

## Curriculum Vitae and List of Selected Publications

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**Education:** 1974 – MD (*Cum Laude*), Lvov State Medical University, General Medicine  
1989 – PhD, Institute of Gerontology, Kiev, Experimental Gerontology

### Positions:

1980–1991 Research Scientist at the Dept of Physiology, Institute of Gerontology, Kiev, Ukraine  
1992-1998 Researcher, Dept of Clinical Pharmacology, Faculty of Health Sciences, Ben-Gurion University of the Negev (BGU), Beer Sheva, Israel  
1998-2005 Researcher B/Senior Lecturer, Division of Basic Sciences, BGU  
2005- Researcher A/Associate Professor, Head of the Lab for the Biology of Aging, The Shraga Segal Dept of Microbiology, Immunology and Genetics, BGU.

**Teaching activities:** Coordinator and lecturer of three courses on the biology of aging

- Biology for Non-Biologists: Biology of Aging – for the MSc students in gerontology (introductory course)
- Biology of Aging – for the M.Sc. and Ph.D. research students (basic course)
- Advanced Course of the Biology of Aging – for the M.Sc. and Ph.D. research students with a basic knowledge in the field

### Supervising research students (in total – 56):

3<sup>rd</sup>-year research projects (towards a B.Sc. degree) – 24  
M.Sc. students – 14  
Ph.D. students – 15  
Post-Doctoral fellows – 3

### Major research interests:

Systems biology of aging, longevity, and age-related diseases; Construction of aging/longevity related databases; Cellular senescence; Wound healing; Fibrosis; Stem cells (Side Population); Lifespan extension. A top priority of my research interests is searching for determinants of life span and the ways for achieving healthy longevity.

**Awards:** **The Prochovnik Prize** 1996 and **The Bergman Prize** 2010, both from the Israel Gerontological Society for the Study on the Biology of Aging; **Scientist of the YEAR 2008:** Annual Award from the 9<sup>th</sup> TV channel

**Member of the Editorial Board:** *Biogerontology*, *Frontiers in Aging Neuroscience* (Associate Editor), *Frontiers in Genetics*, *Network Biology*, *Oncotarget*, *Aging and Longevity (A&L)*, *Fibrosis*

### Coordination activity:

- PI (with Prof. Turgeman and Prof. Gorbunova, PIs) of the BSF research grant, 2022-2026
- Member of the Scientific Committee of the 7<sup>th</sup> Congress of Gerontologists and Geriatricians of Ukraine (October 6-8, 2021, Kiev, Ukraine)
- Chair of the Session “Anti-Aging and Rejuvenation” at the 7<sup>th</sup> Congress of Gerontologists and Geriatricians of Ukraine (October 6-8, 2021, Kiev, Ukraine)
- Council Member, Israel Gerontological Society (Chair of Biological Division; 2014-2018)
- Chair of the 8<sup>th</sup> European Congress of Biogerontology (March 10-13, 2013, Beer Sheva – Dead Sea, Israel)
- Guest Editor of two Special Issues of *Biogerontology* – “Healthy Ageing and Regenerative Medicine” (2013), and “Age-related Diseases: Common or Diverse Pathways?” (2014)
- Scientific Co-manager of the EC FP7 Consortium RESOLVE (2008-2014)
- Member of the Scientific Advisory Board and Program Committee of the 1<sup>st</sup> (2010) and 2<sup>nd</sup> (2012) International Conferences: Genetics of Aging and Longevity

**Selected publications in peer-reviewed journals of the last seven years (in total – over 100 articles; available at <https://scholar.google.co.il/citations?user=sd2aiWkAAAAJ&hl=en>):**

