Eran Meshorer, Professor, The Arthur Gutterman Chair for Stem Cell Research, CV, June 2020

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Education:

1999-2003	Ph.D. in Molecular Neuroscience, Hebrew University
1997-1999	M.Sc. in Molecular Microbiology, Hebrew University
1993-1996	B.Sc. in Biology, *magna cum laude*, Hebrew University

Brief Chronology of Employment:

2016-	Professor, Department of Genetics & ELSC, Hebrew University
2014-2015	Visiting Professor, Whitehead Institute (MIT) and Broad Institute (Harvard/MIT)
2014-	Member, Edmond and Lily Safra Center for Brain Sciences (ELSC)
2011-2016	Associate Professor, Department of Genetics, Hebrew University
2007-2011	Senior Lecturer (Assistant Professor), Department of Genetics, Hebrew University
2004-2007	Post-Doctoral Fellow, National Cancer Institute, NIH, Bethesda, MD
1997-2004	Teaching Assistant, Hebrew University
1994-1996	Research Assistant, Hebrew University

Academic service (HUJ):

2019-	Search committee member, Institute of Life Sciences
2017-	Head, Department of Genetics, The Institute of Life Sciences, Hebrew University
2016-2017	Head, Genetics Department teaching program
2016-	Jerusalem Brain Community (JBC) board member
2015-	Head, Psychobiology program
2015-	Head, Etgar program (distinguished students program)
2013-2014	Search committee member, Institute of Life Sciences
2012-2014	SMART Prize (paper of the month award) committee member
2011-2014	Biology undergraduate program consultant

Selected recent awards and honors:

2019 'Breakthrough of the Year' Award by *Science* for Gokhman et al. *Cell*, 2019
2018 Coordinator, Marie Curie ITN Project award ('*EpiSyStem*')
2016 Gold Medal Award from the 1st Faculty of Medicine, Charles University, Prague, Czech Republic
2016 Named the Arthur Gutterman Chair for Stem Cell Research
2015 Vigevani Research Prize, Israel-Italy (with Prof. Giuseppe Testa, Milano)
2014 Top ten discoveries of 2014, Archaeology magazine
2013 Zelman Cowen Award for Biomedical Research, Hebrew University and University of Sydney
2012 Associate PI, *EpiGeneSys* (EU FP7 consortium)
2012 Hestrin Prize for an outstanding young researcher, Israel Society for Biochemistry and Molecular Biology
2012 Klachky Prize for the advancement of science, Hebrew University
2011 ERC starting grant award
2011 Excellence in teaching award, Life Sciences, Hebrew University
2010 Elkes Award from the National Institute for Psychobiology in Israel
2010 Excellence in teaching award, Woods Hole course on stem cells and regenerative medicine
2010 Associate PI, *EuroSyStem* (EU FP7 consortium)
2009 The Farkash Prize for Life Sciences, Hebrew University
2008 The Joseph H. and Belle R. Braun Senior Lectureship in life sciences, Hebrew University
2008 The Rom prize in genetics, Hebrew University

2007 Alon Fellowship for new faculty from the Israeli Council for Higher Education

2006 Fellows Award (FARE) in recognition of excellence in biomedical research, NIH

2005 *Lilly-Molecular Psychiatry* Award for most original significant research for 2005 (Meshorer et al., 2005)

2004 Golda Meir Fellow, Hebrew University

2003 The Israel Society for Biochemistry and Molecular Biology (ISBMB) Teva national prize for outstanding PhD

Funding (expired)

2016-2018 **TEVA-NNE** "A drug-screening platform for Huntington's and Fragile-X diseases"
$200,000 (Role: co-PI, with N. Benvenisty)

2015-2017 **ERC Proof of Concept (PoC) grant** "An antibody microarray for histone modifications"
€150,000 (Role: PI)

2011-2016 **ERC** "*ExprES*: Chromatin and transcription in ESCs: from single cells to genome-wide views"
€1,500,000 (Role: PI)

2012-2016 **Israel Science Foundation** "Novel non-coding RNAs in embryonic stem cells"
$225,000 (Role: PI)

2012-2016 **ISF-Morasha** "Mechanism of reprogramming human models for neurodegenerative disorders"
$150,000 (Role: co-PI, with Nissim Benvenisty)

2013-2016 **BIKURA ISF personal grant** "Reconstructing the Neandertal epigenome"
$150,000 (Role co-PI, with Liran Carmel)

2013-2016 **Ministry of Science Tashtiot grant** "Israel Center for induced pluripotent stem cell technologies"
$150,000 (Role: co-PI with H. Soreq, N. Benvenisty and B. Reubinoff)

2015-2016 **ISF-Broad** "Defining a glioblastoma stem cell: from chromatin dynamics to cell conversion"
$100,000 (Role: co-PI, with B. Bernstein)

2011-2015 **Human Frontiers Science Program** "The birth of the circadian clock"
$300,000 (Role: co-PI, with Aviv Regev and Sebastian Kadener)

2012-2015 **Israel-Japan collaboration grant**: "Chromatin structure and dynamics in the CNS"
$150,000 (Role: co-PI, with Takumi Takizawa)

2011-2014 **DKFZ-MOST** "Chromatin and epigenetics in pluripotent and tumor initiating cells"
€117,000 (Role: co-PI, with Karsten Rippe)

2011-2013 **Israel-Italy** collaboration grant: "Senescence of stem cells and Rett Syndrome"
$80,000 (Role: co-PI, with Umberto Galderisi)

2011-2013 **Abisch-Frenkel Fund** "Genome-wide and single cell alternative splicing in ES cell differentiation"
$90,000 (Role: PI)

2011 **ISF equipment**: Fluorescence Activated Cell Sorter (FACS)
$150,000 (Role: co-PI, with Nissim Benvenisty and Koby Nahmias)

2009-2013 ***Nucleosome4D***: FP7-PEOPLE, Marie Curie Initial Training Network (ITN)
€150,000 (Role: co-PI). The network funds an ER or ESR in each participating lab.

