

SHAI CARMİ**PERSONAL**

Born: December 1981, Ramat-Gan, Israel
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CURRENT OCCUPATION

2021- Associate professor
Braun School of Public Health and Community Medicine
The Faculty of Medicine
The Hebrew University of Jerusalem, Israel (HUJI)
2026- Affiliated Associate Professor of Human Genetics
Biological & Life Sciences Division
Mohamed bin Zayed University of Artificial Intelligence, United Arab Emirates

EDUCATION

2005 B.Sc., Bar-Ilan University, Israel, Physics and Computer Science, summa cum laude
2006 M.Sc., Bar-Ilan University, Israel, Physics, accelerated track, magna cum laude
Advisor: Prof. Shlomo Havlin.
Thesis title: Statistical physics of complex networks
2010 Ph.D., Bar-Ilan University, Israel, Physics, with distinction
Advisor: Prof. Shlomo Havlin
Thesis title: Complex systems from communication networks to proteins:
statistical analysis and modeling

PAST ACADEMIC POSITIONS

2010-2011 Post-doctoral fellow, The Faculty of Life Sciences, Bar-Ilan University
Mentor: Dr. Erez Levanon
Topic: RNA and DNA editing in mammalian genomes
2011-2015 Post-doctoral scientist, Department of Computer Science, Columbia University
Mentor: Prof. Itsik Pe'er
Topics: Ashkenazi genetics; genetic sharing in founder populations
2015-2021 Senior lecturer (assistant professor)
Braun School of Public Health and Community Medicine,
The Faculty of Medicine
The Hebrew University of Jerusalem, Israel (HUJI)

TEACHING EXPERIENCE

2005-2010 Teaching assistant, Department of Physics, Bar-Ilan University
Courses: Introductory physics laboratory, Introductory physics for the life
sciences, Thermodynamics and statistical mechanics
2016- Lecturer, School of Public Health, The Hebrew University of Jerusalem

- Courses coordinated and taught alone: Statistics for biomedical sciences, Advanced topics in data analysis for public health and medicine, Personal genomics
 - Courses coordinated alone and taught with others: Statistics for medicine and dental medicine, Statistics for medicine
 - Courses taught with others: Statistics for public health, Academic and research skills
 - Courses only coordinated: Introduction to R for biostatistics
- 2020,2021,2022 University-wide excellence (top 10% in student evaluation)
- 2022 Faculty of Medicine teaching excellence award

FELLOWSHIPS, HONORS, AND AWARDS

Undergraduate

- 2001, 2002 The Open University president's list (as a non-degree student)
- 2003, 2004, 2005 Bar-Ilan University dean's list
- 2005 Wolf Foundation award (national)

Graduate

- 2005 Bar-Ilan University rector's award
- 2007 Bar-Ilan University president's fellowship
- 2007 Adams fellowship of The Israel Academy of Sciences and Humanities
- 2007 'Interdisciplinary Technologies' fellowship of The Council for Higher Education of Israel (declined)
- 2008 Bar-Ilan University dean's award
- 2009 Wolf Foundation award (national)

Post-doctoral

- 2011 Human Frontier Science Program Cross Disciplinary Fellowship (international)
- 2015 Alon fellowship of The Council for Higher Education of Israel (national; declined)

Principal investigator

- 2018 Work covered in Science magazine's 10 breakthroughs of 2018
- 2019 Hebrew University Faculty of Medicine young researcher award
- 2019 Hebrew University presidential Ben-Porath award to an excellent young investigator
- 2022- Harry and Helen L. Brenner Chair in Molecular Biology
- 2023 Blavatnik Award for Young Scientists, Life Sciences (national)

PUBLICATIONS

Overall citations: 9739; *h-index*: 41; *i10-index*: 76 (Google Scholar)

Key publications as a principal investigator

1. J. Xue, T. Lencz, A. Darvasi, I. Pe'er, and **S. Carmi**. The Time and Place of European Admixture in Ashkenazi Jewish History. *PLoS Genet.* 13, e1006644 (2017).
2. L. King, J. Wakeley, and **S. Carmi**. A non-zero variance of Tajima's estimator for two sequences even for infinitely many unlinked loci. *Theor. Popul. Biol.* 122, 22 (2018).
3. Y. Erlich, T. Shor, I. Pe'er, and **S. Carmi**. Identity inference of genomic data using long-range familial searches. *Science* 362, 690 (2018). [Covered by Science Magazine's 10 breakthroughs of 2018.](#)
4. E. Granot-Hershkovitz, D. Karasik, ..., I. Peter, **S. Carmi***, and H. Hochner*. A study of Kibbutzim in Israel reveals risk factors for cardiometabolic traits and subtle population structure. *Eur. J. Hum. Genet.* 26, 1848 (2018).

5. R. Schweiger, Y. Erlich, and **S. Carmi**. FactorialHMM: Fast and exact inference in factorial hidden Markov models. *Bioinformatics* 35, 2162 (2019).
6. D. Backenroth, F. Zahdeh, ..., G. Altarescu*, **S. Carmi***, and D. A. Zeevi*. Haploseek: A 24-hour all-in-one method for preimplantation genetic diagnosis (PGD) of monogenic disease and aneuploidy. *Genet. Med.* 21, 1390 (2019).
7. D. Backenroth and **S. Carmi**. A test for deviations from expected genotype frequencies on the X chromosome for sex-biased admixed populations. *Heredity* 123, 470 (2019).
8. H. Fridman, D. Behar, **S. Carmi**, and E. Levy-Lahad. Preconception carrier screening yield: effect of variants of unknown significance in partners of carriers with clinically significant variants. *Genet. Med.*, 22, 646 (2020).
9. E. Karavani*, O. Zuk*, ..., T. Lencz*, and **S. Carmi***. Screening human embryos for polygenic traits has limited utility. *Cell*, 179, 1424 (2019).
10. L. Agranat-Tamir, S. Waldman, ..., B. Yakir, R. Pinhasi*, **S. Carmi***, I. Finkelstein*, L. Carmel*, and D. Reich*. The Genomic History of the Bronze Age Southern Levant. *Cell* 181, 1146 (2020).
11. D. A. Zeevi*, D. Backenroth*, ..., **S. Carmi***, G. Altarescu*. Expanded clinical validation of *Haploseek* for comprehensive preimplantation genetic testing. *Genet. Med.* 23, 1334 (2021).
12. T. Lencz*, D. Backenroth*, ..., O. Zuk, and **S. Carmi**. Utility of polygenic embryo screening for disease depends on the selection strategy. *eLife* 10, e64716 (2021).
13. S. Waldman, ..., **S. Carmi***, and D. Reich*. Genome-wide data from medieval German Jews show that the Ashkenazi founder event pre-dated the 14th century. *Cell* 185, 4703 (2022).
14. M. Krichevski, R. Calderon-Margalit, **S. Carmi***, and R. Raz*. The Heritability of Weight Gain in Infancy: A Population-Based Twin Study. *Paediatr. Perinat. Epidemiol.* 37, 577 (2023).
15. D. Backenroth*, G. Altarescu*, F. Zahdeh, ..., **S. Carmi***, and D. A. Zeevi*. SHaploseek: A sequencing-only high-resolution implementation of comprehensive preimplantation genetic testing. *Sci. Rep.* 13, 18036 (2023).
16. H. Levi, **S. Carmi**, ..., S. Ben-Sachar, N. Elefant, R. Shamir, and R. Elkon. Evaluation of European-based polygenic risk score for breast cancer in Ashkenazi Jewish women in Israel. *J. Med. Genet.* 60, 1186 (2023).
17. A. Capalbo, G. de Wert, H. Mertes, L. Klausner, ..., T. Lencz, and **S. Carmi**. Screening embryos for polygenic disease risk: a review of epidemiological, clinical, and ethical considerations. *Hum. Reprod. Update* (2024).
18. M. Grunin, D. Triffon, ..., **S. Carmi***, and I. Chowers*. Genome-wide association study and genomic risk prediction of age-related macular degeneration in Israel. *Sci. Rep.* 14, 13034 (2024).
19. Y. Huang, **S. Carmi**, and H. Ringbauer. Estimating effective population size trajectories from time-series Identity-by-Descent (IBD) segments. *Genetics*, iyae212 (2025).
20. L. Klausner, **S. Carmi***, S. Ben-Shachar, N. Lev-El Halabi, L. Basel-Salmon, and D. Brabbing Goldstein*. No association between FMR1 premutation and either ADHD or anxiety in 53,707 women undergoing genetic testing for family planning purposes. *Genet. Med.* 27, 101428 (2025).

