

URI ALON
Curriculum Vitae

Professor, Dept. of Molecular Cell Biology,
Weizmann Institute of Science, Rehovot, Israel, 76100
Email: urialon@weizmann.ac.il; web: <http://mcb/UriAlon>; twitter @UriAlonWeizmann
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, Israeli Academy of Science

Service (selected)

Weizmann Senior Scientist Appointments and Promotions Committee
Life Sciences Senior Scientist Appointments and Promotions Committee
Weizmann Institute Thesis committee
Presidents Committee for Gender Equity
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.

Training- completed

PhD students (current position)

Liron Rozenkrantz (Assistant professor, Bar Ilan medical school)
Yael Korem Kohanim (Postdoc, Yale)
Omer Karin (Assistant professor, Imperial College UK)
Nitzan Rosenfeld (Senior Group Leader, Cancer research UK Cambridge)
Ron Milo (Professor, Weizmann Institute)
Shalev Itzkovitz (Professor, Weizmann Institute)
Alon Zaslaver (Professor, Hebrew University)
Alex Sigal (Max Planck Group Leader, Kwazulu-Natal Research Institute)
Shai Kaplan (Co-Founder, SciRobotics)
Nadav Kashtan (Professor, Hebrew University)
Shiraz Kalir (Yisum)

Ariel Cohen (BioMX)
Guy Shinar (Founder, Javelin Medical)
Eran Eden (Co-founder and CEO, MeMed)
Oren Shoval (Co-founder, Via)
Hila Sheftel (Via)
Anat Tzimmer (Postdoc, Institute for Systems Biology, Seattle)
Pablo Szekely (Postdoc, Duke)

Postdocs (current position)

Galit Lahav (Professor, head of dept. of systems biology, Harvard Medical School)
Tomer Kalisky (Associate Professor, Bar Ilan University)
Milana Morgenstern (Senior Lecturer, Bar-Ilan University)
Naama Geva Zatorsky (Assistant Professor, Technion)
Tamar Friedlander (Assistant professor, Hebrew University)
Yuval Hart (Associate professor, Hebrew University)
Miri Adler (Postdoc, Yale)
Jean Hausser (Assistant professor, Karolinska)
Nir Drayman (Assistant professor, UC Irvine)
Benjamin Towbin (Assistant Professor, University of Bern)

For current trainees, see <http://mcb/UriAlon>

Teaching:

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

Books:

An Introduction to Systems Biology, CRC Press, 2006
2nd edition, An Introduction to Systems Biology, CRC Press, 2019
Systems Medicine, Taylor and Francis, to appear 2023

Publications:

1. Alon, U., Drory, A., & Balberg, I. (1990). Systematic derivation of percolation thresholds in continuum systems. *Physical Review A*, 42(8), 4634.
2. Alon, U., Balberg, I., & Drory, A. (1991). New, heuristic, percolation criterion for continuum systems. *Physical Review Letters*, 66(22), 2879.
3. Drory, A., Balberg, I., Alon, U., & Berkowitz, B. (1991). Analytic derivation of percolation thresholds in anisotropic systems of permeable objects. *Physical Review A*, 43(12), 6604.

4. Alon, Uri, Shvarts, D., & Mukamel, D. (1993). Scale-invariant regime in Rayleigh-Taylor bubble-front dynamics. *Physical Review E*, 48(2), 1008.
5. Hecht, Jacob, Alon, U., & Shvarts, D. (1994). Potential flow models of Rayleigh--Taylor and Richtmyer--Meshkov bubble fronts. *Physics of Fluids*, 6(12), 4019–4030.
6. Alon, Uri, Hecht, J., Mukamel, D., & Shvarts, D. (1994). Scale invariant mixing rates of hydrodynamically unstable interfaces. *Physical Review Letters*, 72(18), 2867.
7. Alon, U., Hecht, J., Ofer, D., & Shvarts, D. (1995). Power laws and similarity of Rayleigh-Taylor and Richtmyer-Meshkov mixing fronts at all density ratios. *Physical Review Letters*, 74(4), 534.
8. Alon, U., Evans, M. R., Hinrichsen, H., & Mukamel, D. (1996). Roughening transition in a one-dimensional growth process. *Physical Review Letters*, 76(15), 2746.
9. Ofer, D., Alon, U., Shvarts, D., McCrory, R. L., & Verdon, C. P. (1996). Modal model for the nonlinear multimode Rayleigh--Taylor instability. *Physics of Plasmas*, 3(8), 3073–3090.
10. Alon, U., & Mukamel, D. (1997). Gel electrophoresis and diffusion of ring-shaped DNA. *Physical Review E*, 55(2), 1783.
11. Alon, U., Evans, M. R., Hinrichsen, H., & Mukamel, D. (1998). Smooth phases, roughening transitions, and novel exponents in one-dimensional growth models. *Physical Review E*, 57(5), 4997.
12. Sadot, O., Erez, L., Alon, U., Oron, D., Levin, L. A., Erez, G., Ben-Dor G., & D. Shvarts, D. (1998). Study of nonlinear evolution of single-mode and two-bubble interaction under Richtmyer-Meshkov instability. *Physical Review Letters*, 80(8), 1654.
13. Oron, D., Alon, U., & Shvarts, D. (1998). Scaling laws of the Rayleigh--Taylor ablation front mixing zone evolution in inertial confinement fusion. *Physics of Plasmas*, 5(5), 1467–1476.
14. Rikanati, A., Alon, U., & Shvarts, D. (1998). Vortex model for the nonlinear evolution of the multimode Richtmyer-Meshkov instability at low Atwood numbers. *Physical Review E*, 58(6), 7410.
15. Alon, U., Barkai, N., Notterman, D. A., Gish, K., Ybarra, S., Mack, D., & Levine, A. J. (1999). Broad patterns of gene expression revealed by clustering analysis of tumor and normal colon tissues probed by oligonucleotide arrays. *Proceedings of the National Academy of Sciences*, 96(12), 6745–6750.
16. Alon, U., Surette, M. G., Barkai, N., & Leibler, S. (1999). Robustness in bacterial chemotaxis. *Nature*, 397(6715), 168–171.
17. Staropoli, J. F., & Alon, U. (2000). Computerized analysis of chemotaxis at different stages of bacterial growth. *Biophysical Journal*, 78(1), 513–519.