2010-2012 **Israel Psychobiology Center** "Chromatin-related transcriptional memory in the mammalian brain"
$80,000 (Role: PI)

2010-2012 **Israel Cancer Research Foundation** "Chromatin in embryonic and cancer stem cells"
$60,000 (Role: PI)

2009-2012 **ISF-Morasha** "Human pluripotent stem cells for neurodegenerative diseases"
$150,000 (Role: co-PI, with Nissim Benvenisty)

2010-2012 **Israel Ministry of Health** "Pluripotent stem cells for Machado Joseph Disease"
$85,000 (Role: PI)

2010-2011 **The applicative grant of the Hebrew University** "Improving reprogramming"
$40,000 (Role: PI)

2009-2012 **The Center for Complexity Science** "Alternative splicing in ES cell differentiation"
($150,000; Role: PI). **Funding lost due to the collapse of the Horowitz fund**

2007-2011 **Marie Curie IRG** reintegration grant "Live imaging of nuclear dynamics in ES cells"
€100,000 (Role: PI)

2007-2010 **Israel Science Foundation** personal grant "Identification of chromatin proteins in ES cells"
$150,000 (Role: PI)

Funding (active)

2020-2023 **John Templeton Foundation** "The (epi)genetic basis of the modern human brain evolution"
$750,000 (Role: co-PI, with Liran Carmel)

2018-2022 **EU Marie Curie ITN network** "*EpiSyStem*"
€525,000 (Role: Coordinator; PI)

2017-2022 **Israel Science Foundation** "Chromatin regulators of pluripotent stem cell differentiation"
$500,000 (Role: PI)

2017-2020 **MOST-DKFZ German-Israel collaboration** "The role of ATRX in glioblastoma"
€117,000 (Role: co-PI, with Karsten Rippe)

2015-2020 **FET-OPEN** "*CellViewer*: super-resolution systems microscopy to assess pluripotency"
€800,000 (Role: co-PI, with P. Cosma, M. Lakadamyali)

Publications

I. Research articles:

1. Lezmi E, Weissbein U, Golan-Lev T, Nissim-Rafinia M, **Meshorer E*** & Benvenisty N* (2020) The chromatin regulator ZMYM2 restricts human pluripotent stem cell growth and is essential for teratoma formation. *Stem Cell Reports*. S2213-6711(20)30186-7. doi: 10.1016/j.stemcr.2020.05.014.
2. Mandemaker IK, Zhou D, Bruens ST, Dekkers DH, Verschure PJ, Edupuganti RR, **Meshorer E**, Demmers JA, and Marteijn JA (2020) Histone H1 eviction by the histone chaperone SET reduces cell survival following DNA damage. *J Cell Sci*. [Epub ahead of print]. doi:10.1242/jcs.235473.
3. Goldshtein M, Mellul M, Deutch G, Imashimizu M, Takeuchi K, **Meshorer E**, Ram O and Lukatsky DB (2020) Transcription factor binding in embryonic stem cells is constrained by DNA sequence repeat symmetry. *Biophys J*. doi: 10.1016/j.bpj.2020.02.009 (cover)
4. Gokhman D, Agranat L, Housman G, Nissim-Rafinia M, Colon MN, Gu H, Ferrando M, Gelabert P, Lipende I, Quillen EE, Meissner A, Stone AC, Pusey AE, Mjungu D, Kandel L, Liebergall M, Prada ME, Vidal JM, Krause J, Yakir B, Reich D, Fox CL, Marques-Bonet T, **Meshorer E*** and Carmel L* (2020) Recent Regulatory Changes Shaped the Human Facial and Vocal Anatomy. *Nat Commun*. **11**(1):1189.
5. Batyrev D, Lapid E, Carmel L* and **Meshorer E*** (2020) Predicted Archaic 3D Genome Organization Reveals Genes Related to Head and Spinal Cord Separating Modern from Archaic Humans. *Cells*. 24;9(1). pii: E48. doi: 10.3390/cells9010048.
6. Mallm JP, Windisch S, Biran A, Gal Z, Schumacher S, Glass R, Herold-Mende C, **Meshorer E**, Barbus M and Rippe K (2020) Glioblastoma initiating cells are sensitive to histone demethylase inhibition due to epigenetic deregulation. *Int J Cancer*. **146**(5):1281-1292
7. Cohen-Carmon D, Sorek M, Lerner V, Nissim-Rafinia M, Yarom Y and **Meshorer E** (2019) Progerin-induced transcriptional changes in Huntington's disease human pluripotent stem cells-derived neurons. *Mol Neurobiol*. **57**(3):1768-1777
8. Gokhman D, Mishol N, de Manuel M, de Juan D, Shuqrun J, **Meshorer E**, Marques-Bonet T, Rak Y and Carmel L (2019) Reconstructing Denisovan anatomy using DNA methylation maps. *Cell*. **179**(1):180-192. (cover)

9. Sorek M, Cohen LRZ and **Meshorer E** (2019) Open chromatin structure in PolyQ disease-related genes: a potential mechanism for CAG repeat expansion in the normal human population. *NAR Genom Bioinform*. **1**(1):e3. https://doi.org/10.1093/nargab/lqz003

10. Monderer-Rothkoff G, Tal N, Risman M, Shani O, Nissim-Rafinia M, Malki-Feldman L, Medvedeva V, Groszer M, **Meshorer E** and Shifman S (2019) AUTS2 isoforms control neuronal differentiation. *Mol Psychiatry*. Epub ahead of print. doi: 10.1038/s41380-019-0409-1

11. Gold A, Eini L, Nissim-Rafinia M, Ezer S, Erez K, Nasma A, Viner R, Hanania R, Milyavsky M, **Meshorer E*** and Goldberg M* (2019) Spironolactone inhibits growth of cancer stem cells by impairing the DNA damage response. *Oncogene*. **38**(17):3103-3118. PMID: 30622338

12. Azad GK, Ito K, Sailaja BS, Biran A, Nissim-Rafinia M, Brown DT, Takizawa T and **Meshorer E** (2018) PARP1-dependent eviction of the linker histone H1 mediates immediate early gene expression during neuronal activation. *J Cell Biol*. **217**(2):473-481.