All publications

Peer-reviewed journal papers

1. **S. Carmi**, E. Y. Levanon, S. Havlin, and E. Eisenberg. Connectivity and expression in protein networks: Proteins in a complex are uniformly expressed. *Phys. Rev. E* 73, 031909 (2006).
2. **S. Carmi**, R. Cohen, and D. Dolev. Searching complex networks efficiently with minimal information. *Europhys. Lett.* 74, 1102 (2006).

3. **S. Carmi**, S. Havlin, S. Kirkpatrick, Y. Shavitt, and E. Shir. A Model of Internet topology using k -shell decomposition, *P. Natl. Acad. Sci. USA* **104**, 11150 (2007).
4. E. Lopez, R. Parshani, R. Cohen, **S. Carmi**, and S. Havlin. Limited path percolation in complex networks. *Phys. Rev. Lett.* **99**, 188701 (2007).
5. M. Maragakis, **S. Carmi**, D. ben-Avraham, S. Havlin, and P. Argyrakis. Priority diffusion model in lattices and complex networks. *Phys. Rev. E (Rapid Communication)* **77**, 020103 (2008).
6. **S. Carmi**, Z. Wu, S. Havlin, and H. E. Stanley. Transport in networks with multiple sources and sinks. *EPL* **84**, 28005 (2008).
7. A. Kittas, **S. Carmi**, S. Havlin, and P. Argyrakis. Trapping in complex networks. *EPL* **84**, 40008 (2008).
8. **S. Carmi**, P. L. Krapivsky, and D. ben-Avraham, Partition of networks into basins of attraction. *Phys. Rev. E* **78**, 066111 (2008).
9. **S. Carmi**, E. Y. Levanon, and E. Eisenberg. Efficiency of complex production in changing environment. *BMC Sys. Biol.* **3**:3 (2009).
10. **S. Carmi**, S. Havlin, C. Song, K. Wang, and H. A. Makse. Energy-landscape network approach to the glass transition. *J. Phys. A: Math. Theor.* **42**, 105101 (2009).
11. **S. Carmi**, S. Carter, J. Sun, and D. ben-Avraham. Asymptotic behavior of the Kleinberg model. *Phys. Rev. Lett.* **102**, 238702 (2009).
12. L. Turgeman, **S. Carmi**, and E. Barkai. Fractional Feynman-Kac equation for non-Brownian functionals. *Phys. Rev. Lett.* **103**, 190201 (2009).
13. H. Goldshmidt, D. Matas, A. Kabi, **S. Carmi**, R. Hope, and S. Michaeli. Persistent ER stress induces the Spliced Leader RNA Silencing pathway (SLS), leading to programmed cell death in *Trypanosoma brucei*. *PLoS Pathog.* **6**, e1000731 (2010).
14. R. Parshani, **S. Carmi**, and S. Havlin. Epidemic threshold for the Susceptible-Infectious-Susceptible model on random networks. *Phys. Rev. Lett.* **104**, 258701 (2010).
15. N. G. Koley, J. B. Franklin, **S. Carmi**, H. Shi, S. Michaeli, and C. Tschudi. The transcriptome of the human pathogen *Trypanosoma brucei* at single-nucleotide resolution. *PLoS Pathog.* **6**, e1001090 (2010).
16. **S. Carmi**, L. Turgeman, and E. Barkai. On distributions of functionals of anomalous diffusion paths. *J. Stat. Phys.* **141**, 1071 (2010).
17. **S. Carmi**, I. Borukhov, and E. Y. Levanon. Identification of widespread ultra-edited human RNA. *PLoS Genet.* **7**, e1002317 (2011).
18. **S. Carmi**, G. M. Church, and E. Y. Levanon. Large scale DNA editing of retrotransposons accelerates mammalian genome evolution. *Nat. Commun.* **2**, 519 (2011).
19. **S. Carmi** and E. Barkai. Fractional Feynman-Kac equation for weak ergodicity breaking. *Phys. Rev. E* **84**, 061104 (2011).
20. S. K. Gupta, **S. Carmi**, H. Waldman Ben-Asher, I. D. Tkacz, I. Naboishchikov, and S. Michaeli. Basal splicing factors regulate the stability of mature mRNAs in Trypanosomes. *J. Biol. Chem.* **7**, 4991 (2013).
21. **S. Carmi**, P. F. Palamara, V. Vacic, T. Lencz, A. Darvasi, and I. Pe'er. The variance of identity-by-descent sharing in the Wright-Fisher model. *Genetics* **193**, 911 (2013).
22. S. K. Gupta, I. Kosti, G. Plaut, A. Pivko, I. D. Tkacz, S. Cohen-Chalamish, D. K. Biswas, C. Wachtel, H. Waldman Ben-Asher, **S. Carmi**, F. Glaser, Y. Mandel-Gutfreund, and S. Michaeli. The hnRNP F/H homologue of *Trypanosoma brucei* is differentially expressed in the two life cycle stages of the parasite and regulates splicing and mRNA stability. *Nucleic Acids Res.* **41**, 6577 (2013).
23. N. Bastas, M. Maragakis, P. Argyrakis, D. ben-Avraham, S. Havlin, and **S. Carmi**. Random walk with priorities in communication-like networks. *Phys. Rev. E* **88**, 022803 (2013).

