

Selcan Aydın Curriculum Vitae

The Jackson Laboratory
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EDUCATION

PhD Biology, Duke University, USA, 2017

Advisor: Dr. Nicolas E. Buchler

MSc Systems Biology, University of Heidelberg, Germany, 2011

BSc Biological Sciences and Bioengineering, Sabanci University, Turkey, 2009

PROFESSIONAL APPOINTMENTS

Associate Computational Scientist, Munger Lab, The Jackson Laboratory, USA, 2023 - Present

Postdoctoral Fellow Munger Lab, The Jackson Laboratory, USA, 2018- 2023

Advisor: Dr. Steven C. Munger

PUBLICATIONS

1. Cortes DE, Escudero M, Mitra A, Korgan AC, Edwards A, **Aydin S**, Munger SC, Zhang ZW, O'Connell KMS, Reinholdt LG, Pera MF. An in vitro neurogenetics platform for precision disease modeling in the mouse. bioRxiv; 2023. p. 2022.01.21.477242.
2. **Aydin S**, Pham DT, Zhang T, Keele GR, Skelly DA, Paulo JA, Pankratz M, Choi T, Gygi SP, Reinholdt LG, Baker CL, Churchill GA, Munger SC. [Genetic dissection of the pluripotent proteome through multi-omics data integration](#). Cell Genom. 2023 Apr 12;3(4):100283. doi: 10.1016/j.xgen.2023.100283. eCollection 2023 Apr 12. PubMed PMID: 37082146; PubMed Central PMCID: PMC10112288.
3. **Aydin S**, Pham DT, Zhang T, Keele GR, Skelly DA, Pankratz M, Choi T, Gygi SP, Reinholdt LG, Baker CL, Churchill GA, Munger SC. Genetic dissection of the pluripotent proteome through multi-omics data integration. bioRxiv; 2022.
4. Ortmann D, Brown S, Czechanski A, **Aydin S**, Muraro D, Huang Y, Tomaz RA, Osnato A, Canu G, Wesley BT, Skelly DA, Stegle O, Choi T, Churchill GA, Baker CL, Rugg-Gunn PJ, Munger SC, Reinholdt LG, Vallier L. [Naive Pluripotent Stem Cells Exhibit Phenotypic Variability that Is Driven by Genetic Variation](#). Cell Stem Cell. 2020 Sep 3;27(3):470-481.e6. doi: 10.1016/j.stem.2020.07.019. Epub 2020 Aug 13. PubMed PMID: 32795399; PubMed Central PMCID: PMC7487768.
5. Skelly DA, Czechanski A, Byers C, **Aydin S**, Spruce C, Olivier C, Choi K, Gatti DM, Raghupathy N, Keele GR, Stanton A, Vincent M, Dion S, Greenstein I, Pankratz M, Porter DK, Martin W, O'Connor C, Qin W, Harrill AH, Choi T, Churchill GA, Munger SC, Baker CL, Reinholdt LG. [Mapping the Effects of Genetic Variation on](#)

- [Chromatin State and Gene Expression Reveals Loci That Control Ground State Pluripotency](#). Cell Stem Cell. 2020 Sep 3;27(3):459-469.e8. doi: 10.1016/j.stem.2020.07.005. Epub 2020 Aug 13. PubMed PMID: 32795400; PubMed Central PMCID: PMC7484384.
6. Skelly DA, Czechanski A, Byers C, **Aydin S**, Spruce C, Olivier C, Choi K, Gatti DM, Raghupathy N, Stanton A, Vincent M, Dion S, Greenstein I, Pankratz M, Porter DK, Martin W, Qin W, Harrill AH, Choi T, Churchill GA, Munger SC, Baker CL, Reinholdt LG. Genetic variation influences pluripotent ground state stability in mouse embryonic stem cells through a hierarchy of molecular phenotypes. bioRxiv; 2019.
 7. **Aydin S**. Understanding the Effects of Genetic Variation on Osmo-adaptation Dynamics Across *S. cerevisiae* Using Bulk Segregant Analysis and Whole Genome Sequencing [Internet] [Dissertation]. Duke University; 2017.
 8. Rienzo A, Poveda-Huertes D, **Aydin S**, Buchler NE, Pascual-Ahuir A, Proft M. [Different Mechanisms Confer Gradual Control and Memory at Nutrient- and Stress-Regulated Genes in Yeast](#). Mol Cell Biol. 2015 Nov;35(21):3669-83. doi: 10.1128/MCB.00729-15. Epub 2015 Aug 17. PubMed PMID: 26283730; PubMed Central PMCID: PMC4589597.
 9. Pinna F, Sahle S, Beuke K, Bissinger M, **Tuncay S**, D'Alessandro LA, Gauges R, Raue A, Timmer J, Klingmüller U, Schirmacher P, Kummer U, Breuhahn K. [A Systems Biology Study on NFκB Signaling in Primary Mouse Hepatocytes](#). Front Physiol. 2012;3:466. doi: 10.3389/fphys.2012.00466. eCollection 2012. PubMed PMID: 23293603; PubMed Central PMCID: PMC3533138.

