

Dr. NOA NOVERSHTERN

PERSONAL DETAILS

- Date of birth: 10.6.1977
- Married + 3
- Born in Israel, Citizenship: Israeli
- Mailing address:
Molecular Genetics Department, Weizmann Institute of Science, Rehovot, Israel, 7610001
- **Contact information:** Ph: +972-8-9342314, E-mail: noa.novershtern@weizmann.ac.il,
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EDUCATION

2011-2013 **Weizmann Institute of Science, Rehovot, Israel**

- **Post-Doctorate Fellow**
- Laboratory for Pluripotent Cell Studies
- Principle Investigator: Dr. Jacob Hanna

2004 - 2011 **Hebrew University, Jerusalem, Israel**

- **PhD, Computer science**
- Major in computational biology and probabilistic graphical models.
- Supervisor: Prof. Nir Friedman
- Thesis title: “Transcription Regulation Models and Their Application to Human Disease Research”
- Invited twice to **The Harvard Center for Genomic Research** in order to conduct scientific collaboration with researchers in the center.
- Close clinical collaboration with Pittsburgh University Medical Center.
- Assisted university public relations by repeated lectures for donors and media.

2006 - 2008 **Broad Institute, Cambridge, MA**

- Supervisor: Prof. Aviv Regev.
- Visiting student at the Genome Evolution Group.
- Close scientific collaboration with the Broad Institute’s Imaging Platform and the Dana Farber Cancer Institute.

2005 - 2006 **The Wellcome Trust Sanger Institute, Cambridge, UK**

- Co-supervisor: Prof. Richard Durbin.
- Visiting student in the Genome Informatics Group.

2002 - 2004 **Hebrew University, Jerusalem, Israel**

- **M.Sc., Computer Science.**
- Major in probabilistic graphical models and computational biology, as part of the Bioinformatics Group in the Machine Learning Laboratory.
- Supervisor: Prof. Nir Friedman.
- Thesis title: “Computational Aspects in Gene Expression Analysis”
- Close clinical collaboration with the Hadassah Research Hospital. Appeared on the Hebrew University President’s Report for the years 2003-2004.

1999 - 2002 **Hebrew University, Jerusalem, Israel**

- **B.Sc., Integrated Program in Computer Science and Life Science (CS-LS)**, focusing on computational biology.
- Appeared in Israeli media to promote the CS-LS integrated program, then the program with the **most competitive admission requirements** in the Hebrew University.

EMPLOYMENT HISTORY

- 2013- **Weizmann Institute of Science, Rehovot, Israel**
- **Research Associate**
 - Laboratory for Pluripotent Cell Studies
 - Principle Investigator: Dr. Jacob Hanna
- 2005 **Hebrew University, Jerusalem, Israel**
- **Teaching the course** “Workshop in Computational Bio-Skills,” which includes teaching Perl, Shell and PHP.
- 2004 - 2005 **Israel’s Prime Minister Office**
- Served as an **expert computational consultant**.
 - Specialized in Probabilistic Graphical Models.
- 2002 - 2005 **Hebrew University, Jerusalem, Israel**
- **Teaching assistant** in courses in the School of Computer Science and Engineering, including “Introduction to Data Bases” and “Computational Bio-Skills.”
- 1998 - 1999 **TARO pharmaceutical industries Ltd., Herzliya, Israel**
- Administrator in TARO’s main world wide pharmaceutical R&D facility

MILITARY SERVICE

- 1995-1998 **“HAMAN TALPIOT” Project (8200, Military Intelligence)**
- Served in an officer position (as anon-commissioned officer), fulfilling a key role in a strategic intelligence capacity.
 - Led cross-professional intelligence teams in an intensive, highly pressured environment.
- 1998
- Received a special award as the unit’s **Outstanding Solider**

ACADEMIC APPOINTMENTS

- 2014-
- **Consultant for “Chromatin and RNA Gene Regulation” i-Core**
Established and maintains the i-Core website
- 2013- **Department of Science Teaching, Weizmann Institute, Rehovot, Israel**
- **Teaching bioinformatics classes** in seminars for biology teachers
- 2014 **Tel Aviv University, Tel-Aviv, Israel**
- **Teaching bioinformatics class** for students in NYU-Tel Aviv program
- 2005 **Hebrew University, Jerusalem, Israel**
- **Teaching the course** “Workshop in Computational Bio-Skills”

INTERNATIONAL RECOGNITION

PRIZES AND AWARDS

- 2012
- The Helena Rubinstein **Postdoctoral Fellowship** in Biomedical Sciences and Cancer Research
- 2011

- Weizmann Institute Dean of Faculty Fellowship **for outstanding post-doctorate fellows**
- Travel Fellowship, the Sudarski Center for Computational Biology
- Travel Fellowship, International Society for Computational Biology

2010

- **Sivarten Prize for Research of Pediatric Cancer**, the highest monetary sum award for scientific research in the Hebrew University.
- Best Poster Award, Hebrew University Faculty Day.

2006 - 2009

- Dalia and Dan Maydan Fellowship, Maydan Fellowship Endowment; **Awarded for three consecutive years.**

2004 - 2005

- Student Fellowship, Leibniz Center for Research in Computer Science.