24. S. K. Gupta, V. Chikne, D. Eliaz, I. D. Tkacz, I. Naboishchikov, **S. Carmi**, H. Waldman Ben-Asher, and S. Michaeli. Two splicing factors carrying serine-arginine motifs, TSR1 and TSR1IP, regulate splicing, mRNA stability and rRNA processing in *Trypanosoma brucei*. *RNA Biol.* **11**, 715 (2014).
25. H. T. Porath, **S. Carmi**, and E. Y. Levanon. A genome-wide map of hyper-edited RNA reveals numerous new sites. *Nat. Commun.* **5**, 4726 (2014).
26. **S. Carmi**, K. Y. Hui, E. Kochav, X. Liu, J. Xue, F. Grady, S. Guha, K. Upadhyay, D. Ben-Avraham, S. Mukherjee, B. M. Bowen, T. Thomas, J. Vijai, M. Cruts, G. Froyen, D. Lambrechts, S. Plaisance, C. Van Broeckhoven, P. Van Damme, H. Van Marck, N. Barzilai, A. Darvasi, K. Offit, S. Bressman, L. J. Ozelius, I. Peter, J. H. Cho, H. Ostrer, G. Atzmon, L. N. Clark, T. Lencz, and I. Pe'er. Sequencing an Ashkenazi reference panel supports population-targeted personal genomics and illuminates Jewish and European origins. *Nat. Commun.* **5**, 4835 (2014).
27. **S. Carmi**, P. R. Wilton, J. Wakeley, and I. Pe'er. A renewal theory approach to IBD sharing. *Theor. Popul. Biol.* **97**, 35 (2014).
28. J. Zidan*, D. Ben-Avraham*, **S. Carmi***, T. Maray, E. Friedman, and G. Atzmon. Genotyping of geographically diverse Druze trios reveals substructure and a recent bottleneck. *Eur. J. Hum. Genet.* **23**, 1093 (2015).
29. P. R. Wilton, **S. Carmi***, and A. Hobolth*. The SMC' is a highly accurate approximation to the ancestral recombination graph. *Genetics* **200**, 343 (2015).
30. B. Baskovich, S. Hiraki, K. Upadhyay, P. Meyer, **S. Carmi**, N. Barzilai, A. Darvasi, K. Offit, S. Bressman, L. Ozelius, I. Peter, J. Cho, G. Atzmon, L. Clark, T. Lencz, I. Pe'er, H. Ostrer, and C. Oddoux. Expanded genetic screening panel for the Ashkenazi Jewish Population. *Genet. Med.* **18**, 522 (2016).
31. A. Quint, M. Sagi, **S. Carmi**, H. Daum, Z. Ben Neriah, V. Meiner, O. Elpeleg, and I. Lerer. An Ashkenazi founder mutation in the PKHD1 gene. *Eur. J. Med. Genet.* **59**, 86 (2016).
32. S. Yang, **S. Carmi**, and I. Pe'er. Rapidly registering identity-by-descent across ancestral recombination graphs. *J. Comput. Biol.* **23**, 495 (2016).
33. R. Jaron, N. Rosenfeld, F. Zahdeh, **S. Carmi**, L. Beni-Adani, R. Segel, S. Zeligson, L. Carmel, P. Renbaum, and E. Levy-Lahad. Expanding the phenotype of CRB2 mutations – A new ciliopathy syndrome? *Clin. Genet.* **90**, 540 (2016).
34. R. Hope, K. Egarmina, K. Voloshin, H. Waldman Ben-Asher, **S. Carmi**, D. Eliaz, Y. Drori, and S. Michaeli. Transcriptome and proteome analyses and the role of atypical calpain protein and autophagy in the spliced leader silencing (SLS) pathway in *Trypanosoma brucei*. *Mol. Microbiol.* **102**, 1 (2016).
35. J. Vijai, S. Topka, D. Villano, V. Ravichandran, K. N. Maxwell, A. Maria, T. Thomas, P. Gaddam, A. Lincoln, S. Kazzaz, B. Wenz, **S. Carmi**, K. A. Schrader, S. N. Hart, S. M. Lipkin, S. L. Neuhausen, M. F. Walsh, L. Zhang, F. Lejbkowitz, H. Rennert, Z. K. Stadler, M. Robson, J. N. Weitzel, M. J. Daly, F. J. Couch, K. L. Nathanson, L. Norton, G. Rennert, K. Offit. A recurrent *ERCC3* truncating mutation confers moderate risk for breast cancer. *Cancer Discov.* **6**, 1267 (2016).
36. E. Gilbert, **S. Carmi**, S. Ennis, J. Wilson, and G. Cavalleri. Genomic insights into the population structure and history of the Irish Travellers. *Sci. Rep.* **7**, 42187 (2017).
37. J. Xue, T. Lencz, A. Darvasi, I. Pe'er, and **S. Carmi**. The Time and Place of European Admixture in Ashkenazi Jewish History. *PLoS Genet.* **13**, e1006644 (2017).
38. Y. Einhorn, D. Weissglas-Volkov, **S. Carmi**, H. Ostrer, E. Friedman, and N. Shomron. Differential analysis of mutations in the Jewish Population and its implications on diseases. *Genet. Res., Camb.* **99**, e3 (2017).
39. D. M. Behar, L. Saag, M. Karmin, M. G. Gover, J. D. Wexler, L. F. Sanchez, E. Greenspan, A. Kushniarevich, O. Davydenko, H. Sahakyan, L. Yepiskoposyan, A. Boattini, S. Sarno, L.

- Pagani, **S. Carmi**, S. Tzur, E. Metspalu, C. Bormans, K. Skorecki, M. Metspalu, S. Rootsi, and R. Villems. The genetic variation in the R1a clade among the Ashkenazi Levites' Y chromosome. *Sci. Rep.* **7**, 14969 (2017).
40. K. Y. Hui, H. Fernandez-Hernandez, J. Hu, A. Schaffner, N. Pankratz, N.-Y. Hsu, L.-S. Chuang, **S. Carmi**, N. Villaverde, X. Li, M. Rivas, A. P. Levine, X. Bao, P. R. Labrias, T. Haritunians, D. Ruane, K. Gettler, E. Chen, D. Li, E. R. Schiff, N. Pontikos, N. Barzilai, S. R. Brant, S. Bressman, A. S. Cheifetz, L. N. Clark, M. J. Daly, R. J. Desnick, R. H. Duerr, S. Katz, T. Lencz, R. H. Myers, H. Ostrer, L. Ozelius, H. Payami, Y. Peter, J. D. Rioux, A. W. Segal, W. K. Scott, M. S. Silverberg, J. M. Vance, I. Ubarretxena-Belandia, T. Foroud, G. Atzmon, I. Pe'er, Y. Ioannou, D. P. B. McGovern, Z. Yue, E. E. Schadt, J. H. Cho, and I. Peter. Functional variants in the *LRK2* gene confer shared effects on risk for Crohn's disease and Parkinson's disease. *Sci. Transl. Med.* **10**, eaai7795 (2018).
 41. D. Rothschild, O. Weissbrod, E. Barkan, A. Kurilshikov, T. Korem, D. Zeevi, P. I. Costea, S. Shilo, D. Lador, A. Godneva, I. N. Kalka, N. Bar, A. V. Vila, N. Zmora, M. Pevsner-Fischer, D. Israeli, N. Kosower, G. Malka, B. C. Wolf, T. Avnit-Sagi, M. Lotan-Pompan, A. Weinberger, Z. Halpern, **S. Carmi**, J. Fu, C. Wijmenga, A. Zhernakova, E. Elinav, and E. Segal. Environmental factors dominate over host genetics in shaping human gut microbiota composition. *Nature* **555**, 210 (2018).
 42. T. Lencz, J. Yu, C. Palmer, **S. Carmi**, D. Ben-Avraham, N. Barzilai, S. Bressman, A. Darvasi, J. H. Cho, L. N. Clark, Z. H. Gümüş, V. Joseph, R. Klein, S. Lipkin, K. Offit, H. Ostrer, L. J. Ozelius, I. Peter, G. Atzmon, and I. Pe'er. High-depth whole genome sequencing of an Ashkenazi Jewish reference panel: enhancing sensitivity, accuracy, and imputation. *Hum. Genet.* **137**, 343 (2018).
 43. L. King, J. Wakeley, and **S. Carmi**. A non-zero variance of Tajima's estimator for two sequences even for infinitely many unlinked loci. *Theor. Popul. Biol.* **122**, 22 (2018).
 44. Y. Yehuda, B. Blumenfeld, N. Mayorek, K. Makedonski, O. Vardi, L. Cohen-Daniel, Y. Mansour, S. Baror-Sebban, H. Masika, M. Farago, M. Berger, **S. Carmi**, Y. Buganim, A. Koren, and I. Simon. Germline DNA replication timing shapes mammalian genome composition. *Nucleic Acids Res.* **46**, 8299 (2018).
 45. G. Rosner, N. Gluck, **S. Carmi**, D. Bercovich, N. Fliiss-Issakov, M. Ben-Yehoyada, S. Aharon-Caspi, E. Kellerman, H. Strul, O. Shibolet, and R. Kariv. *POLD1* and *POLE* Gene Mutations in Jewish Cohorts of Early-Onset Colorectal Cancer and of Multiple Colorectal Adenomas. *Dis. Colon Rectum* **61**, 1073 (2018).
 46. Y. Erlich, T. Shor, I. Pe'er, and **S. Carmi**. Identity inference of genomic data using long-range familial searches. *Science* **362**, 690 (2018).
 47. E. Granot-Hershkovitz, D. Karasik, Y. Friedlander, L. Rodriguez-Murillo, R. Dorajoo, J. Liu, A. Sewda, I. Peter, **S. Carmi***, and H. Hochner*. A study of Kibbutzim in Israel reveals risk factors for cardiometabolic traits and subtle population structure. *Eur. J. Hum. Genet.* **26**, 1848 (2018).
 48. A. L. Severson, **S. Carmi**, and N. A. Rosenberg. The effect of consanguinity on between-individual identity-by-descent sharing. *Genetics* **212**, 305 (2019).
 49. D. A. Zeevi, F. Zahdeh, Y. Kling, P. Renbaum, E. Levy-Lahad, **S. Carmi**, and G. Altarescu. Off the street phasing (OTSP): No hassle haplotype phasing for molecular PGD applications. *J. Assist. Reprod. Gen.* **36**, 727 (2019).
 50. R. Schweiger, Y. Erlich, and **S. Carmi**. FactorialHMM: Fast and exact inference in factorial hidden Markov models. *Bioinformatics* **35**, 2162 (2019).
 51. D. Backenroth, F. Zahdeh, Y. Kling, A. Peretz, T. Rosen, D. Kort, S. Zeligson, T. Dror, S. Kirshberg, E. Burak, R. Segal, E. Levy-Lahad, D. Zangen, G. Altarescu*, **S. Carmi***, and D. A. Zeevi*. Haploseek: A 24-hour all-in-one method for preimplantation genetic diagnosis (PGD) of monogenic disease and aneuploidy. *Genet. Med.* **21**, 1390 (2019).

