

# EZGI KARAESMEN

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## EDUCATION

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**The Ohio State University** Columbus, OH, USA 08/2015 - 05/2020  
*Doctor of Philosophy*, – Pharmaceutical Sciences,  
Areas of research: Pharmacogenomics & Statistical Genetics

**State University of New York at Buffalo** Buffalo, NY, USA 08/2014 - 08/2015  
**Roswell Park Cancer Institute Graduate Division**  
*Master of Science*, Interdisciplinary Natural Sciences - *via CanSys Program*  
Areas of research: Cancer Molecular Biology & Bioinformatics

**Université du Luxembourg** Luxembourg City, Luxembourg 09/2013 - 07/2014  
*Master of Science*, Integrated Systems Biology

**Hacettepe University** Ankara, Turkey 09/2008 - 07/2013  
*Bachelor of Science*, Biology  
*Minor*, Philosophy

## ADDITIONAL EDUCATION

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**Advanced Graduate Certificate in Applied Biostatistics** 08/2015 - 09/2016  
*State University of New York at Buffalo* Buffalo, NY, USA

**Computational Genomics Winter Institute** Feb 26-Mar 3, 2018  
*University of California at Los Angeles*, Los Angeles, CA, USA

**Advanced Gene Mapping** Jan 23-27, 2017  
*The Rockefeller University*, New York, NY, USA

**Analysis of NGS Data for Complex Traits Course** July 4-8, 2016  
*Max Delbrück Center for Molecular Medicine*, Berlin, Germany

**Georg-August-Universität Göttingen via Erasmus Programme** 02/2011 - 07/2011  
*Undergraduate Study Abroad Semester*, Göttingen, Germany

## RESEARCH EXPERIENCE

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**Doctoral Research** 03/2016 - Present  
The Ohio State University, Columbus, OH, USA  
College of Pharmacy, Division of Pharmaceutics and Pharmaceutical Chemistry  
Thesis Adviser: Lara Sucheston-Campbell, PhD.

Conduct genome-wide association studies (GWAS) to determine the independent and joint effects of recipient and donor genetic variation associated with survival after HLA-matched unrelated donor Hematopoietic Stem Cell Transplantation (HSCT) in leukemia patients.

- Constructing Cox proportional hazard and competing risk models to test associations with clinical events.
- Determining interactions between genetic variants and agents used during treatment.
- Further evaluation of specific risk groups by stratification of clinical variables.

## Master Thesis Research

08/2014 - 09/2015

Roswell Park Cancer Institute, Buffalo, NY, USA

Department of Pharmacology and Therapeutics

Thesis Adviser: Barbara Foster, PhD.

Thesis title: Retinoic Acid Receptors and LSD1 As Novel Targets For Prostate Cancer

Understanding the transcriptomic control of Retinoic Acid Receptors and LSD1 in prostate cancer to explore their potential as drug targets for prostate cancer treatment.

- Differential gene expression analyses on publicly available prostate cancer datasets (TCGA) and on human prostate cell line LNCaP-C42 under different gene knock-down conditions and drug treatments
- Dose response experiments with commercially available prostate cancer cell lines while targeting RAR-gamma, LSD1 or both

## Student Assistant

05/2014 - 08/2014

Luxembourg Centre for Systems Biomedicine Metabolomics Department

Esch-sur-Alzette, Luxembourg

Supervisor: Karsten Hiller, PhD

## Intern

01/2014 - 02/2014

Centre Recherche Public (CRP) - Santé, Proteomics Department,

Luxembourg City, Luxembourg

Supervisor: Bruno Domon, PhD

## Undergraduate Summer Project

06/2012 - 08/2012

Hacettepe University, Ankara, Turkey

Evolutionary and Ecological Genetics Laboratory (EEGL)

Supervisor: Ergi Deniz Ozsoy, PhD

Project Title: The genetic correlation between testicle and head sizes and its effect on mate selection in *Drosophila subobscura*.

