

# DAVID GOKHMAN

Department of Molecular Genetics, Weizmann Institute of Science  
david.gokhman@weizmann.ac.il

## RESEARCH

- 2021 to date    Senior Scientist (equivalent to Assistant Professor), Department of Molecular Genetics, Weizmann Institute of Science, Israel
- 2018-2021    Postdoc in the Fraser and Petrov labs, Stanford University, CA, USA
- 2012-2017    Research assistant in the Carmel lab, the Hebrew University of Jerusalem, Israel
- 2009-2012    Research assistant in the Meshorer lab, the Hebrew University of Jerusalem, Israel

## EDUCATION

- 2012-2018    PhD in genetics, the Hebrew University of Jerusalem, Israel. Thesis title: *"Reconstructing the Genetic Regulatory Systems of Archaic Humans"*. PhD awarded: Jan 3, 2018. **Hans Wiener prize for best doctoral thesis**
- 2011-2012    M.Sc. in genetics, the Hebrew University of Jerusalem, Israel. GPA: 97.8
- 2009-2011    B.Sc. in Biology (major) and Chemistry (minor) in the "Amirim Teva" honors program at the Hebrew University of Jerusalem, Israel. GPA: 96.05. Amirim project final grade: 98. Dean's award for excellence (2011) and Dean's list (2010). **Magna cum laude**

## TEACHING and MENTORING

- 2022    Projects in Data Science, Weizmann Institute of Science, Israel
- 2021, 2022    Guest lecturer at HEB 1451: Primate Functional Genetics and Genomics, Harvard University

2018	Guest lecturer at BIO 304: Current Topics and Concepts in Population Biology, Ecology, and Evolution, Stanford University
2014-2021	Mentor of two postdocs, two graduate and four undergraduate students
2015-2017	Instructor and scientific coordinator of the Alpha program for high-school dissertation projects
2011-2017	Teaching assistant and Head of the Genetics Laboratory teaching staff in the Life Sciences Institute: General Genetics course, The Hebrew University of Jerusalem
2011-2017	Instructor of high school students in biology dissertation projects
2015	Head of the Israeli delegation and organizer of the World Science Conference Israel (WSCl) for outstanding students, Jerusalem, Israel

## EMPLOYMENT, ARMY and SOCIAL INVOLVEMENT

2021	"Make a wish" – Fulfilling wishes for children with critical illnesses
2014	Volunteer in "Mad'an baGan" (scientist in the kindergarten) project for educating young children about science
2008-2009	Head of the data mining team at the Prime Minister's office
2008	Recipient of the <b>Israel Defense Prize</b> for exceptional technological breakthrough
2007	QA engineer at Aeroscout Ltd. Wi-Fi localization technologies
2004-2007	Army service in the intelligence corps, Unit 8200. Unit Honors prize (2005)
2003-2004	The "Haman Shchakim" (formerly "Haman Talpiot") pre-army training
2000-2003	Volunteer at "Magen David Adom" (Israel's national medical emergency service)
2002	Assistant in the Department of Neurobiology, The Weizmann institute of Science

## SELECTED AWARDS and FELLOWSHIPS

2022	Allon Fellowship for young investigators
2021	Regeneron Prize finalist for Creative Innovation
2020	<i>Israel's 40 Under 40 – The Marker</i> magazine

2020	Ilانيت (FISEB) conference travel scholarship
2019	<b>People's choice <i>Breakthrough of the Year</i>, and editor's choice 1<sup>st</sup> runner-up, <i>Science magazine</i></b>
2018	Hans Wiener prize for best doctoral thesis
2018-2020	Human Frontier Science Program postdoctoral fellowship
2018-2019	Rothschild postdoctoral fellowship
2018	Fulbright postdoctoral fellowship (not activated)
2018	Zuckerman postdoctoral fellowship
2017	<b>Dan David Young Researcher Award</b>
2015	Travel scholarship – Keystone Epigenomics conference, CO, USA
2015	Wolf foundation scholarship for excellent PhD students
2014	<b>Breakthrough of the Year, <i>Archaeology</i> magazine</b>
2014-2018	Clore Foundation scholarship for outstanding PhD students
2014	Mochrik prize for outstanding student in the Genetics department
2014	The Global Young Scientist Summit (GYSS), Singapore, Travel grant for outstanding students
2013	Best lecture award, Graduate Student Conference in Genetics, Genomics and Evolution
2013	Hamilton award finalist for best work, Society for the Study of Evolution (SSE) conference
2013	Fitch award finalist for best work, Society for Molecular Biology and Evolution (SMBE) conference
2012	SMART prize for article of the month in the Institute of Life Sciences
2012	Excellence scholarship for MSc students
2012	Dean's excellence list, BSc
2011	Dean's excellence award
2010	Dean's excellence list
2010, 2011	Excellence scholarship for B.Sc students, Amirim Teva honors program

