

Derek R. Lamb

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EDUCATION

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, 4.0 GPA

University of Pittsburgh (August 2017-May 2021)

Bachelor of Science: Chemistry and Molecular Biology, minor in Theatre Arts

Graduated summa cum laude with a 4.0 GPA

SKILLS

Technical proficiencies: HPLC, ELISA, IF/IHC, Rodent anesthesia & tissue collection

Software proficiencies: R, Python, HTML/CSS, Microsoft Office

RESEARCH EXPERIENCE

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 five 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

SELECTED PUBLICATIONS

- **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.
- 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.
- 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

- **Lamb DR**, Thanagarju K, Setua S, Buehler PW. *Adulteration of opioid deterrent formulated tablets and hematological toxicity*. Poster presented at: CERSI Summit 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.
- Dziejewska 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*. Abstract submitted to ASTMH annual meeting 2023.

ADMINISTRATIVE & LEADERSHIP EXPERIENCE

Undergraduate Teaching Assistant, Organic Chemistry (August 2019-May 2021)

- Led weekly recitations for four semesters, including remedial lessons for struggling students
- Developed exercises to reinforce classroom learning
- Assessed student performance and improvement

Executive Board Member, United States Institute for Theatre Technology, Pitt Chapter (May 2018-May 2020)

- Coordinated bi-weekly meetings and talks for member education and professional advancement
- Secured over \$5,000 of funding for member attendance to annual conference at no cost to membership
- Developed workshops promoting theatre education for membership and local community

Administrative Intern, National Library of Medicine/National Institutes of Health (June-August 2016, June-August 2017)

- Designed websites for the History of Medicine Division, NLM
- Made websites compliant to Section 508 of the U.S. Workforce Rehabilitation Act
- Standardized website designs across a user-friendly and responsive format

AWARDS & RECOGNITION

- The Phillips Medal, 2021
- University of Pittsburgh Dean's List, 2017-2021
- Richard F. Zarilla Award, 2020
- Bausch & Lomb Honorary Science Award, 2016