EFE SEZGIN, Ph.D.

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EDUCATION

2012 Clinical Molecular Medical Genetics
NIH/NHGRI Metropolitan Washington D.C. Medical Genetics Program
Bethesda, MD

2005 Ph.D. Department of Ecology and Evolution
Stony Brook University (SBU), Stony Brook, NY
Topic:"Trehalose metabolism and its interaction with glycogen metabolism in *Drosophila melanogaster*"

1998 B.S. in Biology with Highest Honors – Department of Biology
Minor in Biochemistry-Department of Chemistry
Middle East Technical University (M.E.T.U), Ankara/Turkey
Undergraduate honors thesis research "Microsatellites in wheat and barley genomes" Advisor Mahinur Akkaya. Middle East Technical University, Ankara, Turkey

PROFESSIONAL POSITIONS

February 2016 **Associate Professor**, Laboratory of Nutrigenomics and Epidemiology, Department of Food Engineering, Izmir Institute of Technology, Urla, Izmir ,Turkey

May 2015 **Assistant Professor**, Laboratory of Nutrigenomics and Epidemiology, Department of Food Engineering, Izmir Institute of Technology, Urla, Izmir ,Turkey

2011-2015 **Research Associate** Center for Clinical Trials, Department of Epidemiology, Johns Hopkins University Bloomberg School of Public Health (JHSPH), Baltimore, MD

2006-2011 **NIH Postdoctoral Fellow** in the Genetic Epidemiology laboratory. Principal Investigators Michael W. Smith and Steve O'Brien. Laboratory of Genomic Diversity (LGD), National Cancer Institute-Frederick.

1999-2005 **Research Assistant** for the NIH funded "Molecular polymorphism and molecular Adaptation in Drosophila" and "Metabolic Control relationships of the enzymes of the Central Metabolism" projects. Principal Investigator Walter F. Eanes. Department of Ecology and Evolution, Stony Brook University.

1996-1998 **Research Assistant** for Turkish National Academy of Sciences funded "Allozyme and Morphometric variation in *Bombus terrestris*" project. Principal investigator Aykut Kence. Middle East Technical University, Ankara, Turkey

TEACHING and MENTORSHIP POSITIONS

2016-	Multivariate Statistical Analysis for Engineers (FE534), Izmir Institute of Technology
2016-	Genetics and Genomics for Food Engineers (FE580), Izmir Institute of Technology
2016-	Technical Writing (FE590), Izmir Institute of Technology
2012-2014	Statistical Consultant/Teaching Assistant, Statistical Methods in Public Health (BIO624), Johns Hopkins Bloomberg School of Public Health
2009-2011	Adjunct Faculty/Instructor, Genome Analyses and Mapping, Hood College, Frederick, MD
2007- 2011	SIP (Student Intern Program) mentor, LGD/NCI- Frederick
2005 Fall	Teaching Assistant, Biology Laboratory, SBU
2002 Spring	Teaching Assistant, Applied Population Ecology and Conservation Biology, SBU
2001-2005	Supervise Undergraduate Research, SBU
1998-1999	Teaching Assistant, Introductory Biology Laboratory, SBU

Ad Hoc Reviewer

AIDS, Dove Medical Press, Genetics, Human Genetics, JAIDS, JID, Journal of Heredity, Lancet, MEEGID (Infection, Genetics, and Evolution), Molecular Vision, NEJM, Ophthalmology, PLoSGenetics, PLoSOne, PLoSPathogens, Versita Publishing Group (Central European Journal of Biology)

GRANTS

The Scientific and Technological Research Council of Turkey (TUBİTAK) – 06/2016 –
Effect of Anti-inflammatory IL-10 Pathway in Behçet's Disease

Center for AIDS Research (NIAID 1P30AI094189) – 03/01/2014
Young Investigator Development grant
Role: Investigator

Office of AIDS Research – NIH Intramural Research Grant -- 10/01/10–09/30/11
Topic: Genome-wide association study to identify host genetic risk factors for susceptibility to HIV infection and progression to AIDS related outcomes among African Americans
Role: Investigator