13. Schlesinger S, Kaffe B, Melcer S, Aguilera JDA, Mundackal DS, Kaplan T and **Meshorer E** (2017) A hyperdynamic H3.3 nucleosome marks promoter regions in pluripotent embryonic stem cells. *Nucleic Acids Res*, **45**(21):12181-12194.

14. Edupuganti RR, Harikumar A, Aaronson Y, Biran A, Sailaja BS, Nissim-Rafinia M, Azad GK, Cohen MM, Park JE, Shivalila CS, Markoulaki S, Sze SK, Jaenisch R and **Meshorer E** (2017) Alternative SET / TAFI promoters regulate embryonic stem cell pluripotency and differentiation. *Stem Cell Reports*, **9**(4):1291-1303.

15. Harikumar A, Edupuganti RR, Sorek M, Azad GK, Markoulaki S, Sehnalová P, Legartová S, Bártová E, Farkash-Amar S, Jaenisch R, Alon U and **Meshorer E** (2017) An endogenously tagged fluorescent fusion protein library in mouse embryonic stem cells. *Stem Cell Reports*, **9**(4):1304-1314.

16. Torres CM*, Biran A**[*,S]**, Burney MJ, Patel H, Henser-Brownhill T, Cohen AS, Li Y, Ben Hamo R, Nye E, Spencer-Dene B, Chakravarty P, Efroni S, Matthews N, Misteli T, **Meshorer E** and Scaffidi P* (2016) The linker histone H1.0 determines epigenetic and functional intratumor heterogeneity. *Science*, **353**(6307):1514.

17. Aaronson Y, Livyatan I, Gokhman D, **Meshorer E** (2016) Systematic identification of gene family regulators in mouse and human embryonic stem cells. *Nucleic Acids Res*, **44**(9):4080-4089

18. Livyatan I, Aaronson Y, Gokhman D, Ashkenazi R and **Meshorer E** (2015) BindDB: an integrated database and webtool platform for "reverse-ChIP" epigenomic analysis. *Cell Stem Cell*, **17**(6):647-648

19. Mattout A, Aaronson Y, Sailaja BS, Raghu Ram EV, Harikumar A, Mallm JP, Sim KH, Nissim-Rafinia M, Supper M, Singh PB, Sze SK, Gasser SM, Rippe K and **Meshorer E** (2015) Heterochromatin Protein 1β (HP1β) has distinct functions and distinct nuclear distribution in pluripotent versus differentiated cells. *Genome Biol*. **16**(1):213-234.

20. Kfir N, Glaich O, Lev-Maor G, Alajem A, Datta A, Sze SK, **Meshorer E*** and Ast G* (2015) SF3B1 association with chromatin determines splicing outcome. *Cell Rep*. **11**(4):618–629

21. Alajem A, Biran A, Harikumar A, Sailaja BS, Aaronson Y, Livyatan I, Nissim-Rafinia M, Sommer AG, Mostoslavsky G, Gerbasi VR, Golden DE, Datta A, Sze SK and **Meshorer E** (2015) Differential Association of Chromatin Proteins Identifies BAF60a/SMARCD1 as a regulator of embryonic stem cell differentiation. *Cell Rep*. **10**(12):2019-2031

22. Moussaieff A, Rouleau M, Kitsberg D, Cohen M, Levy G, Barasch D, Nemirovski A, Shen-Orr S, Laevsky I, Amit M, Bomze D, Elena-Herrmann B, Scherf T, Nissim-Rafinia M, Kempa S, Itskovitz-Eldor J, **Meshorer E**, Aberdam D, Nahmias Y. (2015) Glycolysis-mediated changes in acetyl-CoA and histone acetylation control the early differentiation of embryonic stem cells. *Cell Metab*, **21**(3):392-402

23. Yearim A, Gelfman S, Shayevitch R, Melcer S, Glaich O, Mallm JP, Nissim-Rafinia M, Cohen A, Rippe K, **Meshorer E*** and Ast G* (2015) HP1 is involved in regulating the global impact of DNA methylation on alternative splicing. *Cell Rep*, **10**(7):1122-34.

24. Blumberg A, Sailaja BS, Kundaje A, Levin L, Dadon S, Shmorak S, Shaulian S, **Meshorer E** and Mishmar D (2014) Transcription factors bind negatively-selected sites within human mtDNA genes. *Genome Biol Evol*. **6**(10):2634-46

25. Alvarez-Saavedra M, De Repentigny Y, Lagali P, Ram EV, Yan K, Hashem E, Ivanochko D, Huh M, Doo Y, Mears A, Todd M, Corcoran C, Bassett E, Tokarew N, Kokavec J, Majumder R, Ioshikhes I, Wallace V, Kothary R, **Meshorer E**, Stopka T, Skoultchi A and Picketts D (2014) Snf2h-mediated chromatin organization and histone H1 dynamics governs cerebellar morphogenesis and neural maturation. *Nat Commun*. **5**:4181

26. Bošković A, Eid A, Pontabry J, Ishiuchi T, Spiegelhalter C, Ram EVS, **Meshorer E** and Torres-Padilla ME (2014) Higher chromatin mobility supports totipotency and precedes pluripotency in vivo. *Genes Dev*. **28**(10):1042-7

27. Gokhman D, Lavi E, Prüfer K, Fraga MF, Riancho JA, Kelso J, Pääbo S, **Meshorer E*** and Carmel L* (2014) Reconstructing the DNA methylation maps of the Neandertal and the Denisovan. *Science*. **344**(6183):523-7

28. Schlesinger S, **Meshorer E** and Goff SP (2014) Asynchronous transcriptional silencing of individual retroviral genomes in embryonic cell. *Retrovirology*. **11**(1):31

29. Ben-David U[#], Biran A[#], Scaffidi P, Herold-Mende C, Boehringer M, **Meshorer E*** and Benvenisty N* (2014) Elimination of undifferentiated cancer cells by pluripotent stem cell inhibitors. *J Mol Cell Biol*. **6**(3):267-9

