







# RICHARD S. HANNA

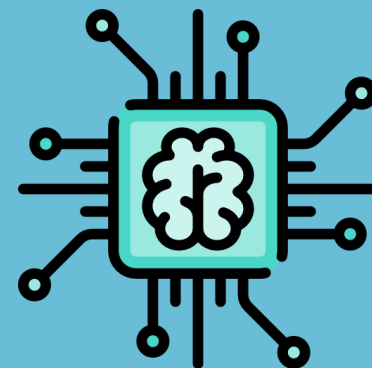
As a Data Scientist on the Cell & Gene Therapy Informatics team at the Children's Hospital of Philadelphia, I develop novel applications, dashboards, packages, reports, and tools to support clinical research and drive innovative solutions. I am excited to work in such a fast-paced, evolving field that provides opportunities to create change and meet modern day clinical challenges. Prior to this role, I have worked in critical care, biomechanics, and medical device development.

## EDUCATION

- 2015  
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2013 • **M.S., Biomedical Engineering**  
Drexel University  Philadelphia, PA
- 2015  
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2013 • **Graduate Certificate in Engineering Management**  
Drexel University  Philadelphia, PA
- 2015  
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2010 • **B.S., Mechanical Engineering**  
Drexel University  Philadelphia, PA

## EXPERIENCE

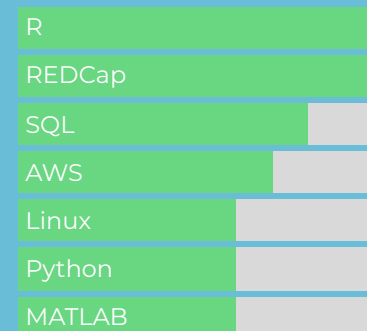
- Present  
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2021 • **Data Scientist II**  
[Children's Hospital of Philadelphia - Cell & Gene Therapy Laboratory](#)  
 Philadelphia, PA
  - Developed novel applications using R/Shiny to automate stem cell transplant outcomes reporting and eliminate historical data entry errors
  - Standardized ETL methods for complex data merges, reporting, and monitoring using continuous integration
  - Built databases for complex studies with error detection, data validation, and custom dashboard analytics using R/Shiny
  - Developed R packages both for both internal and open source use and author of the [REDCapTidieR](#) package on CRAN
  - Supported development of a machine learning clinical decision support tool to predict stem cell product viability
- 2021  
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2019 • **Data Analyst & Programmer**  
[Children's Hospital of Philadelphia - Department of Anesthesiology & Critical Care Medicine](#)  
 Philadelphia, PA
  - Developed and managed ETL processes for an international research collaborative
  - Created dashboards, scheduled reports, and applications to inform clinical decisions
  - Led data-driven projects and team infrastructure using R, Python, & MATLAB
  - Assisted external institutions with troubleshooting database solutions
- 2019  
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2017 • **Research Project Engineer**  
[Children's Hospital of Philadelphia - Department of Anesthesiology & Critical Care Medicine](#)  
 Philadelphia, PA
  - Minimized completion time for various tasks through automated solutions
  - Analyzed patient waveforms and data streams from various medical devices
  - Supervised data quality and integrity in database systems
  - Developed a novel method for anterior/posterior pediatric chest geometry modeling



## CONTACT

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 [richard\\_s\\_hanna](https://twitter.com/richard_s_hanna)  
 [github.com/rsh52](https://github.com/rsh52)  
 [richardshanna.com](https://richardshanna.com)  
 (609) 320-2923

## SKILLS



## CERTIFICATIONS

[AWS Solutions Architect](#)  
[FE/EIT Certified by NCEES](#)

- 2017

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**Project Engineer**  
GS Medical USA

King of Prussia, PA

- Led R&D life cycle of multiple spinal fixation system projects
  - Served as the point of contact for surgeons and customers
  - Conducted mechanical testing per ASTM and ISO standards for quality control
  - Oversaw development of the Occipital-Cervical-Thoracic fixation system
- 2017  
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2015

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**Associate Project Engineer**  
GS Medical USA

King of Prussia, PA

- Supported project leadership in design and development of spinal implant systems
  - Consulted with international partners over production needs
  - Observed surgical cases demonstrating company product use
- 2015  
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2014

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**Biomechanics Engineering Researcher**  
Children's Hospital of Philadelphia - Center for Injury Research & Prevention

