

RESUME

May 2025

1. PERSONAL DETAILS

Full Name:

Milana Frenkel-Morgenstern

Affiliation

Scojen Institute of Synthetic Biology, Dina Recanati School of Medicine, Reichman University, Herzliya, Israel

Marital status (optional):

Married +3

E-mail:

milana.morgenstern@runi.ac.il

Nationality:

Israeli

ORCID ID:

<https://orcid.org/0000-0002-0329-4599>

2. ACADEMIC DEGREES

(Year, department, institution, advisor starting with most **recent** degree)

Date: From-To	Institute	Degree	Advisor	Area of specialization
2001-2006	Molecular Genetics Department, Weizmann Institute of Science, Rehovot, Israel	PhD	Prof. Shmuel Petrokovski	Bioinformatics and Systems Biology
1998-2000	Life Sciences Department & Mathematics and Computer Science Department, Bar- Ilan University, Ramat-Gan, Israel	MSc	Prof. Ron Unger, Prof. Amihod Amir	Mathematics and Computer Sciences with thesis in Molecular Biology
1994-1998	Mathematics and Computer Science Department, Bar- Ilan University, Ramat-Gan, Israel	BSc	N/A	Mathematics and Computer Sciences

3. ACADEMIC APPOINTMENTS

(Years, rank or position, department, institution, starting with most **recent** appointment)

From-To	Department	Institute	Position
February 2024- Today	Scojen Institute of Synthetic Biology, Dina Recanati School of Medicine	Reichman University	Principal Investigator Senior Lecturer
2014-March 2024 <u>Oct 2014 – Jan 2015 -</u> <u>maternity leave</u>	Azrieli Faculty of Medicine	Bar-Ilan University, Israel	Senior Lecturer
2011-2015	Structural Biology and BioComputing Program	Spanish National Research Centre (CNIO), Spain	Staff Scientist
2009-2011 Prof. Alfonso Valencia's lab	Structural Biology and BioComputing Program	Spanish National Research Centre (CNIO), Spain	Caja Navarra International Postdoctoral Fellow
2006-2009 Prof. Uri Alon's lab	Molecular Cell Biology Department & Structural Biology	Weizmann Institute of Science, Israel	Horowitz Foundation Postdoctoral Fellow

4. PROFESSIONAL EXPERIENCE

(Years, rank or position, employer, starting with most **recent** appointment)

From-To	Department	Institute	Position
2024-Today	Dina Recanati School of Medicine	Reichman University, Israel	Principal Investigator
2014-2024	Azrieli Faculty of Medicine	Bar-Ilan University, Israel	Principal Investigator
2009-2014	Molecular Cell Biology	Weizmann Institute of Science, Israel	Scientific Advisor
2003-2012	Davidson Institute of Scientific Education	Weizmann Institute of Science, Israel	Scientific Advisor and Coordinator
2001-2009	Feinberg Graduate School	Weizmann Institute of Science, Israel	Tutor
2001-2002	Computer Sciences	Reichmann University (IDC)	Lecture Assistant

5. RESEARCH INTERESTS (briefly)

- 1. Cell-free DNA (cfDNA), cfRNA, liquid biopsy, apoptosis, necrosis, Systems and Synthetic Biology.**
- 2. Chromosomal translocations, chimeric RNAs, fusion proteins, protein-protein interactions, and druggable targets.**
- 3. Microbiome, metagenome, genome profiling, cfDNA/cfRNA biomarkers.**
- 4. Non-optimal codon usage, genetic code, cell cycle regulation, protein cell-cycle dynamics.**
- 5. Graphs, networks, next-generation sequencing, machine learning, text-mining, AI.**
- 6. Vitamin D, melanin, permanent hair coloring, mRNA technology.**

6. TEACHING EXPERIENCE

(Course title, your role in the course (main teacher, teacher in-charge), level (graduate or undergraduate); list each course only *once*.)

Course Title	My role	Level	Year/s
Introduction to Bioinformatics. Genetics. Introduction to Genetics.	Lecturer, <i>Reichman University</i>	Graduate	2024, 2025. 2025. 2025.
Single Cell Genomics: Advances and Future Perspectives	Lecturer	Graduate	2015, 2017, 2019, 2021, 2023
Next Generation Sequencing Methods and Applications. Chromosomal Alterations	Lecturer	Graduate	2016, 2018, 2020, 2022
Structural Bioinformatics	Lecturer	Graduate	2016, 2018, 2020, 2022
Liquid Biopsy in Complex Diseases and Prenatal Testing using Cell Free DNA (part of the Bioinformatics and Biostatistics course)	Lecturer	Graduate, Medical Students	2018-2023
Deep Learning and Big Data Applications (part of the Bioinformatics and Biostatistics course)	Lecturer	Graduate, Medical Students	2018-2023
Perl Programming	Lecture Assistant	Graduate	2001-2009

Advances in Perl Programming and Bioinformatics	Lecture Assistant	Graduate	2001-2009
Methods and Tools in Computational Biology	Lecture Assistant	Undergraduate	2001-2002

7. UNIVERSITY ACTIVITIES

(Years, activity. List University/Institute, not faculty, committees, or administrative positions, starting with most **recent** appointment)

From-To	Institute	Position
2025-Today	Research Committee , Reichman University, Herzliya, Israel	The Dina Recanati School of Medicine representative
2018-2024	Data Science Institute , Bar-Ilan University, Ramat-Gan, Israel	Board of Directors
2018-2020	Bar-Ilan University, Ramat-Gan, Israel	Elected representative of Senior Lecturers at the BIU Senate

8. DEPARTMENTAL ACTIVITIES

(Years, activity, in descending order)

From-To	Institute	Position
2024-Today	The Dina Recanati School of Medicine, Reichman University	Chair, <i>Committee for Computational Resources</i>
2024-Today	The Dina Recanati School of Medicine, Reichman University	Chair, <i>Graduate Students Committee</i>
2018-2024	Azrieli Faculty of Medicine, Bar-Ilan University	Member, <i>Committee for Genomics and Bioinformatics</i>
2018-2024	Azrieli Faculty of Medicine, Bar-Ilan University	Member, <i>Computational Resources Committee</i>
2014-2017	Azrieli Faculty of Medicine, Bar-Ilan University	Head, <i>Bioinformatics Committee</i>
2016-2018	Azrieli Faculty of Medicine, Bar-Ilan University	Member, <i>Genomics Committee</i>
2015-2018	Azrieli Faculty of Medicine, Bar-Ilan University	Member, <i>Internet Committee</i>

9. PUBLIC PROFESSIONAL ACTIVITIES

9.1 (Years, activity / Keywords) List public professional committees, editorial responsibilities, editorial boards, reviewing of grants and manuscripts for scientific journals, starting with most **recent**)

Years	Activity	Keywords
2020-Today	Awards Evaluation Panel: Swiss Institute of Bioinformatics (SIB) Award 2023 Innovative Resource Award. Horizon 2020 Excellent Science Evaluation, ICSF affiliated conferences.	Bioinformatics, Biotechnology, Biomedicine, Structural Biology, Biochemistry

2015-Today	Reviewer of grants: German-Israel Foundation (GIF) Danish Scientific Agency Tel-Aviv University - internal grants Swiss Science Authority Austrian Science Authority EraPerMed, Ministry of Science Technology (MOST) , European Research Council (ERC) Israel Science Foundation (ISF) Israel Cancer Association (ICA)	Biochemistry, Biotechnology, Biomedicine, RNAs, Transcriptomics, Genomics, Next-Generation Sequencing Technology, Genome Assembly, Cancer, Protein Networks, Protein-Protein Interactions, Bioinformatics, Computational Biology, Machine Learning (ML), Big Data, AI
2011-Today	Reviewer of manuscripts in journals: Bioinformatics (Oxford), Nucleic Acids Research (NAR), Genome Research, PloSCB, BMC Bioinformatics, Cancers (MDPI), Cells (MDPI), Cell Reports (Cell Press), iScience (Cell Press), Scientific Reports (NPG), Nature Communications (NPG), Molecular Oncology (Wiley), FEBS (Wiley), Nucleic Acids Research (Oxford), Elsevier journals	Biology, Biotechnology, Biomedicine, RNAs, Transcriptomics, Genomics, Next-Generation Sequencing, Bioinformatics, Computational Biology, Machine Learning (ML), Big Data, AI
2020- Today	Guest editor in journals: PLoS Genetics Cells/MDPI Biology/MDPI	Chimeric RNAs, Fusions, Cancers, Biotechnology, Biomedicine
2023-Today	Evaluation of the Self-evaluation Report/s of Palacký University Olomouc	Biotechnology, Biomedicine, Biochemistry, Genomics
2015-Today	Reviewer for PhD thesis: Ben-Gurion University, Israel Tel-Aviv University, Israel University of Haifa, Israel University of Calcutta, Kolkata, India National University of Singapore, Singapore Hebrew University of Jerusalem, Israel Bar-Ilan University	Cell Biology, Biotechnology, Biomedicine, RNAs, Transcriptomics, Genomics, Next-Generation Sequencing, Cancer, Protein Networks, Protein-Protein Interactions, Bioinformatics, Computational Biology, Machine Learning (ML), Big Data, AI
2008-Today	Founder and Chair, Art in Science session, International Society of Computational Biology, ISMB/ECCB, annual meetings	Bioinformatics, Biotechnology, Biomedicine

9.2 Member of Editorial Board/ Reviewer (International Journals)

Years (period)	Name of Journal	Role
2011-Present	Bioinformatics (Oxford)	Reviewer
2011-Present	PLoS Computational Biology	Reviewer

2011-Present	BMC Bioinformatics	Reviewer
2011-Present	Cells (MDPI)	Guest Editor, Reviewer
2011-Present	Vaccines (MDPI)	Reviewer
2011-Present	Molecular Oncology (Wiley)	Reviewer
2011-Present	FEBS (Wiley)	Reviewer
2011-Present	Nucleic Acids Research (Oxford)	Reviewer
2011-Present	Nature Communications (Nature Publishing Group, Springer Nature Group)	Reviewer
2011-Present	PLoS Genetics	Guest editor , Reviewer
2011-Present	npj Vaccines (Nature Publishing Group)	Reviewer
2011-Present	npj Systems Biology and Applications	Reviewer
2011-Present	Genome Research	Reviewer
2011-Present	Molecular Systems Biology (EMBO)	Reviewer
2011-Present	npj Genomic Medicine	Reviewer
2011-Present	npj Digital Medicine	Reviewer
2011-Present	Viruses (MDPI)	Reviewer

10. MEMBERSHIP IN PROFESSIONAL SOCIETIES

Years	Society	Position
2017-Today	Israeli Society of Bioinformatics and Computational Biology (ISBCB)	Board of Directors, Head of Audit Committee, Responsible for the ILANIT/FISEB conference sessions 2020, 2023, 2026
2000-Today	Israeli Society of Bioinformatics and Computational Biology (ISBCB)	Member
2017-Today	International Society of Computational Biology (ISCB)	Elected representative , ISCB Affiliated group
2005-2007	International Society of Computational Biology (ISCB)	Elected secretary , Student Council
2005-2009	Student council at the Weizmann Institute of Science	Treasurer
2002-2009	Student council at the Weizmann Institute of Science	Elected member
2002-Today	International Society of Computational Biology (ISCB)	Member
2010-Today	European Association of Cancer Research (EACR)	Member
2009-Today	Federation of European Biochemical Societies (FEBS)	Member

11. FELLOWSHIPS, AWARDS AND HONORS

(Year, honor. List prizes, awards, or significant nominations. Do not include dean's list during BSc.)