30. Raviv S, Bharti K, Rencus-Lazar S, Cohen-Tayar Y, Schyr R, Evantal N, **Meshorer E**, Zilberberg A, Grebe R, Rosin-Arbesfeld R, Lauderdale J, Lutty G, Arnheiter H and Ashery-Padan R (2014) PAX6 regulates melanogenesis in the retinal pigmented epithelium through feed-forward regulatory interactions with MITF. *PLoS Genet*. **10**(5):e1004360

31. Shahar OD, Kalousi A, Eini L, Fisher B, Weiss A, Darr J, Mazina O, Bramson S, Kupiec M, Eden A, **Meshorer E**, Mazin AV, Brino L, Goldberg M and Soutoglou E (2014) A high-throughput chemical screen with FDA approved drugs reveals that the antihypertensive drug Spironolactone impairs cancer cell survival by inhibiting homology directed repair. *Nucleic Acids Res*. **42**(9):5689-701

32. Bodaker M, **Meshorer E**, Mitrani E and Louzoun Y (2014) Genes related to differentiation are correlated with the gene regulatory network structure. *Bioinformatics*. **30**(3):406-13.

33. Efroni S, Meerzaman D, Schaefer CF, Greenblum S, Soo-Lyu M, Hu Y, Cultraro C, **Meshorer E**, Buetow KH (2013) Systems analysis utilising pathway interactions identifies sonic hedgehog pathway as a primary biomarker and oncogenic target in hepatocellular carcinoma. *IET Syst Biol*. **7**(6):243-51

34. Deng T, Zhu I, Zhang S, Leng F, Cherukuri S, Hansen L, Mariño-Ramírez L, **Meshorer E**, Landsman D and Bustin M (2013) HMGN1 Modulates Nucleosome Occupancy And DNase I Hypersensitivity At The CpG Island Promoters Of Embryonic Stem Cells. *Mol Cell Biol*. **33**(16):3377-89

35. Livyatan I, Harikumar A, Nissim-Rafinia M, Duttagupta R, Gingeras TR and **Meshorer E** (2013) Non-polyadenylated transcription in embryonic stem cells reveals novel non-coding RNA related to pluripotency and differentiation. *Nucleic Acids Res*. **41**(12):6300-15 (cover)

36. Gokhman D, Livyatan I, Sailaja BS, Melcer S and **Meshorer E** (2013) Multi-layered chromatin analysis reveals E2F, SMAD and ZFX as transcriptional regulators of the Histone gene family. *Nat Struct Mol Biol*. **20**(1):119-26

37. Sommer CA, Christodoulou C, Gianotti-Sommer A, Shen SS, Sailaja BS, Hezroni H, **Meshorer E**, Kotton DN and Mostoslavsky G. (2013) Residual Expression of Reprogramming Factors Affects the Transcriptional Program and Epigenetic Signatures of Induced Pluripotent Stem Cells*. PLoS One*, **7**(12):e51711

38. Sailaja BS, Cohen-Carmon D, Zimmerman G, Soreq H and **Meshorer E** (2012) Stress-induced epigenetic transcriptional memory of Acetylcholinesterase by HDAC4. *Proc Natl Acad Sci U S A*. **109**(52):E3687-950

39. Farkash-Amar S, David Y, Polten A, Hezroni H, Eldar Y, **Meshorer E**, Yakhini Z and Simon I (2012) Systematic determination of replication structure highlights interconnections between replication, chromatin structure and nuclear localization. *PLoS One*. **7**(11):e48986

40. Dutta B, Adav SS, Koh CG, Lim SK, **Meshorer E** and Sze SK (2012) Elucidating the temporal dynamics of chromatin-associated protein release upon DNA digestion by quantitative proteomics approach. *J Proteomics*, **75**(17):5493-506

41. Melcer S, Hezroni H, Rand E, Nissim-Rafinia M, Stewart C, Skoultchi A, Bustin M and **Meshorer E** (2012) Histone modifications and lamin A regulate chromatin protein dynamics in early embryonic stem cell differentiation. *Nat Commun*. **3**:910

42. Shahar O, Raghu Ram EVS, Shimshoni E, Hareli S, **Meshorer E*** and Goldberg M* (2012) Live imaging of induced and controlled DNA double-strand break formation reveals extremely low repair by homologous recombination in human cells. *Oncogene*. **31**:3495-504

43. Mattout A[#], Biran A[#] and **Meshorer E** (2011) Global epigenetic changes during somatic cell reprogramming to iPS cells. *J Mol Cell Biol*, **3**:341-50 (cover)

44. Hezroni H, Sailaja BS and **Meshorer E** (2011) Pluripotency-related, VPA-induced genome-wide H3K9 acetylation patterns in embryonic stem cells. *J Biol Chem*, **286**:35977-88

45. Hezroni H, Tzchori I, Davidi A, Mattout A, Biran A, Nissim-Rafinia M, Westphal H and **Meshorer E** (2011) H3K9 histone acetylation predicts pluripotency and reprogramming capacity of ES cells. *Nucleus*, **2**(4):300-309

46. Nissim-Rafinia M and **Meshorer E** (2011) Photobleaching assays (FRAP & FLIP) to visualize chromatin protein dynamics in living embryonic stem cells. *J Vis Exp*, **52**: pii: 2696

47. Schwartz S, **Meshorer E** and Ast G (2009) Chromatin organization marks exon-intron structure. *Nat Struct Mol Biol*. **16**:990-996 (cover)

48. Gaspar-Maia A, Alajem A, Polesso F, Sridharan R, Mason MJ, Heidersbach A, Ramalho-Santos J, McManus MT, Plath K, **Meshorer E**, Ramalho-Santos M (2009) Chd1 regulates open chromatin and pluripotency of embryonic stem cells. *Nature*, **460**: 863-868

49. Efroni S, Duttagupta R, Cheng J, Dehghani H, Hoeppner DJ, Dash C, Bazett-Jones DP, Le Grice S, McKay RDG, Buetow KH, Gingeras TR, Misteli T, **Meshorer E** (2008) Global transcription in pluripotent embryonic stem cells. *Cell Stem Cell,* **2**:437-447

50. **Meshorer E,** Yellajoshula D, George E, Scambler PJ, Brown D and Misteli T (2006) Hyperdynamic plasticity of chromatin proteins in pluripotent embryonic stem cells. *Dev Cell*, **10**:105-116