18. Lev Bar-Or, R., Maya, R., Segel, L. A., Alon, U., Levine, A. J., & Oren, M. (2000). Generation of oscillations by the p53-Mdm2 feedback loop: a theoretical and experimental study. *Proceedings of the National Academy of Sciences*, 97(21), 11250–11255.
19. Barkai, N., Alon, U., & Leibler, S. (2001). Robust amplification in adaptive signal transduction networks. *Comptes Rendus De l'Académie Des Sciences-Series IV-Physics-Astrophysics*, 2(6), 871–877.
20. Notterman, Daniel A., Alon, U., Sierk, A. J., & Levine, A. J. (2001). Transcriptional gene expression profiles of colorectal adenoma, adenocarcinoma, and normal tissue examined by oligonucleotide arrays. *Cancer Research*, 61(7), 3124–3130.
21. Kalir, S., McClure, J., Pabbaraju, K., Southward, C., Ronen, M., Leibler, S., Surette, M.G., & Alon, U. (2001). Ordering genes in a flagella pathway by analysis of expression kinetics from living bacteria. *Science*, 292(5524), 2080–2083.
22. Milo, R., Shen-Orr, S., Itzkovitz, S., Kashtan, N., Chklovskii, D., & Alon, U. (2002). Network motifs: simple building blocks of complex networks. *Science*, 298(5594), 824–827.
23. Shen-Orr, S. S., Milo, R., Mangan, S., & Alon, U. (2002). Network motifs in the transcriptional regulation network of *Escherichia coli*. *Nature Genetics*, 31(1), 64–68.
24. Ronen, M., Rosenberg, R., Shraiman, B. I., & Alon, U. (2002). Assigning numbers to the arrows: parameterizing a gene regulation network by using accurate expression kinetics. *Proceedings of the National Academy of Sciences*, 99(16), 10555–10560.
25. Rosenfeld, N., Elowitz, M. B., & Alon, U. (2002). Negative autoregulation speeds the response times of transcription networks. *Journal of Molecular Biology*, 323(5), 785–793.
26. Itzkovitz, S., Milo, R., Kashtan, N., Ziv, G., & Alon, U. (2003). Subgraphs in random networks. *Physical Review E*, 68(2), 026127.
27. Rikanati, A., Alon, U., & Shvarts, D. (2003). Vortex-merger statistical-mechanics model for the late time self-similar evolution of the Kelvin--Helmholtz instability. *Physics of Fluids*, 15(12), 3776–3785.
28. Mangan, S., Zaslaver, A., & Alon, U. (2003). The coherent feedforward loop serves as a sign-sensitive delay element in transcription networks. *Journal of Molecular Biology*, 334(2), 197–204.
29. Rosenfeld, N., & Alon, U. (2003). Response delays and the structure of transcription networks. *Journal of Molecular Biology*, 329(4), 645–654.