U10 EY08057 Meinert L. C. (PI) -- 08/01/08–07/31/13
Topic: Studies of Ocular Complications of AIDS (SOCA)
Role: Co-Investigator (Geneticist for 'Host genetics of infectious disease susceptibility')

AWARDS

2010	NIH Travel award
2006-2011	National Institutes of Health Postdoctoral Training Fellowship
2003	Full scholarship from University of Tennessee-Knoxville to attend courses on the mathematics of biological complexity
2002	Full scholarship from North Carolina State University to attend Summer Institute in Statistical Genetics
1994-1998	Turkish National Academy of Sciences Scholarship

CURRENT MEMBERSHIPS

The American Society of Human Genetics
The Genetics Society of America
New York Academy of Sciences

TRAINING & WORKSHOPS/COURSES ATTENDED

2014	Analysis of Data Generated by Next Generation Sequencing(full semester course), Bethesda, Maryland, USA
2013	Bioinformatics for biologists (full semester course), Maryland, USA
2009	Summer institute in Statistical Genetics, University of Washington, Seattle
2007	Cancer Biotechnology, April 5- May 24, NCI-Frederick, Frederick, Maryland, USA
2006-2007	Introduction to the principles and practice of clinical research, October 16-February 20, NIH, Bethesda, Maryland, USA
2006	Current Topics in Genome Analysis, September 5-December 5, National Human Genome Research Institute, NIH, Bethesda, Maryland, USA
2006	Translational Research in Clinical Oncology, September 11-December 11, NIH, Bethesda, Maryland, USA
2006	NCBI 11 Mini-Courses series, CIT, NIH, NCI-Frederick, Maryland, USA
2003	Short Course: Introduction to the mathematics of biological complexity, March 30-April 2, University of Tennessee-Knoxville, USA
2003	Short Course: Modeling the evolutionary genetics of complex phenotypes: A hierarchical approach from sequences to populations, September 7-10, University of Tennessee-Knoxville, USA
2002	Summer Institute in Statistical Genetics: Introduction to Genomics, Bioinformatics, MCMC for genetics, May 29-June 14, North Carolina State University, USA
2001	Drosophila Species Workshop, October 26-28, University of Arizona, USA

PRESENTATIONS

Sezgin, E. 2015. High-throughput Genotyping and Genome-wide Pathway Analysis Identifies a Significant Role for IL-10 Pathway in HIV/AIDS Susceptibility. HİBİT 2015, Muğla Sıtkı Koçman University, Muğla, Turkey. (presented poster)

Sezgin, E. 2014. Genetic determinants of complex phenotypes. University of Puerto Rico, Puerto Rico, USA. (invited speaker)

Sezgin, E. 2012. High-throughput Genotyping and Genome-wide Pathway Analysis Identifies a Significant Role for IL-10 Pathway in Infectious Disease Susceptibility The Genomics of Common Diseases 2012, Bolger Center, Potomac, MD, USA. (presented poster)

Sezgin, E. 2011. Genetic/Genomic Variation in Natural Populations as an Architecture of Complex Phenotypes. İzmir Yüksek Teknoloji Enstitüsü, Izmir, Turkey. (invited speaker)

Sezgin, E. 2011. Examination of disease based selection, demographic history and population structure in European Y chromosome haplogroup I. Annual Meeting of the Society of the Study of Evolution (SSE), Norman, Oklahoma, USA. (oral presentation)

Sezgin, E. 2010. Host genetics influence CMV retinitis occurrence in patients with AIDS. HIV Drug Resistance Program Think Thank meeting, NCI-Frederick, USA. (oral presentation)

Sezgin, E. 2010. Host genetics of HIV-1/AIDS. New York University Department of Medicine (invited speaker)

Sezgin, E. 2009. Effect of host genetics on the outcome of HIV-1 infection and AIDS related pathologies. Bilkent Üniversitesi, Ankara, Turkey (invited speaker)