51. **Meshorer E**, Bryk B, Toiber D, Cohen J, Podoly E, Dori A and Soreq H (2005) SC35 promotes sustainable stress-induced alternative splicing of neuronal acetylcholinesterase mRNA. *Mol. Psych*. **10**:985-997. [Lilly award winner. Cover]

52. **Meshorer E,** Biton I, Ben-Shaul Y, Assaf Y, Soreq H and Cohen Y (2005) Brain diffusion and transport abnormalities under cholinergic imbalance. *FASEB J*. **19**:910-22

53. **Meshorer E**, Toiber D, Zurel D, Sahly I, Dori A, Cagnano E, Schreiber L, Grisaru D, Tronche F and Soreq H (2004) Combinatorial Complexity of 5' Alternative ACHE Transcripts and Protein Products. *J. Biol. Chem.* **279**:29740-29751

54. **Meshorer E**, Erb C, Gazit R, Pavlovsky L, Kaufer D, Friedman A, Glick D, Ben-Arie N and Soreq H (2002) Alternative splicing and neuritic mRNA translocation under long-term neuronal hypersensitivity. *Science*, **295**:508-512

55. Lev-Lehman E, Evron T, Broide RS, **Meshorer E**, Ariel I, Seidman S and Soreq H (2000) Synaptogenesis and myopathy under acetylcholinesterase overexpression. *J. Mol. Neurosci*. 14:93-105

56. Sigalevich P, **Meshorer E**, Helman Y and Cohen Y (2000) Transition from anaerobic growth conditions of the sulfate reducing bacterium *Desufovibrio oxyclinae* resulting in floculation. *Appl. Environ. Microbiol*. 66:5005-5012

II. Reviews (peer-reviewed)

1. Mathov Y[#], Batyrev D[#], **Meshorer E*** and Carmel L* (2020) Harnessing epigenetics to study human evolution. *Curr Opin Genet Dev*. doi.org/10.1016/j.gde.2020.05.023

2. Schlesinger S and **Meshorer E** (2019) Open chromatin, epigenetic plasticity and nuclear organization in pluripotency. *Dev Cell*, **48**(2):135-150.

3. Gokhman D, Meshorer E and Carmel L (2016) Epigenetics: it's getting old. Past meets future in paleoepigenetics. *Trends Ecol Evol*. **31**(4):290-300.

4. Harikumar A and **Meshorer E** (2015) Chromatin remodeling and bivalent histone modifications in embryonic stem cells. *EMBO Rep*. **16**(12):1609-19.

5. Cohen-Carmon D and **Meshorer E** (2012) Polyglutamine (PolyQ) related diseases: the chromatin connection. *Nucleus*. **3**(5):433-41

6. Biran A and **Meshorer E** (2012) Chromatin and genome organization in reprogramming. *Stem Cells*. **30**(9):1793-9

7. Gaspar-Maia A, Alajem A, **Meshorer E** and Ramalho-Santos M (2011) Open chromatin in stem cells and pluripotency. *Nat Rev Mol Cell Biol*, **12**(1):36-47

8. Mattout, A and **Meshorer E** (2010) Chromatin and nuclear architecture in pluripotent embryonic stem cells. *Curr Opin Cell Biol*, **22**:334-341

9. Raghu Ram EVS and **Meshorer E** (2009) Transcriptional competence in pluripotency. *Genes Dev*. **23**:2793-8

10. Efroni, S, Melcer S, Nissim-Rafinia M and **Meshorer E** (2009) Stem cells do play with dice: a statistical physics view of transcription. *Cell Cycle*. **8**:43-48

11. Prokocimer M, Davidovich M, Nissim-Rafinia M, Wiesel-Motiuk N, Bar D, Barkan R, **Meshorer E** and Gruenbaum Y (2009) Nuclear lamins: key regulators of nuclear structure and activities. *J Cell Mol Med*. **13**:1059-1085

12. Takizawa T and **Meshorer E** (2008) Chromatin and nuclear architecture in the central nervous system. *Trends Neurosci.* **31**:343-352
13. **Meshorer E** and Gruenbaum Y (2008) Gone with the Wnt/Notch: stem cells in laminopathies, progeria and aging. *J Cell Biol*. **181**:9-13
14. **Meshorer E** (2008) Imaging chromatin in embryonic stem cells. *StemBook,* doi/10.3824/stembook.1.2.1, http://www.stembook.org
15. **Meshorer E** (2007) Chromatin in embryonic stem cell neuronal differentiation. *Histol. Histopathol*. **22**:311-319
16. **Meshorer E** and Soreq H (2006) Virtues and woes of acetylcholinesterase alternative splicing in stress related neuropathology. *Trends Neurosci.* **29**:216-224
17. Stoilov P*, **Meshorer E***, Gencheva M, Glick D, Soreq H and Stamm S (2002) Defects in pre-mRNA processing as causes of and predisposition to diseases. *DNA Cell Biol.* **21**:803-818 [*Equal]
18. **Meshorer E** and Soreq H (2002) Pre-mRNA splicing modulations in senescence. *Aging Cell* **1**:10-16 (Cover)

III. Short reviews, News & Views, and Editorial comments

1. Lim PSL and **Meshorer E** (2020) Dppa2 and Dppa4 safeguard bivalent chromatin in order to establish a pluripotent epigenome. *Nat Struct Mol Biol*. In press.
2. Viegas JO and **Meshorer E** (2019) The princess and the P: Pluripotent stem cells and P-Bodies. *Cell Stem Cell*, **25**(5): 589-591
3. **Meshorer E** (2014) Epigenetics one stem at a time. *Cell Stem Cell*. **14**(6):706-9
4. Livyatan I and **Meshorer E** (2013) SON sheds light on RNA splicing and pluripotency. *Nat Cell Biol*, **15**(10):1139-40.
5. **Meshorer E** (2013) SyStem cell biology: A systems biology approach to pluripotent stem cells. *Systems Biomed*, **1**(1):1-3
6. Livyatan I and **Meshorer E** (2013) The HDAC Interaction network. *Mol Syst Biol*, **9**:671
7. Aaronson Y and **Meshorer E** (2013) Stem cells: Regulation by alternative splicing. *Nature*, **498**:176-7
8. Melcer S and **Meshorer E** (2010) The silence of the LADs: Dynamic genome-lamina interactions during embryonic stem cell differentiation. *Cell Stem Cell*, **6**:495-496.
9. **Meshorer E** and Gruenbaum Y (2009) NURD keeps chromatin young. *Nat Cell Biol*. **11**:1176-7.
10. **Meshorer E** and Gruenbaum Y (2008) Rejuvenating premature aging disease. *Nat Med*. **14**:713-715.
11. **Meshorer E** and Misteli T (2005) Splicing misplaced. *Cell*, **122**:317-318.