30. Mangan, S., & Alon, U. (2003). Structure and function of the feed-forward loop network motif. *Proceedings of the National Academy of Sciences*, 100(21), 11980–11985.
31. Alon, Uri. (2003). Biological networks: the tinkerer as an engineer. *Science*, 301(5641), 1866–1867.
32. Setty, Y., Mayo, A. E., Surette, M. G., & Alon, U. (2003). Detailed map of a cis-regulatory input function. *Proceedings of the National Academy of Sciences*, 100(13), 7702–7707.
33. Maslov, S., Sneppen, K., & Alon, U. (2003). Correlation profiles and motifs in complex networks. *Handbook of Graphs and Networks*, 168–198.
34. Kashtan, N., Itzkovitz, S., Milo, R., & Alon, U. (2004). Efficient sampling algorithm for estimating subgraph concentrations and detecting network motifs. *Bioinformatics*, 20(11), 1746–1758.
35. Milo, R., Itzkovitz, S., Kashtan, N., Levitt, R., Shen-Orr, S., Ayzenshtat, I., sheffer, M., & Alon, U. (2004). Superfamilies of evolved and designed networks. *Science*, 303(5663), 1538–1542.
36. Lahav, G., Rosenfeld, N., Sigal, A., Geva-Zatorsky, N., Levine, A. J., Elowitz, M. B., & Alon, U. (2004). Dynamics of the p53-Mdm2 feedback loop in individual cells. *Nature Genetics*, 36(2), 147–150.
37. Kalir, S., & Alon, U. (2004). Using a quantitative blueprint to reprogram the dynamics of the flagella gene network. *Cell*, 117(6), 713–720.
38. Yeager-Lotem, E., Sattath, S., Kashtan, N., Itzkovitz, S., Milo, R., Pinter, R. Y., Alon, U., & Margalit, H. (2004). Network motifs in integrated cellular networks of transcription--regulation and protein--protein interaction. *Proceedings of the National Academy of Sciences*, 101(16), 5934–5939.
39. Kashtan, N., Itzkovitz, S., Milo, R., & Alon, U. (2004b). Topological generalizations of network motifs. *Physical Review E*, 70(3), 031909.
40. Kalir, S., Mangan, S., & Alon, U. (2005). A coherent feed-forward loop with a SUM input function prolongs flagella expression in *Escherichia coli*. *Molecular Systems Biology*, 1(1), 2005–0006.
41. Zaslaver, A., Mayo, A. E., Rosenberg, R., Bashkin, P., Sberro, H., Tsalyuk, M., & Alon, U. (2004). Just-in-time transcription program in metabolic pathways. *Nature Genetics*, 36(5), 486–491.
42. Reigl, M., Alon, U., & Chklovskii, D. B. (2004). Search for computational modules in the *C. elegans* brain. *BMC Biology*, 2, 1–12.
43. Itzkovitz, S., Milo, R., Kashtan, N., Newman, M. E. J., & Alon, U. (2004). Reply to “comment on ‘subgraphs in random networks’”. *Physical Review E*, 70(5), 058102.

44. Kashtan, N., & Alon, U. (2005). Spontaneous evolution of modularity and network motifs. *Proceedings of the National Academy of Sciences*, 102(39), 13773–13778.
45. Friedman, N., Vardi, S., Ronen, M., Alon, U., & Stavans, J. (2005). Precise temporal modulation in the response of the SOS DNA repair network in individual bacteria. *PLoS Biology*, 3(7), e238.
46. Rosenfeld, N., Young, J. W., Alon, U., Swain, P. S., & Elowitz, M. B. (2005). Gene regulation at the single-cell level. *Science*, 307(5717), 1962–1965.
47. Dekel, E., & Alon, U. (2005). Optimality and evolutionary tuning of the expression level of a protein. *Nature*, 436(7050), 588–592.
48. Itzkovitz, S., Levitt, R., Kashtan, N., Milo, R., Itzkovitz, M., & Alon, U. (2005). Coarse-graining and self-dissimilarity of complex networks. *Physical Review E*, 71(1), 016127.
49. Dekel, E., Mangan, S., & Alon, U. (2005). Environmental selection of the feed-forward loop circuit in gene-regulation networks. *Physical Biology*, 2(2), 81.
50. Itzkovitz, S., & Alon, U. (2005). Subgraphs and network motifs in geometric networks. *Physical Review E*, 71(2), 026117.
51. Geva-Zatorsky, N., Rosenfeld, N., Itzkovitz, S., Milo, R., Sigal, A., Dekel, E., Yarnitzky, T., Liron, Y., Polak, P., Lahav, G., & Alon, U. (2006). Oscillations and variability in the p53 system. *Molecular Systems Biology*, 2(1), 2006–0033.
52. Sigal, A., Milo, R., Cohen, A., Geva-Zatorsky, N., Klein, Y., Liron, Y., & Alon, U. (2006). Variability and memory of protein levels in human cells. *Nature*, 444(7119), 643–646.
53. Mangan, S., Itzkovitz, S., Zaslaver, A., & Alon, U. (2006). The incoherent feed-forward loop accelerates the response-time of the gal system of *Escherichia coli*. *Journal of Molecular Biology*, 356(5), 1073–1081.
54. Rosenfeld, N., Perkins, T. J., Alon, U., Elowitz, M. B., & Swain, P. S. (2006). A fluctuation method to quantify in vivo fluorescence data. *Biophysical Journal*, 91(2), 759–766.
55. Zaslaver, A., Bren, A., Ronen, M., Itzkovitz, S., Kikoin, I., Shavit, S., Liebermeister, W., Surette, M. G., & Alon, U. (2006). A comprehensive library of fluorescent transcriptional reporters for *Escherichia coli*. *Nature Methods*, 3(8), 623–628.
56. Mayo, A. E., Setty, Y., Shavit, S., Zaslaver, A., & Alon, U. (2006). Plasticity of the cis-regulatory input function of a gene. *PLoS Biology*, 4(4), e45.
57. Sigal, A., Milo, R., Cohen, A., Geva-Zatorsky, N., Klein, Y., Alaluf, I., Swerdlin, N., Perzov, N., Danon, T., Liron, Y., Raveh, T., Lahav, G., & Alon, U. (2006). Dynamic proteomics in individual human cells uncovers widespread cell-cycle dependence of nuclear proteins. *Nature Methods*, 3(7), 525–531.