## CONFERENCE ORGANIZER

2021	Israeli Society for Evolutionary Biology Annual Conference – 345 participants
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## PEER REVIEWER

Nature Structural and Molecular Biology, Cell, Nature Reviews Genetics, PLoS One, Physiological Reviews, and Molecular Biology and Evolution.

## SCIENTIFIC SOCIETIES

European Cooperation in Science and Technology (COST) – Integrating Neanderthal Legacy (iNEAL).  
Israeli Society for Evolutionary Biology (ISEB)

## PUBLICATIONS and PRESENTATIONS

### INVITED SPEAKER

- 2023 Federation of the Israel Societies for Experimental Biology (Ilanit), Israel
- 2022 Genetic Society of Israel (GSI)
- 2021 Groundbreaking Epigenetic Discoveries seminar series, Epigenetics Consortium of South Australia (EpiCSA)
- 2021 Gene Regulation in Evolution Seminar series, Mainz, Germany
- 2020 Annual Meeting of the Molecular Biology Society of Japan (MBSJ)
- 2020 Computational, Evolutionary and Human Genomics (CEHG) Symposium, CA, USA (could not attend)
- 2020 Society of Molecular Biology and Evolution (SMBE), Canada - (cancelled due to COVID-19)
- 2020 Language of Evolution and Evolution of Language, Israel
- 2019 American Association of Physical Anthropologists (AAPA), OH, USA (could not attend)

### OTHER ORAL PRESENTATIONS

- 2022 Evolutionary Systems Biology (ESB), virtual
- 2021 Human Evolution – From Fossils to Ancient and Modern Genomes, virtual
- 2020 Federation of the Israel Societies for Experimental Biology (Ilanit), Israel
- 2019 Bay Area Population Genomics conference (BAPG), CA, USA

- 2019 American Society of Human Genetics conference (ASHG), TX, USA
- 2018 EvolGenome conference, CA, USA
- 2018 BCATS – Biomedical Computation conference, CA, USA
- 2016 Society of molecular biology and evolution (SMBE), Australia – Two oral presentations
- 2015 Keystone Symposia – DNA methylation and Epigenomics, CO, USA – Extended oral presentation
- 2014 Federation of the Israel Societies for Experimental Biology (Ilanit), Israel – Extended oral presentation
- 2013 Graduate student conference in Genetics, Genomics and Evolution, Israel - **Best lecture award**
- 2013 Society of molecular biology and evolution (SMBE), IL, USA – **Fitch award finalist** for best work at the Society for Molecular Biology and Evolution annual conference. The presentation was covered in *New Scientist* magazine under the title: *First look into workings of the Neanderthal brain*
- 2013 Evolution, UT, USA – **Hamilton award finalist for best talk** at the joint annual conference of the Society for the Study of Evolution (SSE), the Society for Systematic Biologists (SSB) and the American Society of Naturalists (ASN)

## PUBLICATIONS

\* Corresponding author

Starr AL, Gokhman D, Fraser HB\*. Accounting for *cis*-regulatory constraint prioritizes genes likely to affect species-specific traits. *bioRxiv* doi: <https://doi.org/10.1101/2022.03.29.486301>.

Gokhman D\*, Greenbaum G\*. How many loci are required to predict the direction of a phenotypic change? Submitted.

Weiss C, Harshman L, Inoue F, Fraser HB, Petrov DA\*, Ahituv N\*, Gokhman D\*. The *cis*-regulatory effects of variants separating modern from archaic humans, *eLife* (2021).

**Gokhman D\***, Agoglia RM, Kinnebrew M, Gordon W, Sun D, Bajpai VK, Naqvi S, Chen C, Chan A, Chen C, Petrov DA, Ahituv N, Zhang H, Mishina Y, Wysocka J, Rohatgi R, Petrov DA, Fraser HB\*. Human-chimp hybrid cells reveal gene regulatory evolution underlying skeletal divergence. *Nature Genetics* (2021).