Year	Honor	Title	Amount
2021	Rector Prize for Scientific Innovation, Bar-Ilan University	Pan-Cancer Research, COVID-19, and Chimeric RNAs	5000NIS
2016-2019	Bioinfo4Women Fellow	The Super Geek Award , Barcelona Super Computing Center (BSC), Barcelona, Spain	20,000EUR
2011-2015	Miguel Servet (FIS) Foundation - fellowship	Development of a Computational and Experimental Approach to Discover Diagnostic Biomarkers in Cancer using Deep Sequencing of RNA Transcripts	225,000EUR
2009-2011	Caja Navarra Foundation, Spain - fellowship	International postdoctoral fellowship	68,000EUR
2006-2009	Horvitz Foundation Complexity Sciences - fellowship	Cell cycle regulation by means of non-optimal codon usage	75,000USD

Year	Award
Dec. 2017	Excellent Lecturer Award 2017 , Azrieli Faculty of Medicine, Bar-Ilan University
2014	Travel Award for Israeli PostDocs Abroad, ILANIT
2010	Outstanding Poster Award at ISMB conference in Boston
2010	Best Poster Award, ISBCB symposium
2007, 2008, 2009, 2011	Travel Award to ISMB Conference by ISCB
2003, 2006	RECOMB Conference: Student Travel Award
2004	Centre for Systems Biology, Weizmann Institute of Science
2005, 2006, 2008	ECCB Conference Travel Awards
2005	Aharon Katzir Foundation award

12. GRADUATE STUDENTS

(Name of student, year of graduation, title of thesis, name of primary supervisor, names of additional supervisors, if any.)

(If known, please supply for each graduate, place of employment, position, and professional standing.)

Completed PhD dissertations:

- Vikrant Palande**, "Diagnosis of Glioma Tumors using Circulating Cell-Free Tumor DNA in Patients' Blood." 2021. **Supervisor:** Dr. Milana Frenkel-Morgenstern. **Current position:** Postdoctoral student at Johns Hopkins University, Maryland, USA.
- Gon Carmi**, "Design principles of protein evolution and metagenomics", 2022. **Supervisor:** Dr. Milana Frenkel-Morgenstern. **Current position:** Bioinformatician at the Volcani Canter, Israel.

3. **Rajesh Detroja**, “Development of an efficient reference-based method for identifying chimeric RNAs and their applications in complex diseases”, 2023. **Supervisor:** **Dr. Milana Frenkel-Morgenstern**. **Current position:** Postdoctoral student at the Princess Margaret Cancer Research Center, Toronto, Canada.
4. **Sunanda Biswas Mukherjee**, “Deciphering the effects of molecular and epidemiological factors on COVID-19 infection and its severity using computational analysis”, 2023. **Supervisor:** **Dr. Milana Frenkel-Morgenstern**.
5. **Mahua Bhattacharya**, “Studying the effect of genomic alterations on cellular mechanisms involved in cancer processes, 2025. **Supervisor:** **Dr. Milana Frenkel-Morgenstern**.

Completed MSc theses

6. Aviad Sivan, “Codon usage effect on protein expression during cell cycle” 2020. **Supervisor:** **Dr. Milana Frenkel-Morgenstern**. **Current position:** Bioinformatician.

PhD and MSc theses in progress

Name of Student	Degree, Years Supervised	Thesis Title
Mina Roth	2021-2023, Master student MSc thesis in progress	Cell-to-cell communication using cell-free DNA of human cells
Dylan Dsouza	2022-Present, PhD student PhD thesis in progress Expected Graduation 2027	Microbiome Analyses of Arthritis and Lupus Patients and Applications of Antibiotics. Synthesis of Fusion Proteins
Olawumi Giwa	2020-Present, PhD student PhD thesis in progress Expected Graduation 2025	Liquid Biopsy in Glioblastoma to Monitor patients During a Course of the Disease
Kai Cheifetz	2024-Present, PhD student MSc thesis in progress Expected Graduation 2026	Sweet proteins profiling by means of Machine Learning
Daniel Submatian	2022-Present, PhD student PhD thesis in progress Expected Graduation 2027	Digital Hospital for Patients in Complex Diseases and AI

13. SPONSORED LONG-TERM VISITORS AND POST-DOCTORAL ASSOCIATES

Name of Student	Degree, Years Supervised	Title/s
Dr. Somnath Tagore Indo-Israel Fellowship for the excellent	2015-2018, Postdoc, Completed, (Currently – Fellow at the Columbia University, NYC)	• Percolation methods in protein-protein interactions of chimeric proteins in cancers. • Text mining and NLP in Cancer Research. • Classification of tumor suppressors and oncogenes in cancers.

postdoctoral students (VaTaT).		
Dr. Sumit Mukherjee Indo-Israel Fellowship for the excellent postdoctoral students (VaTaT).	2019-2022, postdoc (Currently – Fellow in NIH)	- Immunodominant Epitopes for SARS-Cov-2. - Evolution of Chimeric RNAs, Cancer Plasticity. - Sense-Antisense Chimeras and Evolution.

14. RESEARCH GRANTS

(Year, granting agency, amount, title of grant, names of principal investigators and co-investigators.)

Competitive, industrial, and other sources

Year/s	Foundation	Topic	Competitive/ Industrial	Amount
2014-2015	Danish Science Agency	Text Mining in Cancer Research	Competitive	100,000NIS
2016-2018	Israel Cancer Association (ICA)	Liquid Biopsy platform for early diagnostics of glioblastoma	Competitive	50,000NIS
2016-2018	VaTaT, Israel Ministry of Science	Indo-Israel Fellowship for the excellent postdoctoral student: Dr. Somnath Tagore	Competitive	225,000NIS
2018-2019	The Roland Arnall Foundation- The Bar-Ilan University Cancer Center	Non-invasive Liquid Biopsy for early diagnostics of gliomas	Donation	37,000NIS
2018-2020	Munich University Collaboration grant	Non-invasive liquid biopsy in gliomas	Competitive	30,000EUR
2018-2021	Mor Foundation	Developing of Liquid Biopsy platform for glioblastoma	Industrial	150,000NIS
2019-2021	Israel Innovation Authority (Kamin grant)	Developing of Liquid Biopsy platform for arthritis and lupus	Competitive	880,000NIS
2019-2021	VaTaT, Israel Ministry of Science	Indo-Israel Fellowship for the excellent postdoctoral student: Dr. Sumit Mukherjee	Competitive	225,000NIS
2020-2022	Israel Science Foundation (ISF) Bat-Sheva de Rothschild grant for workshops, Co-PI: Prof. David Karasik	Post-genomic Analyses for Musculoskeletal Biology	Competitive	35,000NIS
2020-2022	Meditech Seed grant, Co-PI: Prof. Judith Aharon-Perez	Developing of Liquid Biopsy platform for Alzheimer's disease	Industrial	55,000NIS

2019-2023	GERMSTORM Co-PI: Prof. David Karasik	COST Action	Competitive	Regional Budget
2020-2022	Data Science Institute (DSI), Bar-Ilan University	Development of COVID-19 Database of Drugs for Repurposing Using Text-Mining Methods	Competitive	15,000NIS
2021-2023	Data Science Institute (DSI), Bar-Ilan University Co-PI with Prof. Oren Peres	Optimizing the Realization of Legal Rights by Alzheimer's and Dementia Patients Using AI	Competitive	50,000NIS
2021-2022	Presidential Research Grant Co-PI: Prof. Eviatar Nevo, Haifa University	Genomics of Penicillium	Competitive	60,000NIS
2021-2023	Israel Innovation Authority Co-PI: Dr. Amos Danielli, Engineering Department, BIU	Detection of chimeric RNA by novel magnetic system	Competitive	1,297,000NIS (667,000NIS Frenkel-Morgenstern lab)
Dec. 2022- Nov. 2023	Israel Cancer Association (ICA)	Liquid Biopsy for Early Diagnostics of Glioblastoma	Competitive	50,000NIS
Sep. 2022 – Aug. 2023	VaTaT	Innovation Technology for Start-Up MynLi	Competitive	50,000NIS
Sep. 2022 – Dec. 2025	Ichilov R&D	Liquid Biopsy Platform in Arthritis	Industrial	70,000NIS
2023-2027	Net4Brain	COST Action	Competitive	Regional Budget
2025-2027	Food Allergy Research and Education (FARE), co-PI: Prof. Eli Magen, Ben-Gurion University	Application: R-202307-00593	Competitive <u>(Submitted)</u>	2M EUR
2025-2028	Israel Science Foundation (ISF)	Mechanisms of Allergies	Competitive <u>(Submitted)</u>	Approx. 250,000 NIS per year

15. SUBMITTED ISF APPLICATIONS THAT RECEIVED A GRADE: “VERY GOOD”

Grant Number	Year	Grant Type	Grant Title
545/24	2024	MAVRI - Biomedical Research Track	Comprehensive study to uncover the mechanism of food allergy through gene expression, CD203c and CD69 extracellular vesicle profiling, and machine learning
263/23	2023	Personal Research Grant	Chimeric RNA: Coding or non-coding? A systematic answer through transcriptomics, translomics, proteomics, and deep learning
273/22	2022	Personal Research Grant	Deciphering features of chimeric RNA involved in altering cancer gene networks
3409/21	2021	China-Israel Research Grant	Innovative machine learning platform enabling the identification of genetic changes in brain cancer to achieve high sensitivity at the single-cell level
546/20	2020	Personal Research Grant	Single-cell analyses of chimeric transcripts encoding fusion proteins in ovarian cancer
2880/19	2019	Singapore-Israel Research Grant	Identification, control, and functional characterization of chimeric transcripts in glioma at the single-cell level
3059/19	2019	Broad Institute - Joint Research Grant	Analysis of the shared genetic basis of Alzheimer's disease and type 2 diabetes to define actionable therapeutic hypotheses
3719/19	2019	Focused Research Program Application for COVID-19	Examination of vaccine efficacy against new epitopes in the SARS-CoV-2 virus in the context of immune deficiency in adults
609/18	2018	Personal Research Grant	Design principles for non-invasive cancer diagnosis to detect acquired drug resistance
2485/18	2018	Canada-Israel Collaboration	Comprehensive epigenetic study of strong nucleosomes associated with fusion sequences and mutations identified in multiple sclerosis patients using liquid biopsy technique

16. PUBLICATIONS

(All publications should appear in ***increasing*** chronological order).

16.1 Theses

Name of Student	Degree, Years Supervised	Thesis Title
Aviad Sivan	2015-2017, Master thesis, MSc completed	Codon usage effect on protein expression during cell cycle
Vikrant Palande	2015-2020 PhD Completed	Diagnosis of Glioma Tumors using Circulating Cell-Free Tumor DNA in Patients' Blood.

Rajesh Detroja	2017-2023 PhD Completed	Development of an efficient reference-based method for identifying chimeric RNAs and their applications in complex diseases
Gon Carmi	2016-2021 PhD Completed	Design principles of protein evolution and metagenomics
Sunanda Biswas Mukherjee	2020-2023 PhD Completed	Deciphering the effects of molecular and epidemiological factors on COVID-19 infection and its severity using computational analysis
Mahua Bhattacharya	2019-2023 PhD Completes	Studying the effect of genomic alterations on cellular mechanisms involved in cancer processes

16.2 Refereed papers in professional journals

Published papers (including all co-authors in the order they appear on the paper, title of paper, journal, volume, first and last pages, and year of publication. (Publications [marked in brown color] that are considered representing your unique contribution to the field; *corresponding author; students marked in blue color).