58. Frankenstein, Z., Alon, U., & Cohen, I. R. (2006). The immune-body cytokine network defines a social architecture of cell interactions. *Biology Direct*, 1(1), 1–15.
59. Itzkovitz, S., Tlusty, T., & Alon, U. (2006). Coding limits on the number of transcription factors. *BMC Genomics*, 7, 1–15.
60. Zaslaver, A., Mayo, A., Ronen, M., & Alon, U. (2006). Optimal gene partition into operons correlates with gene functional order. *Physical Biology*, 3(3), 183.
61. Shinar, G., Dekel, E., Tlusty, T., & Alon, U. (2006). Rules for biological regulation based on error minimization. *Proceedings of the National Academy of Sciences*, 103(11), 3999–4004.
62. Itzkovitz, S., Milo, R., Kashtan, N., Levitt, R., Lahav, A., & Alon, U. (2006). Recurring harmonic walks and network motifs in Western music. *Advances in Complex Systems*, 9(01n02), 121–132.
63. Kalisky, T., Dekel, E., & Alon, U. (2007). Cost--benefit theory and optimal design of gene regulation functions. *Physical Biology*, 4(4), 229.
64. Kashtan, Nadav, Noor, E., & Alon, U. (2007). Varying environments can speed up evolution. *Proceedings of the National Academy of Sciences*, 104(34), 13711–13716.
65. Alon, Uri. (2007). Network motifs: theory and experimental approaches. *Nature Reviews Genetics*, 8(6), 450–461.
66. Amit, I., Citri, A., Shay, T., Lu, Y., Katz, M., Zhang, F., Jacob-Hirsch, J., Amariglio, N., Vaisman, N., Segal, E., Rechavi, G., Alon, U., Mills, G. B., Domany, E., & Yarden, Y. (2007). A module of negative feedback regulators defines growth factor signaling. *Nature Genetics*, 39(4), 503–512.
67. Itzkovitz, S., & Alon, U. (2007). The genetic code is nearly optimal for allowing additional information within protein-coding sequences. *Genome Research*, 17(4), 405–412.
68. Shinar, G., Milo, R., Martínez, M. R., & Alon, U. (2007). Input--output robustness in simple bacterial signaling systems. *Proceedings of the National Academy of Sciences*, 104(50), 19931–19935.
69. Sigal, A., Danon, T., Cohen, A., Milo, R., Geva-Zatorsky, N., Lustig, G., Liron, Y., Alon, U. & Perzov, N. (2007). Generation of a fluorescently labeled endogenous protein library in living human cells. *Nature Protocols*, 2(6), 1515–1527.
70. Parter, M., Kashtan, N., & Alon, U. (2007). Environmental variability and modularity of bacterial metabolic networks. *BMC Evolutionary Biology*, 7, 1–8.
71. Alon, Uri. (2007). Simplicity in biology. *Nature*, 446(7135), 497–497.