AWARDS & HONORS

2022, Postdoc Travel Award, The Jackson Laboratory
2021, rstudio::global(2021) Diversity Scholar, RStudio
2019, International Mammalian Genome Society Scholarship (IMGS) for Trainees, IMGS
2018, Pyewacket Award, The Jackson Laboratory
2016, Biology Grant in Aid, Biology Department, Duke University
2016, Conference Travel Award, The Graduate School, Duke University
2016, Graduate Student Training Enhancement Grant, Duke University
2016, Summer Research Fellowship, The Graduate School, Duke University
2015, 28th Fungal Genetics Conference travel award, Genetics Society of America
2010, Fulbright Student Program PhD Grant, The Turkish Fulbright Commission

PRESENTATIONS

Talks

2023, Characterizing the influence of genetic variation on cell states (talk), Diversity in a Dish Symposium, May 24
2022, Characterizing the influence of genetic variation on cell states (talk), JAX Scientific Symposium, May 10
2021, Genetic dissection of the pluripotent proteome (talk), Complex Traits Consortium Meeting, September 1

- 2020, Proteomics reveals the role of translational regulation in ES cells (talk), Virtual TAGC and Trainee Symposium, April 16
- 2019, Genetic dissection of the embryonic stem cell proteome (talk), Complex Traits Consortium / Rat Genomics 17th Annual Meeting, June 11
- 2019, Genetic dissection of the embryonic stem cell proteome (talk), JAX Scientific Symposium, May 7

Posters

- 2022, Genetic dissection of the pluripotent proteome through multi-omics data integration (poster), Population, Evolutionary and Quantitative Genetics Conference, June 7 - 10
- 2020, Genetic dissection of the pluripotent proteome (poster), The International Symposium on Health Informatics and Bioinformatics, October 22-23
- 2019, Genetic modifiers of protein abundance in embryonic stem cells (poster), New York Stem Cell Foundation Conference, October 22
- 2016, Quantifying the effects of genetic variation on osmoadaptation dynamics (poster), 10th Annual q-bio Conference, July 27-30
- 2015, Characterizing the effects of genetic variation on signaling dynamics (poster), 28th Fungal Genetics Conference, March 17-22
- 2011, Generation of an ODE-based model for TNF α /NF- κ B signaling in murine hepatocytes (poster), International Congress of Systems Biology, Aug 28 – Sept 1

RESEARCH EXPERIENCE

- 2023 - Present, Associate Computational Scientist
Applying systems genetics approaches to investigate the impacts of genetic variation on cell fate commitment and developmental progression using various model systems including neural progenitor cells and palate tissue obtained from genetically diverse mice.
- 2018 - 2023, Postdoctoral Fellow
Studying the influence of genetic variation on cell fate decisions, focusing on pluripotency maintenance in mouse embryonic stem cells under the supervision of Dr. Steven Munger, The Jackson Laboratory
- 2010 - 2017, Dissertation Project
Investigated the effects of genetic variation on signaling dynamics using osmo-adaptation in budding yeast as a model phenotype under the supervision of Dr. Nicolas E. Buchler and Dr. Paul M. Magwene in the Department of Biology, Duke University.
- 2010 - 2011, Master's Thesis Project
Modeled the Tumor necrosis factor (TNF) α induced Nuclear Factor Kappa-light-chain-enhancer of activated B cells (NF κ B) signaling using quantitative experimental data from primary murine hepatocytes. Mathematical modeling and parameter estimation under the supervision of Prof. Dr. Ursula Kummer in in Bioquant Research Institute at University of Heidelberg.