52. D. Backenroth and **S. Carmi**. A test for deviations from expected genotype frequencies on the X chromosome for sex-biased admixed populations. *Heredity* **123**, 470 (2019).
53. M. Winther, S. Shpitzen, O. Yaacov, J. Landau, L. Oren, L. Foroozan-Rosenberg, N. Lev Cohain, D. Schurr, V. Meiner, A. Szalat, **S. Carmi**, M. R. Hayden, E. Leitersdorf, and R. Durst. In search for genetic explanation for LDLc variability in an FH family: Common SNPs and a rare mutation in microsomal triglyceride transfer protein explain only part of LDL variability in an FH family. *J. Lipid Res.* **60**, 1733 (2019).
54. The ROHGen Consortium (including A. Halevy and **S. Carmi**). Associations of autozygosity with a broad range of human phenotypes. *Nat. Commun.* **10**, 4957 (2019).
55. E. Karavani*, O. Zuk*, D. Zeevi, N. Barzilai, N. C. Stefanis, A. Hatzimanolis, N. Smyrnis, D. Avramopoulos, L. Kruglyak, G. Atzmon, M. Lam, T. Lencz*, and **S. Carmi***. Screening human embryos for polygenic traits has limited utility. *Cell* **179**, 1424 (2019).
56. M. Caballero, D. N. Seidman, Y. Qiao, J. Sannerud, T. D. Dyer, D. M. Lehman, J. E. Curran, R. Duggirala, J. Blangero, **S. Carmi**, and A. L. Williams. Crossover interference and sex-specific genetic maps shape identical by descent sharing in close relatives. *PLoS Genet.* **15**, e1007979 (2019).
57. M. Grunin, G. Beykin, E. Rahmani, R. Schweiger, G. Barel, S. Hagbi-Levi, S. Elbaz-Hayoun, B. Rinsky, M. Ganiel, **S. Carmi**, E. Halperin, I. Chowers. Association of a variant in VWA3A with response to anti-VEGF treatment in neovascular age-related macular degeneration. *Invest. Ophthalmol. Vis. Sci.* **61**, 48 (2020).
58. H. Fridman, D. M. Behar, **S. Carmi**, and E. Levy-Lahad. Preconception carrier screening yield: effect of variants of unknown significance in partners of carriers with clinically significant variants. *Genet. Med.* **22**, 646 (2020).
59. L. Agranat-Tamir, S. Waldman, M. Martin, D. Gokhman, N. Mishol, T. Eshel, O. Cheronet, N. Rohland, S. Mallick, N. Adamski, A. Marie Lawson, M. Mah, M. Michel, J. Oppenheimer, K. Stewardson, F. Candilio, D. Keating, B. Gamarra, S. Tzur, R. Kalisher, S. Bechar, V. Eshed, D. J. Kennett, M. Faerman, N. Yahalom-Mack, J. M. Monge, Y. Govrin, Y. Erel, B. Yakir, R. Pinhasi*, **S. Carmi***, I. Finkelstein*, L. Carmel*, and D. Reich*. The genomic history of the Bronze Age Southern Levant. *Cell* **181**, 1146 (2020).
60. H. Fridman, H. G. Yntema, R. Magi, R. Andreson, A. Metspalu, M. Mezzavila, C. Tyler-Smith, Y. Xue, **S. Carmi**, E. Levy-Lahad, C. Gilissen, and H. Brunner. The landscape of autosomal-recessive pathogenic variants in European populations reveals phenotype-specific effects. *Am. J. Hum. Genet.* **108**, 608 (2021).
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2. L. Agranat-Tamir, B. Yakir, **S. Carmi**, M. A. S. Martin, I. Finkelstein, and L. Carmel. DNA of Individuals from Tomb 16/H/50 and Burial 16/H/45. Chapter 13 in *MEGIDDO VII. The Shmunis Excavations of a Monumental Middle Bronze Tomb and Its Environs*. Eds. M. J. Adams, M. S. Cradic, and I. Finkelstein (Pennsylvania State University Press, United States, 2025).

