
10% effort years 1-4

5% effort year 5

The major project goal is to reduce disparities in infant mortality and adverse perinatal outcomes by improving women's health, promoting quality services, strengthening family resilience, achieving collective impact, and increasing accountability through quality improvement, performance monitoring, and evaluation.
Role: Co-Investigator

UL1TR001425 (Heubi)
NIH - National Center for Advancing Translational Sciences
Cincinnati Center for Clinical and Translational Sciences and Training
Research related – peer reviewed   Total direct costs = $13,445,745
                                                                                            20% effort

The vision of the Center for Clinical and Translational Science and Training (CCTST) at the University of Cincinnati is to be the Greater Cincinnati portal of entry for support of clinical and translational research with a goal to enfranchise stakeholders from a broad base to integrate research into healthcare delivery, improve community wellness, foster effective, efficient multisite trials, and train the clinical and translational research workforce of the future.
Role: Key Personnel

MOD #22FY13543 (Muglia)   **07/01/2013-6/30/2019**
The March of Dimes Foundation
Prematurity Research Center – Ohio Collaborative
Research related – non peer reviewed   Total direct costs = $10,211,784
                                                                                          10% effort year 1-2
                                                                                            5% effort year 3
                                                                                        2.5% effort year 4-6

The primary goal of this study is to gain new understanding of the etiologies and mechanisms of preterm birth through a multi-centered transdisciplinary approach. Key research themes include evolutionary biology, genetics, decidual biology, progesterone, and racial disparities.
Role: Key Personnel

Ohio Department of Health Award (Greenberg)   **04/01/2018-06/30/2019**
Ohio Department of Health
Infant Vitality Community Intensive Pilot Project
Service related – peer reviewed   Total direct costs = $534,367
                                                                                              3% effort

The major project goal is to spread community focused efforts to reduce disparities in infant mortality and adverse perinatal outcomes to new geographies. Efforts include improving women's health, promoting quality services, strengthening family resilience, achieving collective impact, and increasing accountability through quality improvement, performance monitoring, and evaluation.
Role: Key Personnel

G-1819-05-0094 (Hall)   **05/14/2018-06/30/2019**
Ohio Department of Medicaid
Ohio Opioid Analytics Project – Child Welfare
Research related – peer reviewed   Total direct costs = $80,167
                                                                                            7.5% effort

The project objective was to team with multidisciplinary experts across Ohio to develop predictive modeling and visualization tools that will inform state policy decisions regarding opioid endpoints with a focus in the child welfare domain.
Role: Principal Investigator

R01LM012230 (Kirkendall/Melton)   **09/15/2015-08/31/2019**
NIH – National Library of Medicine
Improving Intensive Care Medication Safety through EHR-based Algorithms
Research related – peer reviewed   Total direct costs = $728,886
5% effort years 1-2
10% effort year 3
4% effort year 4

The goals of this proposal are to 1) use real time analysis to detect and intercept medication and parenteral nutrition administration errors identified by our recently developed electronic health record content-based algorithms 2) confirm performance of the algorithms in an external institution and 3) create new algorithms to identify smart pump infusion errors.
Role: Co-Investigator

Academic and Research Committee Award (Greiner)   **02/01/2017-01/31/2020**
Cincinnati Children's Hospital Medical Center
Integrated Data Environment to eNhance ouTcomes in cusTody Youth (IDENTITY)
Research related – peer reviewed   Total direct costs = $792,000
5% effort

The major goals of the study are to develop, implement, and validate a real-time information exchange data hub between CCHMC, community behavioral health providers, and Children's Services in order to track and coordinate healthcare delivery, improve community health, and support ongoing programmatic research examining health for children in foster care.