Sezgin, E. 2009. Host genetic factors influencing HIV-1 infection and progression to AIDS. National Cancer Institute fellows retreat, Hersey, Pennsylvania, USA. (presented poster)

Sezgin E. 2006. Human Y chromosome haplogroups and HIV1/AIDS progression. National Cancer Institute, Laboratory of Genomic Diversity Retreat, Ocean City, MD, USA. (oral presentation)

Sezgin, E. 2005. The molecular adaptation of trehalose pathway genes *in Drosophila melanogaster* and *Drosophila simulans*. Orta Doğu Teknik Üniversitesi, Anakara, , Turkey (invited speaker)

Sezgin, E and W.F. Eanes. 2004. Population genetics of trehalose pathway genes *in Drosophila melanogaster*. 45th Annual Drosophila Research conference, Washington, DC, USA. (presented poster)

Sezgin, E and W.F. Eanes. 2002. Adaptive amino acid evolution at the *G-6-pase* locus in *D. simulans* lineage. Annual Meeting of the Society of the Study of Evolution (SSE), Urbana-Champaign, Illinois, USA. (presented poster)

Sezgin, E. and W. F. Eanes. 2001. Sequence variation of metabolic pathway genes in *Drosophila melanogaster*. Annual Meeting of the Society of the Study of Evolution (SSE), Knoxville, Tennessee, USA. (oral presentation)

Sezgin, E. and W. F. Eanes. 2000. Molecular evolution of a metabolic pathway gene (PGLYM) and its pseudogene in *Drosophila melanogaster*. Annual Meeting of the Society of the Study of Evolution (SSE), Bloomington, Indiana, USA. (oral presentation)

PEER REVIEWED PUBLICATIONS

22.Soran A, Bhargava R, Johnson R, Ahrendt G, Bonaventura M, Diego E, McAuliffe FP, Serrano M, Menekse E, **Sezgin E** and McGuirea KP (2016) The impact of Oncotype DX® recurrence score of paraffin-embedded core biopsy tissues in predicting response to neoadjuvant chemotherapy in women with breast cancer. Breast Disease 36:1-17

21. Jabs DA, Van Natta ML, **Sezgin E**, Pak JW, Danis R (2015) Prevalence of intermediate-stage age-related macular degeneration in patients with acquired immunodeficiency syndrome. Am J Ophthalmol 159: 1115-1122 e1

20. Kasembeli AN, Duarte R, Ramsay M, Mosiane P, Dickens C, Dix-Peek T, Limou S, **Sezgin E**, Nelson GW, Fogo AB, Goetsch S, Kopp JB, Winkler CA, Naicker S (2015) APOL1 Risk Variants Are Strongly Associated with HIV-Associated Nephropathy in Black South Africans. J Am Soc Nephrol 26: 2882-2890

19. Svitin A, Malov S, Cherkasov N, Geerts P, Rotkevich M, Dobrynin P, Shevchenko A, Guan L, Troyer J, Hendrickson S, Dilks HH, Oleksyk TK,Donfield S, Gomperts E, Jabs DA, **Sezgin E**, et al. (2014) GWATCH: a web platform for automated gene association discovery analysis. Gigascience. 2014 Nov 5;3:18. doi: 10.1186/2047-217X-3-18 ecollection 2014.

18. Branch AD, Drye TL, Van Natta ML, **Sezgin E**, et al. (2013) Evaluation of hepatitis C virus as a risk factor for HIV-associated neuroretinal disorder. Clinical Infectious Diseases 57(11):1618-25.

17. Minzhong T, Lautenberger JA, Xiaojiang G, **Sezgin E**, et al. (2012). The Principal Genetic Determinants for Nasopharyngeal Carcinoma in China Involve *HLA* Class I Antigen Recognition Groove. PLoS Genetics 8(11):e1003103.

16. Limou S, Delaneau O, Van Manen D, An P, **Sezgin E**, et al. (2012).Multi-cohort genome-wide association study reveals a new signal of protection against HIV-1 acquisition. Journal of Infectious Diseases 205(7):1155-62.