72. Rosenfeld, N., Young, J. W., Alon, U., Swain, P. S., & Elowitz, M. B. (2007). Accurate prediction of gene feedback circuit behavior from component properties. *Molecular Systems Biology*, 3(1), 143.
73. Cohen, A. A., Geva-Zatorsky, N., Eden, E., Frenkel-Morgenstern, M., Issaeva, I., Sigal, A., Milo, R., Cohen-Caidon, C., Liron, Y., Kam, Z., Cohen, L., Danon, T., Perzov., N., & Alon, U. (2008). Dynamic proteomics of individual cancer cells in response to a drug. *Science*, 322(5907), 1511–1516.
74. Kaplan, S., Bren, A., Dekel, E., & Alon, U. (2008). The incoherent feed-forward loop can generate non-monotonic input functions for genes. *Molecular Systems Biology*, 4(1), 203.
75. Kaplan, S., Bren, A., Zaslaver, A., Dekel, E., & Alon, U. (2008). Diverse Two-Dimensional Input Functions Control Bacterial Sugar Genes. *Molecular Cell*, 29(6), 786–792.
76. Parter, M., Kashtan, N., & Alon, U. (2008). Facilitated variation: how evolution learns from past environments to generalize to new environments. *PLoS Computational Biology*, 4(11), e1000206.
77. Oxman, E., Alon, U., & Dekel, E. (2008). Defined order of evolutionary adaptations: experimental evidence. *Evolution*, 62(7), 1547–1554.
78. Alon, Uri. (2008). A biophysicist learns the art of hugging. *Nature*, 453(7196), 701–702.
79. Cohen-Saidon, C., Cohen, A. A., Sigal, A., Liron, Y., & Alon, U. (2009). Dynamics and variability of ERK2 response to EGF in individual living cells. *Molecular Cell*, 36(5), 885–893.
80. Goentoro, L., Shoval, O., Kirschner, M. W., & Alon, U. (2009). The incoherent feedforward loop can provide fold-change detection in gene regulation. *Molecular Cell*, 36(5), 894–899.
81. Kashtan, Nadav, Mayo, A. E., Kalisky, T., & Alon, U. (2009). An analytically solvable model for rapid evolution of modular structure. *PLoS Computational Biology*, 5(4), e1000355.
82. Zaslaver, A., Kaplan, S., Bren, A., Jinich, A., Mayo, A., Dekel, E., Alon, U., Itzkovitz, S. (2009). Invariant distribution of promoter activities in *Escherichia coli*. *PLoS Computational Biology*, 5(10), e1000545.
83. Shinar, G., Rabinowitz, J. D., & Alon, U. (2009). Robustness in glyoxylate bypass regulation. *PLoS Computational Biology*, 5(3), e1000297.
84. Shinar, G., Alon, U., & Feinberg, M. (2009). Sensitivity and robustness in chemical reaction networks. *SIAM Journal on Applied Mathematics*, 69(4), 977–998.
85. Kashtan, Nadav, Parter, M., Dekel, E., Mayo, A. E., & Alon, U. (2009). Extinctions in heterogeneous environments and the evolution of modularity. *Evolution*, 63(8), 1964–1975.

86. Alon, U. (2009). How to choose a good scientific problem. *Molecular Cell*, 35(6), 726–728.
87. Cohen, A. A., Kalisky, T., Mayo, A., Geva-Zatorsky, N., Danon, T., Issaeva, I., Kopito, R. B., Perzov, N., Milo, R., Sigal, A., & Alon, U. (2009). Protein dynamics in individual human cells: experiment and theory. *PLoS One*, 4(4), e4901.
88. Rahat, O., Alon, U., Levy, Y., & Schreiber, G. (2009). Understanding hydrogen-bond patterns in proteins using network motifs. *Bioinformatics*, 25(22), 2921–2928.
89. Alon, Uri. (2009). How to give a good talk. *Molecular Cell*, 36(2), 165–167.
90. Geva-Zatorsky, Naama, Dekel, E., Cohen, A. A., Danon, T., Cohen, L., & Alon, U. (2010). Protein dynamics in drug combinations: a linear superposition of individual-drug responses. *Cell*, 140(5), 643–651.
91. Shoval, O., Goentoro, L., Hart, Y., Mayo, A., Sontag, E., & Alon, U. (2010). Fold-change detection and scalar symmetry of sensory input fields. *Proceedings of the National Academy of Sciences*, 107(36), 15995–16000.
92. Shachrai, I., Zaslaver, A., Alon, U., & Dekel, E. (2010). Cost of unneeded proteins in *E. coli* is reduced after several generations in exponential growth. *Molecular Cell*, 38(5), 758–767.
93. Frenkel-Morgenstern, M., Cohen, A. A., Geva-Zatorsky, N., Eden, E., Prilusky, J., Issaeva, I., Sigal, A., Cohen-Saidon, C., Liron, Y., Cohen, L., Danon, T., Perzov, N., & Alon, U. (2010). Dynamic Proteomics: a database for dynamics and localizations of endogenous fluorescently-tagged proteins in living human cells. *Nucleic Acids Research*, 38(suppl_1), D508–D512.
94. Rosenheim, J. A., Alon, U., & Shinar, G. (2010). Evolutionary balancing of fitness-limiting factors. *The American Naturalist*, 175(6), 662–674.
95. Geva-Zatorsky, Naama, Dekel, E., Batchelor, E., Lahav, G., & Alon, U. (2010). Fourier analysis and systems identification of the p53 feedback loop. *Proceedings of the National Academy of Sciences*, 107(30), 13550–13555.
96. Noor, E., Eden, E., Milo, R., & Alon, U. (2010). Central carbon metabolism as a minimal biochemical walk between precursors for biomass and energy. *Molecular Cell*, 39(5), 809–820.
97. Alon, Uri. (2010). How to build a motivated research group. *Molecular Cell*, 37(2), 151–152.
98. Issaeva, I., Cohen, A. A., Eden, E., Cohen-Saidon, C., Danon, T., Cohen, L., & Alon, U. (2010). Generation of double-labeled reporter cell lines for studying co-dynamics of endogenous proteins in individual human cells. *PloS One*, 5(10), e13524.