Processes and Methods, Step 1 Award (Hall)   **10/21/2019-02/21/2020**
The Center for Clinical and Translational Science and Training
From Electronic Health Records to Research Quality Data
Research related – peer reviewed   Total direct costs = $5,000

This grant funds the planning of a proposal to develop an integrated cross-platform research data pipeline for generalizable, semi-automated ETL (including geomarker assessment) of EHR data into a REDCap database along with a versatile, customizable framework for data visualization in the context of infants exposed in utero to opioids.
Role: Principal Investigator

UO1HG008666 (Harley)   **09/01/2015-03/13/2020**
NIH – National Human Genome Research Institute
Better Outcomes for Children: Promoting Excellence in Healthcare Genomics to Inform Policy
Research related – peer reviewed   Total direct costs = $742,762
5% effort year 4-5

Cincinnati Children's Hospital Medical Center (CCHMC) is participating in the eMERGE III Network by pursuing a series of initiatives designed to advance genomics and the electronic health record (EHR).
Role: Key Personnel

3R01ES028277-03S1 (Chen)   **09/30/2019-03/13/2020**
NIH – National Institute of Environmental Health Sciences
Enhancing Data Management and Sharing in the HOME Study
Research related – peer reviewed   Total direct costs = $118,590
                                                                                              10% effort

This is an administrative supplement to the parent grant, Developmental Neurotoxicity of Organophosphate and Novel Brominated Flame Retardants in Children (R01ES028277, 2017-2022, PI Aimin Chen, University of Cincinnati). This project aims to enhance data management and sharing in the Health Outcomes and Measures of the Environment (HOME) Study, on which the parent grant is based.
Role: Co-Investigator

1K01DA041620-01A1 (Beal)   **02/15/2017-03/13/2020**
NIH – National Institute on Drug Abuse
Using Administrative and Clinical Data to Detect Drug Use and HIV Risk in Foster Care
Research related – peer reviewed   Total direct costs = $810,625
                                                                                       7% effort years 1-2
                                                                                        4% effort year 3
                                                                                     3% effort years 4-5

The goal if this application is to identify youth at risk for substance abuse and HIV, with an eye toward designing intervention and prevention efforts that front-line workers and providers can enact for foster youth prior to age 18 to increase the likelihood that substance abuse and HIV in adulthood can be prevented.
Role: Co-Investigator

Chiesi Farmaceutici Award (Wexelblatt)   **07/01/2019-03/13/2020**
Chiesi Farmaceutici
Prevalence and Profile of Intrauterine Polysubstance Exposures
Research related – peer reviewed   Total direct costs = $493,249
                                                                                         8% effort year 1
                                                                                      6.7% effort year 2-3

The goal if this project is to characterize the true prevalence of late pregnancy intrauterine exposures to substances of abuse among in the general newborn population and to determine the prevalence of polysubstance exposures among infants with intrauterine opioid exposures from maternal medication assisted treatment. Among those exposed through medication assisted treatment, we will identify associations between exposure type and extent with newborn treatment course including length of stay and need for pharmacologic treatment for neonatal abstinence syndrome.
Role: Co-Investigator

H49MC27823 (Greenberg)   **04/01/2019-03/13/2020**
Health Resources and Services Administration
Healthy Start Cincinnati
Service related – peer reviewed   Total direct costs = $3,364,779
                                                                                     5% effort years 1-5

The major project goal is to reduce disparities in infant mortality and adverse perinatal outcomes by: improving women's health, promoting quality services, strengthening family resilience, achieving collective impact, and increasing accountability through quality improvement, performance monitoring, and evaluation. Role: Co-Investigator

Robert Wood Johnson Foundation Award #77497 (Hall)   **04/01/2020-03/31/2021**
COALESCE: COVID-19 Open dAta modeL basEd reSearCh nEtwork
Research related – peer reviewed   Total direct costs = $89,286
       10% effort

The project goal is to create a standardized dataset enabling researchers, clinicians, and policy makers to understand the impact and progression of COVID-19 among a network of sentinel partner health systems. The network will use an open data model to support centralized aggregation of data and distributed queries pertinent to COVID-19 research and surveillance. Role: Principal Investigator

PUBLICATIONS

Peer Reviewed Articles as a Listed Author

1. **Hall ES**, Vawdrey DK, Knutson CD. RF Rendez-Blue: Reducing power and inquiry costs in Bluetooth-enabled mobile systems. Eleventh International Conference on Computer Communications and Networks, Proceedings. 2002:640-5. [Not MEDLINE Indexed] [DOI 10.1109/ICCCN.2002.1043140]