15. An P, Li R, Wang JM, Yoshimura T, Takahashi M, Samudralal R, O'Brien SJ, Phair J, Goedert JJ, Kirk GD, Troyer JL, **Sezgin E**, et al. (2011). Role of Exonic Variation in Chemokine Receptor Genes on AIDS: CCRL2 F167Y Association with Pneumocystis Pneumonia. PLoS Genetics 7(10): e1002328.

14. **Sezgin E**, Van Natta ML, Ahuja A, Lyon A, Srivastava S, Troyer JL, O'Brien SJ, and Jabs DA(2011). Association of host genetic factors with the course of cytomegalovirus retinitis in patients infected with HIV. American Journal of Ophthalmology. Jun;151(6):999-1006.e4

13. Troyer JL, Nelson GW, Chinn LW, Macintosh C, Johnson RC, **Sezgin E,** et al. (2011) *PARD3B* AIDS restriction discovered by genome-wide association study. Journal of Infectious Diseases 203(10):1491-1502.

12. **Sezgin E,** Hendrickson SL, Jabs DA, Van Natta ML, Troyer JL, Smith MW, O'Brien SJ (2010). Effects of host genetics in neuroretinal disorder development in HIV infected patients. Journal of Acquired Immune Deficiency Syndromes 54(4):343-351.

11. Hendrikson SL, Lautenberger, JA, Chinn LW, Malasky M., **Sezgin E** et al. (2010). Genetic variants in nuclear-encoded mitochondrial genes influence AIDS progression. PLoSONE 5(9):e12862.

10. **Sezgin E**, Drosdak A, MacIntosh C, et al. Examination of disease based selection, demographic history and population structure in European Y chromosome haplogroup I. (2010). Journal of Human Genetics 55:613-620.

9. **Sezgin E,** Jabs DA, Hendrickson S, Van Natta ML, Troyer JL, Smith MW, O'Brien S J (2010). Effect of host genetics on CMV retinitis occurrence in patients with AIDS. Journal of Infectious Diseases 202(4):606-613.

8. Somel M and **Sezgin E** (2010). Genetic Footprints of Natural Selection and Drift in Human Evolution. Hacettepe Journal of Biology and Chemistry 38: 193-220.

7. **Sezgin E,** Lind JM, Shresta S, Hendrickson SL, et al. (2009). Association of human Y chromosome haplogroup I with HIV progression and HAART outcome. Human Genetics 125:281-294.

6. Merritt TJS, Kuczynski C, **Sezgin E**, Zhu CT, Kumagai S, and Eanes WF (2009). Quantifying interactions within the NADP(H) enzyme network in Drosophila melanogaster. Genetics 182: 565-574.

5. Hendrickson SL, Hutcheson HB, Ruiz-Pesini E, Poole JC, Lautenberger J, **Sezgin E**, et al. (2008). Mitochondrial DNA Haplogroups influence AIDS Progression. AIDS 22(18):2429-39.

4. Flowers JM, **Sezgin E**, Kumagai S, Duvernell DD, Matzkin LM, Schmidt PS, and Eanes WF (2007). Adaptive Evolution of Metabolic Pathways in *Drosophila*. Molecular Biology and Evolution 24(6):1347-1354

3. Eanes WF, Merritt TJS, Flowers JM, Kumagai S, **Sezgin E**, and Zhu CT (2006). Flux control and excess capacity in the enzymes of glycolysis and their relationship to flight metabolism in *Drosophila melanogaster*. Proceedings of the National Academy of Sciences-USA 103: 19413-19418.

2. Merritt TJS, **Sezgin E**, Zhu CT, and Eanes W.F. (2006). Triglyceride pools, flight, and activity variation at the *Gpdh* locus in *Drosophila melanogaster*. Genetics 172: 293-304.

1. **Sezgin, E**, Duvernell, DD, Matzkin LM, Duan, Y, Zhu CT, Verrelli BC, and Eanes WF (2004). Single-locus latitudinal clines and their relationship to temperate adaptation in metabolic genes and derived alleles in *Drosophila melanogaster*. Genetics 168**:** 923-931.