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2. T. Lencz and **S. Carmi**. Selected before birth: Embryo risk screening could lower the odds of illnesses ranging from depression to diabetes. Can it be ethically done? *Aeon* (Feb 17, 2023).
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MEDIA COVERAGE

- 2006 *Limited path percolation in complex networks*. *Physical Review Focus*.
- 2007 *A model of Internet topology*. MIT Technology Review, Science News, IEEE Spectrum, PopSci, Scientific American, Bloomberg News, Wired, and over 15 others.
- 2011 *Large scale DNA editing of retrotransposons*. Ha'aretz.
- 2014 *Sequencing an Ashkenazi reference panel*. LA Times, NBC News, Yahoo! News, The Scientist, National Geographic, Genome Web, Ha'aretz, The Jewish Daily Forward, and over 20 others, including radio and TV shows in Israel.
- 2014 *A renewal theory approach to IBD sharing*. Stanford Scope.
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- 2018- Media appearances and consultations. *Newspapers and magazines*: The New York Times, Nature, Science, Businessweek, BBC, The Washington Post, The Wall Street Journal, New York Magazine, The Boston Globe, Associated Press, MIT Technology Review, Die Zeit, Sydney Morning Herald, Science et Vie, New Scientist, Live Science, Ha'aretz (multiple times), Yedioth Ahronoth, Israel Hayom, ynet, Globes, Times of Israel, Galileo, Captain Kids, Today's Science, Inside Precision Medicine. *TV*: Channel 12, Channel 10, Reshet13, ynet (online), KAN-Israeli Public Broadcasting Corporation (online), Izvestia Multimedia. *Radio*: Galatz, 102FM, 103FM, Tel-Aviv radio. *Podcasts*: Ha'aretz, KAN-Israeli Public Broadcasting Corporation, HUJICAST, ManifoldOne. Podcasts with Hebrew names: באים אל הפרופסורים, השבוע במזרח התיכון.

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- 2017 PI Israel Science Foundation (ISF) new faculty equipment grant 932/17, “A computing and storage system for statistical and population genetics research.” 202,215₪.
- 2017-2022 PI Israel Science Foundation (ISF) personal grant 407/17, “New methods for using genetic variation and genealogical records for inferring recent demographic events.” 1,000,000₪.
- 2018-2019 PI German-Israeli Foundation for Scientific Research and Development (GIF) Young Scientists' Program grant I-2489-407.6/2017, “Reconstructing recent population histories using multi-individual haplotype sharing and applications to Ashkenazi Jewish genetics.” €18,000.
- 2018- PI Hebrew University president award for the publication of high-profile research, 10,000₪.
- 2019-2023 PI United States – Israel Binational Science Foundation (BSF) regular grant 2017024, “Theory of consanguinity and its effects on genomic sharing within and between individuals.” Joint with Noah Rosenberg, Stanford University. \$216,000 Amount to SC: \$108,000.
- 2019-2023 Sub-award The Israel Science Foundation (ISF) program in precision medicine grant 3485/19, “Combined omics and electronic medical records-big data for prediction of phenotype sub-types, progression, and treatment outcome in age-related macular degeneration.” PIs: Itay Chowers and Jaime Levy, Hadassah Medical Center and Amit Meller, Technion. 4,700,000₪. Amount to SC: 48,000₪.
- 2020-2021 PI Hebrew University Center for Interdisciplinary Data Science Research (CIDR) grant for collaborations between data science researchers and researchers from other fields, “Developing the next generation of preimplantation genetic testing.” Joint with David Zeevi, Shaare Zedek Medical Center. 75,000₪ (all to SC).
- 2021-2022 PI Hebrew University Center for Interdisciplinary Data Science Research (CIDR). Competitive renewal of the grant “Developing the next generation of preimplantation genetic testing.” Joint with David Zeevi, Shaare Zedek Medical Center. 45,000₪ (all to SC).
- 2020- PI Hebrew University Ben-Porath award for excellent young investigators. 15,000₪.
- 2021-2022 PI The Israeli Council for Higher Education (CHE) (via the Weizmann Data Science Research Center) Collaborative Research Grants in Data Science 2020-P129437, “Mining the largest dataset on sexual mating preference and fitness inheritance.” Joint with Yitzhak Pilpel, Weizmann Institute of Science. 100,000₪. Amount to SC: 20,000₪.
- 2020-2024 PI Israel Science Foundation (ISF) program in precision medicine grant 1778/20, “Inherited retinal diseases: from national-scale discovery of genes and risk factors to development of novel personalized therapeutics.” Joint with: Dror Sharon and Eyal Banin, Hadassah Medical Center, and Shay Ben-Aroya, Bar-Ilan University. 4,200,000₪. Amount to SC: 246,285₪.
- 2020-2024 PI Israel Ministry of Science and Technology grant 3-17419, “Pharmacogenetic variants: from genotype frequencies to treatment response in high-burden diseases in Israel”. Joint with: Gad Rennert, Technion. 1,192,490₪. Amount to SC: 419,750₪.
- 2021-2025 PI National Human Genome Research Institute (NHGRI) of the National Institutes of Health (NIH) R01HG011711. “Polygenic embryo screening: towards informed decision-making”. Joint with: Todd Lencz, Northwell Health, and

- Gabriel Lázaro-Muñoz, Harvard University. \$2,889,641. Amount to SC: \$359,702.
- 2021-2022 PI The joint research fund of the Hebrew University and its affiliated hospitals. “Does surveillance improve ovarian cancer outcomes in BRCA mutation carriers?” Joint with: Rachel Michaelson-Cohen, Shaare Zedek Medical Center. \$10,000 (no funding to SC).
- 2021-2022 PI Gassner Fund for Medical Research. “Validation of Genome-Wide Polygenic Risk Scores for Coronary Artery Disease in the Israeli Population”. Joint with: Smadar Horowitz-Cederboim, Ronen Durst, and Naama Elefant, Hadassah Medical Center. 50,000₪ (no funding to SC).
- 2022-2026 co-PI Israel Ministry of Science and Technology knowledge center in forensic DNA grant number 1001584586. 2,999,150₪. Lead PI: Yuval Dor, The Hebrew University. Amount to SC: 437,000₪.
- 2024-2027 PI* Psifas Initiative for Precision Medicine, The Ministry of Health. “Population genetics analysis of the Israeli Reference Genome Project”. 180,000₪.
- 2024 Sub-award* Israel Ministry of Defense. PIs: Yitzhak Pilpel and David Zeevi, Weizmann Institute of Science. 300,000₪. Amount to SC: 15,000₪.
- 2024 PI* Hebrew University Leopold Greenberg Foundation for forensic medicine. “Forensic identification using genetic genealogy.” 39,760₪.
- 2024-2028 PI Israel Science Foundation (ISF) MAVRI - Biomedical Research Grants Track 1393/24. “Discovering genes for severe schizophrenia in Israel's unique founder populations.” Joint with: Mark Weiser, Sheba Medical Center. 2,880,000₪. Amount to SC: TBD.
- 2025-2027 PI World Anti-Doping Agency (WADA) Research Grant 242E03KC, “Advancing non-invasive detection of doping via in vivo genome editing”. Joint with: Kyle Cromer, University of California, San Francisco, and Daniel Herstein, Israel National Anti-Doping Agency. \$150,000. Amount to SC: \$27,000.
- 2025-2029 PI National Human Genome Research Institute (NHGRI) of the National Institutes of Health (NIH) R01HG011711 (competitive renewal). “Polygenic embryo screening: towards informed decision-making”. Joint with: Todd Lencz, Northwell Health, Gabriel Lázaro-Muñoz, Harvard University, and Stacey Pereira, Baylor College of Medicine. \$3,291,424. S.C. removed from the grant due to Trump administration’s elimination of foreign awards.
- 2026-2027 PI The joint research fund of the Hebrew University and its affiliated hospitals. “Genetic susceptibility and long-term outcomes in patients with acute kidney injury associated with hair-straightening products” Joint with: Shoshana Zevin, Linda Shavit, Alon Bnaya, and Gheona Altarescu, Shaare Zedek Medical Center. \$10,000 (no funding to SC).
- 2026-2027 PI Institute for Research in Military Medicine (IRMM) of the Faculty of Medicine of the Hebrew University of Jerusalem. “Whole-genome sequencing of unidentified human skeletal remains”. Joint with: Alon Oz, IDF Genomic Center for Casualties Identification. \$25,000 (to be distributed by SC).