## PUBLICATIONS

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1. Wang J, Clay-Gilmour AI, **Karaesmen E**, Rizvi A, Zhu Q, Yan L, Preus L, Liu S, Wang Y, Griffiths E, Stram DO, Pooler L, Sheng X, Haiman C, Van Den Berg D, Webb A, Brock G, Spellman S, Pasquini M, McCarthy P, Allan J, Stölzel F, Onel K, Hahn TE, Sucheston-Campbell LE. **Genome-wide association analyses identify variants in IRF4 associated with Acute Myeloid Leukemia and Myelodysplastic Syndrome susceptibility.** *bioRxiv* 773952 (2019). doi:[10.1101/773952](https://doi.org/10.1101/773952)
2. **Karaesmen E**, Hahn TE, Dile A, Rizvi AA, Wang J, Wang T, Haagenon M, Preus L, Zhu Q, Liu Q, Yan L, Liu S, Haiman CA, Stram D, Pooler L, Sheng X, Van Den Berg D, Brock G, Webb A, McCarthy PL, Pasquini MC, Spellman SR, Lee SJ, Paczesny S, Sucheston-Campbell LE. **Multiple functional variants in IL1RL1 region are pre-transplant markers for risk of GVHD and infection deaths.** *Blood Adv.* 2019 Aug 13;3(15):2337-2341. PMID: 31391166. doi: [10.1182/bloodadvances.2019000052](https://doi.org/10.1182/bloodadvances.2019000052)
3. Tang H, Hahn TE, **Karaesmen E**, Rizvi AA, Wang J, Paczesny S, Wang T, Preus L, Zhu Q, Haiman CA, Stram D, Pooler L, Sheng X, Van Den Berg D, Brock G, Webb A, Pasquini MC, McCarthy PL, Spellman SR, Sucheston-Campbell LE. **Validation of genetic associations**

**with acute GVHD and non-relapse mortality in DISCOVeRY-BMT.** *Blood Adv.* 2019 Aug 27;3(16):2512-2524. PMID: 31455667. doi:[10.1182/bloodadvances.2019000075](https://doi.org/10.1182/bloodadvances.2019000075).

4. Rizvi AA, **Karaesmen E**, Morgan M, Preus L, Wang J, Sovic M, Hahn TE, Sucheston-Campbell LE. **gwasurvivr: an R package for genome-wide survival analysis.** *Bioinformatics.* 2018 Nov 5. PMID: 30395168. doi:[10.1093/bioinformatics/bty920](https://doi.org/10.1093/bioinformatics/bty920)
5. **Karaesmen E**, Rizvi AA, Preus L, McCarthy PL, Pasquini MC, Onel K, Zhu X, Spellman S, Haiman CA, Stram DO, Pooler L, Sheng X, Zhu Q, Yan L, Liu Q, Hu Q, Webb A, Brock G, Clay-Gilmour AI, Battaglia S, Tritchler D, Liu S, Hahn TE, Sucheston-Campbell LE. **Replication and validation of genetic polymorphisms associated with survival after allogeneic blood or marrow transplant.** *Blood* 2017 Sep 28;130(13):1585-1596. PMID: 28811306. doi:[/10.1182/blood-2017-05-784637](https://doi.org/10.1182/blood-2017-05-784637)
6. Clay-Gilmour AI, Hahn T, Preus LM, Onel K, Skol A, Hungate E, Zhu Q, Haiman CA, Stram DO, Pooler L, Sheng X, Yan L, Liu Q, Hu Q, Liu S, Battaglia S, Zhu X, Block AW, Sait SN, **Karaesmen E**, Rizvi AA, Weisdorf DJ, Ambrosone CB, Tritchler D, Ellinghaus E, Ellinghaus D, Stanulla M, Clavel J, Orsi L, Spellman S, Pasquini, MC, McCarthy PL, Sucheston-Campbell LE. **Genetic association with B-cell acute lymphoblastic leukemia in allogeneic transplant patients differs by age and sex.** *Blood Adv.* 2017 Sep 8;1(20):1717-1728. PMID: 28811306. doi:[10.1182/bloodadvances.2017006023](https://doi.org/10.1182/bloodadvances.2017006023)