Philadelphia, PA

- Created a virtual surrogate model for child restraint system assessment
  - Coauthored and presented publications on research findings
  - Assessed occupant motion and injury kinematics using motion capture technology

## SELECTED PUBLICATIONS & POSTERS

- 2023  
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2021

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**Automation of Hematopoietic Cell Transplant Outcomes Reporting Leads to Dramatic Reduction of Errors Reported to Real-World Data Registry**  
Transplant and Cellular therapy

David S. Anderson, Richard S. Hanna, Amir Reza Pashmineh Azar, Victoria Collier, Patricia Hankins, Brandon Loudon, Timothy S. Olson, Stephan A. Grupp, Charles A. Phillips, Stephan Kadauke
- 2022

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**Paediatric In-hospital cardiopulmonary resuscitation quality and outcomes in children with CHD during nights and weekends**  
Cardiology in the Young

Priscilla Yu, Ivie Esangbedo, Xuemei Zhang, Richard Hanna, Dana E. Niles, Vinay Nadkarni, Tia Raymond
- 2021

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**Risk factors and outcomes for recurrent paediatric in-hospital cardiac arrest: Retrospective multicenter cohort study**  
Resuscitation

Maria E. Frazier, Stephanie R. Brown, Amanda O'Halloran, Tia T. Raymond, Richard Hanna, Dana E. Niles, Monica Kleinman, Robert M. Sutton, Joan Roberts, Ken Tegtmeyer, Heather A. Wolfe, Vinay M. Nadkarni, Maya Dewan
- 2021

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**Effect of Amplitude Spectral Area on Termination of Fibrillation and Outcomes in Pediatric Cardiac Arrest**  
JAHA

Tia T. Raymond, Sandeep V. Pandit, Heather Griffis, Xuemei Zhang, Richard Hanna, Dana E. Niles, Annemarie Silver, Javier J. Lasa, Sarah E. Haskell, Dianne L. Atkins, Vinay M. Nadkarni
- 2020

●

**Pediatric cardiopulmonary resuscitation quality during intra-hospital transport.**  
Resuscitation

Morgan Loaec, Adam S Himebauch, Todd J Kilbaugh, Robert A Berg, Kathryn Graham, Richard Hanna, Heather A Wolfe, Robert M Sutton, Ryan W Morgan

2019

**Pediatric In-Hospital CPR Quality at Night and on Weekends**

[Resuscitation](#)

- Ivie Esangbedo, Priscilla Yu, Tia Raymond, Dana E. Niles, **Richard Hanna**, Xuemei Zhang, Heather Wolfec, Heather Griffis, Vinay Nadkarni for the Pediatric Resuscitation Quality (pediRES-Q) Collaborative Investigators

2018

**Is CPR Quality Worse on Nights and Weekends in the Cardiac ICU?**

[PCICS](#)

- Priscilla Yu, Ivie Esangbedo, Heather Griffis, **Richard Hanna**, Vinay Nadkarni, Dana E. Niles, Tia Raymond

2018

**Cardiopulmonary Resuscitation in the Pediatric Emergency Department: Initial Findings from the Videography in Pediatric Emergency Research (VIPER) Collaborative**

[ReSS](#)

- Karen J. O'Connell, Alexis B. Sandler, Matthew Leda, Benjamin T. Kerrey, Sage R. Myers, Mary Frey, Ichiro Watanabe, **Richard Hanna**, Aaron J. Donoghue

2015

**Development of a Small Rear Facing Child Restraint System Virtual Surrogate to Evaluate CRS-to-Vehicle Interaction and Fitment**

[SAE](#)

- Aditya Belwadi, **Richard Hanna**, Audrey Eagle, Daniel Martinez, Julie Kleinert, Eric Dahle



**RELATED EXPERIENCE**

Present  
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2018

**CHOP R User Group Steering Committee Member**

[Children's Hospital of Philadelphia](#)

- Led, organized, and participated in R user classes, group talks, and seminars to encourage education and collaboration throughout the enterprise
- Assisted in teaching introductory R courses to new users throughout CHOP
- Presented on R concepts including R Markdown, API workflows, and clinical reporting to drive effective cross-displine communication

Present  
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2020

**R 101 for Clinicians Teaching Assistant**

[Children's Hospital of Philadelphia](#)

- Supported leadership in the CHOPR User Group and community in educating clinicians around the hospital on the fundamentals of R
- Facilitated online learning and helped new users troubleshoot issues