* Non-competitive awards

CONFERENCES

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- 2004 Science of Complex Networks: from Biology to the Internet and WWW, Portugal (poster)
- 2005 Katzir Conference on Molecular Perspectives on Protein-Protein Interactions, Israel (poster)
- 2007 Complex Networks: from Biology to Information Technology, Italy (talk)

- 2011 Weak Chaos, Infinite Ergodic Theory, and Anomalous Dynamics, Germany (talk)
- 2012 The annual meeting of the American Society of Human Genetics, USA (poster)
- 2012 Personal Genomes and Medical Genomics, Cold Spring Harbor Laboratory, USA (talk)
- 2013 The annual meeting of the American Society of Human Genetics, USA (talk)
- 2014 Human Evolution in the Genomic Era: Origins, Populations, and Phenotypes, UK (talk)
- 2014 The Biology of Genomes, Cold Spring Harbor Laboratory, USA (poster)
- 2014 The annual meeting of the Society for Molecular Biology and Evolution, Puerto Rico (poster)
- 2014 The annual meeting of the American Society of Human Genetics, USA (poster)
- 2015 The Biology of Genomes, Cold Spring Harbor Laboratory, USA (poster)
- 2016 Understanding the Function of Human Genome Variation, Sweden (poster)
- 2016 Founder populations: Lessons from the Jewish Genome, Israel (talk)
- 2016 Probabilistic Modeling in Genomics, UK (talk)
- 2017 Revisiting the Question of Jewish Origins, USA (invited talk)
- 2017 Human Evolution: Fossils, Ancient and Modern Genomes, UK (talk)
- 2018 The Israel Statistical Association Annual Meeting, Israel (invited talk)
- 2018 Genomics – from disease prevention to treatment, Israel (invited talk)
- 2018 Genealogy and the Sciences, Israel (invited talk)
- 2019 The annual meeting of the American Society of Human Genetics, USA (talk)
- 2020 ILANIT/FISEB (Federation of the Israel Societies for Experimental Biology), Israel (invited talk)
- 2021 Annual meeting of the European Society of Human Reproduction and Embryology (ESHRE), online (invited talk)
- 2021 Annual meeting of the Israeli Fertility Association, Israel (talk)
- 2022 EBART (Evidence Based Assisted Reproduction Technology) Congress (invited talk)
- 2022 The Israel Statistical Association Annual Meeting, Israel (invited talk)
- 2023 The British Fertility Society Annual Meeting, UK (presenting remotely; invited talk)
- 2023 ILANIT/FISEB (Federation of the Israel Societies for Experimental Biology), Israel (talk)
- 2023 Annual meeting of the European Society of Human Reproduction and Embryology (ESHRE), Denmark (talk)
- 2023 Polygenic Embryo Screening Meeting, USA (co-organizer + talk)
- 2023 International Genetic Epidemiology Society annual meeting, USA (keynote speaker; remote)
- 2023 Spanish Association for the Study of Reproductive Biology biannual meeting, Spain (invited talk; remote due to the Gaza war)
- 2023 World congress on controversies in obstetrics gynecology & infertility (COGI), Austria (invited talk; remote)
- 2024 Israel Genetic Society annual meeting (invited talk)
- 2024 European Society of Human Genetics annual meeting (invited talk)
- 2024 Annual meeting of the European Society of Human Reproduction and Embryology (ESHRE), the Netherlands (talk)
- 2024 SMBE satellite meeting on ancient DNA: beyond allele frequencies, Ireland (talk)
- 2024 Israeli Society for Evolutionary Biology, Israel (invited talk)
- 2024 Spanish Society for Genetic Counsellors (SEAGen) (invited talk; remote)
- 2025 The Best of ASRM and ESHRE, Portugal (invited talk)
- 2025 Israeli Society of Medical Genetics (invited talk)
- 2025 DVR congress (German societies for reproductive biology and medicine), Germany (invited talk)
- 2026 ILANIT/FISEB (Federation of the Israel Societies for Experimental Biology), Israel (invited talk)
- 2026 The Advances in Social Genomics Conference, USA (keynote speaker)
- 2026 Annual meeting of the Israeli Fertility Association, Israel (keynote speaker)

WORKSHOPS

- 2006 Workshop on Networks and Complexity, Israel (talk)
- 2007 Adams fellowship annual poster session, the National Academy of Sciences, Israel
- 2008 Adams fellowship annual poster session, the National Academy of Sciences, Israel
- 2009 The Science of Complexity, Israel (talk)
- 2009 Bar-Ilan's Institute for Nanotechnology and Advanced Materials meeting, Israel (talk)
- 2010 The annual meeting of the Israel Physical Society, Israel (talk)
- 2014 Columbia University annual postdoc research symposium (poster; 4th prize)
- 2015 Columbia University Foundations of Data Science poster session
- 2015 Columbia University Data Science Institute Bi-Annual symposium poster session
- 2016 Israeli Bioinformatics Symposium (poster)
- 2018 HLA and KIR population dynamics, Israel (invited talk)
- 2018 Computational Genomics Summer Institute, UCLA, USA (invited talk)
- 2018 Workshop on "Jewish genes", The Hebrew University of Jerusalem, Israel (invited chair)
- 2019 Israel human population genetics meeting (keynote lecture)
- 2019 Innovations in Forensics and the Law, Israel (invited talk)
- 2019 Computational Genomics Summer Institute, UCLA, USA (invited talk)
- 2021 Broad-Israel Science Foundation Annual Symposium, online (invited talk)
- 2021 Hadassah Eye and Vision Innovation Forum, Israel (invited talk)
- 2022 Thermo Fisher Scientific Webinar on Predictive Genomics (invited talk)
- 2023 Scientific, clinical and ethical challenges in Preimplantation & Prenatal fields, Belgium (invited talk; remote due to the Gaza war)
- 2024 UK's Human Fertilisation and Embryology Authority (HFEA) horizon scanning meeting (invited talk)
- 2024 Israel's Ministry of Defense forensic identification center
- 2024 Israel's Ministry of Science and Technology forensic DNA knowledge center
- 2025 Interdisciplinary Methods in the Investigation of the Past, Israel Institute for Advanced Studies (invited talk)
- 2025 Computational Genomics Summer Institute, UCLA, USA (invited talk)
- 2025 MBZUAI School of Digital Public Health Symposium, United Arab Emirates (invited talk)
- 2026 Bridges of Science Symposium, Israel (invited talk)
- 2026 HealthIL Week, Israel (invited round table presentation)
- 2026 ESHRE PGT Consortium Seminar on troubleshooting from intake to follow up, Greece (invited talk)

SEMINAR TALKS

- 2007 The Center for Polymer Studies, Boston University
- 2008 The Center for Complex Network Research, Northeastern University
- 2009 The Center for Complex Network Research, Northeastern University
- 2010 IBM research center, Tel Aviv
- 2011 Department of Mathematics, Bar-Ilan University
- 2011 Department of Physics, Tel Aviv University
- 2012 Faculty of Life Sciences, Bar-Ilan University
- 2012 School of Computer Science, Tel-Aviv University
- 2013 School of Computer Science, Tel-Aviv University
- 2013 Broad Institute
- 2013 Department of Genetics, Harvard Medical School
- 2013 Department of Computer Science, Columbia University