2. Vawdrey DK, **Hall ES**, Knutson CD, Archibald JK. A self-adapting healthcare information infrastructure using mobile computing devices. Healthcom 2003, Proceedings. 2003:91-7. [Not MEDLINE Indexed] [DOI 10.1109/HEALTH.2003.1218725]

3. **Hall ES**, Vawdrey DK, Knutson CD, Archibald JK. Enabling remote access to personal electronic medical records. IEEE Eng Med Biol Mag. 2003 May-Jun;22(3):133-9. [PMID 12845829] [DOI 10.1109/MEMB.2003.1213636]

4. **Hall ES**, Thornton SN. Extracting nursing practice patterns from structured labor and delivery data sets. AMIA Annu Symp Proc. 2007 Oct 11:309-13. [PMID 18693848] [PMCID PMC2813662]

5. **Hall ES**, Thornton SN. Generating nurse profiles from computerized labor and delivery documentation. AMIA Annu Symp Proc. 2008 Nov 6:268-72. [PMID 18998796] [PMCID PMC2656022]

6. **Hall ES**, Poynton MR, Narus SP, Thornton SN. Modeling the distribution of Nursing Effort using structured Labor and Delivery documentation. J Biomed Inform. 2008 Dec;41(6):1001-8. Epub 2008 Apr 20. [PMID 18495549] [PMCID PMC2649767] [DOI 10.1016/j.jbi.2008.04.005]

7. **Hall ES**, Poynton MR, Narus SP, Jones SS, Evans RS, Varner MW, Thornton SN. Patient-level analysis of outcomes using structured labor and delivery data. J Biomed Inform. 2009 Aug;42(4):702-9. Epub 2009 Feb 6. [PMID 19535002] [PMCID PMC2706298] [DOI 10.1016/j.jbi.2009.01.008]

8. South AP, Jones DE, **Hall ES**, Huo S, Meinzen-Derr J, Liu L, Greenberg JM. Spatial analysis of preterm birth demonstrates opportunities for targeted intervention. Matern Child Health J. 2012 Feb;16(2):470-8. [PMID 21290172] [DOI 10.1007/s10995-011-0748-2]

9. **Hall ES**, South AP, Jones DE, Meinzen-Derr J, Huo S, Liu L, Greenberg JM. Spatial analysis in support of community health intervention strategies. AMIA Annu Symp Proc. 2012;2012:311-20. Epub 2012 Nov 3. [PMID 23304301] [PMCID PMC3540564]

10. Kenny AP, Tabangin M, **Hall E**, Woodrooffe K, Lai W, Meinzen-Derr J, Hopkin RJ, Greenberg JM. Cincinnati regional incidence, morbidity, and mortality of neonatal foregut defects and high coincidence with cardiovascular malformations. <u>J Neonatal Biol</u>. 2013;2(115):2167-0897.1000115. [Not MEDLINE Indexed] [DOI 10.4172/2167-0897.1000115]

11. Goyal NK, **Hall ES**, Meinzen-Derr JK, Kahn RS, Short JA, Van Ginkel JB, Ammerman RT. Dosage effect of prenatal home visiting on pregnancy outcomes in at-risk, first-time mothers. <u>Pediatrics</u>. 2013 Nov;132 Suppl 2:S118-25. [PMID 24187113] [PMCID PMC3943375] [DOI 10.1542/peds.2013-1021J]

12. **Hall ES**, Goyal NK, Ammerman RT, Miller MM, Jones DE, Short JA, Van Ginkel JB. Development of a linked perinatal data resource from state administrative and community-based program data. <u>Matern Child Health J</u>. 2014 Jan;18(1):316-25. [PMID 23420307] [PMCID PMC3936676] [DOI 10.1007/s10995-013-1236-7]