2003

- Wolf Fellowship for Graduate Students, Hebrew University.
- Travel award, the Sudarski Center for Computational Biology.

PATENTS & COMERCIAL PRODUCTS

2014

- **“Isolated Naïve Pluripotent Stem Cells and Methods of Generating Same”**, Filed by Weizmann Institute of Science, YEDA
- **“Media For Culturing Naïve Pluripotent Stem Cells”**. Filed by Weizmann Institute of Science, YEDA (Provisional)
- **RSeT™**, the first defined human naïve pluripotency growth media commercialized by Stem Cell Technologies INC. (Vancouver, Canada)

2004

- **“Compositions and methods for diagnosing and treating post traumatic stress disorder”**, filed by The Hebrew University, Yissum.

REVIEWING ACTIVITIES

2012-

- **Scientific Reviewer for granting agencies**, including BBSRC (UK), Israel Science Foundation (ISF), Broad Institute.

2011-

- **Scientific Reviewer for journals**, including PNAS, PLOS ONE, Bioinformatics, The Journal of Physiology.

TALKS IN INTERNATIONAL MEETINGS

2016

“High Resolution Mapping of Deterministic iPSC Reprogramming to Murine Ground State Pluripotency”
5th Cambridge Stem Cell International Symposium, Cambridge, UK

2013

“Tweaking the Chromatin to Deterministic Reprogramming”
Broad-ISF Cell Circuits Symposium, Jerusalem, Israel

2012

“Mechanisms of Pluripotency Induction and Maintenance”
The Helmsley Stem Cell Symposium, Weizmann Institute, Israel

2011

“Physical Module Network An Integrative Approach for Reconstructing Transcription Regulation”
International Society for Computational Biology (ISMB/ECCB), Vienna, Austria

2006

“Stochastic Integrative Modeling of Transcription Regulation”
Neural Information Processing Systems (NIPS), Computational Biology Meeting, Vancouver, Canada

2003

“Gene Expression Patterns in Blood Cells Classify Post-Traumatic Stress Disorder among Trauma Survivors” **Bertinoro Computational Biology Meeting**, Bertinoro, Italy

SCIENTIFIC PRODUCTIVITY

GRANTS

2016-2017

- Israel Science Foundation (ISF)- INCPM Grant

2014-2017

- Israel Science Foundation Legacy Biomed Grant

COLLABORATORS

Current

- Prof. Aviv Regev, Broad Institute, Cambridge, MA
- Prof. Gidi Rechavi, Sheba Medical Center, Tel-Aviv
- Dr. Erez Levanon, Bar Ilan University, Ramat-Gan
- Dr. Noam Stern-Ginossar, Weizmann Institute of Science, Rehovot
- Dr. Shraga Schwartz, Weizmann Institute of Science, Rehovot
- Dr. Igor Ulitzky, Weizmann Institute of Science, Rehovot
- Dr. Ido Amit, Weizmann Institute of Science, Rehovot
- Prof. William Greenleaf, Stanford University, Stanford, CA

Past

- Prof. Ronnen Segman, Hadassah Medical Center, Jerusalem
- Prof. Naftali Kaminski, Yale School of Medicine, New-Haven, CT
- Prof. Ben L. Ebert, Dana Farber/Harvard, Boston, MA

LIST OF PUBLICATIONS

REFEREED ARTICLES

Transient Acquisition of Pluripotency During Somatic Cell Trans-differentiation with iPSC Reprogramming Factors

*Mazza I, Caspi I, Zviran A, Chomsky E, Rais Y, Viukov S, Geula S, Buenrostro JD, Weinberger L, Krupalnik V, Hanna S., Zerbib, M, Dutton JR, Greenleaf WJ, Massarwa R, **Novershtern N** and Hanna JH*

Nature Biotechnology, 2015 Jul; 33(7)769-74

m6A mRNA Methylation Facilitates Resolution of Naïve Pluripotency Towards Differentiation.

Geula S., Moshitch-Moshkovitz S.*, Dominissini D.*, Mansour AA.*, Kol N., Salmon-Divon M., Hershkovitz V., Peer E., Mor N., Manor YS., Ben Haim M.S., Eyal E., Yunger S., Pinto Y., Jaitin DA., Viukov S., Rais Y., Krupalnik V., Chomsky E., Zerbib M., Mazza I., Rechavi Y., Massarwa R., Hanna S., Ido Amit, Levanon EY., Amariglio N., Stern-Ginossar N., **Novershtern N.**#, Rechavi G.# and Hanna JH#*

Corresponding authors

Science, 2015 Feb ;347(6225):1002-6

Derivation of novel human ground state naive pluripotent stem cells

*Obad Gafni**, *Leebee Weinberger**, *Abed AlFatab Mansour**, *Yair S. Manor**, *Elad Chomsky**, *Dalit Ben-Yosef*, *Yael Kalma*, *Sergey Viukov*, *Itay Mazza*, *Asaf Zviran*, *Yoach Rais*, *Zohar Shipony*, *Zohar Mukamel*, *Vladislav Krupalnik*, *Mirie Zerbib*, *Shay Geula*, *Inbal Caspi*, *Dan Schneir*, *Tamar Shwartz*, *Shlomit Gilad*, *Daniela Amann-Zalcenstein*, *Sima Benjamin*, *Ido Amit*, *Amos Tanay*, *Rada Massarwa*[#], **Noa Novershtern**[#] and *Jacob H. Hanna*[#]