2014 Division of Psychiatric Genomics, Icahn School of Medicine at Mount Sinai
2014 Department of Organismic and Evolutionary Biology, Harvard University
2014 Computational Biology and Bioinformatics, University of Southern California
2014 Department of Computer Science, University of California, Los Angeles
2014 Faculty of Medicine, Tel-Aviv University
2015 Department of Biological Statistics and Computational Biology, Cornell University
2015 Department of Genetics, The Faculty of Medicine, The Hebrew University of Jerusalem
2015 Department of Human Genetics and Metabolic Diseases, Hadassah Medical Center
2015 School of Computer Science and Engineering, The Hebrew University of Jerusalem
2015 Institute of Genetics, Shaare Zedek Medical Center
2017 Faculty of Mathematics and Computer Science, Weizmann Institute of Science
2018 Cancer Research Hub, The Faculty of Medicine, The Hebrew University of Jerusalem
2018 Faculty of Mathematics and Computer Science, Weizmann Institute of Science
2018 Department of Archaeogenetics, Max Planck Institute for the Science of Human History
2018 Institute of Genetics, Ha'Emek Medical Center
2018 School of Public Health, The Hebrew University of Jerusalem
2019 Department of Molecular Genetics, Weizmann Institute of Science
2019 Max Planck Institute for the Science of Evolutionary Biology
2019 Faculty of Mathematics and Computer Science, Weizmann Institute of Science
2019 The Faculty of Medicine (2x), The Hebrew University of Jerusalem
2020 Hadassah Medical Center clinical presentation
2020 Faculty lecture, Faculty of Medicine, The Hebrew University of Jerusalem
2020 Cardiology, Hadassah Medical Center
2020 Department of Genetics, Harvard Medical School
2020 Program in Quantitative Genomics, Harvard T.H. Chan School of Public Health
2020 Computational Data Science, Technion
2021 Department of Biology, Stanford University
2021 Department of Molecular Genetics, Weizmann Institute of Science
2021 School of Public Health, The Hebrew University of Jerusalem
2021 International Genetic Epidemiology Society
2021 Department of Genetics, Institute of Life Sciences, The Hebrew University of Jerusalem
2022 Department of Human Genetics, University of Chicago
2022 Faculty of Humanities, The Hebrew University of Jerusalem
2022 Norwegian Institute of Public Health
2022 Department of Statistics and Operations Research, Tel-Aviv University
2022 Genetics Institute, UCL
2022 Department of Genetics, Harvard Medical School
2022 School of Computer Science and Engineering, The Hebrew University of Jerusalem
2022 Department of Biology, Stanford University
2023 Department of Biochemistry, The Faculty of Medicine, The Hebrew University of Jerusalem
2023 Institute of Life Sciences, The Hebrew University of Jerusalem
2023 Department of Jewish History, Faculty of Humanities, The Hebrew University of Jerusalem
2024 Department of Statistics, University of Haifa
2024 Department of Jewish History, Ben Gurion University
2024 Institute of Genetics, Shaare Zedek Medical Center
2024 Ultima Genomics, Israel
2024 Department of Archaeogenetics, Max Planck Institute for Evolutionary Anthropology
2024 Institute of Genetics, Ha'Emek Medical Center
2024 European Society of Human Reproduction and Embryology (ESHRE) special webinar
2024 National Human Genome Research Institute special webinar

- 2025 Israel National Forensic Laboratory
- 2025 Psifas: Israel National Precision Initiative
- 2025 School of Public Health, The Hebrew University of Jerusalem
- 2025 IVF Unit, Shaare Zedek Medical Center
- 2025 Department of Genetics, Hadassah Medical Center
- 2025 University of Pavia and Genera Innovations in IVF webinar series
- 2025 Faculty of Medicine, The Hebrew University of Jerusalem
- 2025 Cardiology, Hadassah Medical Center
- 2026 Faculty of Medicine, Bar-Ilan University
- 2026 Department of Applied Mathematics and Theoretical Physics, University of Cambridge
- 2026 European Society of Human Reproduction and Embryology (ESHRE) special webinar (organizer and speaker)
- 2026 The Shmunis School of Biomedicine and Cancer Research, Tel Aviv University
- 2026 Genetic Institute, Rambam Health Care Campus

PUBLIC TALKS (UNPAID)

- 2016 World Federation of Tunisian Jews
- 2017 Boston Jewish Genealogical Society
- 2021,2022 Hebrew University annual city center public event (איינשטיין בעיר)
- 2023 Medical data science Israel Meetup
- 2024 European Researchers' night Hebrew University event
- 2026 Blavatnik Awards Science Symposium

PEER REVIEW

- 2008- An independent reviewer for:
 - Interdisciplinary:** Science, PNAS, Nature Communications, PLOS One, Scientific Reports
 - Biomedical sciences:** Cell, Nature Genetics, Nature Medicine, eLife, American Journal of Human Genetics, European Journal of Human Genetics, Genome Biology, Genome Research, Genetics, Genetics in Medicine, Molecular Biology and Evolution, PLOS Genetics, PLOS Computational Biology, Bioinformatics, Human Reproduction, Fertility and Sterility, Reproductive Biomedicine Online, Journal of Assisted Reproduction and Genetics, Molecular Psychiatry, Theoretical Population Biology, BMC Bioinformatics, Human Genetics, Clinical and Translational Medicine, Genes, Human Biology, Frontiers in Genetics, Journal of Personalized Medicine, Israel Journal of Health Policy Research, Molecular Biotechnology
 - Conferences:** RECOMB, ESHRE
 - Physics:** Physical Review Letters, Physical Review E, Europhysics Letters, New Journal of Physics, Journal of Statistical Mechanics, Physics Letters A, Journal of Physics A, Physica A, ESAIM: Mathematical Modelling and Numerical Analysis, Canadian Journal of Physics
 - Other:** Journal of Anthropological Research
- 2008 Selected as a Europhysics Letters distinguished referee.
- 2016- Grant reviewer for:
 - The Wellcome Trust, German-Israeli Foundation for Scientific Research and Development (GIF), Israel Science Foundation (ISF), Dutch Research Council, Israel Cancer Association, The International Institute for Jewish Genealogy, The Israel National Institute

for Health Policy Research, The joint foundation of the Hebrew University and affiliated hospitals

2023-2026 Associate editor, Theoretical Population Biology
2023- Reviewing editor, eLife

OTHER PROFESSIONAL SERVICE

University committees:

2024-2026 Grants committee, Azrieli Israel Center for Addiction and Mental Health
2024- Computing committee, The Faculty of Medicine
2016-2023 Research committee, The Faculty of Medicine
2017- Advanced studies committee, The Faculty of Medicine
2016- PhD committee, Braun School of Public Health

Other university service:

2016-2017, 2018-2019 School seminar coordinator, Braun School of Public Health

PhD committees:

2016-2021 Lily Agranat-Tamir, Life Sciences and Statistics (HUJI)
2019-2024 Shoshana Revel-Vilk, Braun School of Public Health (HUJI)
2021-2024 Sapir Labes, Faculty of Medicine (HUJI)
2021- Batel Ziv, Life Sciences and Statistics (HUJI)
2025- Michelle Eidelman, Faculty of Life Sciences, Bar-Ilan University
2025- Benjamin Kaufman, Department of Human Genetics, McGill University

PhD thesis reading:

2017 Samantha Streicher, Yale School of Public Health
2023 Keren Levinstein Hallak, Tel Aviv University
2024 Mira Stulman (HUJI)