IV. Chapters

1. Biran A and **Meshorer E** (2020) Chromatin plasticity in pluripotent and cancer stem cells. In: *Stem Cell Epigenetics*. E. Meshorer, G. Testa Eds. Elsevier Publishers, Boston, USA. In press.
2. Livyatan I and **Meshorer E** (2017) Forward and reverse epigenomics in embryonic stem cells. In: *Handbook of Nutrition, Diet, and Epigenetics*. V. Preedy Ed. Springer Publishers, Heidelberg, Germany.
3. Salts N and **Meshorer E** (2016) Epigenetics in development, differentiation and reprogramming. In: *The Functional Nucleus*. D. Bazett-Jones, G. Dellaire Eds. Springer Publishers, Heidelberg, Germany.
4. Harikumar A and **Meshorer E** (2013) Measuring the dynamics of chromatin proteins during differentiation. *Methods Mol Biol*. **1042**:173-80.
5. Sailaja BS, Takizawa T and **Meshorer E** (2012) Chromatin immunoprecipitation (ChIP) in hippocampal cells and tissues. *Methods Mol Biol*, **809**:353-64.
6. Melcer S and **Meshorer E** (2010) Chromatin plasticity in embryonic stem cells. *Essays Biochem*. **48**(1):245-262
7. **Meshorer E** and Soreq H (2008) mRNA modulations in stress and aging. Handbook of Neurochemistry and Molecular Neurobiology. Volume No. 14: *Developmental and aging changes in the nervous system*. 3rd Ed. Editors: Perez-Polo R and Rossner S. Springer-Verlag: Berlin, Heidelberg, pp.215-243.

8. Soreq H, **Meshorer E**, Cohen O, Yirmiya R, Ginzberg D and Glick D (2004). The molecular neurobiology of acetylcholinesterase variants: from stressful insults to antisense intervention. In: Silman I, Fisher A, Anglister L, Michaelson D and Soreq H (eds.) *Cholinergic Mechanisms,* Martin Dunitz , London, pp.119-124
9. **Meshorer E** and Soreq H (2002) Antisense intervention with cholinergic impairments associated with neurodegenerative disease. In: *Mapping the Progress of Alzheimer's and Parkinson's Disease*. Y Mizuno, A Fisher, I Hanin. Eds. Kluwer Academic/Plenum Publishers, New York, pp. 45-48

V. Books and monographs

1. **Meshorer E** (2009) Long-lasting stress-induced changes in neuronal alternative splicing. VDM Verlag Pub, Germany/UK.
2. **Meshorer E** and Soreq H (2004) Stressed Out: on the molecular biology of stress responses. Van-Leer Institute publishers, Hakibutz Hameuchad, Jerusalem. Hebrew manuscript.

VI. Editorial

1. 'Stem Cell Chromatin' special issue in Stem Cell Reports (2020), **E Meshorer** & K. Plat, Guest Editors
2. *Stem Cell Epigenetics* (2020), Elsevier (in preparation). **E. Meshorer** & G. Testa, Editors
3. *The Cell Biology of Stem Cells* (2010), Landes Bioscience. **E. Meshorer** & K. Plath, Editors
4. *Stem Cell Chromatin* (2008), in: Frontiers in Bioscience. **E. Meshorer**, Managing Editor

VII. Correspondence and miscellaneous

1. **Meshorer E**, Herrmann H, Raška I (2011) Nuclear visions enhanced: chromatin structure, organization and dynamics. *EMBO Rep*, 12(8):748-50.
2. **Meshorer E** (2008) Eran Meshorer: getting a chromatin perspective. In: People and Ideas. Interview by Caitlin Sedwick. *J Cell Biol.* **182:** 618-619
3. **Meshorer E,** Biton I, Ben-Shaul Y, Assaf Y, Soreq H and Cohen Y (2006) Comment on: Abnormalities in the pattern of AQP4 immunoreactivity. *FASEB J*. **20**:2425.
4. **Meshorer E** (2006) Iran is sixth, not second, in Middle East publication list. *Nature*. **443**: 271.

Patents:

1. **Meshorer E**, Segev E, Soen Y (2010) Antibody microarray for histone modifications. Provisional
2. **Meshorer E** and Soreq H (2004) Novel AChE variants. Patent No. 161354 (file reference 16925-WO-03) (incl. GenBank accession numbers AY389977-AY389983)
3. **Meshorer E**, Shoham S, Soreq H and Sklan E (2003) System and method for assaying drugs. Patent WO0240994 (incl. GenBank accession numbers AX430850-AX430853)

Selected talks in international conferences:

