

# Eric Reyes

Assistant Professor | Department of Mathematics (Updated: August 2017)

---

## CONTACT INFORMATION

Eric Reyes  
Assistant Professor  
5500 Wabash Avenue  
Rose-Hulman Institute of Technology  
Department of Mathematics  
Terre Haute, IN 47803

Phone: 812.877.8287  
Email: [reyesem@rose-hulman.edu](mailto:reyesem@rose-hulman.edu)  
Website: [reyesem.github.io](http://reyesem.github.io)

## EDUCATION

### **Ph.D. in Statistics (2012)**

North Carolina State University, Raleigh NC

- Dissertation Title: *Complete Least Squares: A New Variable Screening and Selection Method*
- Advisors: Dennis Boos and Len Stefanski

### **Master of Statistics (2008)**

North Carolina State University, Raleigh NC

- Concentration: Biomedical Statistics

### **B.S. in Mathematics and Economics (Summa Cum Laude, 2006)**

Rose-Hulman Institute of Technology, Terre Haute IN

## ACADEMIC EXPERIENCE

### **Assistant Professor of Mathematics**

Aug 2012 – Present

Rose-Hulman Institute of Technology, Terre Haute IN  
Department of Mathematics

- Teach lower and upper level statistics courses
- Convener of the Statistics and Operations Research curriculum development group

### **Teaching Assistant**

Jan 2008 – Aug 2008

North Carolina State University, Raleigh NC  
Department of Statistics  
Introductory Statistics Course

- Conducted review sessions and held office hours
- Prepared course notes for students
- Conducted lectures
- Wrote and graded exams

## COMPUTING SKILLS

Expertise: R, SAS (including macro language), Minitab, L<sup>A</sup>T<sub>E</sub>X Word, Excel, Powerpoint  
Working Knowledge: WinBUGS, Camtasia Studio, Panopto, HTML

UNDERGRADUATE COURSES TAUGHT	<p>Engineering Statistics I (Multiple Terms Each Year)</p> <p>Engineering Statistics II (Last Taught: Fall 2013)</p> <p>Probability (Last Taught: Winter 2016) Statistical Programming (Last Taught: Fall 2016)</p> <p>Mathematical Statistics (Last Taught: Winter 2016)</p> <p>Bioengineering Statistics (Last Taught: Spring 2017)</p> <p>Applied Regression Analysis and Introduction to Time Series (Last Taught: Winter 2015)</p> <p>Special Topics: Introduction to Bayesian Inference (Last Taught: Fall 2014)</p>
RESEARCH INTERESTS	<p>Variable selection and screening</p> <p>Statistics education</p> <p>Applications of statistics to the medical field</p>
PUBLICATIONS	<p>Small SR, Rogge RD, Malinzak RA, <b>Reyes EM</b>, Cook PL, Farley KA, Ritter MA. "Micromotion at the tibial plateau in primary and revision total knee arthroplasty: fixed <i>versus</i> rotating platform designs." <i>Bone &amp; Joint Research</i>. (2016) 5:122-129.</p> <p>Koshizaka M, Lopes RD, <b>Reyes EM</b>, Gibson CM, Schulte PJ, Hafley GE, Hernandez AF, Green JB, Kouchoukos NT, Califf RM, Ferguson TB, Peterson ED, Alexander JH. "Long-term clinical and angiographic outcomes in patients with diabetes undergoing coronary artery bypass graft surgery: Results from the PProject of Ex-vivo Vein graft ENgineering via Transfection IV Trial." <i>American Heart Journal</i>. (2015) 169(1):175-184.</p> <p>Thomas L, <b>Reyes EM</b>. "Tutorial: Survival Estimation for Cox Regression Models with Time-Varying Coefficients." <i>Journal of Statistical Software</i>. (2014) 61:1-23.</p> <p>van Diepen S, Brennan JM, Hafley GE, <b>Reyes EM</b>, Allen KB, Ferguson TB, Peterson ED, Williams JB, Gibson CM, Mack MJ, Kouchoukos NT, Alexander JH, Lopes RD. "Endoscopic Harvesting Device Type and Outcomes in Patients Undergoing Coronary Artery Bypass Surgery." <i>Annals of Surgery</i>. (2014) 260(2):402-408.</p> <p>Shen L, Shah BR, <b>Reyes EM</b>, Thomas L, Wojdyla D, Diem P, Leiter LA, Charbonnel B, Mareev V, Horton ES, Haffner SM, Soska V, Holman R, Bethel MA, Schaper F, Sun JL, McMurray JJV, Califf RM, Krum H. "Role of Diuretics, <math>\beta</math> Blockers, and Statins in Increasing the Risk of Diabetes in Patients with Impaired Glucose Tolerance: Reanalysis of Data from the NAVIGATOR Study." <i>British Medical Journal</i>. (2013) 347:f6745 doi: 10.1136/bmj.f6745.</p> <p><b>Reyes EM</b> and Thomas LE. "Chapter 15: Analytical Methods of Addressing Confounding." In: <u>Understanding Clinical Research</u>. Editors: Lopes RD and Harrington RA. McGraw-Hill Education. (2013) ISBN/ISSN:9780071746786</p> <p><b>Reyes EM</b>, Ghosh SK. "Bayesian Average Error Based Approach to Sample Size Calculations for Hypothesis Testing." <i>Journal of Biopharmaceutical Statistics</i>. (2013) 23(3):569-588.</p> <p>Kohli P, Wallentin L, <b>Reyes E</b>, Harrow J, Husted S, angiolillo DJ, Ardissino D, Mauer G, Morais J, Nicolau JC, Oto A, Storey RF, James SK, Cannon CP. "Reduction in First and Recurrent Cardiovascular Events with Ticagrelor Compared with Clopidogrel in the PLATO Study." <i>Circulation</i>. (2013) 127:673-680.</p>