13. Goyal NK, **Hall ES**, Jones DE, Meinzen-Derr JK, Short JA, Ammerman RT, Van Ginkel JB. Association of maternal and community factors with enrollment in home visiting among at-risk, first-time mothers. <u>Am J Public Health</u>. 2014 Feb;104 Suppl 1:S144-51. Epub 2013 Dec 19. [PMID 24354835] [PMCID: PMC4011104] [DOI 10.2105/AJPH.2013.301488]

14. **Hall ES**, Folger AT, Kelly EA, Kamath-Rayne BD. Evaluation of gestational age estimate method on the calculation of preterm birth rates. <u>Matern Child Health J</u>. 2014 Apr;18(3):755-62. [PMID 23775254] [DOI 10.1007/s10995-013-1302-1]

15. **Hall ES**, Wexelblatt SL, Crowley M, Grow JL, Jasin LR, Klebanoff MA, McClead RE, Meinzen-Derr J, Mohan VK, Stein H, Walsh MC; OCHNAS Consortium. A multicenter cohort study of treatments and hospital outcomes in neonatal abstinence syndrome. <u>Pediatrics</u>. 2014 Aug;134(2):e527-34. [PMID 25070317] [PMCID PMC4531273] [DOI 10.1542/peds.2013-4036]

16. Li Q, Melton K, Lingren T, Kirkendall ES, **Hall E**, Zhai H, Ni Y, Kaiser M, Stoutenborough L, Solti I. Phenotyping for patient safety: algorithm development for electronic health record based automated adverse event and medical error detection in neonatal intensive care. <u>J Am Med Inform Assoc</u>. 2014 Sep-Oct;21(5):776-84. Epub 2014 Jan 8. [PMID 24401171] [PMCID PMC4147599] [DOI 10.1136/amiajnl-2013-001914]

17. Winhusen T, Wilder C, Wexelblatt SL, Theobald J, **Hall ES**, Lewis D, Van Hook J, Marcotte M. Design considerations for point-of-care clinical trials comparing methadone and buprenorphine treatment for opioid dependence in pregnancy and for neonatal abstinence syndrome. <u>Contemp Clin Trials</u>. 2014 Sep;39(1):158-65. Epub 2014 Aug 23. [PMID 25183042] [DOI 10.1016/j.cct.2014.08.009]

18. **Hall ES**, Connolly N, Jones DE, DeFranco EA. Integrating public data sets for analysis of maternal airborne environmental exposures and stillbirth. <u>AMIA Annu Symp Proc</u>. 2014 Nov 14;2014:599-605. eCollection 2014 Nov 14. [PMID 25954365] [PMCID PMC4419928]

19. Goyal NK, Folger AT, **Hall ES**, Ammerman RT, Van Ginkel JB, Pickler RS. Effects of home visiting and maternal mental health on use of the emergency department among late preterm infants. <u>J Obstet Gynecol Neonatal Nurs</u>. 2015 Jan-Feb;44(1):135-44. [PMID 25782193] [DOI 10.1111/1552-6909.12538]

20. Lynema S, Marmer D, **Hall ES**, Meinzen-Derr J, Kingma PS. Neutrophil CD64 as a diagnostic marker of sepsis: impact on neonatal care. <u>Am J Perinatol</u>. 2015 Mar;32(4):331-6. Epub 2014 Jul 31. [PMID 25077472] [PMCID PMC5665654] [DOI 10.1055/s-0034-1384644]

21. DeFranco E, **Hall E**, Hossain M, Chen A, Haynes EN, Jones D, Ren S, Lu L, Muglia L. Air pollution and stillbirth risk: Exposure to airborne particulate matter during pregnancy is associated with fetal death. <u>PLoS One</u>. 2015 Mar 20;10(3):e0120594. eCollection 2015 Mar 20. [PMID 25794052] [PMCID PMC4368103] [DOI 10.1371/journal.pone.0120594]

22. **Hall ES**, Lang MD, Levin L, Narendran V. Variation in neonatal inpatient charges at the state and local

level. Hosp Top. 2015 Apr-Jun;93(2):27-35. [PMID 26185931] [DOI 10.1080/00185868.2015.1052273]