Sept 19 GIBH, Chinese Academy of Sciences, Guangzhou, China

Mar 19 DKFZ Israel Annual Meeting, Heidelberg, Germany

Mar 19 CellViewer Annual Meeting, Prague, Czech Republic

Nov 18 Functional Organization of the Cell Nucleus, Prague, Czech Republic

Oct 18 Israel-Strasbourg Symposium, IGBMC, Strasbourg

Aug 18 Chromatin and Metabolism Summer School, Spetses Island, Greece

July 18 Broad-Israel Annual meeting, Broad Institute, Cambridge, MA

July 18 Chair and speaker, FEBS Annual meeting, Prague Czech Republic

May 18 Visualizing Nuclear Structure and Epigenetics, Cyprus

Apr 18 Institute Curie Invited speaker seminar, Paris

Apr 18 Epigenetics and Chromatin Mini-Symposium, Brno, Czech Republic - Keynote

Jan 18 EpiGene2Sys Annual Meeting, Munich, Germany

Nov 17 Invited seminar series, Radboud University, Nijmegen, The Netherlands

Oct 17 B-Debate: Epigenetic mechanisms in health and disease, Barcelona, Spain
Oct 17 Invited seminar series, CRG, Barcelona, Spain
Sep 17 Stem Cell Meeting, Cold Spring Harbor, NY, USA
Apr 17 Nuclear Architecture & Function, Český Krumlov, Czech Republic - Keynote
Feb 17 UCL/ELSC Neuroscience meeting, University College London, London, UK
July 16 Chair and speaker, The International Congress of Cell Biology, Prague, Czech Republic
Jun 16 14th ISSCR annual meeting, Boston, MA, USA
Oct 15 Somatic Cell Reprogramming course and conference, CRG, Barcelona, Spain
Sep 15 EPIGEN-MiChroNetwork chromatin seminar, Milano, Italy - Keynote
Sep 15 Italian Association for Cell Biology (ABCD) annual congress, Bologna, Italy
Sep 15 Creating Life in 3D conference, Brno, Czech Republic - Keynote
July 15 ISF-Institute de France Chromatin Meeting, Paris, France
Jan 15 Broad Institute invited seminar series, Cambridge, MA, USA
Nov 14 Somatic Cell Reprogramming course and conference, CRG, Barcelona, Spain
July 14 Invited seminar series, CiRA (Center for iPS Cell Research), Kyoto, Japan
Jun 14 Israel-Broad Institute Cell Observatory Annual meeting, Boston, MA, USA
May 14 Invited seminar series, Ludwig-Maximilians-Universität (LMU), Munich, Germany
Apr 14 The Center for Integrative Genomics seminar series, Lausanne University, Switzerland
Mar 14 Meeting on Chromatin Structure and Function, Moscow, Russia - Keynote
Jan 14 Invited seminar series, Napoli II University, Italy
Dec 13 EpiGeneSys annual meeting, Cambridge, UK
Nov 13 Invited seminar series, University of Zurich, Switzerland
Sep 13 Chromatin Changes in Differentiation and Malignancies, Egmond aan Zee, The Netherlands
Jun 13 11th ISSCR annual meeting, Boston, MA, USA
Jun 13 Epigen meeting, Palermo, Italy
Apr 13 Invited seminar, Nanyang Technical University, Singapore
Mar 13 DKFZ-Israel annual meeting, Heidelberg, Germany
Dec 12 IGBMC Seminar Series Invited Speaker, Strasbourg, France
Oct 12 *Nucleosome4D* annual meeting, Barcelona, Spain
Oct 12 Chromatin, Confocal Microscopy and Living Cell Studies, Brno, Czech Republic
Oct 12 Frontiers in Stem Cells & Regeneration, Woods Hole, MA, USA
Sep 12 Dynamic Organization of Nuclear Function, Cold Spring Harbor Laboratories, USA
Apr 12 NIH course on 'Stem Cells and Cancer', Howard University, Washington DC, USA
Dec 11 EuroSyStem neuronal stem cell meeting, Milano, Italy
Oct 11 Frontiers in Stem Cells & Regeneration, Woods Hole, MA, USA
Jun 11 EuroSyStem annual meeting, Prague, Czech Republic
Apr 11 EMBO workshop on Chromatin Structure, Organization and Dynamics, Prague, Czech Republic
Mar 11 NIH course on 'Cancer Stem Cells'. Howard University, Washington DC, USA
Nov 10 RESCUES annual meeting, Newcastle, UK
July 10 3rd International Congress on Stem Cells and Tissue Formation, Dresden, Germany
Oct 10 Frontiers in Stem Cells & Regeneration, Woods Hole, MA, USA
Jun 10 8th ISSCR annual meeting, San-Francisco, CA, USA
May 10 Mechanobiology and stem cells conference, Singapore

Feb 10 Invited seminar series, UCLA

Dec 09 Dissection of pluripotent stem cells – Japanese Molecular Biology Society, Yokohama, Japan

Feb 09 Abcam Stem Cell meeting, Singapore

Jun 08 6th ISSCR annual meeting, Philadelphia, PA, USA

Jun 07 Chromatin and Epigenetic Regulation of Transcription, Penn State University

May 07 EMBO conference on Chromatin and Epigenetics, EMBL Heidelberg, Germany

Dec 06 Abcam Stem Cell Meeting 2006, Cancun, Mexico

Nov 06 14th Annual Congress of the European Society for Gene Therapy (ESGT), Athens, Greece

Oct 06 NIH Research Festival, Bethesda, MD

July 06 The 15th World Congress of Pharmacology, Beijing, China

May 06 Center for Excellence in Chromosome Research, Washington DC

July 05 FEBS 30th Congress / IUBMB 9th Conference, Budapest, Hungary

Mar 05 Days of Mol. Medicine, Stem Cell Biology and Human Disease, Salk Inst., La Jolla

Dec 04 American Society for Cell Biology, 44th annual meeting, Washington DC

Professional activities, Editorial and Societies (commission of trust):

Editor (with G. Testa), Stem Cell Epigenetics, Elsevier (2020)

ISSCR Publication Committee, International Society for Stem Cell research (2018-)

Vice President, ILANIT / FISEB (2017-)

Council member, UNESCO's International Cell Research Organization (2017-)

Associate Editor, *Frontiers in Neuroscience* (2013-2015)

Editorial Board Member, *Cells* (2020-); *Systems Biomedicine* (2016-2019)

Editor (with K. Plath), *The Cell Biology of Stem Cells*, Landes Bioscience / Springer (2012)

Managing Editor for the on-line encyclopedia *Frontiers in Bioscience*, section on Stem Cell Chromatin (2007-)

Reviewing papers for >60 journals, including: *Science*, *Nature*, *Cell*, *Nat Cell Biol*, *Nat Genet*, *Nat Struct Mol Biol*, *Nat Commun*, *Nat Rev Genet*, *PNAS*, *Dev Cell*, *Cell Stem Cell*, *Cell Rep*, *Stem Cells*, *Stem Cell Rev*, *eLife*, *PLoS Biol*, *PLoS Genet*, *PLoS One*, *Cell Res*, *Genes Dev*, *Aging Cell*, *Mol Syst Biol*, *Exp Cell Res*, *EMBO J*, *EMBO Rep*, *Mol Biol Cell*, *Mol Cell Biol*, *Nucleus*, *Nucleic Acids Res*, *Chromosoma*, *Epigenetics Chromatin*, *Sci Rep*, *J Cell Biol*, *J Cell Sci*, *Dev Biol*, *Front Neurosci*, *Front Mol Neurosci*, *Front Cell Neurosci*, *Genome Biol*, *Genome Med*, *Etc*..