1. **Frenkel-Morgenstern M**, Voet H, Pietrokovski S. Enhanced statistics for local alignment of multiple alignments improve prediction of protein function and structure. **Bioinformatics**. 2005 Jul 1;21(13):2950-6. doi: 10.1093/bioinformatics/bti462. Epub 2005 May 3. PMID: 15870168.
2. **Frenkel-Morgenstern M**, Singer A, Bronfeld H, Pietrokovski S. One-Block CYRCA: an automated procedure for identifying multiple-block alignments from single block queries. **Nucleic Acids Res**. 2005 Jul 1;33(Web Server issue):W281-3. doi: 10.1093/nar/gki488. PMID: 15980470; PMCID: PMC1160248.
3. Eyal E#, **Frenkel-Morgenstern M#**, Sobolev V, Pietrokovski S. A pair-to-pair amino acids substitution matrix and its applications for protein structure prediction. **Proteins**. 2007 Apr 1;67(1):142-53. doi: 10.1002/prot.21223. PMID: 17243158. #equally contributed first authors.
4. **Frenkel-Morgenstern M***, Magid R, Eyal E, Pietrokovski S. Refining intra- protein contact prediction by graph analysis. **BMC Bioinformatics**. 2007 May 24;8 Suppl 5(Suppl 5):S6. doi: 10.1186/1471-2105-8-S5-S6. PMID: 17570865; PMCID: PMC1892094.
5. Klipcan L, **Frenkel-Morgenstern M**, Safo MG. Presence of tRNA-dependent pathways correlates with high cysteine content in methanogenic Archaea. **Trends Genet**. 2008 Feb;24(2):59-63. doi: 10.1016/j.tig.2007.11.007. Epub 2008 Jan 14. PMID: 18192060.
6. Cohen AA, Geva-Zatorsky N, Eden E, **Frenkel-Morgenstern M**, Issaeva I, Sigal A, Milo R, Cohen-Saidon C, Liron Y, Kam Z, Cohen L, Danon T, Perzov N, Alon U. Dynamic proteomics of individual cancer cells in response to a drug. **Science**. 2008 Dec 5;322(5907):1511-6. doi: 10.1126/science.1160165. Epub 2008 Nov 20. PMID: 19023046.
7. **Frenkel-Morgenstern M**, Tworowski D, Klipcan L, Safo M. Intra-protein compensatory mutations analysis highlights the tRNA recognition regions in aminoacyl-tRNA synthetases. **J Biomol Struct Dyn**. 2009 Oct;27(2):115-26. doi: 10.1080/07391102.2009.10507302. PMID: 19583438.
8. **Frenkel-Morgenstern M**, Cohen AA, Geva-Zatorsky N, Eden E, Prilusky J, Issaeva I, Sigal A, Cohen-Saidon C, Liron Y, Cohen L, Danon T, Perzov N, Alon U. Dynamic Proteomics: a database for dynamics and localizations of endogenous fluorescently tagged proteins in living human cells. **Nucleic Acids Res**. 2010 Jan;38(Database issue):D508-12. doi: 10.1093/nar/gkp808. Epub 2009 Oct 9. PMID: 19820112; PMCID: PMC2808965.
9. Gottlieb A, **Frenkel-Morgenstern M**, Safo M, Horn D. Common peptides study of aminoacyl-tRNA synthetases. **PLoS One**. 2011;6(5):e20361. doi: 10.1371/journal.pone.0020361. Epub 2011 May 27. PMID: 21647378; PMCID: PMC3103580.
10. **Frenkel-Morgenstern M***, Danon T, Christian T, Igarashi T, Cohen L, Hou YM, Jensen LJ. Genes adopt non-optimal codon usage to generate cell cycle-dependent oscillations in protein levels. **Mol Syst Biol**. 2012 Feb 28;8:572. doi:10.1038/msb.2012.3. PMID: 22373820; PMCID: PMC3293633. *corresponding author
11. **Frenkel-Morgenstern M**, Valencia A. Novel domain combinations in proteins encoded by chimeric transcripts. **Bioinformatics**. 2012 Jun 15;28(12):i67-74. doi: 10.1093/bioinformatics/bts216. PMID: 22689780; PMCID: PMC3371848.
12. **Frenkel-Morgenstern M**, Lacroix V, Ezkurdia I, Levin Y, Gabashvili A, Prilusky J, Del Pozo A, Tress M, Johnson R, Guigo R, Valencia A. Chimeras taking shape: potential functions of proteins encoded by chimeric

- RNA transcripts. **Genome Res.** 2012 Jul;22(7):1231-42. doi: 10.1101/gr.130062.111. Epub 2012 May 15. PMID: 22588898; PMCID: PMC3396365.
13. **Frenkel-Morgenstern M**, Gorohovski A, Lacroix V, Rogers M, Ibanez K, Boullosa C, Andres Leon E, Ben-Hur A, Valencia A. ChiTaRS: a database of human, mouse and fruit fly chimeric transcripts and RNA-sequencing data. **Nucleic Acids Res.** 2013 Jan;41(Database issue):D142-51. doi: 10.1093/nar/gks1041. Epub 2012 Nov 9. PMID: 23143107; PMCID: PMC3531201.
 14. **Frenkel-Morgenstern M**, Gorohovski A, Vucenovic D, Maestre L, Valencia A. ChiTaRS 2.1--an improved database of the chimeric transcripts and RNA-seq data with novel sense-antisense chimeric RNA transcripts. **Nucleic Acids Res.** 2015 Jan;43(Database issue):D68-75. doi: 10.1093/nar/gku1199. Epub 2014 Nov 20. PMID: 25414346; PMCID: PMC4383979.
 15. Gamper HB, Masuda I, **Frenkel-Morgenstern M**, Hou YM. Maintenance of protein synthesis reading frame by EF-P and m(1)G37-tRNA. **Nat Commun.** 2015 May 26;6:7226. doi: 10.1038/ncomms8226. PMID: 26009254; PMCID: PMC4445466.
 16. Gamper HB, Masuda I, **Frenkel-Morgenstern M**, Hou YM. The UGG Isoacceptor of tRNA^{Pro} Is Naturally Prone to Frameshifts. **Int J Mol Sci.** 2015 Jul 1;16(7):14866-83. doi: 10.3390/ijms160714866. PMID: 26140378; PMCID: PMC4519876.
 17. Li K, Wang L, Knisbacher BA, Xu Q, Levanon EY, Wang H, **Frenkel-Morgenstern M**, **Tagore S**, Fang X, Bazak L, Buchumenski I, Zhao Y, Lövy M, Li X, Han L, Frenkel Z, Beiles A, Cao YB, Wang ZL, Nevo E. Transcriptome, genetic editing, and microRNA divergence substantiate sympatric speciation of blind mole rat, Spalax. **Proc Natl Acad Sci U S A.** 2016 Jul 5;113(27):7584-9. doi: 10.1073/pnas.1607497113. Epub 2016 Jun 23. PMID: 27339131; PMCID: PMC4941469.
 18. **Gorohovski A**, **Tagore S**, **Palande V**, **Malka A**, **Raviv-Shay D**, **Frenkel-Morgenstern M***. ChiTaRS-3.1-the enhanced chimeric transcripts and RNA-seq database matched with protein-protein interactions. **Nucleic Acids Res.** 2017 Jan 4;45(D1):D790-D795. doi: 10.1093/nar/gkw1127. Epub 2016 Nov 29. PMID: 27899596; PMCID: PMC5210585. ***corresponding author**
 19. **Frenkel-Morgenstern M***, **Gorohovski A**, **Tagore S**, Sekar V, Vazquez M, Valencia A. ChiPPI: a novel method for mapping chimeric protein-protein interactions uncovers selection principles of protein fusion events in cancer. **Nucleic Acids Res.** 2017 Jul 7;45(12):7094-7105. doi: 10.1093/nar/gkx423. PMID: 28549153; PMCID: PMC5499553. ***corresponding author**
 20. Cai Z, Wang L, Song X, **Tagore S**, Li X, Wang H, Chen J, Li K, Frenkel Z, Gao D, **Frenkel-Morgenstern M**, Zhang T, Nevo E. Adaptive Transcriptome Profiling of Subterranean Zokor, *Myospalax baileyi*, to High-Altitude Stresses in Tibet. **Sci Rep.** 2018 Mar 16;8(1):4671. doi: 10.1038/s41598-018-22483-7. PMID: 29549310; PMCID: PMC5856782.
 21. Welch L, Gaeta B, Kovats DE, **Frenkel Morgenstern M.*** Art in Science Competition invites artworks to the annual exhibition on ISMB 2018 in Chicago. **F1000Res.** 2018 Mar 19;7:ISCB Comm J-337. doi: 10.12688/f1000research.14242.1. PMID: 29623191; PMCID: PMC5861520. ***corresponding author**
 22. **Frenkel-Morgenstern M**, Welch L, Gaeta B, Kovats DE. Art in Science Competition invites artworks to the annual exhibition on ISMB 2018 in Chicago. **PLoS Comput Biol.** 2018 May 7;14(5):e1006139. doi: 10.1371/journal.pcbi.1006139. PMID: 29734340; PMCID: PMC5937733. ***corresponding author**
 23. Journo G, Tushinsky C, Shterngas A, Avital N, Eran Y, Karpuj MV, **Frenkel-Morgenstern M**, Shamay M. Modulation of Cellular CpG DNA Methylation by Kaposi's Sarcoma-Associated Herpesvirus. **J Virol.** 2018 Jul 31;92(16):e00008-18. doi:10.1128/JVI.00008-18. PMID: 29899086; PMCID: PMC6069195.
 24. Emanuelli A, Manikoth Ayyathan D, Koganti P, Shah PA, Apel-Sarid L, Paolini B, **Detroja R**, **Frenkel-Morgenstern M**, Blank M. Altered Expression and Localization of Tumor Suppressive E3 Ubiquitin Ligase SMURF2 in Human Prostate and Breast Cancer. **Cancers (Basel).** 2019 Apr 18;11(4):556. doi: 10.3390/cancers11040556. PMID: 31003445; PMCID: PMC6521037.
 25. Boginya A, **Detroja R**, Matityahu A, **Frenkel-Morgenstern M**, Onn I. The chromatin remodeler Chd1 regulates cohesin in budding yeast and humans. **Sci Rep.** 2019 Jun 20;9(1):8929. doi: 10.1038/s41598-019-45263-3. PMID: 31222142; PMCID: PMC6586844.
 26. **Tagore S**, **Gorohovski A**, Jensen LJ, **Frenkel-Morgenstern M***. ProtFus: A Comprehensive Method Characterizing Protein-Protein Interactions of Fusion Proteins. **PLoS Comput Biol.** 2019 Aug 22;15(8):e1007239. doi: 10.1371/journal.pcbi.1007239. PMID: 31437145; PMCID: PMC6705771.
 27. **Frenkel-Morgenstern M**. Identification of Chimeric RNAs Using RNA-Seq Reads and Protein-Protein Interactions of Translated Chimeras. **Methods Mol Biol.** 2020;2079:27-40. doi: 10.1007/978-1-4939-9904-0_3. PMID: 31728960. ***corresponding author**
 28. **Balamurali D**, **Gorohovski A**, **Detroja R**, **Palande V**, **Raviv-Shay D**, **Frenkel-Morgenstern M***. ChiTaRS 5.0: the comprehensive database of chimeric transcripts matched with druggable fusions and 3D chromatin maps. **Nucleic Acids Res.** 2020 Jan 8;48(D1):D825-D834. doi: 10.1093/nar/gkz1025. PMID: 31747015; PMCID: PMC7145514. ***corresponding author**
 29. **ICGC/TCGA Pan-Cancer Analysis of Whole Genomes Consortium**. Pan-cancer analysis of whole genomes. **Nature.** 2020 Feb;578(7793):82-93. doi:10.1038/s41586-020-1969-6. Epub 2020 Feb 5.