Agrant-Tamir L, Waldman S, Martin M, **Gokhman D**, Mishol N, Eshel T, Cheronet O, Rohland N, Mallick S, Adamski N, Lawson AM, Mah M, Michel M, Oppenheimer J, Stewardson K, Candilio F, Keating D, Gamarra B, Tzur S, Novak M, Kalisher R, Bechar S, Eshed V, Kennet D, Faerman M, Yahalom-Mack N, Monge JM, Govrin Y, Erel Y, Yakir B, Pinhasi R\*, Carmi S\*, Finkelstein I\*, Carmel L\*, and Reich D\*. The Genomic History of the Bronze Age Southern Levant. *Cell* (2020).

**Gokhman D**, Nissim-Rafinia M, Agranat-Tamir L, Housman G, García-Pérez R, Lizano E, Cheronet O, Mallick S, Nieves-Colón MA, Li H, Alpaslan-Roodenberg S, Novak M, Gu H, Osinski JM, Ferrando-Bernal M, Gelabert P, Lipende I, Mjungu D, Kondova I, Bontrop R, Kullmer O, Weber G, Shahar T, Dvir-Ginzberg M, Faerman M, Quillen EE, Meissner A, Lahav Y, Kandel L, Liebergall M, Prada ME, Vidal JM, Gronostajski RM, Stone AC, Yakir B, Lalueza-Fox C, Pinhasi R, Reich D, Marques-Bonet T, Meshorer E\*, Carmel L\*. Differential DNA methylation of vocal and facial anatomy genes in modern humans. *Nature communications*, 11 (1189) (2020).

**Gokhman D\***, Mishol N, de Manuel M, de Juan D, Shuqrun J, Meshorer E, Marques-Bonet T, Rak Y, Carmel L\*. Reconstructing Denisovan Anatomy Using DNA Methylation Maps. *Cell*, 179(1), 180-192. e10 (2019). **People's choice 1<sup>st</sup> place, and editor's choice 1<sup>st</sup> runner-up for "2019 Breakthrough of the Year" by *Science*.**

**Gokhman D**, Kelman G, Amartely A, Gershon G, Tsur S, Carmel L\*. Gene ORGANizer: linking genes to the organs they affect. *Nucleic Acids Research*, 45(W1):W138-W145 (2017). **Selected as one of the Top Tools of 2017 by LabWorm.**

**Gokhman D**, Malul A, Carmel L\*. Inferring Past Environments from Ancient Epigenomes. *Molecular Biology and Evolution*, 34(10), 2429:2438 (2017).

Racimo F, Gokhman D, Fumagalli M, Hansen T, Moltke I, Albrechtsen A, Carmel L, Huerta-Sanchez E, Nielsen R\*. Archaic adaptive introgression in TBX15/WARS2. *Molecular Biology and Evolution*, 34(3), 509:524 (2016).

Gokhman D, Meshorer E, Carmel L\*. Epigenetics: it's getting old. Past meets future in paleoepigenetics. *Trends in Ecology and Evolution*, 31:290-300 (2016).

Livyatan I, Aaronson Y, Gokhman D, Meshorer E\*. Systematic identification of gene family regulators in mouse and human embryonic stem cells. *Nucleic Acids Research*, 44:4080-9 (2016).

Livyatan I, Aaronson Y, Gokhman D, Ashkenazi R, Meshorer E\*. BindDB: An Integrated Database and Webtool Platform for "Reverse-ChIP" Epigenomic Analysis. *Cell Stem Cell*, 17(6):647-8 (2015).

Gokhman D, Lavi E, Prüfer K, Fraga MF, Riancho JA, Kelso J, Pääbo S, Meshorer E\*, and Carmel L\*. Reconstructing the DNA methylation maps of the Neandertal and the Denisovan. *Science*, 344:523-527 (2014). **Featured as *ScienceXpress* and on the *Science* website. 2014 Breakthrough of the Year by *Archaeology magazine*.**

Gokhman D, Livyatan I, Sailaja BS, Melcer S, Meshorer E\*. Multilayered chromatin analysis reveals E2f, Smad and Zfx as transcriptional regulators of histones. *Nature Structural & Molecular Biology*, 20: 119-126 (2013). **Winner of the institute's SMART prize for *article of the month*.**