

Derek R. Lamb

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EDUCATION

University of Pennsylvania (June 2025-present)

Doctorate of Philosophy: Biostatistics

Columbia University Mailman School of Public Health (July 2023-May 2025)

Master of Science: Biostatistics, concentration in Theory and Methods

University of Maryland Graduate School, Baltimore (August 2022-May 2023)

Epidemiology, Non-degree seeking student

University of Pittsburgh (August 2017-May 2021)

Bachelor of Science: Chemistry and Molecular Biology, minor in Theatre Arts; graduated summa cum laude

RESEARCH EXPERIENCE

Research Assistant, Center for Statistical Genetics, Columbia University Irvine Medical Center (March 2024-May 2025)

- Performed statistical analyses to understand genetic and proteomic associations with complex traits
- Developed a modular R package for Omics data analysis using regression summary statistics

Research Assistant, Center for Blood Oxygen Transport, University of Maryland School of Medicine (May 2022-July 2023)

- Designed and implemented a longitudinal clinical study of cardiopulmonary bypass
- Developed HPLC methods for the separation of modified hemoglobins
- Designed pharmacokinetic and therapeutic animal studies
- Research contributed to six peer-reviewed manuscripts

Laboratory Assistant, Center for Blood Oxygen Transport, University of Maryland School of Medicine (May 2021-May 2022)

- Developed assay for methemoglobin generation in response to oxidative stressors
- Investigated the causes and effects of coagulopathies in humans with COVID-19 and sickle cell disease
- Characterized hemolytic events caused by antimalarial drugs and opioid abuse

Undergraduate Researcher, Hernández Sánchez Research Group, University of Pittsburgh (October 2018-May 2019)

- Synthesized and purified building blocks for the assembly of novel macrocycles
- Determined chemical purity and composition by chromatography and NMR

PUBLICATIONS

†First author or co-first author

- Dziejulska-Cronk KH, Reisz JA, Hay AM, Nemkov T, Cendali FI, Issaian A, **Lamb DR**, Palha MS, Legenzov EA, Kao JPY, Walker LA, Tekwani BL, Buehler PW, D'Alessandro A, Zimring JC. *Primaquine-5,6-orthoquinone is directly hemolytic to older G6PD deficient RBCs in a humanized mouse model*. J Pharmacol Exp Ther. 2024 Aug 2;JPET-AR-2024-002218. doi: 10.1124/jpet.124.002218.
- Cuddington C, Greenfield A, Lee YG, Kim JL, **Lamb D**, Buehler PW, Black SM, Palmer AF, Whitson BA. *Polymerized Human Hemoglobin-Based Oxygen Carrier Preserves Lung Allograft Function During Normothermic Ex Vivo Lung Perfusion*. ASAIO J. 2024 Jan 25. doi: 10.1097/MAT.0000000000002118.
- **Lamb DR**†, Greenfield A, Thangaraju K, Setua S, Eiker G, Wang Q, Vahedi A, Khan MA, Yahya A, Cabrales P, Palmer AF, Buehler PW. *The Molecular Size of Bioengineered Oxygen Carriers Determines Tissue Oxygenation in a Hypercholesterolemia Guinea Pig Model of Hemorrhagic Shock and Resuscitation*. Mol Pharm. 2023 Oct 16. doi: 10.1021/acs.molpharmaceut.3c00611.
- Palha MS, Legenzov EA, **Lamb DR**, Zimring JC, Buehler PW, Kao JPY. *Superoxide measurement as a novel probe of red blood cell storage quality*. Blood Transfus. 2023 Sep;21(5):422-427. doi: 10.2450/2022.0246-22.
- Greenfield A, **Lamb DR**†, Gu X, Thangaraju K, Setua S, Yahya A, Vahedi A, Khan MA, Wang Q, Buehler PW, Palmer AF. *Biophysical Analysis and Preclinical Pharmacokinetics-Pharmacodynamics of Tangential Flow Filtration Fractionated Polymerized Human Hemoglobin as a Red Blood Cell Substitute*. Biomacromolecules. 2023 Apr 10;24(4):1855-1870. doi: 10.1021/acs.biomac.3c00051.

