

# MEGAN LYNCH

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University of Maryland School of Medicine  
655 W. Baltimore Street  
Health Sciences Research Facility III  
Baltimore, MD

## EDUCATION

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| <b>PhD</b> | University of Maryland School of Medicine<br>Human Genetics and Genomic Medicine | Expected: July 2021 |
| <b>BS</b>  | Lehigh University<br>Biomedical Engineering                                      | 2015                |

## RESEARCH EXPERIENCE

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- Dissertation**, University of Maryland School of Medicine, Baltimore MD 2016-Present  
Advisor: Braxton Mitchell
- Statistical analysis of disease-susceptibility genes in an Amish community. Studying genetic architecture of Amish including pathogenic variants in clinically actionable genes and adverse trait outcomes associated with kinship of couple pairs and individual autozygosity.
  - Mapping epigenetic modification in familial hyperlipidemia carriers and postprandial hyperlipidemia.
  - Population admixture analysis for ancestry estimation.
- Lehigh University**, Bethlehem Pennsylvania 2013 to 2015  
**Research Assistant**, Dr. Brian Chen Lab
- Mapped specificity and influence of anchor residue for binding pocket and amino acids for design of specific Major Histocompatibility Complex (MHC) predictor. To investigate the nature of the pocket, measured steric and electric field influences on the interaction between the inhibitor and binding pocket.
- Lehigh University**, Bethlehem Pennsylvania 2014 to 2015  
**Research Assistant**, Dr. Lang Lab
- Study evolution using yeast *Saccharomyces cerevisiae* as an ideal model.

## TEACHING SERVICE

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- Lehigh University**, Bethlehem PA Spring 2015  
**Teaching Assistant**, Computer Science
- Guided students through three projects in which they were asked to apply computational techniques to principles of structural biology, examining molecular structure, function, and evolution.
  - 18 students, 8 hrs/wk

## PUBLICATIONS

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### *Journal Papers*

Streeten, E.A., See, V., Jeng, L.B. J., Maloney, K.A., **Lynch, M.**, Glazer, A.M., Yang, T., Roden, D., Pollin, T.I., Daue, M., Ryan, K.A., Perry, J.A., O'Connell, J., Beitelshes, A., Palmer, K., Mitchell, B.D., Shuldiner, A.R. "KCNQ1 and Long QT Syndrome in 1/45 Amish: The road from identification to implementation of culturally appropriate precision medicine", *Circulation Precision Medicine*, 2020

Guo L., Torii S., Fernandez R., Braumann R.E., Fuller D.T., Hyun Paek K., Gadhoke N.V., Harris K., Mayhew C.M., Zarpak R., Jinnouchi H., Sakamoto A., Sato Y., Mori H., Kutyna M.D., Lee P.J., Weinstein L.M., Collado-Rivera C.J., Ali B.B., Atmakuri D.R., Dhingra R., Finn E.L.B., Bell M.W., Maloney K.A., **Lynch M.**, Cornelissen A., Kuntz S.H., Park J., Kutys R., Wang L., Hong S.N., Gupta A., Kolodgie F.D., Romero M.E., Jeng L.J.B., Mitchell B.D., Surve D., Fowler D.R., Hong C.C., Virmani R., Finn A.V., "Genetics of Unexplained Sudden Cardiac Death in Adult Caucasian and African American Individuals", *JAMA Cardiology*, May 2021

### *Abstracts*

**Lynch, M.**, Mitchell, B.D., Xu, H., "Abstract MP151: Post-prandial Lipemia Acutely Changes Epigenetic Regulation of Inflammatory Genes Over 4 Hr", *American Heart Association: Arteriosclerosis, Thrombosis, and Vascular Biology*, June 2020

### *Journal Papers in Review*

**Lynch M.**, Maloney K.A., Pollin T.I., Streeten E.A., Xu H., Shuldiner A.R., Van Hout C.V., Gonzaga-Jauregui C., Mitchell B.D., "The Burden of Pathogenic Variants in Clinically Actionable Genes in a Founder Population" Submitted to: *AJMG*

## PRESENTATIONS AND INVITED LECTURES

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**Poster Presentation**, "High Frequency of Loss of Function Variants in ACMG Clinically Actionable Genes in the Amish", *CHARGE*, October 2018.

**Poster Presentation**, "Enrichment of Variants in Medically Actionable Genes in the Amish", *ACMG*, April 2019.

**Poster Presentation**, "Burden of Medically Actionable Variants in the Amish, a Founder Population," *Amish Research Conference*, June 2019.

**Platform Presentation**, "Quantifying the Burden of Pathogenic Variants in ACMG Clinically Actionable genes in the Amish and non-founder populations," *Keystone Symposia*, January 2020.

**Short Talk** "Kinship in a Founder Population Impacts Reproductive Health and Other Health Outcomes", *University of Maryland Baltimore 3MT*, November 2020

**Platform Presentation** "Impact of Genetic Relatedness of Parents on Reproductive Outcomes", *ACMG*, April 2021

**Invited Lecture** “Impact of Consanguinity on Fitness Related Traits in a Founder Population”, Johns Hopkins University, April 2021

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**PROFESSIONAL TRAINING**

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**B. Braun Medical**, Product Design Intern, 2013-2014

- Team member of engineering students who designed an intravenous fluid warming device for hospital use. Created an accurate and consistent temperature read-out from an Arduino to maintain temperature of the fluid outflow. Comprehensive product design includes a working prototype as well as marketing and financial plan.

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**PROFESSIONAL AFFILIATIONS**

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**Graduate Student Association**

President, May 2018-2020

Graduate Council Representative, May 2017-2018

**Graduate Assistant Advisory Committee**

Chair, 2018-2020

**University Student Government Association**

Senator, 2017-2019

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**PROFESSIONAL SERVICE**

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**Research Conference Co-Organizer**

University of Maryland Baltimore Graduate Research Conference, 2019, 2020

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**COMMUNITY SERVICE**

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**House of Ruth Maryland**

Child Care Assistant, Baltimore MD, 2017-2019

**Junior League of Baltimore**

Member, Baltimore MD, 2021

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**HONORS AND AWARDS**

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**Nutrigenomics, Nutrigenetics and Precision Nutrition Scholarship** 2016

**Donald and Dorothy Stabler Scholarship** 2011-2014