30. Li Y, Roberts ND, Wala JA, Shapira O, Schumacher SE, Kumar K, Khurana E, Waszak S, Korbel JO, Haber JE, Imielinski M; PCAWG Structural Variation Working Group [Frenkel-Morgenstern M]; Weischenfeldt J, Beroukhir R, Campbell PJ; PCAWG Consortium. Patterns of somatic structural variation in human cancer genomes. **Nature**. 2020 Feb;578(7793):112-121. doi: 10.1038/s41586-019-1913-9. Epub 2020 Feb 5.
31. Gerstung M, et al, PCAWG Evolution & Heterogeneity Working Group; Spellman PT, Wedge DC, Van Loo P; PCAWG Consortium [Frenkel-Morgenstern M]. The evolutionary history of 2,658 cancers. **Nature**. 2020 Feb;578(7793):122-128. doi: 10.1038/s41586-019-1907-7. Epub 2020 Feb 6.
32. Rheinbay E, et al; PCAWG Drivers and Functional Interpretation Working Group; PCAWG Structural Variation Working Group [Frenkel-Morgenstern M]; Weischenfeldt J, Beroukhir R, Martincorena I, Pedersen JS, Getz G; PCAWG Consortium. Analyses of non-coding somatic drivers in 2,658 cancer whole genomes. **Nature**. 2020 Feb;578(7793):102-111. doi: 10.1038/s41586-020-1965-x. Epub 2020 Feb 5.
33. Alexandrov LB, et al; PCAWG Mutational Signatures Working Group; Getz G, Rozen SG, Stratton MR; PCAWG Consortium [Frenkel-Morgenstern M]. The repertoire of mutational signatures in human cancer. **Nature**. 2020 Feb;578(7793):94-101. doi: 10.1038/s41586-020-1943-3. Epub 2020 Feb 5.
34. PCAWG Transcriptome Core Group; PCAWG Transcriptome Working Group [Frenkel-Morgenstern M]; Brazma A, Brooks AN, Göke J, Rätsch G, Schwarz RF, Stegle O, Zhang Z; PCAWG Consortium. Genomic basis for RNA alterations in cancer. **Nature**. 2020 Feb;578(7793):129-136. doi: 10.1038/s41586-020-1970-0. Epub 2020 Feb 5.
35. Sieverling L, Hong C, Koser SD, Ginsbach P, Kleinheinz K, Hutter B, Braun DM, Cortés-Ciriano I, Xi R, Kabbe R, Park PJ, Eils R, Schlesner M; PCAWG-Structural Variation Working Group [Frenkel-Morgenstern M]; Brors B, Rippe K, Jones DTW, Feuerbach L; PCAWG Consortium. Genomic footprints of activated telomere maintenance mechanisms in cancer. **Nat Commun**. 2020 Feb 5;11(1):733. doi: 10.1038/s41467-019-13824-9.
36. Shuai S; PCAWG Drivers and Functional Interpretation Working Group [Frenkel-Morgenstern M]; Gallinger S, Stein LD; PCAWG Consortium. Combined burden and functional impact tests for cancer driver discovery using DriverPower. **Nat Commun**. 2020 Feb 5;11(1):734. doi: 10.1038/s41467-019-13929-1.
37. Bhandari V, Li CH, Bristow RG, Boutros PC; PCAWG Consortium [Frenkel-Morgenstern M]. Divergent mutational processes distinguish hypoxic and normoxic tumours. **Nat Commun**. 2020 Feb 5;11(1):737. doi: 10.1038/s41467-019-14052-x.
38. Zhang Y, Chen F, Fonseca NA, He Y, Fujita M, Nakagawa H, Zhang Z, Brazma A; PCAWG Transcriptome Working Group; PCAWG Structural Variation Working Group [Frenkel-Morgenstern M]; Creighton CJ; PCAWG Consortium. High-coverage whole-genome analysis of 1220 cancers reveals hundreds of genes deregulated by rearrangement-mediated cis-regulatory alterations. **Nat Commun**. 2020 Feb 5;11(1):736. doi: 10.1038/s41467-019-13885-w.
39. Rubanova Y, Shi R, Harrigan CF, Li R, Wintersinger J, Sahin N, Deshwar AG; PCAWG Evolution and Heterogeneity Working Group; Morris QD; PCAWG Consortium [Frenkel-Morgenstern M]. Reconstructing evolutionary trajectories of mutation signature activities in cancer using TrackSig. **Nat Commun**. 2020 Feb 5;11(1):731. doi: 10.1038/s41467-020-14352-7.
40. Cmero M, Yuan K, Ong CS, Schröder J; PCAWG Evolution and Heterogeneity Working Group; Corcoran NM, Papenfuss T, Hovens CM, Markowitz F, Macintyre G; PCAWG Consortium [Frenkel-Morgenstern M]. Inferring structural variant cancer cell fraction. **Nat Commun**. 2020 Feb 5;11(1):730. doi: 10.1038/s41467-020-14351-8.
41. Paczkowska M, Barenboim J, Sintupisut N, Fox NS, Zhu H, Abd-Rabbo D, Mee MW, Boutros PC; PCAWG Drivers and Functional Interpretation Working Group; Reimand J; PCAWG Consortium [Frenkel-Morgenstern M]. Integrative pathway enrichment analysis of multivariate omics data. **Nat Commun**. 2020 Feb 5;11(1):735. doi: 10.1038/s41467-019-13983-9.
42. Jiao W, Atwal G, Polak P, Karlic R, Cuppen E; PCAWG Tumor Subtypes and Clinical Translation Working Group; Danyi A, de Ridder J, van Herpen C, Lolkema MP, Steeghs N, Getz G, Morris QD, Stein LD; PCAWG Consortium [Frenkel-Morgenstern M]. A deep learning system accurately classifies primary and metastatic cancers using passenger mutation patterns. **Nat Commun**. 2020 Feb 5;11(1):728. doi: 10.1038/s41467-019-13825-8.
43. Reyna MA, Haan D, Paczkowska M, Verbeke LPC, Vazquez M, Kahraman A, Pulido-Tamayo S, Barenboim J, Wadi L, Dhingra P, Shrestha R, Getz G, Lawrence MS, Pedersen JS, Rubin MA, Wheeler DA, Brunak S, Izarzugaza JMG, Khurana E, Marchal K, von Mering C, Sahinalp SC, Valencia A; PCAWG Drivers and Functional Interpretation Working Group; Reimand J, Stuart JM, Raphael BJ; PCAWG Consortium [Frenkel-Morgenstern M]. Pathway and network analysis of more than 2500 whole cancer genomes. **Nat Commun**. 2020 Feb 5;11(1):729. doi: 10.1038/s41467-020-14367-0.
44. Carlevaro-Fita J, Lanzós A, Feuerbach L, Hong C, Mas-Ponte D, Pedersen JS; PCAWG Drivers and Functional Interpretation Group; Johnson R; PCAWG Consortium [Frenkel-Morgenstern M]. Cancer

- LncRNA Census reveals evidence for deep functional conservation of long noncoding RNAs in tumorigenesis. **Commun Biol.** 2020 Feb 5;3(1):56. doi: 10.1038/s42003-019-0741-7.
45. Yakneen S, Waszak SM; PCAWG Technical Working Group; Gertz M, Korbel JO; PCAWG Consortium [Frenkel-Morgenstern M]. Butler enables rapid cloud-based analysis of thousands of human genomes. **Nat Biotechnol.** 2020 Mar;38(3):288-292. doi: 10.1038/s41587-019-0360-3. Epub 2020 Feb 5.
 46. Yuan Y, Ju YS, Kim Y, Li J, Wang Y, Yoon CJ, Yang Y, Martincorena I, Creighton CJ, Weinstein JN, Xu Y, Han L, Kim HL, Nakagawa H, Park K, Campbell PJ, Liang H; PCAWG Consortium [Frenkel-Morgenstern M]. Comprehensive molecular characterization of mitochondrial genomes in human cancers. **Nat Genet.** 2020 Mar;52(3):342-352. doi: 10.1038/s41588-019-0557-x. Epub 2020 Feb 5.
 47. Rodriguez-Martin B, Alvarez EG, Baez-Ortega A, Zamora J, Supek F, Demeulemeester J, Santamarina M, Ju YS, Temes J, Garcia-Souto D, Detering H, Li Y, Rodriguez-Castro J, Dueso-Barroso A, Bruzos AL, Dentro SC, Blanco MG, Contino G, Ardeljan D, Tojo M, Roberts ND, Zumalave S, Edwards PA, Weischenfeldt J, Puiggròs M, Chong Z, Chen K, Lee EA, Wala JA, Raine KM, Butler A, Waszak SM, Navarro FCP, Schumacher SE, Monlong J, Maura F, Bolli N, Bourque G, Gerstein M, Park PJ, Wedge DC, Beroukhim R, Torrents D, Korbel JO, Martincorena I, Fitzgerald RC, Van Loo P, Kazazian HH, Burns KH; PCAWG Structural Variation Working Group [Frenkel-Morgenstern M]; Campbell PJ, Tubio JMC; PCAWG Consortium. Pan-cancer analysis of whole genomes identifies driver rearrangements promoted by LINE-1 retrotransposition. **Nat Genet.** 2020 Mar;52(3):306-319. doi: 10.1038/s41588-019-0562-0. Epub 2020 Feb 5.
 48. Akdemir KC, Le VT, Chandran S, Li Y, Verhaak RG, Beroukhim R, Campbell PJ, Chin L, Dixon JR, Futreal PA; PCAWG Structural Variation Working Group; PCAWG Consortium [Frenkel-Morgenstern M]. Disruption of chromatin folding domains by somatic genomic rearrangements in human cancer. **Nat Genet.** 2020 Mar;52(3):294-305. doi: 10.1038/s41588-019-0564-y. Epub 2020 Feb 5.
 49. Zapatka M, Borozan I, Brewer DS, Iskar M, Grundhoff A, Alawi M, Desai N, Sülthmann H, Moch H; PCAWG Pathogens; Cooper CS, Eils R, Ferretti V, Lichter P; PCAWG Consortium. The landscape of viral associations in human cancers. **Nat Genet.** 2020 Mar;52(3):320-330. doi: 10.1038/s41588-019-0558-9. Epub 2020 Feb 5.
 50. Cortés-Ciriano I, Lee JJ, Xi R, Jain D, Jung YL, Yang L, Gordenin D, Klimczak LJ, Zhang CZ, Pellman DS; PCAWG Structural Variation Working Group [Frenkel-Morgenstern M]; Park PJ; PCAWG Consortium. Comprehensive analysis of chromothripsis in 2,658 human cancers using whole-genome sequencing. **Nat Genet.** 2020 Mar;52(3):331-341. doi: 10.1038/s41588-019-0576-7. Epub 2020 Feb 5.
 51. Oliveira KCS, Ramos IB, Silva JMC, Barra WF, Riggins GJ, [Palande V](#), Pinho CT, **Frenkel-Morgenstern M**, Santos SEB, Assumpcao PP, Burbano RR, Calcagno DQ. Current Perspectives on Circulating Tumor DNA, Precision Medicine, and Personalized Clinical Management of Cancer. *Mol Cancer Res.* 2020 Apr;18(4):517-528. doi: 10.1158/1541-7786.MCR-19-0768. Epub 2020 Jan 29. PMID: 31996469.
 52. [Mukherjee S](#), [Tworowski D](#), [Detroja R](#), [Mukherjee SB](#), **Frenkel-Morgenstern M***. Immunoinformatics and Structural Analysis for Identification of Immunodominant Epitopes in SARS-CoV-2 as Potential Vaccine Targets. *Vaccines (Basel).* 2020 Jun 9;8(2):290. doi: 10.3390/vaccines8020290. PMID: 32526960; PMCID: PMC7350000. ***corresponding author**
 53. Li CH, Prokopec SD, Sun RX, Yousif F, Schmitz N; PCAWG Tumour Subtypes and Clinical Translation; Boutros PC; PCAWG Consortium [Frenkel-Morgenstern M]. Sex differences in oncogenic mutational processes. **Nat Commun.** 2020 Aug 28;11(1):4330. doi: 10.1038/s41467-020-17359-2. PMID: 32859912; PMCID: PMC7455744.
 54. Merzon E, [Tworowski D](#), [Gorohovski A](#), Vinker S, Golan Cohen A, Green I, **Frenkel-Morgenstern M***. Low plasma 25(OH) vitamin D level is associated with increased risk of COVID-19 infection: an Israeli population-based study. *FEBS J.* 2020 Sep;287(17):3693-3702. doi: 10.1111/febs.15495. Epub 2020 Aug 28. PMID: 32700398; PMCID: PMC7404739. ***corresponding author**
 55. [Palande V](#), [Raviv Shay D](#), **Frenkel-Morgenstern M***. Detection of Cell-Free DNA in Blood Plasma Samples of Cancer Patients. *J Vis Exp.* 2020 Sep 9;(163). doi: 10.3791/61449. PMID: 32986022. ***corresponding author**
 56. Bailey MH, Meyerson WU, Dursi LJ, Wang LB, Dong G, Liang WW, Weerasinghe A, Li S, Li Y, Kelso S; MC3 Working Group; PCAWG novel somatic mutation calling methods working group; Saksena G, Ellrott K, Wendl MC, Wheeler DA, Getz G, Simpson JT, Gerstein MB, Ding L; PCAWG Consortium [Frenkel-Morgenstern M]. Retrospective evaluation of whole exome and genome mutation calls in 746 cancer samples. **Nat Commun.** 2020 Sep 21;11(1):4748. doi: 10.1038/s41467-020-18151-y.
 57. [Carmi G](#), [Tagore S](#), [Gorohovski A](#), [Sivan A](#), [Raviv-Shay D](#), **Frenkel-Morgenstern M***. Design principles of gene evolution for niche adaptation through changes in protein-protein interaction networks. **Sci Rep.** 2020 Sep 24;10(1):15628. doi: 10.1038/s41598-020-71976-x. PMID: 32973219; PMCID: PMC7519090. ***corresponding author**
 58. Raisaro JL, Marino F, Troncoso-Pastoriza J, Beau-Lejdstrom R, Bellazzi R, Murphy R, Bernstam EV, Wang H, Bucalo M, Chen Y, Gottlieb A, Harmanci A, Kim M, Kim Y, Klann J, Klersy C, Malin BA, Méan M,

