EVAN BISIRRI

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SUMMARY

B.S. M.S. in Biomedical Engineering pursuing a Chemical Engineering PhD with biotechnology focus. Significant computational and mathematical modeling experience in motor vehicle industry, cardiovascular engineering, and medical devices.

EDUCATION

University of Colorado Boulder — Dept. of Chemical and Biological Engineering *August 2018 – Present*
PhD Student

Drexel University — Dept. of Biomedical Engineering and Health Sciences *September 2013 – June 2018*
B.S. Biomedical Engineering
M.S. Biomedical Engineering
Honors Program, Pennoni Honors College

AWARD AND HONORS

Goldwater Scholarship Honorable Mention *2017*
Students Tackling Advanced Research (STAR) Scholars Program *2014*
A.J. Drexel Scholarship for Academic Merit, Drexel University *2013- 2018*
Dean's List, Drexel University *2013- 2018*

EXPERIENCE

Master's Thesis *December 2016 – June 2018*

Dr. Amy Throckmorton, Associate Professor, Drexel BioCirc Lab, Drexel University

Title: Fluid-Structure Analysis of a Collapsible Axial Impeller Pump Cage Design for the Fontan Circulation

- Evaluate effects of varied material characteristics of cage for collapsible impeller pump designed to aid circulation in Fontan patients through creation and testing of computational models
- Synthesize accurate Fontan model based on existing research
- Material and flow analysis of different model configurations

LATCH Project *September 2016 – February 2017*

Children's Hospital of Philadelphia CIRP, Philadelphia PA

- Designed Finite Element (FE) models to quantify Child Restraint System (CRS) security in relation to variable LATCH anchor distances
- Collaborated with PI and mentors to determine testing matrix
- Replaced Hybrid III Anthropomorphic Test Device (ATD) with new Q3 and Q6 ATD for existing FE models

Vehicle Crash Testing Device Development *May 2016 – February 2017*

Children's Hospital of Philadelphia CIRP, Philadelphia PA

- Proposed novel testing apparatus design for device specifications and constraints
- Devised drive and control mechanisms
- Constructed Computer Aided Design (CAD) models for individual components
- Calculated expected stress, shear, mass, etc. from assembled CAD files
- Identified parts and manufacturers for physical device construction

Child Seat Surrogate Development *January 2016 – May 2016*

Children's Hospital of Philadelphia CIRP, Philadelphia PA

- Classified CRS into categories of similar type and size
- Aided in creation of CRS category overlays

- Generated meshes of simple geometry to represent current CRS sizing trends for use by vehicle and CRS manufacturers to classify products

Pediatric Harness Pretensioner Project *November 2014 – December 2016*

Children's Hospital of Philadelphia CIRP, Philadelphia PA

- Built FE models to identify safety and efficacy of harness pretensioner application in CRS
- Tabulated data from FEA
- Utilized physical testing data for validation
- Performed data analysis to identify important relationships and areas for future exploration

Students Tackling Advanced Research (STAR) Scholar *June 2014 – September 2014*

Dr. Sriram Balasubramanian, Associate Professor, Biomechanics Lab, Drexel University

- Planned research project goals and activities
- Organized, examined, and edited vertebral scans to create 3D data point cloud
- Collaborated with lab members to write Matlab code for importing and manipulating point clouds
- Wrote semi-automated analysis code in Matlab for use on point clouds
- Maintained detailed notes on daily activities, long term goals, and code testing
- Worked toward goal of mathematically modeling vertebral shape change correlated with age

RESEARCH CONFERENCES – PRESENTATIONS

British Conference on Undergraduate Research, Bournemouth University	*2017*
National Conference on Undergraduate Research, University of Memphis	*2017*
Children's Hospital of Philadelphia Research Day, Philadelphia PA	*2016*
Colonial Academic Alliance Undergraduate Research Conference, Drexel University	*2015*
National Conference on Undergraduate Research, Eastern Washington University	*2015*
National Collegiate Research Conference, Harvard University	*2015*
Philadelphia Spine Symposium, University of Pennsylvania	*2014*
Students Tackling Advanced Research Summer Showcase	*2014*

SKILLS

Software

- ANSYS
- MATLAB
- Mimics
- 3-Matic
- HyperMesh
- Pspice
- Microsoft Excel/Word/PowerPoint
- Inkscape
- Pymol
- LS-Dyna
- LS-PrePost
- Auto CAD
- Creo Parametric
- SolidWorks
- Tina-TI
- Adobe Photoshop/InDesign
- Android Studio

Coding Languages

- MATLAB
- Python (basic proficiency)
- Java (basic proficiency)

Laboratory Skills

- FPLC
- Ellipsometry
- TIRF microscopy
- Single molecule FRET techniques
- Polymerization techniques

ACTIVITIES AND LEADERSHIP

- Member, SuperNova Research Program *2015 - 2018*
- Presenter/Attendee, Drexel Nerd Night *2015 - 2018*
- Member, Undergraduate Research Leaders (URLs) (Mentorship Chair, 2014 -16) *2014 - 2018*