1. Tfilin M, Gobshtis N, Fozailoff D, **Fraifeld VE**, Turgeman G (2023) Polarized anti-inflammatory mesenchymal stem cells increase hippocampal neurogenesis and improve cognitive function in aged mice. *Int J Mol Sci* 24:4490.
2. David E, Bitan R, Atlas S, Wolfson M, **Fraifeld VE** (2022) Correlative links between natural radiation and life expectancy in the US population. *Biogerontology* 23:425-430
3. Knyazer A, Bunu G, Toren D, Mracica TB, Segev Y, Wolfson M, Muradian KK, Tacutu R, **Fraifeld VE** (2021) Small molecules for cell reprogramming: a systems biology analysis. *Aging (Albany NY)* 13:25739-25762.
4. Muradian KK and **Fraifeld VE** (2021) Hypercapnia-inducible factor: a hypothesis. *Aging & Longevity (A&L)* 2(3):27-31
5. **Fraifeld VE** and Muradian KK (2021) Hypoxic-hypercapnic environment as a model of hypometabolism, calorie restriction, hypoglycemia and non-medicamentous treatment of related pathology. *Diabetes Research and Metabolism* 2(1):110
6. Toren D, Yanai H, Abu Taha R, Bunu G, Ursu E, Ziesche R, Tacutu R, **Fraifeld VE** (2021) Systems biology analysis of lung fibrosis-related genes in the bleomycin mouse model. *Sci Rep* 11:19269
7. Samaha E, Vierlinger K, Weinhappel W, Godnic-Cvar J, Nöhammer C, Koczan D, Thiesen HJ, Yanai H, **Fraifeld VE**, Ziesche R (2021) Expression profiling suggests loss of surface integrity and failure of regenerative repair as major driving forces for chronic obstructive pulmonary disease progression. *Am J Respir Cell Mol Biol* 64(4):441-452
8. Kulaga AY, Ursu E, Toren D, Tyshchenko V, Guinea R, Pushkova M, **Fraifeld VE**, Tacutu R (2021) Machine Learning Analysis of Longevity-Associated Gene Expression Landscapes in Mammals. *Int J Mol Sci* 22:1073
9. David E, Wolfson M, **Fraifeld VE** (2021) Background radiation impacts human longevity and cancer mortality: reconsidering the linear no-threshold paradigm. *Biogerontology* 22:189-195
10. Gobshtis N, Tfilin M, **Fraifeld VE**, Turgeman G (2021) Transplantation of mesenchymal stem cells causes long-term alleviation of schizophrenia-like behaviour coupled with increased neurogenesis. *Mol Psychiatry* 26:4448-4463.
11. Bunu G, Toren D, Ion CF, Barardo D, Sârghie L, Grigore LG, de Magalhães JP, **Fraifeld VE**, Tacutu R (2020) SynergyAge, a curated database for synergistic and antagonistic interactions of longevity-associated genes. *Sci Data* 7:366
12. Toren D, Kulaga A, Jethva M, Rubin E, Snezhkina AV, Kudryavtseva AV, Nowicki D, Tacutu R, Moskalev AA, **Fraifeld VE** (2020) Gray whale transcriptome reveals longevity adaptations associated with DNA repair and ubiquitination. *Aging Cell* 19:e13158
13. Avelar RA, Ortega JG, Tacutu R, Tyler EJ, Bennett D, Binetti P, Budovsky A, Chatsirisupachai K, Johnson E, Murray A, Shields S, Tejada-Martinez D, Thornton D, **Fraifeld VE**, Bishop CL, de Magalhães JP (2020) A multidimensional systems biology analysis of cellular senescence in aging and disease. *Genome Biol* 21:91.
14. Tolstun DA, Knyazer A, Tushynska TV, Dubiley TA, Bezrukov VV, **Fraifeld VE**, Muradian KK (2020) Metabolic remodelling of mice by hypoxic-hypercapnic environment: imitating the naked mole-rat. *Biogerontology* 2020 Apr;21(2):143-153
15. Boichuck M, Zorea J, Elkabets M, Wolfson M, **Fraifeld VE** (2019) c-Met as a new marker of cellular senescence. *Aging (Albany NY)* 11:2889-2897
16. Tacutu R, Thornton D, Johnson E, Budovsky A, Barardo D, Craig T, Diana E, Lehmann G, Toren D, Wang J, **Fraifeld VE**, de Magalhães JP (2018) Human Ageing Genomic Resources: new and updated databases. *Nucleic Acids Res* 46(D1):D1083-D1090
17. Yanai H, **Fraifeld VE** (2018) The role of cellular senescence in aging through the prism of Koch-like criteria. *Ageing Res Rev* 41:18-33
18. Yanai H, Budovsky A, Barzilay T, Tacutu R, **Fraifeld VE** (2017) Wide-scale comparative analysis of longevity genes and interventions. *Aging Cell* 16(6):1267-1275