## ORAL PRESENTATIONS

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1. **Karaesmen E** (2019 Dec) **Exploring Genetic Associations with Bone Marrow Transplant Outcomes.** American Society of Hematology 61<sup>st</sup> Annual Meeting, Friday Scientific Workshop on Integrative Epidemiology: Translating Epidemiology and Basic Science to Maximize Clinical Impact, Orlando, FL.
2. Sing A, **Karaesmen E** (2019 Nov) **How do you change the world? By developing future women leaders.** Google Developers Group Ohio DevFest, Columbus, OH.
3. **Karaesmen E** (2019 Mar) **Introduction to Data Science with R.** Women in Analytics Conference, Columbus OH
4. **Karaesmen E**, Hahn ET, Dile A, Rizvi AA, Wang J, Wang T, Haagenon MD, Preus L, Zhu Q, Liu Q, Yan L, Liu S, Haiman C, Stram D, Pooler L, Cheng X, Van Den Berg D, Brock G, Webb A, McCarthy PL, Spellman SR, Lee JS, Paczesny S, and Sucheston-Campbell LE. **Multiple Functional Donor Polymorphisms in IL1RL1 region Associate with Death Due to GvHD or Infection after Unrelated Donor Allogeneic Hematopoietic Stem Cell Transplantation (HCT) for AML and MDS.** (2018 Dec) American Society of Hematology 60<sup>th</sup> Annual Meeting, San Diego, CA.
5. **Karaesmen E** (2018 Mar) **Data Cleaning and Manipulation with R.** Women in Analytics Conference, Columbus OH
6. **Karaesmen E**, Rizvi AA, Preus L, McCarthy PL, Pasquini M, Singh S, Singh SK, Onel K, Zhu X, Spellman S, Haiman CA, Stram DO, Pooler L, Sheng X, Zhu Q, Yan L, Liu Q, Hu Q, Webb A, Brock G, Clay-Gilmour AI, Battaglia S, Tritchler D, Liu S, Hahn T, Sucheston-Campbell LE. (2018 Feb). **Genome-Wide Significant Donor Genetic Associations with Death Due to Disease in AML and MDS Patients in the First 1 Year after BMT Are Not Modified By Conditioning Intensity or TBI.** 2018 BMT Tandem Meetings, Salt Lake City, UT.

7. **Karaesmen E.** (2017 Nov). **Personalized Medicine and Genomic Data Science.** Google Developers Group Ohio DevFest, Columbus, OH.
8. **Karaesmen E,** Rizvi AA, Preus L, McCarthy PL, Pasquini MC, Onel K, Zhu X, Spellman S, Haiman CA, Stram DO, Pooler L, Sheng X, Zhu Q, Yan L, Liu Q, Hu Q, Webb A, Brock G, Clay-Gilmour AI, Battaglia S, Tritchler D, Liu S, Hahn T, Sucheston-Campbell LE. (2016 Dec). **Replication of Candidate SNP Survival Analyses and Gene-Based Tests of Association with Survival Outcomes after an Unrelated Donor Blood or Marrow Transplant: Results from the DISCOVeRY-BMT Study.** *American Society of Hematology 58<sup>th</sup> Annual Meeting, San Diego, CA.*
9. **Karaesmen E,** Rizvi AA, Preus L, McCarthy PL, Pasquini MC, Onel K, Zhu X, Spellman S, Haiman CA, Stram DO, Pooler L, Sheng X, Zhu Q, Yan L, Liu Q, Hu Q, Webb A, Brock G, Clay-Gilmour AI, Battaglia S, Tritchler D, Liu S, Hahn T, Sucheston-Campbell LE. (2016 Oct). **Visualizing genomic results for team science: an example from the DISCOVeRY-BMT study.** Inaugural The Ohio State University Pharmaceutics Retreat, Columbus, OH.