99. Eden, E., Geva-Zatorsky, N., Issaeva, I., Cohen, A., Dekel, E., Danon, T., Cohen, L., Mayo, a., & Alon, U. (2011). Proteome half-life dynamics in living human cells. *Science*, 331(6018), 764–768.
100. Noy, L., Dekel, E., & Alon, U. (2011). The mirror game as a paradigm for studying the dynamics of two people improvising motion together. *Proceedings of the National Academy of Sciences*, 108(52), 20947–20952.
101. Shoval, O., Alon, U., & Sontag, E. (2011). Symmetry invariance for adapting biological systems. *SIAM Journal on Applied Dynamical Systems*, 10(3), 857–886.
102. Hart, Y., Madar, D., Yuan, J., Bren, A., Mayo, A. E., Rabinowitz, J. D., & Alon, U. (2011). Robust control of nitrogen assimilation by a bifunctional enzyme in *E. coli*. *Molecular Cell*, 41(1), 117–127.
103. Madar, Daniel, Dekel, E., Bren, A., & Alon, U. (2011). Negative auto-regulation increases the input dynamic-range of the arabinose system of *Escherichia coli*. *BMC Systems Biology*, 5, 1–9.
104. Moran, G. S., & Alon, U. (2011). Playback theatre and recovery in mental health: Preliminary evidence. *The Arts in Psychotherapy*, 38(5), 318–324.
105. Shoval, O., Sheftel, H., Shinar, G., Hart, Y., Ramote, O., Mayo, A., Dekel, E., Kavanagh, K., & Alon, U. (2012). Evolutionary trade-offs, Pareto optimality, and the geometry of phenotype space. *Science*, 336(6085), 1157–1160.
106. Silander, O. K., Nikolic, N., Zaslaver, A., Bren, A., Kikoin, I., Alon, U., & Ackermann, M. (2012). A genome-wide analysis of promoter-mediated phenotypic noise in *Escherichia coli*. *PLoS Genetics*, 8(1), e1002443.
107. Sasson, V., Shachrai, I., Bren, A., Dekel, E., & Alon, U. (2012). Mode of regulation and the insulation of bacterial gene expression. *Molecular Cell*, 46(4), 399–407.
108. Hart, Y., Antebi, Y. E., Mayo, A. E., Friedman, N., & Alon, U. (2012). Design principles of cell circuits with paradoxical components. *Proceedings of the National Academy of Sciences*, 109(21), 8346–8351.
109. Noy, L., Hart, Y., Andrew, N., Ramote, O., Mayo, A. E., & Alon, U. (2012). A quantitative study of creative leaps. *ICCC*, 72–76.
110. Koster, D. A., Mayo, A., Bren, A., & Alon, U. (2012). Surface growth of a motile bacterial population resembles growth in a chemostat. *Journal of Molecular Biology*, 424(3–4), 180–191.
111. Geva-Zatorsky, Naama, Issaeva, I., Mayo, A., Cohen, A., Dekel, E., Danon, T., cohen, L., Liron, Y., Alon, U., & Eden, E. (2012). Using bleach-chase to measure protein half-lives in living cells. *Nature Protocols*, 7(4), 801–811.