23. Goyal NK, **Hall ES**, Greenberg JM, Kelly EA. Risk prediction for adverse pregnancy outcomes in a Medicaid population. J Womens Health (Larchmt). 2015 Aug;24(8):681-8. Epub 2015 Jun 23. [PMID 26102375] [PMCID PMC4543486] [DOI 10.1089/jwh.2014.5069]

24. **Hall ES**, Wexelblatt SL, Crowley M, Grow JL, Jasin LR, Klebanoff MA, McClead RE, Meinzen-Derr J, Mohan VK, Stein H, Walsh MC; OCHNAS Consortium. Implementation of a neonatal abstinence syndrome weaning protocol: A multicenter cohort study. Pediatrics. 2015 Oct;136(4):e803-10. Epub 2015 Sep 14. [PMID 26371196] [DOI 10.1542/peds.2015-1141]

25. Li Q, Kirkendall ES, **Hall ES**, Ni Y, Lingren T, Kaiser M, Lingren N, Zhai H, Solti I, Melton K. Automated detection of medication administration errors in neonatal intensive care. J Biomed Inform. 2015 Oct;57:124-33. Epub 2015 Jul 17. [PMID 26190267] [PMCID PMC4715992] [DOI 10.1016/j.jbi.2015.07.012]

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Patents

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34. Rossi R, **Hall E**, DeFranco E, Mode of delivery in stillbirth pregnancies. The American Congress of Obstetricians and Gynecologists Annual Meeting, Austin, Texas, April 27-30, 2018.

35. Lee M, **Hall E**, DeFranco E. Contribution of previable births to racial disparity in infant mortality rates in the United States. The American Congress of Obstetricians and Gynecologists Annual Meeting, Austin, Texas, April 27-30, 2018.

36. Enlow E, Asthana T, King A, Liberio B, **Hall ES**, Leonard M, Brokamp C, Greenberg J, Britto M, Lorch S. Health care utilization by preterm infants in the 60 days after NICU discharge: Incidence, preventability, and disparities. Pediatric Academic Societies Annual Meeting, Toronto, Canada, May 5-8, 2018.

37. Goyal NK, Folger AT, Brown CM, Sucharew H, **Hall ES**, Van Ginkel JB, Ammerman RT. Infant ED use and patterns of well child care. Pediatric Academic Societies Annual Meeting, Toronto, Canada, May 5-8, 2018.

38. Protopapas SA, Wexelblatt SL, Greenberg JM, **Hall ES.** Retrospective cohort study of hepatitis C transmission rates in infants with intrauterine opioid exposure. Annual Meeting of the American College of Epidemiology, Cincinnati, Ohio, September 23-25, 2018.

39. Dexheimer J, Beal S, **Hall E**, Divekar P, Patel V, Greiner M. Designing IDENTITY for foster youth: Technical considerations for a data sharing application. American Academy of Pediatrics National Conference & Exhibition, Orlando, Florida, November 2-6, 2018.

40. Dexheimer J, Beal S, **Hall E**, Divekar P, Patel V, Greiner M. Sharing health and custody data between clinicians and caseworkers: A case study of IDENTITY. American Academy of Pediatrics National Conference & Exhibition, Orlando, Florida, November 2-6, 2018.

41. Beal SJ, Ammerman RT, Folger AT, Van Ginkel JB, **Hall ES**. Rates of enrollment and outcomes of home visiting for mothers with and without a history of foster care. HARC Collaborative Science of Home Visiting Annual Meeting, Washington DC, January 30, 2019.

42. Rossi RM, Brackett E, **Hall E**, DeFranco E. Identifiable risk factors associated with early stillbirth. The Society for Maternal-Fetal Medicine Annual Meeting, Las Vegas, Nevada, February 11-16, 2019.

43. Rossi RM, Brackett E, **Hall E**, DeFranco E. Risk factors associated with early stillbirth in women with chronic hypertension. The Society for Maternal-Fetal Medicine Annual Meeting, Las Vegas, Nevada, February 11-16, 2019.