**Reyes E**, Harrington RA, Pieper KS. "Chapter 17.1: Basic statistics and Analysis for the Interventional Cardiologist." In: Cardiac Catheterization and Interventional Cardiology Self-Assessment Program. American College of Cardiology. (2013)

Lopes RD, Williams JB, Mehta RH, **Reyes EM**, Hafley GE, Allen KB, Mack MJ, Peterson ED, Harrington RA, Gibson CM, Califf RM, Kouchoukos NT, Ferguson TB, Lorenz TJ, Alexander JH. "Edifoligide and Long-Term Outcomes After Coronary Artery Bypass Grafting: PRoject of Ex-vivo Vein graft ENgineering via Transfection IV (PREVENT IV) 5-Year Results." *American Heart Journal*. (2012) 164(3):379-386.e1.

**Reyes EM**, Pieper KS, Harrington RA. "Chapter 41: Statistics Related to Interventional Cardiology Procedures." In: 1001 Questions: An Interventional Cardiology Board Review. Editors: Mukherjee D, Cho L, Moliterno DJ. Lippincott Williams & Wilkins. (2011) ISBN/ISSN: 9781451112993

Kociol RD, Horton JR, Fonarow GC, **Reyes EM**, Shaw LK, O'Connor CM, Felker GM, Hernandez AF. "Admission, Discharge, or Change in BNP and Long-Term Outcomes: Data from OPTIMIZE-HF Linked to Medicare Claims." *Circulation: Heart Failure*. (2011) 4(5):628-636.

Koval KW, Setji TL, **Reyes E**, Brown AJ. "Higher High-Density Lipoprotein Cholesterol in African-American Women with Polycystic Ovary Syndrome Compared with Caucasian Counterparts." *Journal of Endocrinology and Metabolism*. (2010) 95(9):E49-53.

Pandya SB, Kim YH, Meyers SN, Davidson CJ, Flaherty JD, Park DW, Mediratta A, Pieper K, **Reyes E**, Bonow RO, Park SJ, Beohar N. "Drug-Eluting Versus Bare-Metal Stents in Unprotected Left Main Coronary Artery Stenosis: A Meta-Analysis." *Journal of the American College of Cardiology, Cardiovascular Interventions*. (2010) 3(6):602-611.