- Prasser F, Scudeller L, Torkamani A, Vaucher J, Puppala M, Wong STC, **Frenkel-Morgenstern M**, Xu H, Musa BM, Habib AG, Cohen T, Wilcox A, Salihu HM, Sofia H, Jiang X, Hubaux JP. SCOR: A secure international informatics infrastructure to investigate COVID-19. **J Am Med Inform Assoc**. 2020 Nov 1;27(11):1721-1726. doi: 10.1093/jamia/ocaa172. PMID: 32918447; PMCID: PMC7454652.
59. **Tworowski D**, **Gorohovski A**, **Mukherjee S**, **Carmi G**, **Levy E**, **Detroja R**, **Mukherjee SB**, **Frenkel-Morgenstern M***. COVID19 Drug Repository: text-mining the literature in search of putative COVID19 therapeutics. **Nucleic Acids Res**. 2021 Jan 8;49(D1):D1113-D1121. doi: 10.1093/nar/gkaa969. PMID: 33166390; PMCID: PMC7778969. ***corresponding author**
 60. **Mukherjee S**, Banerjee B, Karasik D, **Frenkel-Morgenstern M***. mRNA-lncRNA Co-Expression Network Analysis Reveals the Role of lncRNAs in Immune Dysfunction during Severe SARS-CoV-2 Infection. **Viruses**. 2021 Mar 3;13(3):402. doi: 10.3390/v13030402. PMID: 33802569; PMCID: PMC7999169. ***corresponding author**
 61. **Mukherjee S**, Heng HH, **Frenkel-Morgenstern M***. Emerging Role of Chimeric RNAs in Cell Plasticity and Adaptive Evolution of Cancer Cells. **Cancers (Basel)**. 2021 Aug 27;13(17):4328. doi: 10.3390/cancers13174328. PMID: 34503137; PMCID: PMC8431553. ***corresponding author**
 62. Merzon E, Green I, Vinker S, Golan-Cohen A, **Gorohovski A**, Avramovich E, **Frenkel-Morgenstern M***, Magen E. The use of aspirin for primary prevention of cardiovascular disease is associated with a lower likelihood of COVID-19 infection. **FEBS J**. 2021 Sep;288(17):5179-5189. doi: 10.1111/febs.15784. Epub 2021 Apr 19. PMID: 33621437; PMCID: PMC8013755. ***corresponding author**
 63. **Carmi G**, **Gorohovski A**, **Mukherjee S**, **Frenkel-Morgenstern M***. Non-optimal codon usage preferences of coronaviruses determine their promiscuity for infecting multiple hosts. **FEBS J**. 2021 Sep;288(17):5201-5223. doi: 10.1111/febs.15835. Epub 2021 Apr 7. PMID: 33756061. ***corresponding author**
 64. **Carmi G**, **Gorohovski A**, **Frenkel-Morgenstern M***. EvoProDom: evolutionary modeling of protein families by assessing translocations of protein domains. **FEBS Open Bio**. 2021 Sep;11(9):2507-2524. doi: 10.1002/2211-5463.13245. Epub 2021 Aug 21. PMID: 34196123; PMCID: PMC8409312. ***corresponding author**
 65. **Mukherjee S**, **Detroja R**, **Balamurali D**, Matveishina E, Medvedeva YA, Valencia A, **Gorohovski A**, **Frenkel-Morgenstern M***. Computational analysis of sense-antisense chimeric transcripts reveals their potential regulatory features and the landscape of expression in human cells. **NAR Genom Bioinform**. 2021 Aug 25;3(3):lqab074. doi: 10.1093/nargab/lqab074. PMID: 34458728; PMCID: PMC8386243. ***corresponding author**
 66. Illouz T, Biragyn A, **Frenkel-Morgenstern M**, **Weissberg O**, **Gorohovski A**, Merzon E, Green I, Iulita F, Flores-Aguilar L, Dierssen M, De Toma I, Lifshitz H, Antonarakis SE, Yu E, Herault Y, Potier MC, Botté A, Roper R, Sredni B, Sarid R, London J, Mobley W, Strydom A, Okun E. Specific Susceptibility to COVID-19 in Adults with Down Syndrome. **Neuromolecular Med**. 2021 Dec;23(4):561-571. doi: 10.1007/s12017-021-08651-5. Epub 2021 Mar 4.
 67. **Detroja R**, **Gorohovski A**, **Giwa O**, **Baum G**, **Frenkel-Morgenstern M***. ChiTaH: a fast and accurate tool for identifying known human chimeric sequences from high-throughput sequencing data. **NAR Genom Bioinform**. 2021 Nov 26;3(4):lqab112. doi: 10.1093/nargab/lqab112. PMID: 34859212; PMCID: PMC8633610. ***corresponding author**
 68. **Mukherjee SB**, **Gorohovski A**, Merzon E, **Levy E**, **Mukherjee S**, **Frenkel-Morgenstern M***. Seasonal UV exposure and vitamin D: association with the dynamics of COVID-19 transmission in Europe. **FEBS Open Bio**. 2022 Jan;12(1):106-117. doi: 10.1002/2211-5463.13309. Epub 2021 Dec 4. PMID: 34608759; PMCID: PMC8653358. ***corresponding author**
 69. Merzon E, Green I, Somekh E, Vinker S, Golan-Cohen A, Israel A, **Gorohovski A**, **Frenkel-Morgenstern M***, Stein M. The Association of Previous Vaccination with Live-Attenuated Varicella Zoster Vaccine and COVID-19 Positivity: An Israeli Population-Based Study. **Vaccines (Basel)**. 2022 Jan 4;10(1):74. doi: 10.3390/vaccines10010074. PMID: 35062735; PMCID: PMC8777897. ***corresponding author**
 70. **Detroja R**, **Mukherjee S**, **Frenkel-Morgenstern M**. The Landscape of Novel Expressed Chimeric RNAs in Rheumatoid Arthritis. **Cells**. 2022 Mar 24;11(7):1092. doi: 10.3390/cells11071092. PMID: 35406656; PMCID: PMC8998144. ***corresponding author**
 71. **Palande V**, **Siegal T**, **Detroja R**, **Gorohovski A**, Glass R, Flueh C, Kanner AA, Laviv Y, Har-Nof S, Levy-Barda A, Viviana Karpuz M, Kurtz M, Perez S, **Raviv Shay D**, **Frenkel-Morgenstern M***. Detection of gene mutations and gene-gene fusions in circulating cell-free DNA of glioblastoma patients: an avenue for clinically relevant diagnostic analysis. **Mol Oncol**. 2022 May;16(10):2098-2114. doi: 10.1002/1878-0261.13157. Epub 2022 Feb 11. PMID: 34875133; PMCID: PMC9120899. ***corresponding author**
 72. Magen E, **Mukherjee S**, **Bhattacharya M**, **Detroja R**, **Merzon E**, Blum I, Livoff A, Shlapobersky M, Baum G, Talisman R, Cherniavsky E, Dori A, **Frenkel-Morgenstern M***. Clinical and Molecular Characterization of a Rare Case of BNT162b2 mRNA COVID-19 Vaccine-Associated Myositis. **Vaccines (Basel)**. 2022 Jul 16;10(7):1135. doi: 10.3390/vaccines10071135. PMID: 35891299; PMCID: PMC9324661.

73. Mukherjee S, Kuang Z, Ghosh S, Detroja R, Carmi G, Tripathy S, Barash D, Frenkel-Morgenstern M*, Nevo E, Li K. Incipient Sympatric Speciation and Evolution of Soil Bacteria Revealed by Metagenomic and Structured Non-Coding RNAs Analysis. **Biology (Basel)**. 2022 Jul 26;11(8):1110. doi: 10.3390/biology11081110. PMID: 35892966; PMCID: PMC9331176. ***co-corresponding author**
74. Masuda I, Yamaki Y, Detroja R, Tagore S, Moore H, Maharjan S, Nakano Y, Christian T, Matsubara R, Lowe TM, Frenkel-Morgenstern M, Hou YM. tRNA methylation resolves codon usage bias at the limit of cell viability. **Cell Reports**. 2022 Oct 25;41(4):111539. doi: 10.1016/j.celrep.2022.111539. PMID: 36288695; PMCID: PMC9643105.
75. Mukherjee SB, Mukherjee S, Detroja R, Frenkel-Morgenstern M*. The landscape of differential splicing and transcript alternations in severe COVID-19 infection. **FEBS J**. 2023 Jan 11. doi: 10.1111/febs.16723. Epub ahead of print. PMID: 36628954. ***corresponding author**
76. Mukherjee SB, Detroja R, Mukherjee S, Frenkel-Morgenstern M*. The Landscape of Expressed Chimeric Transcripts in the Blood of Severe COVID-19 Infected Patients. **Viruses**. 2023 Feb 4;15(2):433. doi: 10.3390/v15020433. PMID: 36851647; PMCID: PMC9958880. ***corresponding author**
77. Dsouza D, Bik L, Giwa O, Cohen S, Levy Barazany H, Siegal T, Frenkel-Morgenstern M*. ChiTaRS 8.0: the comprehensive database of chimeric transcripts and RNA-seq data with applications in liquid biopsy. **2025 Jan 6;53(D1):D1302-D1312**. ***corresponding author**

Submitted papers (same as published papers with the available details).