Corresponding authors

Nature, 2013 Dec ;504(7469):282-6

Deterministic direct reprogramming of somatic cells to pluripotency

*Yoach Rais**, *Asaf Zviran**, *Shay Geula**, *Obad Gafni*, *Elad Chomsky*, *Sergey Viukov*, *Abed AlFatab Mansour*, *Inbal Caspi*, *Vladislav Krupalnik*, *Mirie Zerbib*, *Itay Mazza*, *Nofar Mor*, *Dror Baran*, *Leebee Weinberger*, *Diego A. Jaitin*, *David Lara-Astiaso*, *Ronnie Blecher-Gonen*, *Zohar Shipony*, *Zohar Mukamel*, *Tzachi Hagai*, *Shlomit Gilad*, *Daniela Amann-Zalcenstein*, *Amos Tanay*, *Ido Amit*, **Noa Novershtern**[#] and *Jacob H. Hanna*[#]

Corresponding authors

Nature, 2013 Sep ;502(7469):65-70

The H3K27 demethylase Utx regulates somatic and germ cell epigenetic reprogramming

*Abed Al-Fatab Mansour**, *Obad Gafni**, *Leebee Weinberger*, *Asaf Zviran*, *Daniela Amann-Zalcenstein*, *Yoach Rais*, *Mirie Zerbib*, *Sergey Viukov*, *Liad Holtzman*, *Shirley Horn-Saban*, *Ido Amit*, **Noa Novershtern**^{**} and *Jacob H. Hanna*[#].

* Equal contribution

Corresponding authors

Nature, 2012 July ;488(7411):409-413

Physical Module Networks: An Integrative Approach for Reconstructing Transcription Regulation

Noa Novershtern, *Aviv Regev*, *Nir Friedman*;

Bioinformatics (ISMB), 2011 Jul 1;27(13):i177-85.

Densely Interconnected Transcriptional Circuits Control Cell States in Human Hematopoiesis

*Noa Novershtern**, *Aravind Subramanian**, *Lee N. Lawton*, *Raymond H. Mak*, *W. Nicholas Haining*, *Marie E. McConkey*, *Naomi Habib*, *Nir Yosef*, *Cindy Y. Chang*, *Tal Shay*, *Garrett M. Frampton*, *Adam C. B. Drake*, *Ilya Leskov*, *Bjorn Nilsson*, *Fred Preffer*, *David Dombkowski*, *John W. Evans*, *Ted Liefeld*, *John S. Smutko*, *Jianzhu Chen*, *Nir Friedman*, *Richard A. Young*, *Todd R. Golub*, *Aviv Regev*, *Benjamin L. Ebert*

* Equal contribution

Cell, 2011 Jan 21;144(2):296-309.

Mitochondrial Processes Are Impaired in Hereditary Inclusion Body Myopathy

Eisenberg I, ***Novershtern N***, *Itzhaki Z*, *Becker-Cohen M*, *Sadeh M*, *Willems PH*, *Friedman N*, *Koopman WJ*, *Mitrani-Rosenbaum S*.

Human Molecular Genetics, 2008 Dec 1;17(23):3663-74.

A Functional and Regulatory Map of Asthma

Noa Novershtern, *Zohar Itzhaki*, *Obad Manor*, *Nir Friedman* and *Naftali Kaminski*

American Journal of Respiratory Cell and Molecular Biology, 2008 Mar;38(3):324-36

Peripheral Blood Mononuclear Cell Gene Expression Profiles Identify Emergent Post-Traumatic Stress Disorder among Trauma Survivors

Ronen Segman, ***Noa shefi***, *Tania Goltser-Dubner*, *Nir Friedman*, *Naftali Kaminski* and *Arik Shalev*

Molecular Psychiatry 2005 May;10(5):500-13.

INVITED EDITORIALS

esBAF Safeguards Stat3 Binding to Maintain Pluripotency

Noa Novershtern[#] *Jacob Hanna*[#]

Corresponding authors

Nature Cell Biology, 2011 Aug 1;13(8):886-8.

INVITED REVIEWS

Understanding Stem cell states: naïve to primed pluripotency in rodents and humans.

Leehee Weinberger, Muneef Ayyash, Noa Novershtern and Jacob H. Hanna.

Nature Reviews Molecular Cell Biology Mar 2016; 17(3):155-69

COMMENTARIES

Mbd3/NuRD is a Key Inhibitory Module During the Induction and Maintenance of Naïve Pluripotency

Asaf Zviran, Yoach Rais, Nofar Mor, Noa Novershtern[#], Jacob H Hanna[#]

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bioRxiv doi: <http://dx.doi.org/10.1101/01396>, March 2015