PEER REVIEWED  
CONFERENCE  
ABSTRACTS

Sutterer B, **Reyes EM**, Berend ME, Small S, Rogge RD. "An Investigation of the Relationship between Plantar Weight Distribution and the Condition of Osteoarthritic Knees During Quiet Standing." Presented at Orthopaedic Research Society 2015 Annual Meeting.

Shen L, Shah BR, **Reyes EM**, Thomas L, Diem P, Leiter LA, Charbonnel B, Mareev V, Horton E, Haffner SM, Soska V, Holman R, Bethel A, Schaper F, Sun JL, McMurray J, Calif R, Krum H. "Do Diuretics, Beta-Blockers, and Statins Increase the Risk of Diabetes in Patients with Impaired Glucose Tolerance? Insights from the NAVIGATOR Study." *Circulation*. (2012) 126:A14642 Presented at 2012 AHA Scientific Sessions.

Lucas BD, Broce M, Mehta RH, **Reyes EM**, Alexander JH. "No Evidence of Cardiovascular Harm of Nonsteroidal Anti-Inflammatory Use During Coronary Artery Bypass: Post-hoc Results from Two Large Multicenter Randomized Trials." *Circulation*. (2011) 124:A12945 Presented at 2011 AHA Scientific Sessions.

WORKING PAPERS

Small SR, Rogge RD, Reyes EM, Seale RB, Elliott JB, Deffenbaugh D, Malinzak RA. "Primary Stability of the Tibial Tray in Uncemented TKA: Biomechanical Comparison of Porous Ingrowth Surfaces." Status: *Draft complete, circulating to co-authors for feedback*.

Reyes EM, Evans D. “Effects of Exam Design on Test Anxiety and Performance.” Status: *Analysis complete, writing first draft.*

Reyes EM, Boos DD, Stefanski LA. “Complete Least Squares.” Status: *Initial draft complete, requires rewrite.*

Reyes EM, Roberts C. “A Unified Approach for Variable Selection in the Presence of Missing Data via Least Squares Approximation.” Status: *Early stages.*

PRESENTATIONS     *Tuning Variable Selection via Noise When Prediction is Not the Primary Objective*  
Joint Statistical Meetings  
Baltimore MD (Aug 2017)

*Specifications Grading in a Statistics Classroom*  
Half-Day Workshop  
US Conference on Teaching Statistics  
State College PA (May 2017)

*Life Lessons from a Young(ish) Professor*  
Conference Celebrating 75 Years of the Department  
North Carolina State University  
Raleigh NC (Oct 2016)

*Choosing to be an Outlier in a Mathematics Department*  
Panelist  
Joint Statistical Meetings  
Chicago IL (Aug 2016)

*Specifications Grading in a Statistics Classroom*  
Round Table Discussion  
Joint Statistical Meetings  
Chicago IL (Aug 2016)

*Unified Approach to Variable Selection in Missing Data via Least Squares Approximation*  
Joint Statistical Meetings  
Seattle WA (Aug 2015)

*Six Sigmas of Separation: Strategies for Making Inter-Disciplinary Connections*  
with Dr. Diane Evans (Rose-Hulman Institute of Technology)  
US Conference on Teaching Statistics  
State College PA (May 2015)

*Engaging Intro Statistics Students with Activities*  
Half-Day Workshop with Dr. Diane Evans (Rose-Hulman Institute of Technology)  
US Conference on Teaching Statistics  
College Station PA (May 2015)

*Name-Brand vs. Off-Brand: A Twist on Taste Testing for a Mathematical Statistics Course*  
Joint Statistical Meetings  
Boston MA (Aug 2014)

*Engineering a Statistical Model: An Activity for an Engineering Statistics Course*  
 Poster Presentation (*peer reviewed*)  
 US Conference on Teaching Statistics  
 Research Triangle Park, NC (May 2013)