78. Tagore S, Frenkel-Morgenstern M*. Mutated Tumor Suppressors Follow Oncogenes Profile by the Gene Hypermethylation of Partners in the Protein Interaction Networks. doi: <https://doi.org/10.1101/2022.03.28.486156>. **BioRxiv**. March. 2022. ***corresponding author**
79. Somnath Tagore, Milana Frenkel-Morgenstern*. Improving patient survival by direct targeting of chimeric protein-protein interaction networks. doi: <https://doi.org/10.1101/2022.03.24.485646>. 2022. **BioArxiv**. ***corresponding author**
80. Ilana Kolodkin-Gal, Milana Frenkel-Morgenstern M. Liquid Biopsy for Microbiome Exploration. **Trends in Biotechnology**. 2025.
81. Mahua Bhattacharya, Dan Yaniv, Sunil Pachakar, Rajesh Detroja, Dylan. P. D'Souza, Gidi Baum, Aviram Mizrahi and Milana Frenkel Morgenstern*. Circulating cell-free DNA in oral squamous cell carcinoma patients allows for non-invasive prognosis and identification of structural variants, novel chimeras and oncoviruses. **MedArxiv**. 2025. **Revision to Communications Medicine**.

16.3 Review papers

82. Mukherjee S, Frenkel-Morgenstern M*. Evolutionary impact of chimeric RNAs on generating phenotypic plasticity in human cells. **Trends Genet**. 2022 Jan;38(1):4-7. doi: 10.1016/j.tig.2021.08.015. Epub 2021 Sep 24. PMID: 34579972. **FOCUS ISSUE in Trends Genet**. ***corresponding author**
83. Mukherjee SB, Mukherjee S, Frenkel-Morgenstern M*. Fusion proteins mediate alternation of protein interaction networks in cancers. **Adv Protein Chem Struct Biol**. 2022;131:165-176. doi: 10.1016/bs.apcsb.2022.05.007. Epub 2022 Jun 7. PMID: 35871889. ***corresponding author**
84. Mukherjee S, Mukherjee SB, Frenkel-Morgenstern M. Functional and regulatory impact of chimeric RNAs in human normal and cancer cells. **Wiley Interdiscip Rev RNA**. 2023 Jan 12:e1777. doi: 10.1002/wrna.1777. Epub ahead of print. PMID: 36633099. ***corresponding author**

16.4 Books

(List all co-authors in the order they appear on the book, title of book, publisher, number of pages, and year of publication).

16.5 Edited Books

85. Wasser S and Frenkel-Morgenstern M. NEW HORIZONS IN EVOLUTION. 2021 **ELSEVIER** BOOK. <https://www.elsevier.com/books/new-horizons-in-evolution/wasser/978-0-323-90752-1>
Dr. Milana Frenkel-Morgenstern and Prof. Solomon Wasser are co-editors of this book (published by Elsevier).

Key Features: The book addresses New Horizons in Evolutionary Theory and Processes. The authors include theoreticians, experimentalists, and naturalists, contributing novel findings and ideas to evolutionary theory of speciation, adaptation, and regulation and its application in medicine and agriculture. The book will have widespread appeal for undergraduate and graduate students of all sciences, beside the biological sciences and bioengineering. It will attract active scientists at all levels of the biological sciences from the cellular to the organismal, including naturalists, experimentalists, and theoreticians, since evolution is the core of all sciences.

16.6 Chapters in books

(List all co-authors in the order they appear in the chapter, first and last pages, title of book, editors of the book, publisher, and year of publication).

86. **Frenkel-Morgenstern M***. Identification of Chimeric RNAs Using RNA-Seq Reads and Protein-Protein Interactions of Translated Chimeras. **Methods Mol Biol.** 2020;2079:27-40. doi: 10.1007/978-1-4939-9904-0_3. PMID: 31728960. ***corresponding author**

16.7 Refereed papers in conference proceedings

(Include all co-authors in the order they appear on the paper, title of paper, title of publication, conference, publisher, first and last pages, date, and location).

87. [Tagore S](#), **Frenkel-Morgenstern M.*** *When mathematics outsmarts cancer*. Publication date 2019
Proceedings. Conference International Work-Conference on Bioinformatics and Biomedical Engin
Pages 477-485 Publisher Springer.

16.8 Patents granted and submitted:

(List all co-inventors in the order they appear on the patent, title of patent and year patent was granted.

Do not list filed patents.)

Date	PATENTS
2006	Method and apparatus for protein structure prediction, Weizmann Institute of Science
2008	Cell populations for polypeptide analysis and uses of same
2022	METHODS AND BIOMARKERS FOR DIAGNOSTICS, DISEASE MONITORING, PERSONALIZED DRUG DISCOVERY AND TARGETED THERAPY OF AUTOIMMUNE DISEASE CONDITIONS” (SESB Ref: 195192352)
2022	METHODS AND BIOMARKERS FOR DIAGNOSTICS, DISEASE MONITORING, PERSONALIZED DRUG DISCOVERY AND TARGETED THERAPY OF MALIGNANT AND NEURODEGENERATIVE DISEASE CONDITIONS” (SESB Ref: 195192352)
2024 PROVISIONAL	Methods and Apparatus for Biochip – Reichman University
2024 PROVISIONAL	Methods and Apparatus for Permanent Coloring using mRNA and Nanotechnology – Reichman University
2025 PROVISIONAL	Methods and Apparatus for Liquid Biopsy in Allergies – Reichman University

17. CONFERENCES

Plenary, keynote or invited talks, contributed talks and posters:

(List of authors [underline the presenter], title of talk, conference title, location, date, oral or poster presentation.)

Conference Name	Name of paper presented	Date	Presentation Type (plenary, invited, contributed)	Authors	Venue (city, country)
RECOMB 2003	Enhanced Statistics for Local Alignment of Multiple Alignments Improves Prediction of Protein Function and Structure	Sep 2003	Poster	Milana Frenkel-Morgenstern , Shmuel Pietrokovski	Berlin, Germany
ISMB/ECCB 2004	The LAMA and CYRCA profile and multiple profile alignment methods.	Aug 2004	Poster and Oral Software Demonstration	Milana Frenkel-Morgenstern , Shmuel Pietrokovski	Glasgow, Scotland, United Kingdom
ECCB 2005	A novel pair-to-pair substitution matrix improves protein contact prediction.	Sep 2005	Oral presentation	Milana Frenkel-Morgenstern , Shmuel Pietrokovski	Madrid, Spain
ECCB 2005	1. A novel pair-to-pair substitution matrix improves protein contact prediction; 2. The LAMA and One-Block CYRCA profile and multiple profile alignment methods.	Sep 2005	Posters	Milana Frenkel-Morgenstern , Eran Eyal, Vladimir Sobolev, Shmuel Pietrokovski	Madrid Spain
RECOMB 2006	A new method for intra-protein contact prediction using pair-to-pair substitution matrix.	Apr 2006	Poster	Milana Frenkel-Morgenstern , Eran Eyal, Vladimir Sobolev, Shmuel Pietrokovski	Venice Italy
ECCB 2008, Italy	Intra-protein compensatory mutations analysis highlights the tRNA recognition regions in aminoacyl-tRNA synthetases	Aug 2008	Poster	Milana Frenkel-Morgenstern , Mark G. Safro	Sardinia, Italy
ISMB 2008	Comprehensive compensatory mutations analysis highlights the tRNA recognition regions	July 2008	Poster	Milana Frenkel-Morgenstern , Mark G. Safro	Toronto, Canada

	in aminoacyl-tRNA synthetases.				
BioMed conference 2008	Compensated mutations analysis reveals tRNA binding and recognition sites of amino-acyl tRNA synthetases.	Oct 2008	Poster	Milana Frenkel-Morgenstern, Mark G. Safro	Barcelona, Spain
EMBO conference 2008	Intra-protein compensatory mutations of amino-acyl tRNA synthetases are overrepresented at tRNA recognition regions.	Sep 2008	Poster	Milana Frenkel-Morgenstern, Mark G. Safro	Madrid, Spain
ISMB/ECCB 2007	A novel pair-to-pair substitution matrix and its applications for protein contact prediction.	Jul 2007	Poster	Milana Frenkel-Morgenstern, Eran Eyal, Vladimir Sobolev, Shmuel Pietrokovski	Vienna, Austria
ISMB/ECCB 2009	Comprehensive intra-protein compensatory mutations analysis reveals tRNA recognition regions of mitochondrial aminoacyl-tRNA synthetases.	Jun 2009	Poster	Milana Frenkel-Morgenstern, Mark G. Safro	Stockholm Sweden
ISMB/ECCB 2009	Comprehensive intra-protein compensatory mutations analysis reveals tRNA recognition regions of mitochondrial aminoacyl-tRNA synthetases	Jun 2009	Oral Presentation	Milana Frenkel-Morgenstern, Mark G. Safro	Stockholm Sweden
ISMB 2010	The potential functional role of chimeric transcripts in higher eukaryotes.	Jul 2010	Outstanding Poster Award 2010	Milana Frenkel-Morgenstern, Alfonso Valencia	Boston, USA
Israeli Bioinformatics symposium 2010	The potential functional role of chimeric transcripts in higher eukaryotes.	Apr 2010	Best Poster Award 2010	Milana Frenkel-Morgenstern, Alfonso Valencia	Technion, Haifa
RECOMB Systems Biology and Genomics 2011	Chimeras taking shape: Potential function of proteins encoded by chimeric RNA transcripts	Oct 2011	Oral Presentation	Milana Frenkel-Morgenstern, Alfonso Valencia	Barcelona, Spain

ISMB/ECCB 2011	Potential functions of proteins encoded by chimeric RNA transcripts	Jul 2011	Oral Presentation	Milana Frenkel-Morgenstern, Alfonso Valencia	Vienna, Austria
ISMB/ECCB 2013	The role of chimeric transcripts in higher eukaryotes,	Jul 2013	Highlights and Oral Presentation	Milana Frenkel-Morgenstern, Alfonso Valencia	Berlin Germany
ISMB 2012	Novel domain combinations in proteins encoded by chimeric transcripts	Jul 2012	Proceedings and Oral Presentation	Milana Frenkel-Morgenstern, Alfonso Valencia	Long Beach USA
CECAM Workshop: Computational Modelling of Gene Expression and its Evolution	Non-optimal codon usage produces cell-cycle dependent oscillations at the protein levels	Oct 2015	Invited Speaker	Milana Frenkel-Morgenstern	Tel-Aviv Israel
Outstanding Women Bioinformatics Program	Liquid Biopsy platform in low Burden tumors	Apr 2017	Invited Speaker	Milana Frenkel-Morgenstern	Barcelona Spain
Israeli Bioinformatics Symposium	Chimeric Protein-protein interaction networks and their alterations are cancer phenotype specific	May 2017	Invited Speaker	Milana Frenkel-Morgenstern	Rehovot Israel
Tel Aviv University seminars at Engineering Department	Liquid Biopsy platform in low Burden tumors	Nov 2018	Invited Speaker	Milana Frenkel-Morgenstern	Tel-Aviv Israel
Facing High Throughput Data Analysis Challenges in Life Sciences	Functional selection of chimeric proteins in cancer through alterations in the chimeric protein-protein interaction networks	Dec 2016	Invited Speaker	Milana Frenkel-Morgenstern	MIGAL, Kiriatt-Shmona Israel
Bioinformatics and Biomedical Engineering 7th International Work-Conference, IWBBIO 2019	<u>When Mathematics Outsmarts Cancer</u> Published in LNCS/Springer	May, 2019	Invited Speaker	Somnath Tagore, Milana Frenkel-Morgenstern	Granada, Spain
4 th Liquid Biopsy Summit	https://www.diagnosticsworldnews.com/2019/06/05/liquid-biopsy-and-art-in-science-future-directions.aspx	June, 2019	Invited Speaker	Milana Frenkel-Morgenstern	San-Francisco, USA