TEACHING EXPERIENCE

- 2022, Data Carpentry (Ecology with Python), June 5 at Colby College
2021, Many faces of Rmarkdown (Invited talk), R-ladies Dammam, April 21
<https://many-faces.netlify.app/>
2021, Data Organization, Cleaning, Analysis and Visualization in R, March 22 – 25 at Genentech

The Jackson Laboratory

- 2021, Journal Club for Postbaccalaureate Researchers, September 2021 - January 2022
2020, R for Data Science: Explore, July
2020, R for Data Science: Wrangle, August
2020, Introductory R, June
2019, Teaching Assistant, Genetics 1
2019, Instructor, R for Data Science, March 25 & April 1
2019, Instructor, R for Reproducible Scientific Analysis, February 4 & 11
2018, Teaching Assistant, Human and Mammalian Genetics and Genomics: The 59th McKusick Short Course, July 16-27

Duke University, Teaching Assistant

- 2017 Spring, BIO212L: General Microbiology
2016 Fall, BIO212L: General Microbiology
2016 Spring, BIO212L: General Microbiology
2015 Fall, BIO212L: General Microbiology
2015 Spring, BIO201L: Gateway to Biology: Molecular Biology

OUTREACH & LEADERSHIP

- 2023, Panelist, JAX Data Science: Opportunities and Challenges, Computational Community Retreat at The Jackson Laboratory, October 3
2022, Co-organizer of ‘How to make teaching accessible?’ workshop held by Accessibility Committee at the Early Career Leadership Program run by Genetics Society of America, October 17
2022, Co-supervised JAX Summer Student Bryant Luna Ramos with Dr. Steven Munger, The Jackson Laboratory, Bar Harbor, ME
2022, Co-supervised JAX Post-baccalaureate Research Student Samantha Ardery with Dr. Steven Munger, The Jackson Laboratory, Bar Harbor, ME
2022, Member of Accessibility Committee at the Early Career Leadership Program run by Genetics Society of America
2021, Co-supervision of Tufts Graduate Student Jaycee Choi with Dr. Steven Munger, The Jackson Laboratory, Bar Harbor, ME
2021, Reviewer at the Peer Review Training Program run by Genetics Society of America
2021, Co-supervised JAX Summer Student Samantha Ardery with Dr. Steven Munger, The Jackson Laboratory, Bar Harbor, ME
2021, Treasurer and Secretary, Women in Science and Engineering, The Jackson Laboratory, Bar Harbor, ME
2021, Skype-a Scientist, Jan 15, 27

Selcan Aydin CV

- 2021, Co-supervision of Tufts Graduate Student Sherrea Brown with Dr. Steven Munger, The Jackson Laboratory, Bar Harbor, ME
- 2020, Obtained Certification as RStudio Instructor, <https://education.rstudio.com/trainers/people/aydin+selcan>
- 2020, Fark Yaratan Kadınlar (webinar), Nov 30
- 2020, Skype-a Scientist, Jan 9, Feb 18, Nov 9, 19
- 2020, Co-supervision of Tufts Graduate Student Luke Parsley with Dr. Steven Munger, The Jackson Laboratory, Bar Harbor, ME
- 2019, Co-supervised JAX Summer Student Stephanie Hoyt with Dr. Steven Munger, The Jackson Laboratory, Bar Harbor, ME
- 2018 - 2019, Treasurer, JAX Postdoc Association, The Jackson Laboratory, Bar Harbor, ME
- 2018, Obtained Software Carpentry Instructor Certification
- 2018, Co-supervised JAX Summer Student Benjamin Allan-Rahill with Dr. Steven Munger, The Jackson Laboratory, Bar Harbor, ME
- 2018, DNA Day Volunteer at Conners-Emerson School, Bar Harbor, ME
- 2015 - 2017, Treasurer, Women In Science and Engineering, Duke University, NC
- 2015, NC DNA Day Volunteer at Ridgcroft School, Ahoskie, NC
- 2014 - 2015, Mentored two undergraduate students at Duke University, NC
- 2011 - 2012, BOOST Science coach for 7th grade students at Duke University, NC

LANGUAGES

English (fluent)
Turkish (native)

REFERENCES

Available upon request.