19. Gobshtis N, Tfilin M, Wolfson M, **Fraifeld VE**, Turgeman G (2017) Transplantation of mesenchymal stem cells reverses behavioural deficits and impaired neurogenesis caused by prenatal exposure to valproic acid. *Oncotarget* 8:17443-17452.
20. Barardo D, Thornton D, Thoppil H, Walsh M, Sharifi S, Ferreira S, Anžič A, Fernandes M, Monteiro P, Grum T, Cordeiro R, De-Souza EA, Budovsky A, Araujo N, Gruber J, Petrascheck M, **Fraifeld VE**, Zhavoronkov A, Moskalev A, de Magalhães JP (2017) The DrugAge database of aging-related drugs. *Aging Cell* 16:594-597
21. Yehuda S, Yanai H, Priel E, **Fraifeld VE** (2017) Differential decrease in soluble and DNA-bound telomerase in senescent human fibroblasts. *Biogerontology* 18:525-533
22. Yanai H, Lumenta DB, Vierlinger K, Hofner M, Kitzinger HB, Kamolz LP, Nöhammer C, Chilosì M, **Fraifeld VE** (2016) Middle age has a significant impact on gene expression during skin wound healing in male mice. *Biogerontology* 17:763-770
23. Yanai H, Budovsky A, Tacutu R, Barzilay T, Abramovich A, Ziesche R, Fraifeld VE (2016) Tissue repair genes: the TiRe database and its implication for skin wound healing. *Oncotarget* 7:21145-21155
24. Toren D, Barzilay T, Tacutu R, Lehmann G, Muradian KK, **Fraifeld VE** (2016) MitoAge: a database for comparative analysis of mitochondrial DNA, with a special focus on animal longevity. *Nucleic Acids Res* 44(D1):D1262-D1265
25. Yanai H, Shteinberg A, Porat Z, Budovsky A, Braiman A, Ziesche R, **Fraifeld VE** (2015) Cellular senescence-like features of lung fibroblasts derived from idiopathic pulmonary fibrosis patients. *Aging (Albany NY)* 7(9):664-672
26. Caliò A, Zamò A, Ponzoni M, Zanolin ME, Ferreri AJ, Pedron S, Montagna L, Parolini C, **Fraifeld VE**, Wolfson M, Yanai H, Pizzolo G, Doglioni C, Vinante F, Chilosì M (2015) Cellular senescence markers p16INK4a and p21CIP1/WAF are predictors of Hodgkin lymphoma outcome. *Clin Cancer Res* 21:5164-5172
27. Muradian Kh, Vaiserman A, Min KJ, **Fraifeld VE** (2015) Fucoxanthin and lipid metabolism: A minireview. *Nutr Metab Cardiovasc Dis* 25:891-897
28. Yanai H, Toren D, Vierlinger K, Hofner M, Nöhammer C, Chilosì M, Budovsky A, **Fraifeld VE** (2015) Wound healing and longevity: lessons from long-lived  $\alpha$ MUPA mice. *Aging (Albany NY)* 7:167-176
29. Sagi O, Budovsky A, Wolfson M, **Fraifeld VE** (2015) ShcC proteins: brain aging and beyond. *Ageing Res Rev* 19:34-42



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