

URI ALON
Curriculum Vitae

Professor, Dept. of Molecular Cell Biology,
Weizmann Institute of Science, Rehovot, Israel, 7610001
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Focus Areas: Systems Biology and Systems Medicine

Professional Positions:

2008-present Full Professor, Molecular Cell Biology, Weizmann Institute of Science
2004-2008 Associate Professor, Molecular Cell Biology, Weizmann Institute of Science
2000-2004 Senior Scientist, Molecular Cell Biology, Dept. Physics of Complex Systems, Weizmann Institute of Science
2008-2010 Visiting Professor, Systems Biology, Harvard Medical School
2021-2022 Visiting Professor, Bioengineering, Stanford

Education:

1997-1999 Post-Doctoral Fellow with S. Leibler
Dept. Molecular Biology, Princeton University
1992-1996 Ph.D., Physics, Weizmann Institute of Science
1989-1992 M.Sc., Physics, Hebrew University of Jerusalem
1986-1989 B.Sc., Physics and Mathematics, Hebrew University of Jerusalem

Research Interests:

Design principles of biological circuits. Physics of biological systems. Hormone circuits, systems immunology, fibrosis, aging.

Awards and Fellowships:

1996 - Wolf Foundation Ph.D. Prize, Weizmann Institute of Science
1996 - Rothchild postdoctoral fellowship
1997/8 - Markee Fellowship, Princeton University
1999 - Alon Fellowship, Weizmann Institute of Science
2000 - Moore Fellowship, Caltech
2001 - EMBO Young Investigator Award
2001 - Carl and Frances Korn Career Development Chair in the Life Sciences

2003 - Minerva Junior Research Group on Biological Computation
2003 - Levinson award, Weizmann Scientific Council
2003 - IBM Faculty award
2004 - Overton Prize, International Society for Computational Biology
2005 - Teva Founders Prize for Biomedical Research
2007 - Elected, EMBO member
2009 - Radcliff Fellowship
2009 - Michael Bruno Memorial Award
2014 - Nakasone Award for Breakthrough in Life Science
2017- Jacques Solvay Chair in Physics
2021- Elected to Israeli Academy of Science
2025 - Elected to Academy for Health and Lifespan Research
2026 - Medal for the Physics of Life, IUPAP

Service (selected)

Weizmann Institute of Science

Senior Scientist Appointments and Promotions Committee
Life Sciences Senior Scientist Appointments and Promotions Committee
Institute Thesis committee
Director, Sagol Institute for Longevity Research
Director of Weizmann Career development for new faculty

Editorial board

Cell, Cell Systems, Current Opinions Systems Biology, Quantitative Biology.

Diversity, Equity and Inclusion:

2011-2023 Facilitator of interactive 2-day workshops on leadership and communication skills with emphasis on DEI for new PIs, female graduate students and deans at multiple Israeli universities.

2017, 2023 Facilitator of gender equity workshops for senior university leadership.

Teaching:

2004-2019 Developed, taught and wrote widely-used textbook, Systems Biology
2020-present Developed, taught and wrote textbook, Systems Medicine

Books:

1. An Introduction to Systems Biology, CRC Press, 2019 (First edition 2006)

2. Systems Medicine: physiological circuits and the dynamics of disease, CRC Press, 2024

Selected Publication

1. Milo, R., Shen-Orr, S., Itzkovitz, S., Kashtan, N., Chklovskii, D., and Alon, U. (2002). Network motifs: simple building blocks of complex networks. *Science* 298, 824–827.
2. Shen-Orr, S.S., Milo, R., Mangan, S., and Alon, U. (2002). Network motifs in the transcriptional regulation network of *Escherichia coli*. *Nat. Genet.* 31, 64–68.
3. Mangan, S., and Alon, U. (2003). Structure and function of the feed-forward loop network motif. *Proc. Natl. Acad. Sci. U.S.A.* 100, 11980–11985.
4. Lahav, G., Rosenfeld, N., Sigal, A., Geva-Zatorsky, N., Levine, A.J., Elowitz, M.B., and Alon, U. (2004). Dynamics of the p53-Mdm2 feedback loop in individual cells. *Nat. Genet.* 36, 147–150.
5. Dekel, E., and Alon, U. (2005). Optimality and evolutionary tuning of the expression level of a protein. *Nature* 436, 588–592.
6. Sigal, A., Milo, R., Cohen, A., Geva-Zatorsky, N., Klein, Y., Liron, Y., Rosenfeld, N., Danon, T., Perzov, N., and Alon, U. (2006). Variability and memory of protein levels in human cells. *Nature* 444, 643–646.
7. Cohen, A.A., Geva-Zatorsky, N., Eden, E., Frenkel-Morgenstern, M., Issaeva, I., Sigal, A., Milo, R., Cohen-Saidon, C., Liron, Y., Kam, Z., et al. (2008). Dynamic proteomics of individual cancer cells in response to a drug. *Science* 322, 1511–1516.
8. Geva-Zatorsky, N., Dekel, E., Cohen, A.A., Danon, T., Cohen, L., and Alon, U. (2010). Protein dynamics in drug combinations: a linear superposition of individual-drug responses. *Cell* 140, 643–651.
9. Eden, E., Geva-Zatorsky, N., Issaeva, I., Cohen, A., Dekel, E., Danon, T., Cohen, L., Mayo, A., and Alon, U. (2011). Proteome half-life dynamics in living human cells. *Science* 331, 764–768.
10. Hart, Y., Madar, D., Yuan, J., Bren, A., Mayo, A.E., Rabinowitz, J.D., and Alon, U. (2011). Robust control of nitrogen assimilation by a bifunctional enzyme in *E. coli*. *Mol. Cell* 41, 117–127.
11. Shoval, O., Goentoro, L., Hart, Y., Mayo, A., Sontag, E., and Alon, U. (2010). Fold-change detection and scalar symmetry of sensory input fields. *Proc. Natl. Acad. Sci. U.S.A.* 107, 15995–16000.
12. Shoval, O., Sheftel, H., Shinar, G., Hart, Y., Ramote, O., Mayo, A., Dekel, E., Kavanagh, K., and Alon, U. (2012). Evolutionary trade-offs, Pareto optimality, and the geometry of phenotype space. *Science* 336, 1157–1160.
13. Hart, Y., Reich-Zeliger, S., Antebi, Y.E., Zaretsky, I., Mayo, A.E., Alon, U., and Friedman, N. (2014). Paradoxical signaling by a secreted molecule leads to homeostasis of cell levels. *Cell* 158, 1022–1032.
14. Karin, O., Swisa, A., Glaser, B., Dor, Y., and Alon, U. (2016). Dynamical compensation in physiological circuits. *Mol. Syst. Biol.* 12, 886.
15. Zhou, X., Franklin, R.A., Adler, M., Jacox, J.B., Bailis, W., Shyer, J.A., Flavell, R.A., Mayo, A., Alon, U., and Medzhitov, R. (2018). Circuit Design Features of a Stable Two-Cell System. *Cell* 172, 744–757.
16. Korem Kohanim, Y., Tendler, A., Mayo, A., Friedman, N., and Alon, U. (2020). Endocrine Autoimmune Disease as a Fragility of Immune Surveillance against Hypersecreting Mutants. *Immunity* 52, 872–884.
17. Yang, Y., Karin, O., Mayo, A., Song, X., Chen, P., Santos, A., Lindner, A., and Alon, U. Damage dynamics and the role of chance in the timing of *E. coli* cell death. *Nat. Commun.* 14, 2209 (2023)