PUBLICATIONS

- Thangaraju K, Setua S, Lisk C, Swindle D, Stephenson D, Dzieciatkowska M, **Lamb DR**, Moitra P, Pak D, Hassell K, George G, Nuss R, Davizon-Castillo P, Stenmark KR, D'Alessandro A, Irwin DC, Buehler PW. *Extracellular Vesicle Size Reveals Cargo Specific to Coagulation and Inflammation in Pediatric and Adult Sickle Cell Disease*. Clin Appl Thromb Hemost. 2023 Jan-Dec;29:10760296231186144. doi: 10.1177/10760296231186144.
- Setua S, Thangaraju K, Dzieciatkowska M, Wilkerson RB, Nemkov T, **Lamb DR**, Tagaya Y, Boyer T, Rowden T, Doctor A, D'Alessandro A, Buehler PW. *Coagulation potential and the integrated omics of extracellular vesicles from COVID-19 positive patient plasma*. Sci Rep. 2022 Dec 23;12(1):22191. doi: 10.1038/s41598-022-26473-8.

ABSTRACTS, PRESENTATIONS, & POSTERS

- Hay AH, Buehler P, Kao J, **Lamb DR**, Commons R, Legenzov EA, Palha MS, Zimring JC. *Combination of a reductase inhibitor with primaquine prevents hemolysis of G6PD deficient RBCs*. Abstract submitted to ASTMH annual meeting 2024.
- Dziewulska KH, Kao JPY, Palha MS, Legenzov EA, Buehler PW, **Lamb DR**, Zimring JC. *Superoxide generation and redox cycling of primaquine metabolites can be driven by Biliverdin Reductase B and N-ribosyldihydronicotinamide: quinone reductase 2*. Presented at ASTMH annual meeting 2023.
- Laurencin V, **Lamb DR**, Gordy D, Stone E, Spitalnik SL, Hod E, Kao JPY, Buehler PW, Thomas T. *Acute treadmill training of FVB mice leads to improved RBC deformability and decreased lipid peroxidation after cold storage*. Presented at AABB annual meeting 2023.
- Lamb DR**, Thanagarju K, Setua S, Buehler PW. *Adulteration of opioid deterrent formulated tablets and hematological toxicity*. Poster presented at CERSI Summit 2023.

TRADITIONAL MEDIA PUBLICATIONS

- "Sexually transmitted infections increasing in NYC – here's how to protect yourself" in *New York Amsterdam News*, March 20, 2025.
- "How doctors, nurses, and pastors are overcoming vaccination hesitancy in Black communities" in *New York Amsterdam News*, September 19, 2024
- "Factcheck: False – Long COVID is just in your head" in *New York Amsterdam News*, May 2, 2024
- "Factcheck – False: Current at-home COVID tests cannot detect latest variants of COVID-19" in *New York Amsterdam News*, April 11, 2024

CAMPUS TALKS

- "HTML and CSS for the Data Scientist," hosted by the Columbia University Biostatistics Computing Club, February 10, 2025.
- Panelist, "How to set up your computer as a statistician," hosted by the Columbia University Biostatistics Computing Club, September 16, 2024.
- "HTML and CSS for the Data Scientist," hosted by the Columbia University Biostatistics Computing Club, February 7, 2024.

TEACHING EXPERIENCE

Teaching Assistant, Department of Biostatistics, Columbia University (2024-2025)

- Applied Regression II (Spring 2025) – 36 students
- Data Science I (Fall 2024) – 177 students
- Probability (Fall 2024) – 116 students

Teaching Assistant, Department of Chemistry, University of Pittsburgh (2019-2021)

- Organic Chemistry I (Fall 2019, Spring 2020, Fall 2020, Spring 2021) – approx. 200 students

MEMBERSHIPS & ORGANIZATIONS

American Statistical Association (2024-present)

Columbia University Public Health Journalism Club (2023-2025)

- Treasurer (2024-2025)

Columbia University Biostatistics Computing Club (2023-2025)

AWARDS & RECOGNITION

- Delta Omega Public Health Honorary Society, 2025
- The Phillips Medal, 2021
- University of Pittsburgh Dean's List, 2017-2021
- Richard F. Zarilla Award, 2020
- 1st Place, University of Maryland Chemathon Competition, 2017
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- Bausch & Lomb Honorary Science Award, 2016