**Curriculum vitae**

***Personal details:***

Name: **Efrat Shema-Yaacoby**

Date of birth: August 1, 1981

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Academic address: Dept. of Pathology, Massachusetts General Hospital, Boston, MA, USA

***Education and Research training:***

9/2012 – present: Post-doctoral associate at Massachusetts General Hospital, Harvard Medical School and the Broad Institute of MIT and Harvard, in the lab of Dr. Bradley Bernstein. Research topic: analysis of combinatorial epigenetic modifications in cancer. **Supported by the international Fulbright fellowship program and the Jane Coffin Childs Cancer Research Foundation.**

1/2012 – 9/2012: Post-doctoral associate at the Weizmann Institute of Science under the supervision of Prof. Moshe Oren. Research topic: analysis and characterization of the tumor-prone phenotype of RNF20 heterozygous mice.

10/2007 – 12/2011: Ph.D in molecular cell biology and cancer research at the Weizmann Institute of Science under the supervision of Prof. Moshe Oren. Research topic: the roles of RNF20, a chromatin modifier, in transcription regulation and cancer. My work is summarized in several papers, including two in the prestigious journals *Molecular Cell* and *Genes & Development*.

10/2005 – 9/2007: M.Sc in molecular cell biology at the Weizmann Institute of Science under the supervision of Prof. Moshe Oren. Transferred to direct PhD program.

10/2002 - 9/2005: B.Sc in biology in the Hebrew University of Jerusalem, Israel. I participated in the national Amirim program for outstanding students, was cited on the dean’s list for academic achievements, and received the Dean’s Scholar award for every year of my studies. Grades average: 96.2.

***Scholarships and awards:***

2012: Jane Coffin Childs Memorial Fund post-doctoral fellowship.

2012: National Postdoctoral Award for Advancing Women in Science.

2012: Fulbright post-doctoral fellowship.

2012: UNESCO-L’OREAL national award for Young Women in Life Sciences.

2012: International Dimitris N. Chorafas award for outstanding PhD.

2009-2012: Adams Fellowship of 22,000$ a year for the duration of my PhD studies.

2010: I was selected to participate in the 60th Meeting of Nobel Laureates at Lindau, Germany, with full travel award.

2009: Otto Schwartz Prize "For Excellent Studies, Ph.D".

2003-2005: Amirim national science program award of full tuition scholarship.

***Selected Publications:***

# [Shema-Yaacoby E](http://www.ncbi.nlm.nih.gov/pubmed?term=Shema-Yaacoby%20E%5BAuthor%5D&cauthor=true&cauthor_uid=23933260), [Nikolov M](http://www.ncbi.nlm.nih.gov/pubmed?term=Nikolov%20M%5BAuthor%5D&cauthor=true&cauthor_uid=23933260), [Haj-Yahya M](http://www.ncbi.nlm.nih.gov/pubmed?term=Haj-Yahya%20M%5BAuthor%5D&cauthor=true&cauthor_uid=23933260), [Siman P](http://www.ncbi.nlm.nih.gov/pubmed?term=Siman%20P%5BAuthor%5D&cauthor=true&cauthor_uid=23933260), [Allemand E](http://www.ncbi.nlm.nih.gov/pubmed?term=Allemand%20E%5BAuthor%5D&cauthor=true&cauthor_uid=23933260), [Yamaguchi Y](http://www.ncbi.nlm.nih.gov/pubmed?term=Yamaguchi%20Y%5BAuthor%5D&cauthor=true&cauthor_uid=23933260), [Muchardt C](http://www.ncbi.nlm.nih.gov/pubmed?term=Muchardt%20C%5BAuthor%5D&cauthor=true&cauthor_uid=23933260), [Urlaub H](http://www.ncbi.nlm.nih.gov/pubmed?term=Urlaub%20H%5BAuthor%5D&cauthor=true&cauthor_uid=23933260), [Brik A](http://www.ncbi.nlm.nih.gov/pubmed?term=Brik%20A%5BAuthor%5D&cauthor=true&cauthor_uid=23933260), [Oren M](http://www.ncbi.nlm.nih.gov/pubmed?term=Oren%20M%5BAuthor%5D&cauthor=true&cauthor_uid=23933260), [Fischle W](http://www.ncbi.nlm.nih.gov/pubmed?term=Fischle%20W%5BAuthor%5D&cauthor=true&cauthor_uid=23933260). (2013). Systematic identification of proteins binding to chromatin-embedded ubiquitylated H2B reveals recruitment of SWI/SNF to regulate transcription. Cell Rep. 15;4(3):601-8

**Shema E**, Kim J, Roeder RG and Oren M. (2011). RNF20 inhibits TFIIS-facilitated transcriptional elongation to suppress pro-oncogenic gene expression. Mol. Cell *42*(4), 477-488.

[**Shema E**, Tirosh I, Aylon Y, Huang J, Ye C, Moskovits N, Raver-Shapira N, Minsky N, Pirngruber J, Tarcic G, Hublarova P, Moyal L, Gana-Weisz M, Shiloh Y, Yarden Y, Johnsen SA, Vojtesek B, Berger SL, Oren M.](http://www.ncbi.nlm.nih.gov/pubmed/18832071?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum) (2008). The histone H2B-specific ubiquitin ligase RNF20/hBRE1 acts as a putative tumor suppressor through selective regulation of gene expression. Genes Dev. *22*, 2664-2676.