44. Rossi RM, Brackett E, **Hall E**, DeFranco E. Risk factors associated with early stillbirth in women with pregestational diabetes. The Society for Maternal-Fetal Medicine Annual Meeting, Las Vegas, Nevada, February 11-16, 2019.

45. Morrison TM, McAllister J, **Hall E**, Wexelblatt S. A retrospective review of visual outcomes in neonates affected by neonatal abstinence syndrome. Pediatric Academic Societies Annual Meeting, Baltimore, Maryland, April 24-May 1, 2019.

46. Kirkendall ES, Ni Y, Lingren T, Leonard M, **Hall ES**, Melton K. An Automated System for Real-time Medication Administration Error Detection. Pediatric Academic Societies Annual Meeting, Baltimore, Maryland, April 24-May 1, 2019.

47. Kirkendall ES, Ni Y, Lingren T, Leonard M, **Hall ES**, Melton K. Data challenges with real-time safety event detection & clinical decision support. AMIA 2019 Clinical Informatics Conference, Atlanta, Georgia, April 30-May 2, 2019.

48. Rossi R, **Hall ES**, DeFranco EA. Trends in periviable obstetric and neonatal practice patterns for livebirths between 22-24 weeks' gestation. The American Congress of Obstetricians and Gynecologists Annual Meeting, Nashville, Tennessee, May 3-6, 2019.

49. **Hall E**, Muglia L, Babcock L, Ewing A, Adeoye O. Lifespan Data Integration and Acute Care Research: Vision, Accomplishments, & Future Opportunities. 2019 Fall CTSA Program Meeting. Arlington Virginia September 26-27, 2019.

50. Harnett B, Harley J, **Hall E**. Integrating and Harmonizing EHR Data from Multiple Institutions Across Mother and Child Dyads. The eMERGE Network Fall Steering Committee Meeting, Rockville, Maryland, October 3-4, 2019.

51. Czarny HN, Forde B, **Hall E**, DeFranco EA, Rossi RM, Association of mode of delivery on infant survival at 22 and 23 weeks of gestation. The Society for Maternal-Fetal Medicine Annual Meeting, Virtual, January 27-30, 2021.

52. Rossi RM, DeFranco EA, **Hall E**. Association of antenatal corticosteroid exposure and infant survival at 22 and 23 weeks. The Society for Maternal-Fetal Medicine Annual Meeting, Virtual, January 27-30, 2021.

53. Forde B, Czarny HN, Dufendach K, **Hall E**, DeFranco EA, Warshak C, Rossi RM. A new predictive model for periviable infant survival. The Society for Maternal-Fetal Medicine Annual Meeting, Virtual, January 27-30, 2021.

54. Kurowski D, DuGoff E, **Hall E,** Glicksberg B, Simmons A, Necessity Is the Mother of Invention: COVID-19 As a Force for Change in Health Care Data. 2021 Health Datapalooza and National Health Policy Conference. February 16-18, 2021

TEACHING AND MENTORING

TEACHING

Course Instruction

Spring 2016 Introduction to Medical Informatics (BMIN-7053), Department of Biomedical Informatics, University of Cincinnati College of Medicine, Cincinnati, Ohio

Fall 2016 Introduction to Medical Informatics (BMIN-7053), Department of Biomedical Informatics, University of Cincinnati College of Medicine, Cincinnati, Ohio

Fall 2017 Introduction to Medical Informatics (BMIN-7053), Department of Biomedical Informatics, University of Cincinnati College of Medicine, Cincinnati, Ohio

Fall 2018 Introduction to Medical Informatics (BMIN-7053), Department of Biomedical Informatics, University of Cincinnati College of Medicine, Cincinnati, Ohio

Fall 2019 Introduction to Medical Informatics (BMIN-7053), Department of Biomedical Informatics, University of Cincinnati College of Medicine, Cincinnati, Ohio