SNO Neuro-oncology meeting	SNO's Virtual Annual Meeting https://www.eventscribe.com/2020/SNO/	Nov 19-21, 2020	Short presentation for e-Poster	Milana Frenkel-Morgenstern , Vikrant Palande, Tali Segal	Virtual meeting
Common Mechanisms in Alzheimer's and Type 2 Diabetes	Frontal Meeting at the Azrieli Faculty of Medicine	March 3-5, 2020	Lecture on Deep Learning in Alzheimer's Disease	Milana Frenkel-Morgenstern	Frontal meeting
Musculo-Skeletal diseases and Deep Learning	Virtual Meeting at the Azrieli Faculty of Medicine	Dec 13-15, 2020	Lecture on Deep Learning and Liquid Biopsy	Milana Frenkel-Morgenstern and David Karasik	Virtual meeting
Structural Biology Department, Hebrew University,	Liquid Biopsy in brain tumors using gene-gene fusions	2021	Invited Speaker	Milana Frenkel-Morgenstern and Vikrant Palande	Jerusalem, Israel
Engineering Department, Tel-Aviv University	Liquid Biopsy in brain tumors using gene-gene fusions	2021	Invited Speaker	Milana Frenkel-Morgenstern and Vikrant Palande	Tel-Aviv, Israel
COVID-19 Vaccines conference	Immunodominant Epitopes	2021	Invited Speaker	Milana Frenkel-Morgenstern and Sumit Mukherjee	Delhi India
Conference in Evolution organized by the Weizmann Institute of Sciences	EvoProtDom model of evolution of proteins using translocations of protein domains	2022	Invited Speaker	Milana Frenkel-Morgenstern and Gon Carmi	Ramat-Gan, Israel
Post-genomic Analyses for Musculoskeletal Biology (supported by Bat-Sheva de Rothschild Fund)	Liquid Biopsy in Genomics	Oct 12-13, 2021	Keynote	Milana Frenkel-Morgenstern	Safed, Israel
PLEP conference in Evolution	EvoProtDom model of evolution of proteins using translocations of protein domains	May 8-12, 2022	Invited Speaker	Milana Frenkel-Morgenstern , Gon Carmi	Nazareth, Israel
ECAR Liquid Biopsy conference	Liquid Biopsy in Complex Diseases	May 24-26, 2022	Invited Speaker	Milana Frenkel-Morgenstern	Bergamo, Italy
International Oncology Conference 2022,	Liquid Biopsy using gene-gene fusions in glioblastoma	Aug 2022	Invited Speaker	Milana Frenkel-Morgenstern	Hagsholim, Israel
IDS 2023	Big Data in Genomics	Jan 08-11, 2023	Poster Presentation	Milana Frenkel-Morgenstern	Ein-Gedi, Israel

Weizmann Institute of Science	Advances of Liquid Biopsy and AI	May 2023	Invited Speaker, seminar	Milana Frenkel-Morgenstern	Rehovot, Israel
Migal Institute in Galilee	Advances of Liquid Biopsy and AI	May 2023	Invited Speaker, seminar	Milana Frenkel-Morgenstern	Kiriat-Shmona, Israel
DSI Retreat 2023 ISDAI 2023	ChiTaH: Big Data tools to identify chimeric RNAs AI-driven diagnostics of glioblastoma	June 2023 January 2023	Invited Speaker	Milana Frenkel-Morgenstern	Yaarim, Jerusalem, Israel
ISMB/ECCB 2023	EvoProtDom model of evolution of proteins using translocations of protein domains	July 2023	Oral presentation	Milana Frenkel-Morgenstern, Gon Carmi	Lyon, France
6th Advances in Circulating Tumor Cells (ACTC 2023)	Detection of gene-gene fusions in circulating cell-free DNA	September 2023	Oral presentation	Milana Frenkel-Morgenstern, Tali Siegal	Skiathos Island, Greece
SNO Neuro-oncology meeting	SNO annual meeting 2023	Nov, 2023	Short presentation and poster	Milana Frenkel-Morgenstern, Tali Segal	Vancouver, Canada
GIW XXXII ISCB-ASIA VI	“Gene-gene fusions as biomarkers for personalized therapy in glioblastoma multiforme by means of Systems Biology technique”	Nov, 2023	Oral presentation	Milana Frenkel-Morgenstern	Singapore
ISDAI 2025	AI-driven diagnostics of glioblastoma	January 2023	Invited Speaker	Milana Frenkel-Morgenstern	Yaarim, Jerusalem, Israel
BGU seminar, Engineering Department	AI-driven diagnostics of glioblastoma	April 2023	Invited Speaker	Milana Frenkel-Morgenstern	Beer-Sheva, Israel
ISBCB 2025 – April 2025	Organizer of the Symposium – IBS 2025	April 2025	Organizer of the Symposium	Milana Frenkel-Morgenstern	Reichman University

ADDITIONAL PRESENTATIONS -SCIENTIFIC CONFERENCES

1. **Milana Frenkel-Morgenstern.** (2017) Chimeric Protein-Protein Interaction Networks and their Alterations are Cancer Phenotype Specific. The 19th Israeli Bioinformatics Symposium. May 15th, 2017. Weizmann Institute of Science. (Invited Talk)
2. **Milana Frenkel-Morgenstern** (2017) Functional Selection of Chimeric Proteins in Cancer Through Alterations in the Chimeric Protein-Protein Interaction Networks. February 2017. Migdal Conference in NGS (Invited Talk).
3. **Milana Frenkel-Morgenstern** (2015). Non-optimal codon usage produces cell-cycle regulation in human cells. CECAM conference. October 13-16, 2015, Tel-Aviv (Invited Talk).
4. **Tagore, S., Frenkel-Morgenstern, M.** (2017) The communities of party hubs in fusion protein-protein interaction networks increases their robustness against site-directed knockouts. ISMB 2017 - Intelligent Systems for Molecular Biology (ISMB), Net-Biol COSI, Prague, Czech Republic, July 21 – 25, 2017 (Poster, Talk).
5. **Tagore, S., Frenkel-Morgenstern, M.** (2017) Classifying oncogenes and tumor suppressors in fusion protein-protein interaction networks using a community-based Naïve Bayes approach. ISMB 2017 - Intelligent Systems for Molecular Biology (ISMB), Sys-Mod COSI, Prague, Czech Republic, July 21 – 25, 2017 (Poster).

6. **Tagore, S., Gorohovski, A., Jensen, L.J., Frenkel-Morgenstern, M.** (2017) A Text Mining Approach Characterizes Fusion Proteins and Their Interactions From PubMed Publications. ISMB 2017 - Intelligent Systems for Molecular Biology (ISMB), Bio-Ontology COSI, Prague, Czech Republic, July 21 – 25, 2017 (Talk, Flash Update).
7. **Tagore, S., Frenkel-Morgenstern, M.** (2017) The percolation model of fusion protein-protein interaction networks reveals multi-interface hubs as potential drug targets. Great Lakes Bioinformatics Conference (GLBIO-2017), May 15- 17, 2017, Univ. of Illinois at Chicago, U.S.A. (Oral).
8. **Tagore, S., Frenkel-Morgenstern, M.** (2017) Chimeric Protein-Protein Interaction Networks Reveal Alterations in Cancer-Specific Phenotypes. sbv Improver Epigenomics Challenge, May 04, 2017, Tel-Aviv, Israel (Poster).
9. **Frenkel-Morgenstern, M., Tagore, S., Valencia, A.** (2017) The Percolation Analysis of the Chimeric Protein-Protein Interactions in the PanCancer Datasets. PanCancer Teleconference, March 22, 2017 (Talk).
10. **Tagore, S., Frenkel-Morgenstern, M.** (2017) The percolation model of the chimeric protein-protein interaction networks reveals central nodes as potential drug targets, 6th Translational Research Day, March 01, 2017, Bar-Ilan University, Safed, Israel (Oral).
11. **Tagore, S., Frenkel-Morgenstern, M.** (2017) Protein-protein Interaction Networks of Cancer Fusions Display Small World Behavior and Strong Resilience against Perturbing Lower-Degree Hubs. 8Th ILANIT / FISEB Conference, Eilat, Israel, February 20-23, 2017 (E-Poster).
12. **Tagore, S., Gorohovski, A., Jensen, L.J., Frenkel-Morgenstern, M.** (2016) ProtFus: a python repository for tagging fusion proteins and their interactions in text, ISMB 2016 - Intelligent Systems for Molecular Biology (ISMB) 2016 Orlando, Florida, U.S.A., July 8 – 12 July, 2016 (Poster).
13. **Tagore, S., Gorohovski, A., Jensen, L.J., Frenkel-Morgenstern, M.** (2016) ProtFus: a tool for identifying fusion proteins and their interactions from text, IBS 2016 - Israeli Bioinformatics Symposium, University of Haifa, May 18, 2016, Israel (Poster).
14. **Tagore, S., Frenkel-Morgenstern, M.** (2016) ProtFus: a python repository for tagging fusion protein instances in PubMed, 5th Translational Research Day, February 15, 2016, Bar-Ilan University, Safed, Israel (Poster).
15. **Carmi, G.#, Tagore, S.#, Sivan, A.#, Gorohovski, A.#, Li, K., Nevo, E., Raviv-Shay, D., Frenkel-Morgenstern, M.** *PASTORAL: The Database of Protein-Protein Interactions of the Stress-Response Genes in Subterranean and Fossorial Animals.* 7th Translational Research Day, February 26, 2018, Bar-Ilan University, Safed, Israel (Poster). #Equal Contribution.
16. **Tagore, S., Frenkel-Morgenstern, M.** (2018) *Site-directed percolation of fusion protein-protein interaction networks reveal multi-interface hubs as potential drug targets.* International School and Conference on Network Science (NetSci-X), Hangzhou, China, January 6-8, 2018 (Oral).
17. **Frenkel-Morgenstern, M., Gorohovski, A., Tagore, S., Sekar, V., Vazquez, M., Valencia, A.** (2017) *Chimeric Protein-Protein Interaction Networks Reveal Alterations in Cancer-Specific Phenotypes.* 15th RECOMB Comparative Genomics Satellite Workshop, Barcelona, Spain, October 4 – 6, 2017 (Poster).
18. **Tagore, S., Frenkel-Morgenstern, M.** (2017) *A community-based Naïve Bayes method for classifying oncogenes and tumor suppressors using fusion protein-protein interaction networks.* 42nd FEBS Congress, Jerusalem, Israel, September 10 – 14, 2017 (Poster).
19. **Tagore, S., Frenkel-Morgenstern, M.** (2017) *Percolation-like phase transitions in protein-protein interactions networks of fusions reveal a discrepancy in cancer phenotypes.* ISMB 2017 - Intelligent Systems for Molecular Biology (ISMB), Student Council Symposium, Prague, Czech Republic, July 21, 2017 (Poster).
20. **Tagore, S., Frenkel-Morgenstern, M.** (2017) *The communities of party hubs in fusion protein-protein interaction networks increases their robustness against site-directed knockouts.* ISMB 2017 - Intelligent Systems for Molecular Biology (ISMB), Net-Biol COSI, Prague, Czech Republic, July 21 – 25, 2017 (Poster, Talk).
21. **Tagore, S., Frenkel-Morgenstern, M.** (2017) *Classifying oncogenes and tumor suppressors in fusion protein-protein interaction networks using a community-based Naïve Bayes approach.* ISMB 2017 - Intelligent Systems for Molecular Biology (ISMB), Sys-Mod COSI, Prague, Czech Republic, July 21 – 25, 2017 (Poster).
22. **Tagore, S., Gorohovski, A., Jensen, L.J., Frenkel-Morgenstern, M.** (2017) *A Text Mining Approach Characterizes Fusion Proteins and Their Interactions from PubMed Publications.* ISMB 2017 - Intelligent Systems for Molecular Biology (ISMB), Bio-Ontology COSI, Prague, Czech Republic, July 21 – 25, 2017 (Talk, Flash Update).
23. **Tagore, S., Frenkel-Morgenstern, M.** (2017) *The percolation model of fusion protein-protein interaction networks reveals multi-interface hubs as potential drug targets.* Great Lakes Bioinformatics Conference (GLBIO-2017), May 15- 17, 2017, Univ. of Illinois at Chicago, U.S.A. (Oral).
24. **Frenkel-Morgenstern, M., Tagore, S., Valencia, A.** (2017) *The Percolation Analysis of the Chimeric Protein-Protein Interactions in the PanCancer Datasets.* Pancancer Teleconference, March 22, 2017 (Talk).