Reviewing grants: European Research Council ERC advanced grants; EU FP7 programs; MRC (South Africa); AD society (UK), MRC (UK); Wellcome Trust (UK); GENOPAT (France), ANR (France), French National Research Agency, Atip-Avenir (France); Austrian Science Fund (Austria), Czech Science Foundation (Czech Republic), as well as all agencies in Israel.

Member, Israel Society for Microscopy; International Society for Stem Cell Research; Israel Society for Neuroscience; Israel Society for Biochemistry and Molecular Biology (ISBMB); American Society for Biochemistry and Molecular Biology

Board Member, The Israel Genetics Society (2014-); The Israel Stem Cell Society (2016-); The Jerusalem Brain Community (2017-); FISEB (Vice President, 2017-)

Reviewing committee member, European Union FP7, Brussels, 2013; French ANR SVE6 ("genetics, genomics, bioinformatics and system biology"), Paris, 2012; Research Council Romania ("Ideas: Complex

Exploratory Research Projects"), Bucharest; International Society for Stem Cell Research; ANR, Paris, 2016, 2017, 2019

International meetings organization:

2021 Human Genome Meeting 2021 (Vice President), Tel-Aviv, Israel
2021 EMBO Workshop on Chromatin & Nuclear dynamics (with R. Foisner & I. Raska), Prague
2020 EpiSyStem Annual Meeting, Milano, Italy
2020 FISEB/ILANIT Vice President, Eilat, Israel
2019 *Seeing and decoding nuclear function and structure*, CRG, Barcelona
2018 *What Makes us Human* (with A. Mezer & I. Segev), ELSC, Givat Ram, Jerusalem
2017 *Imaging Chromatin* international mini-symposium, The Institute of Life Sciences, HUJ
2017 The UK-Israel Stem Cell young researcher conference, Bet-Belgia, Givat Ram, Jerusalem
2017 The ELSC international meeting for molecular neuroscience: *From generation to degeneration*
2014 Institute for Advanced Studies–Peking University workshop: '*Design Principles in Cellular Systems*'
2013 The first Israel-China ISF-NSFC joint workshop on Epigenetics and genetics of human diseases
2013 Co-organizer (with Y. Dor), the Kornberg 2013 Summer Course on Regenerative Biology (HUJ).
2012 The Annual Meeting of the *Nucleosome4D* European Consortium (Barcelona, Spain).
2010 The Annual Meeting of the Israel Live Imaging Forum (ILIF) – organizer and chair (HUJ).

Active lab members:

MSc: Talia Rohrlich (GOLD fellowship prize from the Jerusalem Brain Community)
PhD: Binyamin Kaffe (former EMET student program for outstanding students)
Moria Maman (Levtzion VATAT Fellowship)
Walaa Oweis (Neubauer Doctoral Fellowship)
Daniel Batyrev (ELSC student)
Lea Cohen (ELSC student)
Tamar Segal
Juliane Viegas (EpiSyStem ITN Network student)
Patrick Siang Lin Lim (EpiSyStem ITN Network student)
Post-doc: Matan Sorek (Prev. ELSC student, ELSC Excellence Award; Hoffman scholar; Azrieli Fellow)
Research Associates:
Dr. Malka Nissim-Rafinia
Dr. Eitan Segev (Network manager, EpiSyStem ITN)
Dr. Ayelet-Hashahar Cohen (Researcher-Teacher program)

Administrator: Yael Riback

Alumni: Adva Maimon (MSc: 2008-2010), Benvenisty lab, Hebrew University
Hadas Hezroni (MSc: 2009-2011; Pollack prize), Ulitsky lab, Weizmann Institute
Dr. Anna Mattout (post-doc: 2008-2011), PI, Toulouse University, France
Dr. Shai Melcer (PhD: 2008-2012), CEO, BIOHOUSE
Dr. Badi Sri Sailaja (PhD: 2008-2013), Post-doc, Raskin lab, Rutgers University
Dr. Adi Alajem (PhD: 2007-2013), Research Associate, Ram lab, Hebrew University
Dr. David Gokhman (MSc: 2010-2011), Post-doc, Hunter & Petrov Labs, Stanford University
Dr. Raghu Ram (post-doc: 2009-2013), Research Associate, Shiekhattar lab

Yair Aaronson (MSc: 2011-2014), Algotec, Israel

Nuphar Salts (MSc: 2012-2014), MD studies, Tel-Aviv University

Dr. Rachel Schyr (Research Associate: 2011-2014), Research Associate, Ben-Zvi lab, Hebrew U

Dr. Divya Mundackal (post-doc: 2014-2015), Tenure Track Researcher, SCTIMST, India

Dr. Sharon Schlesinger (post-doc: 2013-2015), PI, Hebrew University

Dr. Dorit Cohen (post-doc: 2011-2015), FutuRx, Ness-Ziona

Dr. Ilana Livyatan (PhD: 2010-2016), Post-doc, Straussman & Segal labs, Weizmann Institute

Dr. Alva Biran (PhD: 2011-17; Pollack prize; Clore Fellow), Post-doc, Groth Lab, Copenhagen

Naveh Evantal (joint student with Sebastian Kadener)

Dr. Gajendra Kumar Azad (post-doc: 2014-2017, Lady Davis Fellowship), PI, Patna University, India

Dr. Arigela Harikumar (MSc/PhD: 2011-2018, ITN fellow), Post-doc, Shiekhattar lab