Lectures

Mar 2002	The Poket Doktor: A Bluetooth healthcare application, University of Utah Department of Medical Informatics Seminar, Salt Lake City, Utah
Feb 2008	Analysis of patient outcomes using computerized labor and delivery data. Cincinnati Children's Hospital Medical Center Seminar, Cincinnati, Ohio
Sep 2010	Use of spatial analysis for the targeting of preterm birth interventions, Cincinnati Children's Hospital Biomedical Informatics Seminar, Cincinnati, Ohio
May 2011	Cincinnati maternal child health data core. Cincinnati Children's Hospital Medical Center Perinatal Institute Community Research Forum, Cincinnati, Ohio
May 2012	Developing preterm birth intervention strategies using linked data sets. Cincinnati Children's Hospital Medical Center Prevention Science Seminar, Cincinnati, Ohio
May 2013	Biomedical informatics applications in the study of preterm birth. Cincinnati Children's Hospital Biomedical Informatics Seminar, Cincinnati, Ohio
Jul 2013	From bench to bedside and back again: Enhancing clinical, translational, and outcomes research with informatics infrastructure. Nationwide Children's Hospital Seminar, Columbus, Ohio
Jul 2013	Experiences of a power user. REDCap User Group, Cincinnati, Ohio
Oct 2014	Integration of vital records and air quality measures to enable analysis of airborne environmental exposures and pregnancy outcomes. Cincinnati Children's Hospital Biomedical Informatics Seminar, Cincinnati, Ohio
Mar 2015	Introduction to the work of Cradle Cincinnati. Challenges and opportunities: The Ohio Public Health Information Data Warehouse & new IPHIS variables, Cincinnati, Ohio
Sep 2015	Informatics applications in infant mortality research. Cincinnati Children's Hospital Biomedical Informatics Seminar, Cincinnati, Ohio
Nov 2015	Lifespan data integration with the Maternal and Infant Data Hub. Cincinnati Children's Hospital Clinical Informatics Focus Group, Cincinnati, Ohio
Apr 2016	New models of health data integration to improve pregnancy outcomes. University of Cincinnati Research Week, Cincinnati, Ohio
Aug 2016	Maternal nicotine use: Self-report vs. laboratory toxicology. Infant Mortality Reduction Research and Education Meeting, Cincinnati, Ohio
Feb 2017	Vital statistics: Everything you need to know to start your own study today (or your money back). Cincinnati Children's Hospital Clinical Informatics Focus Group, Cincinnati, Ohio
May 2018	Biomedical Informatics at UC, UC Health, and Cincinnati Children's. University of Cincinnati Research Development Workshop, Cincinnati, Ohio
Mar 2019	Neonatal Abstinence Syndrome, Tri-State Opioid Symposium, Cincinnati, Ohio
Aug 2019	Opportunities for perinatal research through integration of regional health data. Geisinger Seminar, Danville, Pennsylvania

MENTORING

2016	Heather Masters – Master of Science, Clinical and Translational Research, Thesis Committee member
2018	Ene Fairchild – Neonatal Fellow, Scientific Oversight Committee member

2018	Nataraja Sarma Vaitinadin – Master of Science, Environmental Health, Doctoral qualifying committee member
2018	Stella Protopapas – Master of Science, Public Health, Thesis committee member
2019	Manan Shah – Neonatal Fellowship, Scholarly Oversight Committee member
2020-	Karina Phang – Mentoring committee member
2021-	Katrina Romagnoli – Mentoring committee member
2021-	Yirui Hu – Mentoring committee member

SERVICE

Memberships in Professional Organizations

2004-	Member, American Medical Informatics Association
2015-	Member, International Population Data Linkage Network
2015-	Elected Member, Society for Pediatric Research