*Bayesian Average Error Based Approach to Sample Size Calculations (with an introduction to constructing R packages)*  
 Department of Statistics, Bayesian Seminar Series  
 North Carolina State University  
 Raleigh NC (Sep 2011)

*Bayesian Average Error Based Approach to Sample Size Calculations for Hypothesis Testing*  
 ENAR Spring Meeting  
 Miami FL (Mar 2011)

*Bayesian Average Error Based Approach to Hypothesis Testing and Sample Size Determination*  
 Poster Presentation  
 Midwest Biopharmaceutical Statistics Workshop  
 Charlie Samson Poster Award  
 Muncie IN (May 2010)

*Introduction to the Use of Inverse Probability Weighting via Propensity Scores*  
 Statistics Working Group Educational Meeting  
 Duke Clinical Research Institute  
 Durham NC (Apr 2010)

*Introduction to Principal Stratification*  
 Department of Statistics, Student Seminar Series  
 North Carolina State University  
 Raleigh NC (Oct 2009)

*Overview of Variable Selection Methods*  
 Statistics Working Group Educational Meeting  
 Duke Clinical Research Institute  
 Durham NC (May 2009)

*Do Dogs Really Know Calculus?*  
 Rose-Hulman Undergraduate Mathematics Conference  
 Terre Haute IN (Mar 2006)

STUDENT  
 RESEARCH  
 DIRECTED

PIC Math Project, **Mariana Lane** (2017)  
 Client: 84.51  
 Jointly supervised the project with Dr. Christina Selby  
*Using Retailer Transaction Data to Assess the Benefit of Marketing*

Mathematics Senior Project, **Ruinan (Victor) Zhang** (2017)  
 Client: SMARI  
*Statistical Methods for Market Research*

Mathematics Senior Thesis, **Aaron Brown** (Incomplete)  
*Assumption of Normality in the Introductory Course*

Mathematics Senior Thesis, **Xiaomo Wang** (Incomplete)  
*Variable Selection through Addition of Noise when Prediction is Not Primary Goal*

Mathematics Senior Project, **Amy Kamperman** (2016)  
Client: Joint Replacement Surgeons of Indiana  
*Analysis of Tibial Micromotion, Phase 3*

Computer Science Thesis, **Wenjun (Kathy) Kong** (2016)  
1st Place: CAUSE Undergraduate Research Project Competition (USRESP), Methodological Research Subcategory  
*Feature Screening in the Presence of Nonlinear Relationships*

Mathematics Senior Thesis, **Cody Roberts** (2015)  
*A Unified Approach to Variable Selection in the Presence of Missing Data*

Class Project / Individual Research, **Lorena Maxwell** (MA 2015)  
2nd Place: CAUSE Undergraduate Class Project Competition (USCLAP)  
*Bayesian Analysis of Gender Bias in Jury Selection*

Mathematics Senior Project, **Lorena Maxwell** (2015)  
*Nonlinear Modeling Framework for Estimating Young's Modulus from Stress-Strain Curves*

Mathematics Senior Thesis, **Kimberly Boucher** (Incomplete)

Mathematics Senior Project, **Devon Hardman** (2013)  
Client: BD Technologies  
Honorable Mention, CAUSE Undergraduate Research Project Competition (USRESP)  
*An Application of Nonlinear Mixed Effects Models to Cell Culturing Studies to Assess the Efficacy of Various Media*

COMMITTEE	Biomedical Engineering, <b>Sonia Sanchez</b> (Expected: 2018) Advisor: Renee Rogge <i>TBA</i>
MEMBER,	
MASTER'S THESIS	Biomedical Engineering, <b>Anderson Adams</b> (2015) Advisor: Renee Rogge <i>A Comparative Evaluation of Cadaveric and Composite Femur Models for Total Hip Arthroplasty</i>
	Biomedical Engineering, <b>Brian Sutterer</b> (2014) Advisor: Renee Rogge <i>An Investigation of the Relationship Between Plantar Weight Distribution and the Condition of Osteoarthritic Knees During Quiet Standing</i>
	Biomedical Engineering, <b>Cody Austin</b> (2013) Advisor: Glen Livesay Winner, Rose-Hulman Most Outstanding Master's Thesis <i>The Effect of Loading Orientation on the Structural Properties of the Anterior Cruciate Ligament</i>