MSc/MPH thesis reading:

2017 Reshit Beizer (HUJI PH)
2018 Nechama Averick (HUJI PH)
2019 Itay Nitzan (HUJI PH)
2019 Gabriel Azhari, Engineering, Bar-Ilan University
2021 Rachel Michaelson-Cohen (HUJI PH)
2022 Tzach Ben-Menachem (HUJI PH)
2023 Maya Simchoni (HUJI PH)
2023 Gashaw Dagnaw (HUJI PH)
2024 Doron Kabiri (HUJI PH)
2024 Noga Reshef (HUJI biomedical sciences)
2024 Arni Gerhman (HUJI PH)
2025 Yoav Barkai (HUJI PH)
2025 Milkiyas Habtegebriel (HUJI PH)

PhD defense committee:

2020 Mor Hanani, Hadassah Medical Center
2022 Ruth Harari-Kremer (HUJI PH)

National committees:

2020 Council for Higher Education data science fellowship

Professional committees:

2021-2022 Leading a think tank on the regulation of genetic research and testing in Israel of behalf of the Israel Association of Public Health Physicians

Evaluations

2022- Harvard, Yale

Other activities:

- 2021- Managing a Slack group for discussing genetic genealogy science and papers
 2023- Main contributor to a Telegram group for discussing preimplantation genetic testing science (admin since 2025)

Data access committees:

- 2014- The Ashkenazi Genome Consortium (coordinator)

Consulting (non-profit):

- 2017- Israel Ministry of Health national precision medicine initiative (PSIFAS)
 2019 Israel Science Foundation
 2019-2020 Israel Ministry of Justice
 2023- Israel Ministry of National Security
 2019-2021 Clalit Health Services
 2025 Federation of Local Authorities in Israel
 2025 Israel Institute for Biological Research
 2025 Israel Ministry of Defense
 2026 Israel's Knesset Science and Technology committee

Consulting (industry):

- 2016- My Heritage
 2026- Flagship Pioneering

Memberships in societies:

- 2010-2011 Israel Physical Society
 2012-2014, 2019 The American Society of Human Genetics
 2014 The Society for Molecular Biology and Evolution
 2022 Israel Association of Public Health Physicians
 2023- European Society of Human Reproduction and Embryology

STUDENTS SUPERVISED

Post-docs

- 2021- Michelle Grunin (joint with Jonathan Haines, Case Western Reserve University)
 2020-2021 Daniel Backenroth (part time)
 2019 Einat Granot-Hershkovitz
 2016-2018 Shay Tzur (part time)
 2016 Avner Halevy (part time)

PhD students

- 2024- Gilat Sacks (joint with Gheona Altarescu, Shaare Zedek Medical Center)
 2023- Ethel Vol
 2021- Liraz Klausner
 2019-2023 Idit Tessler (joint with Ronen Durst and Dan Gilon, Hadassah Medical Center)
 2017-2021 Hila Fridman (joint with Ephrat Levy-Lahad, Shaare Zedek Medical Center, graduated with distinction)
 2016-2022 Shamam Waldman

Master's students

- 2025- Ateret Revital
 2021-2025 Guy Mizrachi
 2020-2022 Daria Triffon (joint with Itay Chowers, Hadassah Medical Center)
 2017-2019 Idit Tessler (joint with Ronen Durst and Dan Gilon, Hadassah Medical Center; rector's list)
 2017-2019 Ehud Karavani
 2016-2018 David Raveh-Brawer (faculty's excellent thesis award, graduated magna cum laude)

Undergraduate research projects and research interns/assistants

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|-----------|---|
| 2025 | Chen Renan Biomedical sciences (HUJI) Methods for preimplantation genetic testing |
| 2024- | Harel Ismach Medicine (Ariel University), MD thesis Evaluating the expected success rate of investigative genetic genealogy |
| 2024-2025 | Ateret Revital Biomedical sciences (HUJI) Models for polygenic embryo screening |
| 2024 | Dolev Revivo Medicine (HUJI), computational medicine seminar Jewish population genetics |
| 2022- | Ariel Lomes Jewish population genetics |
| 2023 | Kinneret Norin Polygenic embryo screening in admixed populations |
| 2021-2022 | Hila Rotbard Medicine (HUJI) Estimating the frequency of pharmacogenetic alleles in diverse Israeli populations |
| 2020-2021 | Guy Mizrachi Biomedical sciences (HUJI) Developing computational methods for preimplantation genetic testing |
| 2020-2021 | Dana Golan Biomedical sciences (HUJI) Clinical utility of polygenic scores |
| 2018-2019 | Roei Levy Public health (HUJI) Inference of sex-specific founder events with X-linked IBD sharing |
| 2019-2021 | Saar Armon Biomedical sciences (HUJI) Algorithms for variant calling from low coverage sequencing data |
| 2016-2019 | Jacob (Kobi) Landau Medicine (HUJI), MD thesis Computational methods for studying the male germline cell lineage |
| 2018-2019 | Itamar Medved Biomedical sciences (HUJI) Demographic inference based on multiway haplotype sharing |
| 2016-2017 | Or Yaacov Medicine (HUJI) Searching for genes associated with lipid levels in a large pedigree from Israel |
| 2016 | Dana Baril Computer Science (HUJI) Coalescence times in large-scale genealogical records |
| 2015-2016 | Noam Bar Computer Science and Computational Biology (HUJI) Imputation of missing variants for ultra-low coverage sequencing in Ashkenazi Jews |
| 2015-2016 | Gavriel Fialkoff Computer Science and Computational Biology (HUJI) |

- 2016 Detection of copy number variants for preimplantation genetic screening with low-coverage single cell embryonic sequencing
Adina Barchichat
Bioinformatics, Jerusalem College of Technology
IBD mapping on the X chromosome

STUDENT FELLOWSHIPS AND HONORS (FOR LAB PROJECTS)

- 2019, 2020 Shamam Waldman, Center for Interdisciplinary Data Science Research, fellowship in core data science, 44,000₪ (2019), 22,000₪ (2020)
2020, 2021 Idit Tessler, Center for Interdisciplinary Data Science Research, fellowship in core data science, 44,000₪ (2020), 22,000₪ (2021)
2021-2023 Michelle Grunin, Shamir scholarship of the Ministry of Science and Technology for returning scientists, 280,000₪
2024 Liraz Klausner, The Israel Statistical and Data Science Association annual meeting best poster award

STUDENT PROJECTS SUPERVISED (BEFORE HUJI)

Undergraduate computational biology research projects at Bar-Ilan University

- 2010 Structural motifs in transcripts regulated under splicing factors depletion in *Trypanosoma brucei* (Or Garfunkel and Roy Azran)
2011 DNA editing in polymorphic human retrotransposons (Anastasia Shapiro)
2011 A comprehensive screen for DNA editing in mammalian genomes (Binyamin Knisbacher)

Undergraduate/masters research projects at Columbia University

- 2012 Quality control and variant statistics in the genomes of Ashkenazi Jews (Fillan Grady)
2012 Imputation of Ashkenazi Jewish genomes using whole genome sequencing panels (Ethan Kochav)
2012 Evaluating methods of local ancestry inference in closely related populations (James Xue)
2013 Coverage of Ashkenazi Jewish genomes by long segments shared with a reference panel (James Xue)
2014 Extracting IBD segments efficiently from genealogical trees (Shuo Yang)
2015 Refining the parameters of the bottleneck in the Ashkenazi Jewish population history (Hannah Rosenwein)