112. Farkash-Amar, S., Eden, E., Cohen, A., Geva-Zatorsky, N., Cohen, L., Milo, R., Sigal, A., Danon, T & Alon, U. (2012). Dynamic proteomics of human protein level and localization across the cell cycle. *PloS One*, 7(11), e48722.
113. Hart, Y., & Alon, U. (2013). The utility of paradoxical components in biological circuits. *Molecular Cell*, 49(2), 213–221.
114. Friedlander, Tamar, Mayo, A. E., Tlusty, T., & Alon, U. (2013). Mutation rules and the evolution of sparseness and modularity in biological systems. *PloS One*, 8(8), e70444.
115. Hart, Y., Mayo, A. E., Shoval, O., & Alon, U. (2013). Comparing apples and oranges: fold-change detection of multiple simultaneous inputs. *PloS One*, 8(3), e57455.
116. Bren, A., Hart, Y., Dekel, E., Koster, D., & Alon, U. (2013). The last generation of bacterial growth in limiting nutrient. *BMC Systems Biology*, 7(1), 1–9.
117. Sheftel, H., Shoval, O., Mayo, A., & Alon, U. (2013). The geometry of the Pareto front in biological phenotype space. *Ecology and Evolution*, 3(6), 1471–1483.
118. Kavanagh, K. D., Shoval, O., Winslow, B. B., Alon, U., Leary, B. P., Kan, A., & Tabin, C. J. (2013). Developmental bias in the evolution of phalanges. *Proceedings of the National Academy of Sciences*, 110(45), 18190–18195.
119. Keren, L., Zackay, O., Lotan-Pompan, M., Barenholz, U., Dekel, E., Sasson, V., Aidelberg, G., Bren, A., Zeevi, D., Weinberger, a., Alon, U. & segal E. (2013). Promoters maintain their relative activity levels under different growth conditions. *Molecular Systems Biology*, 9(1), 701.
120. Madar, Daniel, Dekel, E., Bren, A., Zimmer, A., Porat, Z., & Alon, U. (2013). Promoter activity dynamics in the lag phase of Escherichia coli. *BMC Systems Biology*, 7(1), 1–13.
121. Szekely, P., Sheftel, H., Mayo, A., & Alon, U. (2013). Evolutionary tradeoffs between economy and effectiveness in biological homeostasis systems. *PLoS Computational Biology*, 9(8), e1003163.
122. Mitarai, N., Alon, U., & Jensen, M. H. (2013). Entrainment of noise-induced and limit cycle oscillators under weak noise. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 23(2), 023125.
123. Hart, Y., Noy, L., Feniger-Schaal, R., Mayo, A. E., & Alon, U. (2014). Individuality and togetherness in joint improvised motion. *PloS One*, 9(2), e87213.
124. Hart, Y., Reich-Zeliger, S., Antebi, Y. E., Zaretsky, I., Mayo, A. E., Alon, U., & Friedman, N. (2014). Paradoxical signaling by a secreted molecule leads to homeostasis of cell levels. *Cell*, 158(5), 1022–1032.

125. Farkash-Amar, S., Zimmer, A., Eden, E., Cohen, A., Geva-Zatorsky, N., Cohen, L., Milo, R., Sigal, A., Danon, T., & Alon, U. (2014). Noise genetics: inferring protein function by correlating phenotype with protein levels and localization in individual human cells. *PLoS Genetics*, 10(3), e1004176.
126. Adler, M., Mayo, A., & Alon, U. (2014). Logarithmic and power law input-output relations in sensory systems with fold-change detection. *PLoS Computational Biology*, 10(8), e1003781.
127. Friedlander, Tamar, Mayo, A. E., Tlusty, T., & Alon, U. (2015). Evolution of bow-tie architectures in biology. *PLoS Computational Biology*, 11(3), e1004055.
128. Rothschild, Daphna, Dekel, E., Hausser, J., Bren, A., Aidelberg, G., Szekely, P., & Alon, U. (2014). Linear superposition and prediction of bacterial promoter activity dynamics in complex conditions. *PLoS Computational Biology*, 10(5), e1003602.
129. Hart, Y., Sheftel, H., Hausser, J., Szekely, P., Ben-Moshe, N. B., Korem, Y., Tendler, A., Mayo, A., & Alon, U. (2015). Inferring biological tasks using Pareto analysis of high-dimensional data. *Nature Methods*, 12(3), 233–235.
130. Aidelberg, G., Towbin, B. D., Rothschild, D., Dekel, E., Bren, A., & Alon, U. (2014). Hierarchy of non-glucose sugars in Escherichia coli. *BMC Systems Biology*, 8(1), 1–12.
131. Tendler, A., Mayo, A., & Alon, U. (2015). Evolutionary tradeoffs, Pareto optimality and the morphology of ammonite shells. *BMC Systems Biology*, 9, 1–12.
132. Noy, L., Alon, U., & Friedman, J. (2015). Corrective jitter motion shows similar individual frequencies for the arm and the finger. *Experimental Brain Research*, 233, 1307–1320.
133. Korem, Y., Szekely, P., Hart, Y., Sheftel, H., Hausser, J., Mayo, A., Rothenberg, ME., Kalinsky, T., & Alon, U. (2015). Geometry of the gene expression space of individual cells. *PLoS Computational Biology*, 11(7), e1004224.
134. Szekely, P., Korem, Y., Moran, U., Mayo, A., & Alon, U. (2015). The mass-longevity triangle: Pareto optimality and the geometry of life-history trait space. *PLoS Computational Biology*, 11(10), e1004524.
135. Pereira, L., Kratsios, P., Serrano-Saiz, E., Sheftel, H., Mayo, A. E., Hall, White, GJ., LeBoeuf, b., Gracia, L., Alon, U., Hobert, O. (2015). A cellular and regulatory map of the cholinergic nervous system of *C. elegans*. *Elife*, 4, e12432.
136. Friedlander, T., Mayo, A. E., Tlusty, T., & Alon, U. (2015). Mutation Rules and the Evolution of Sparseness and Modularity in Biological Systems (vol 8, e70444, 2013). *PloS One*, 10(3).