***Additional Publications:***

Haj-Yahya M, Eltarteer N, Ohayon S, **Shema E**, Kotler E, Oren M, Brik A. (2012). [N-methylation of isopeptide bond as a strategy to resist deubiquitinases.](http://www.ncbi.nlm.nih.gov/pubmed/23065695) Angew Chem Int Ed Engl. 51(46):11535-9

Fuchs G, **Shema E**, Vesterman R, Kotler E, Wolchinsky Z, Wilder S, Golomb L, Pribluda A, Zhang F, Haj-Yahya M, Feldmesser E, Brik A, Yu X, Hanna J, Aberdam D, Domany E, Oren M. (2012). [RNF20 and USP44 regulate stem cell differentiation by modulating H2B monoubiquitylation.](http://www.ncbi.nlm.nih.gov/pubmed/22681888) Mol Cell. 46(5):662-73.

[Shiloh Y](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Shiloh%20Y%22%5BAuthor%5D), [**Shema E**](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Shema%20E%22%5BAuthor%5D)**,** [Moyal L](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Moyal%20L%22%5BAuthor%5D), [Oren M](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Oren%20M%22%5BAuthor%5D). (2011). RNF20-RNF40: A ubiquitin-driven link between gene expression and the DNA damage response. [FEBS Lett.](http://www.ncbi.nlm.nih.gov/pubmed/21827756) *5*.

Dori-Bachash M, **Shema E**, Tirosh I. (2011). Coupled evolution of transcription and mRNA degradation. [PLoS Biol.](http://www.ncbi.nlm.nih.gov/pubmed/21666807) *9*(7):e1001106

**Shema E**, Oren M, Minsky N. (2011). Detection and characterization of ubiquitylated H2B in mammalian cells. Methods *54*, 326-330.

[Zwang Y](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Zwang%20Y%22%5BAuthor%5D), [Sas-Chen A](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Sas-Chen%20A%22%5BAuthor%5D), [Drier Y](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Drier%20Y%22%5BAuthor%5D), [Shay T](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Shay%20T%22%5BAuthor%5D), [Avraham R](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Avraham%20R%22%5BAuthor%5D), [Lauriola M](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Lauriola%20M%22%5BAuthor%5D), [**Shema E**](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Shema%20E%22%5BAuthor%5D), [Lidor-Nili E](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Lidor-Nili%20E%22%5BAuthor%5D), [Jacob-Hirsch J](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Jacob-Hirsch%20J%22%5BAuthor%5D), [Amariglio N](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Amariglio%20N%22%5BAuthor%5D), [Lu Y](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Lu%20Y%22%5BAuthor%5D), [Mills GB](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Mills%20GB%22%5BAuthor%5D), [Rechavi G](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Rechavi%20G%22%5BAuthor%5D), [Oren M](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Oren%20M%22%5BAuthor%5D), [Domany E](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Domany%20E%22%5BAuthor%5D), [Yarden Y](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Yarden%20Y%22%5BAuthor%5D). (2011). Two Phases of Mitogenic Signaling Unveil Roles for p53 and EGR1 in Elimination of Inconsistent Growth Signals. Mol. Cell *42*(4), 524-535.

Moyal L, Lerenthal Y, Gana-Weisz M, Mass G, So S, Wang SY, Eppink B, Chung YM, Shalev G, **Shema E**, Shkedy D, Smorodinsky NI, van Vliet N, Kuster B, Mann M, Ciechanover A, Dahm-Daphi J, Kanaar R, Hu MC, Chen DJ, Oren M and Shiloh Y. (2011). Requirement of ATM-dependent monoubiquitylation of histone H2B for timely repair of DNA double-strand breaks. Mol. Cell. *41*, 529-542.

Pirngruber J, Shchebet A, Lemm I, Schreiber L, **Shema E**, Minsky N, Chapman RD, Eick D, Lührmann R, Oren M and Johnsen SA. (2009). CDK9 directs H2B monoubiquitination and controls replication-dependent histone mRNA 3’-end processing. [EMBO Rep.](javascript:AL_get(this,%20'jour',%20'EMBO%20Rep.');) *10*, 894-900.

[Minsky N, **Shema E**, Field Y, Schuster M, Segal E, Oren M.](http://www.ncbi.nlm.nih.gov/pubmed/18344985?ordinalpos=3&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum) (2008). Monoubiquitinated H2B is associated with the transcribed region of highly expressed genes in human cells. Nat Cell Biol*.* *10*, 483-488.

[Klutstein M, Shaked H, Sherman A, Avivi-Ragolsky N, **Shema E**, Zenvirth D, Levy AA, Simchen G.](http://www.ncbi.nlm.nih.gov/pubmed/18430956?ordinalpos=2&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum) (2008). Functional conservation of the yeast and Arabidopsis RAD54-like genes. Genetics. *178,* 2389-2397.

***Conferences and invited talks:***

6-12/5/2012: **Poster presentation** at the Gordon conference “Chromatin Structure and Function”, Lucca, Italy.

1-5/6/2011: **Poster presentation** at the EMBO Conference Series on Chromatin and Epigenetics, Heidelberg, Germany.

1-6/6/2010: Participation in the 60th Meeting of Nobel Laureates at Lindau, Germany.

9-10/11/2008: **Poster presentation** at the Chromatin and Transcriptional Regulation Conference, Weizmann institute of Science, Rehovot, Israel.

27-31/10/2008: **Poster presentation** at the international p53 workshop, Shanghai, China.

18-21/8/2008: **Selected talk** at the Benzon symposia on Transcription, Chromatin and Disease, Copenhagen, Denmark.

6/3/2008: **Selected talk** at the Joint Meeting of the AMRF Consortium on Ubiquitin and Cancer, Tel-Aviv University, Tel-Aviv, Israel.

28-31/1/08: **Poster presentation** at the 5th Congress of the Federation of the Israel Societies for Experimental Biology, Eilat, Israel.

***Teaching experience:***

2010-2011: Lab course in Feinberg Graduate School, Weizmann Institute of Science, on “Analysis of chromatin”, with Dr. Dan Michael.