CONSULTING EXPERIENCE	<p><b>Statistical Consultant</b> Nov 2015 – Present</p> <p>Joint Replacement Surgeons of Indiana, Rose-Hulman Lab</p> <ul style="list-style-type: none"><li>- Statistical consulting with biomedical engineers</li><li>- Analysis of clinical datasets collected at the JRSI lab on the Rose-Hulman campus</li><li>- Analytical techniques included mixed effects models and estimation through generalized estimating equations for repeated measures</li><li>- Author statistical sections for articles and abstracts</li></ul> <p><b>Reviewer</b> May 2017 – Jun 2017</p> <p>CRC Press</p> <ul style="list-style-type: none"><li>- Reviewed textbook chapters and provided feedback</li></ul> <p><b>Independent Consultant</b> Aug 2013 – Aug 2014</p> <p>John Wiley &amp; Sons, Inc., Higher Education</p> <ul style="list-style-type: none"><li>- Create video lectures on statistical concepts to be used with textbook</li></ul> <p><b>Statistical Consultant</b> Feb 2012 – Dec 2012</p> <p>Duke Clinical Research Institute, Durham NC</p> <p>Clinical Trial Statistics</p> <p>via Kelley Services</p> <ul style="list-style-type: none"><li>- Statistical consulting with clinicians and statisticians</li><li>- Analysis of clinical datasets</li><li>- Analytical techniques include survival analysis, propensity scores, predictive modeling</li><li>- Author statistical sections for articles and abstracts</li></ul> <p><b>Intern, Secondary Manuscripts</b> Sep 2006 – Dec 2011</p> <p>Duke Clinical Research Institute, Durham NC</p> <p>Clinical Trial Statistics</p> <ul style="list-style-type: none"><li>- Statistical consulting with clinicians and statisticians</li></ul>
GRANTS	<p>Rose-Hulman KEEN Course Development Grant (Summer 2016)</p> <p><i>Incorporating Entrepreneurial Minded Learning through Data Science in a Statistical Programming Course</i></p> <p>Amount: \$5000</p> <p>Rose-Hulman Multimedia Grant (Summer 2013)</p> <p><i>Data to Decisions: A Video Series for Enhancing Engineering Statistics</i></p> <p>Amount: \$5000</p>
HONORS, PROFESSIONAL MEMBERSHIPS	<p>Member: American Statistical Association</p> <p>Member: Mathematical Association of America</p> <p>Graduate School: Charlie Sampson Poster Award Winner (MBSW 2010)</p> <p>Graduate School: Trainee in NHLBI Integrated Biostatistical Training Program for CVD Research</p> <p>Undergraduate: Mu Sigma Rho</p>
SERVICE ACTIVITIES	<p><b>Departmental Service</b></p> <p>Convener: Statistics and Operations Research Curriculum Group (AY 14-15, 15-16, 16-17)</p> <p>Advisor: Area Minor in Statistics (AY 15-16, 16-17)</p> <p>Member: Data Science Curriculum Core Group (AY 15-16, 16-17)</p> <p>Member: Undergraduate Math Conference Committee (AY 15-16, 16-17)</p>

Member: Department Hiring Committee (AY 15-16)

Co-Organizer: Undergraduate Math Conference (AY 14-15)

Registration: High School Math Contest (AY 15-16, 16-17)

**Institutional Service**

Member: Committee on Animal Care and Use (AY 15-16, 16-17)

Member: Quality of Education Committee (AY 13-14, 14-15)

Member: Subcommittee on Academic Misconduct (AY 14-15)

Faculty Advisor: InterVarsity Christian Fellowship

**Professional Service**

Reviewer: Rose-Hulman Undergraduate Mathematics Journal

Member: ASA-MAA Joint Committee on Statistics Education (Jan 2016 - Dec 2017)