25. Tagore, S., Frenkel-Morgenstern, M. (2017) *The percolation model of the chimeric protein-protein interaction networks reveals central nodes as potential drug targets*, 6th Translational Research Day, March 01, 2017, Bar-Ilan University, Safed, Israel (Oral).
26. Tagore, S., Frenkel-Morgenstern, M. (2017) *Protein-protein Interaction Networks of Cancer Fusions Display Small World Behavior and Strong Resilience against Perturbing Lower-Degree Hubs*. 8Th ILANIT / FISEB Conference, Eilat, Israel, February 20-23, 2017 (E-Poster).
27. Tagore, S., Gorohovski, A., Jensen, L.J., Frenkel-Morgenstern, M. (2016) *ProtFus: a python repository for tagging fusion proteins and their interactions in text*, ISMB 2016 - Intelligent Systems for Molecular Biology (ISMB) 2016 Orlando, Florida, U.S.A., July 8 – 12, 2016 (Oral and Poster).
28. Tagore, S., Gorohovski, A., Jensen, L.J., Frenkel-Morgenstern, M. (2016) *ProtFus: a tool for identifying fusion proteins and their interactions from text*, IBS 2016 - Israeli Bioinformatics Symposium, University of Haifa, May 18, 2016, Israel (Oral and Poster).
29. Tagore, S., Frenkel-Morgenstern, M. (2016) *ProtFus: a python repository for tagging fusion protein instances in PubMed*, 5th Translational Research Day, February 15, 2016, Bar-Ilan University, Safed, Israel (Poster).
30. Mukherjee, S., Detroja, R., Mukherjee, S.B., Frenkel-Morgenstern, M. *"The expression landscape of bi-directional sense-antisense chimeric transcripts in human normal tissues and cancer cells"*. Translational Day, Azrieli Faculty of Medicine, 2021.
31. Detroja, R., Mukherjee, S., Frenkel-Morgenstern, M. "The landscape of chimeric RNAs expression in Rheumatoid Arthritis". Translational Research Day, 2021, Bar-Ilan University, Safed, Israel (Poster).
32. Mukherjee, S., Detroja, R., Balamurali, D., Frenkel-Morgenstern, M. "Sense-antisense chimeric transcripts produced by trans-splicing are potentially involved in post-transcriptional regulations". RECOMB, 2020.
33. Mukherjee, S., Detroja, R., Balamurali, D., Frenkel-Morgenstern, M. "Structural and computational analysis of sense-antisense chimeric transcripts reveals their potential regulatory roles in human cells". ECCB/ISMB, 2021.
34. Biswas Mukherjee S, Frenkel-Morgenstern M. "Computational analysis of differential splicing and transcript alternations in severe COVID-19 infection". ECCB 2022.
35. Bhattacharya M, Frenkel-Morgenstern M. "Effect of optimized codon on cyclin dependent kinase I on cell cycle regulation" at Eli Hurvitz 11th Translation Day held at Bar Ilan University, Faculty of medicine, Safed, Israel 20th September 2022. Oral presentation.
36. Bhattacharya M, Frenkel-Morgenstern M. "Effect of optimized codon on cyclin dependent kinase I on cell cycle regulation" at European Molecular Biology Organization (EMBO), Edinburgh, Scotland 8th April to 11th April 2022 (Travel fellowship received from gender equality). Oral presentation.
37. Bhattacharya M, Frenkel-Morgenstern M. "Effect of optimized codon on cyclin dependent kinase I on cell cycle regulation" at European Molecular Biology Organization (EMBO), Edinburgh, Scotland 8th April to 11th April 2022. Poster.
38. Bhattacharya M, Frenkel-Morgenstern M. "Effect of codon optimization on cell cycle regulatory proteins" at Tel Aviv University, Israel, July 2021. Poster.
39. Bhattacharya M, Frenkel-Morgenstern M. "Effect of codon optimization on cell cycle regulatory proteins" at the 10th Annual Research Day, Azrieli Faculty of Medicine, Bar Ilan University, Zefat-Israel, July 2021 (*Best Poster Award*).
40. Mukherjee S, Frenkel-Morgenstern M. "Computational analysis of differential splicing and transcript alternations in severe COVID-19 infection", European Conference on Computational Biology (ECCB) 2022" in Barcelona, Spain. Poster.
41. Mukherjee S, Frenkel-Morgenstern M. "Computational analysis of differential splicing and transcript alternations in severe COVID-19 infection", "Tuller's Lab Mini Symposium" at Tel-Aviv University (2022). Poster.
42. Mukherjee S, Frenkel-Morgenstern M. "Computational analysis of differential splicing and transcript alternations in severe COVID-19 infection", 11th Translational Research Day" at Azrieli Faculty of Medicine, Bar-Ilan University (2022). Poster.
43. Roth M., Frenkel-Morgenstern M. "Optimization of cfDNA extraction from cell culture to study its role in intercellular communication". 11th Translational Research Day" at Azrieli Faculty of Medicine, Bar-Ilan University (2022). Poster.
44. Giwa O., Frenkel-Morgenstern M. "Identification and Validation of Novel Gene-Gene fusions as biomarkers for early diagnosis of cancers and complex diseases using Liquid biopsy. 10th ILANIT/FISEB Conference" at Eilat, Israel (20-23 February 2023). Poster.
45. Giwa O., Frenkel-Morgenstern M. "Identification and Validation of Novel Gene-Gene fusions as biomarkers for early diagnosis of cancers and complex diseases using Liquid biopsy. "Tuller's Lab Mini Symposium" at Tel-Aviv University (2023). Poster.

Participation in organizing conferences

(Conference title, location, date, organizational function)

Title of conference	Role	Year	Organization
ISMB 2008 in Toronto	Visual Reflections on Science Organizer and Chair	2008	International Society of Computational Biology, ISMB conference
ISMB/ECCB 2009 in Stockholm	Visual Reflections on Science Organizer and Chair	2009	International Society of Computational Biology, ISMB conference
ECCB 2008 in Gent	Art & Science Organizer and Chair	2008	International Society of Computational Biology, ISMB conference
ISMB 2010 in Boston	Art & Science Organizer and Chair	2010	International Society of Computational Biology, ISMB conference
ISMB/ECCB 2011 in Vienna	Art & Science Organizer and Chair	2011	International Society of Computational Biology, ISMB conference
ISMB/ECCB 2013 in Berlin	Art & Science Organizer and Chair	2013	International Society of Computational Biology, ISMB conference
ISMB 2014 in Boston	Art & Science Organizer and Chair	2014	International Society of Computational Biology, ISMB conference
ISMB/ECCB 2015 in Dublin	Art & Science Organizer and Chair	2015	International Society of Computational Biology, ISMB conference
Text Mining in Cancer Research International Course, Safed, Israel	Organizer Chair Lecturer	2015	Denmark-Israel collaboration supported by the Danish Agency of Science
ISMB 2016 in Orlando, Florida, USA	Art & Science Organizer and Chair	2016	International Society of Computational Biology, ISMB conference
ISMB 2018 in Chicago, USA	Art & Science Organizer and Chair	2016	International Society of Computational Biology, ISMB conference
Common Mechanisms in Alzheimer's Disease and Type II Diabetes , Safed, Israel	Organizer and Scientific Committee Chair	March, 2019	Data Science Institute (DSI) and Dangoor Personalized Medicine Institute, Bar-Ilan University
Musculoskeletal Disease and Genomics in the era of Big Data and AI technologies , Safed, Israel	Co-Organizer and Scientific Committee Chair	2020, 2021	GERMSTORM COST EU action and Bat Sheva de Rothschild Fund
Hellenic Bioinfo Conference 2019 , Greece	Invited Speaker, Board Member	2019	International Society of Computational Biology
Bioinfo4Women Conference , Barcelona, Spain	Scientific and Organizing Committee	2019, 2022, 2023, 2024	International Society of Computational Biology

18. Media publications

(Up to one page reserved for notes and comments [free text] not fitting the above items [1–16])

Liquid Biopsy and Chimeric RNA

<https://www.liquidbiopsysummit.com/milana-frenkel-morgenstern-interview>

<https://program.eventact.com/lecture?id=204322&code=2371662>

<https://www.researchgate.net/lab/Milana-Frenkel-Morgenstern-Lab>

COVID19 Research 2020-2021

<https://www.birad.biz/tag/dr-milana-frenkel-morgenstern/>

<https://www.timesofisrael.com/mutation-proof-israeli-scientist-nears-vaccine-thatll-cope-with-covid-changes/>

<https://www.timesofisrael.com/vitamin-d-helps-the-body-fight-coronavirus-major-israeli-study-claims/>

<https://www.jpost.com/health-science/bar-ilan-covid-19-researchers-join-consortium-for-secure-research-635443>

COVID19 research and Vitamin D 2020

[Medscape](#), [RTL](#) (Germany), [Bild](#) (Germany), [Jerusalem Post](#), [Times of India](#), [Juedische Allgemeine](#) (Germany), [I24](#), [Times of Israel in English](#) and in [French](#), [Iton Gadol](#) (Argentina), [Israel 21c](#), [Europa Press](#), [el Periodico](#) (Spain), [Diario Uno](#) (Argentina), [Heraldo](#) (Spain), [Diario de Mallorca](#) (Spain), [Israel Today](#), [shethepeople](#), [International Business Times](#) (Singapore), [India.com](#), [Firstpost](#) (India), [Arutz 7](#), [worldhealth.net](#), [Juedische Allgemeine](#) (Germany), [Wetter](#) (Austria), [Semarangku](#) (Indonesia), [Israel Heute](#) (Germany), [Suara](#) (Indonesia), [Astro Awani](#) (Malaysia), [Guardian](#) (Nigeria), [One India](#), [Legal Insurrection](#), [Szombat](#) (Hungary), [Mot the Gioi](#) (Vietnam), [JForum](#) (France), [The Yeshiva World](#), [News Bytes](#), [Israel Valley](#), [Mendo Voz](#) (Argentina), [Diario Judio](#) (Mexico), [Joods](#) (The Netherlands), [Termedia](#) (Poland), [Hoydia](#) (Argentina), [Wprost](#) (Poland), [Notizie Scientifiche](#) (Italy), [El Espanol](#), [Salom](#) (Turkey), [Nanova](#) (Mexico), [News 18](#) (India), [Stil](#) (Serbia), [Panorama](#) (Venezuela), [Aurora](#)

Contribution to Society

Art and Science exhibition and competition (Founder since 2008) – International Annual Event

<https://europepmc.org/article/pmc/pmc5861520>

<https://www.iscb.org/ismb2016-submission/ismb2016-artscience>

<https://www.iscb.org/ismbecb2015-submission/ismbecb2015-artscience>

<https://www.iscb.org/archive/conferences/iscb/ismb2010-submission-details/ismb2010-artandscienceexhibition.html>