Committees

2011-2013	Collaborative for Infant Mortality Reduction Team, Cincinnati, Ohio, Member
2012-2016	Cincinnati Children's Hospital Neonatal Abstinence Syndrome Task Force, Cincinnati, Ohio, Member
2015-2017	American Medical Informatics Association, United States, Clinical Informatics Item Writer
2016-2017	Ohio Infant Mortality Research Partnership, Columbus, Ohio, Executive Committee Advisor
2014-2020	Cincinnati Children's Hospital Department of Biomedical Informatics Graduate Program Education Committee, Cincinnati, Ohio, Member
2015-2020	University of Cincinnati, Biomedical Informatics Graduate Program Faculty, Cincinnati, Ohio, Member
2018-2020	Every Child Succeeds, Cincinnati, Ohio, Affiliated Faculty
2020-	Geisinger Ethics and Data Strategy Steering Committee, Danville, Pennsylvania, Member
2021-	Geisinger Artificial Intelligence Steering Committee, Danville, Pennsylvania, Co-Chair
2021-	Geisinger Informatics Education Steering Committee, Danville, Pennsylvania, Co-Chair
2021-	Geisinger Data Strategy Steering Committee, Danville, Pennsylvania, Member
2022-	Geisinger Implementation and Evaluation Steering Committee, Danville, Pennsylvania, Co-Chair

Editorial and Conference Program Service

2016-2017	Program Committee Member, Association for Computing Machinery Conference on Bioinformatics, Computational Biology, and Health Informatics, Seattle, Washington
2016-2019	Editorial Board Member, Biomedical Informatics Insights
2021-2023	Scientific Program Committee Member, AMIA Informatics Summit
2021	Scientific Program Committee Member, AMIA 2021 Annual Symposium
2021	Reviewer, Fellow of AMIA (FAMIA) 2022 Applications
2022	Judge, Geisinger Scholarship Days Clinical Oral Presentations

Grant Reviews

Grant	Year of Review
Thrasher Research Fund	2018
The Center for Clinical and Translational Science and Training, Pilot Translational Research and Innovative Core grants	2020
Sir Henry Wellcome Postdoctoral Fellowship	2020
NIH, Advancing Genomic Medicine, Special Emphasis Panel	2022

Manuscript Reviews

Journal	Year of Review (# of Reviews)
IEEE Wireless Communications and Networking	2003 (1)
Symposium on Computer-Based Medical Systems	2006 (1)
Artificial Intelligence in Medicine	2013 (1)
Pediatric and Neonatal Care	2014 (1)
Computers in Biology and Medicine	2015 (1)
Computers, Informatics, Nursing	2015 (2)
Health Informatics Journal	2015 (1)
Addiction	2016 (1)
The American Journal on Addictions	2016 (1)
AMIA Joint Summits on Translational Science	2016 (2) 2015 (3) 2014 (3)
BMC Medical Research Methodology	2016 (1)
Injury Prevention	2017 (1)
JMIR Research Protocols	2017 (1)
Public Health	2017 (1) 2016 (4) 2015 (4) 2014 (1)
American Journal of Perinatology	2018 (2) 2016 (2)
American Journal of Perinatology Reports	2018 (1)
Biomedical Informatics Insights	2018 (1) 2017 (1) 2016 (2)
Drug and Alcohol Dependence	2018 (1) 2015 (1)
Journal of Addiction Medicine	2018 (1) 2014 (1)
New England Journal of Medicine	2018 (1) 2016 (1)

Pediatric Research	2018 (1)
American Journal of Public Health	2019 (1) 2017 (1)
Journal of Developmental & Behavioral Pediatrics	2019 (1)
Journal of Pediatric Health Care	2019 (1)
Journal of Rural Health	2019 (1) 2018 (1) 2017 (1) 2015 (1)
Paediatric & Perinatal Epidemiology	2019 (1)
ACI Open	2021 (1)
Applied Clinical Informatics	2021 (1)
Journal of Biomedical Informatics	2021 (1) 2017 (1) 2016 (2) 2015 (2) 2014 (2) 2009 (1)
Pediatrics	2021 (1) 2019 (1) 2017 (1) 2016 (2) 2015 (2)
AMIA Annual Symposium	2022(6) 2021(8) 2020 (3) 2019 (2) 2018 (2) 2016 (2) 2015 (2) 2014 (2) 2012 (5) 2011 (4) 2010 (5)
JAMA Pediatrics	2022(1) 2019 (1) 2014 (1)
Maternal and Child Health Journal	2022(1) 2019 (1) 2018 (1) 2016 (1) 2015 (1)