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 | 2013
M.S., Biomedical Engineering
Drexel University — Philadelphia, PA

2015 | 2013
Graduate Certificate in Engineering Management
Drexel University — Philadelphia, PA

2015 | 2010
B.S., Mechanical Engineering
Drexel University — Philadelphia, PA

EXPERIENCE

Present | 2021
Data Scientist II
Children's Hospital of Philadelphia - Cell & Gene Therapy Laboratory — Philadelphia, PA

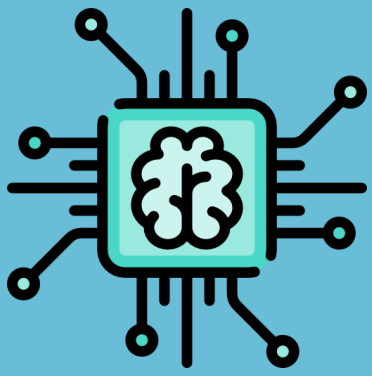
- Developed novel applications using R/Shiny to automate stem cell transplant outcomes reporting and eliminate historical data entry errors
- Standardized ETL methods for complex data merges, reporting, and monitoring using continous integration
- Built databases for complex studies with error detection, 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 pacakge on CRAN
- Supported development of a machine learning clinical decision support tool to predict stem cell product viability

2021 | 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 | 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

richardshanna91@gmail.com
richard_s_hanna
github.com/rsh52
richardshanna.com
(609) 320-2923

SKILLS

- R
- REDCap
- SQL
- AWS
- Linux
- Python
- MATLAB

CERTIFICATIONS

AWS Solutions Architect

FE/EIT Certified by NCEES

Made in R using the pagedown package.
Last updated on 2023-11-08.

2017

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 Occiptal-Cervical-Thoracic fixation system

2017 | 2015

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 | 2014

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 | 2022

A machine-learning model that incorporates CD45 surface expression predicts hematopoietic progenitor cell recovery after freeze-thaw

Cytotherapy

- Arwa Z. Al-Riyami, Elena Maryamchik, Richard S. Hanna, Amir Reza Pashmineh Azar, Xingwu Zheng, Shilpa Choudhari, Colleen Finn, Nicholas Giacobbe, Rene Machietto, Robert Rieser, Farzaneh Ghasemi Tahrir, Xiaoyong Zhang, Stephan Kadauke, Yongping Wang

2023 | 2021

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

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

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

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

RELATED EXPERIENCE

Present | 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 | 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