## POSTER PRESENTATIONS

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1. **Karaesmen E.** (2020, Jan) **Introducing R to teenagers: A learnr experience.** RStudio Conference 2020, San Fransico, CA
2. **Karaesmen E,** Rizvi AA, Wang J, Sovic M, Zhu Q, Yan L, Preus L, Liu s, Stram D, Pooler L, Sheng X, Haiman C, Van Den Berg D, Webb A, Brock G, Spellman SR, Pasquini MC, McCarthy PL, Hahn TE, PhD9 and Sucheston-Campbell LE. (2019, Dec) **Genome Wide Interaction Analysis Identifies Expression Quantitative Trait Loci Associated with Reduced Survival after Reduced Intensity Conditioning HLA-Matched Unrelated Donor Allogeneic Hematopoietic Cell Transplant.** American Society of Hematology 61<sup>st</sup> Annual Meeting, Orlando FL
3. **Karaesmen E,** Rizvi AA, Sovic M, Wang J, Singh SK, Singh S, Wang T, Haagenson M, Dile A, Preus L, Spellman SR, Lee SJ, Hahn TE, Paczesny S, Sucheston-Campbell LE. (2018, Mar) **Donor SNPs in IL1RL1, Strongly Correlated With Serum sST2 Concentration, Significantly Associate With Risk Of Acute GVHD Implications For Donor Selection.** College of Pharmacy 13th Annual Research Day, Columbus, OH
4. Sucheston-Campbell LE, Preus L, McCarthy PL, Pasquini MC, Onel K, Zhu X, Spellman S, Haiman CA, Stram DO, Pooler L, Sheng X, Zhu Q, Yan L, Liu Q, Hu Q, Webb A, Brock G, Clay-Gilmour AI, Battaglia S, Tritchler D, Liu S, **Karaesmen E,** Rizvi AA, Hahn T. (2017, Apr). **DISCOVeRY-BMT study: Variants Affecting Transplant and Disease Related Mortality in AML and MDS patients.** The Ohio State University Comprehensive Cancer Center Annual Scientific Meeting, Columbus, OH.
5. **Karaesmen E,** Battaglia S, Foster B. (2015, June). **Retinoic acid receptors and LSD1 as Novel Targets for Castration Resistant Prostate Cancer.** Roswell Park Cancer Institute Retreat, Geneseo, NY.

## PEER REVIEW

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## TEACHING EXPERIENCE

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Received RStudio Tidyverse Instructor Certification Sep 13 2019

**Understanding Injury Data with R**, Data Science for Women Summer Camp July 17 2019  
I conducted a workshop with students in 8-10 grades. Interactive material is available [here](#).

**Teaching Assistant for Introduction to the Structure, Analyses and Interpretation of Genomic Data studies Course (PHR 8194)** Spring 2019

- Addition to assistantship, I also taught Data Visualization Module giving a two lecture introduction to ggplot2 package in R.

**Introduction to R Programming Workshops** 2018 - Present

- Every year I organize multiple R programming workshops to raise funds for [Pelotonia](#).
- This 12 hour workshop includes the introduction of R objects and functions, methods of data cleaning and visualization for beginners.
- Dates of past workshops:
  - April 22 - May 6, 2019
  - Sept 4 - 13, 2018
  - July 15 - Aug 8, 2017
  - June 8 - 29, 2017

**Bioconductor Workshop at OSU** September 11-12 2017

- Organized a 2-day Bioconductor workshop hosted by Dr. Martin Morgan with over 100 attendees

## PROGRAMMING SKILLS

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R, UNIX/Linux, Bash/Shell, RMarkdown, L<sup>A</sup>T<sub>E</sub>X, Git, PLINK

## FELLOWSHIPS/SCHOLARSHIPS/HONORS/AWARDS

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- [comSpark Central Ohio 30 under 30 Award](#) Nov 2019
- American Society of Hematology Abstract Achievement Award Oct 2018
- [Pelotonia Graduate Fellowship](#) Aug 2018-Aug 2020
- First Place Graduate Student Poster April 2018  
The Ohio State University College of Pharmacy 13th Annual Research Day
- Chang Ahn Travel Award Jan 2018  
The Ohio State University College of Pharmacy
- Elected to Phi Kappa Phi Honor Society – Chapter 155 Sept 2017
- Travel Scholarship July 2017  
BioC 2016: Where Software and Biology Connect, San Francisco
- Soroptimist International of Europe Scholarship Aug 2014
- Cancer and Systems Biology (CanSys) Program Feb 2014-Dec 2014  
between the University at Buffalo, Université du Luxembourg

## LANGUAGES

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- Turkish: Mother tongue
- English: Fluent
- German: Advanced  
Deuthches Sprachdiplom der Kultusministerkonferenz – Zweite Stufe (C1) May, 2008

- French: Intermediate  
Diplôme D'Études En Langue Française (DELF) B2 July, 2010

### **EXTRA-CIRRICULAR**

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- Organizer of [R-Ladies Columbus](#)
- Raised over \$4,000 for [Pelotonia](#), a large fundraising event for cancer research in Columbus, OH.  
Cycled 25 miles for ride event in 2017, 45 miles in 2018 and 100 miles in 2019.