137. Feniger-Schaal, R., Noy, L., Hart, Y., Koren-Karie, N., Mayo, A. E., & Alon, U. (2016). Would you like to play together? Adults' attachment and the mirror game. *Attachment & Human Development*, 18(1), 33–45.
138. Bren, A., Park, J. O., Towbin, B. D., Dekel, E., Rabinowitz, J. D., & Alon, U. (2016). Glucose becomes one of the worst carbon sources for *E. coli* on poor nitrogen sources due to suboptimal levels of cAMP. *Scientific Reports*, 6(1), 1–10.
139. Houri-Ze'evi, L., Korem, Y., Sheftel, H., Faigenbloom, L., Toker, I. A., Dagan, Y., Awad, L., Degani, L., Alon, U., & Rechavi, O. (2016). A tunable mechanism determines the duration of the transgenerational small RNA inheritance in *C. elegans*. *Cell*, 165(1), 88–99.
140. Hart, Y., Czerniak, E., Karnieli-Miller, O., Mayo, A. E., Ziv, A., Biegon, A., Citron, A., & Alon, U. (2016). Automated video analysis of non-verbal communication in a medical setting. *Frontiers in Psychology*, 7, 1130.
141. Zimmer, A., Katzir, I., Dekel, E., Mayo, A. E., & Alon, U. (2016). Prediction of multidimensional drug dose responses based on measurements of drug pairs. *Proceedings of the National Academy of Sciences*, 113(37), 10442–10447.
142. Czerniak, E., Biegon, A., Ziv, A., Karnieli-Miller, O., Weiser, M., Alon, U., & Citron, A. (2016). Manipulating the placebo response in experimental pain by altering doctor's performance style. *Frontiers in Psychology*, 7, 874.
143. Keren, L., Hausser, J., Lotan-Pompan, M., Slutskin, I. V., Alisar, H., Kaminski, S., Weinbereger, A., Milo, R., Alon, U., & Segal, E. (2016). Massively parallel interrogation of the effects of gene expression levels on fitness. *Cell*, 166(5), 1282–1294.
144. Dahan, A., Noy, L., Hart, Y., Mayo, A., & Alon, U. (2016). Exit from synchrony in joint improvised motion. *PloS One*, 11(10), e0160747.
145. Karin, O., Swisa, A., Glaser, B., Dor, Y., & Alon, U. (2016). Dynamical compensation in physiological circuits. *Molecular Systems Biology*, 12(11), 886.
146. Adler, M., Szekely, P., Mayo, A., & Alon, U. (2017). Optimal regulatory circuit topologies for fold-change detection. *Cell Systems*, 4(2), 171–181.
147. Towbin, B. D., Korem, Y., Bren, A., Doron, S., Sorek, R., & Alon, U. (2017). Optimality and sub-optimality in a bacterial growth law. *Nature Communications*, 8(1), 14123.
148. Gaziv, G., Noy, L., Liron, Y., & Alon, U. (2017). A reduced-dimensionality approach to uncovering dyadic modes of body motion in conversations. *PloS One*, 12(1), e0170786.

149. Zimmer, A., Amar-Farkash, S., Danon, T., & Alon, U. (2017). Dynamic proteomics reveals bimodal protein dynamics of cancer cells in response to HSP90 inhibitor. *BMC Systems Biology*, 11(1), 1–11.
150. Karin, O., Alon, U., & Sontag, E. (2017). A note on dynamical compensation and its relation to parameter identifiability. *BioRxiv*, 123489.
151. Rozenkrantz, Liron, Mayo, A. E., Ilan, T., Hart, Y., Noy, L., & Alon, U. (2017). Placebo can enhance creativity. *PloS One*, 12(9), e0182466.
152. Karin, O., & Alon, U. (2017). Biphasic response as a mechanism against mutant takeover in tissue homeostasis circuits. *Molecular Systems Biology*, 13(6), 933.
153. Hart, Y., Mayo, A. E., Mayo, R., Rozenkrantz, L., Tendler, A., Alon, U., & Noy, L. (2017). Creative foraging: An experimental paradigm for studying exploration and discovery. *PloS One*, 12(8), e0182133.
154. Shoval, O., & Alon, U. (2010). SnapShot: network motifs. *Cell*, 143(2), 326–326.
155. Zimmer, A., Tendler, A., Katzir, I., Mayo, A., & Alon, U. (2017). Prediction of drug cocktail effects when the number of measurements is limited. *PLoS Biology*, 15(10), e2002518.
156. Drayman, N., Karin, O., Mayo, A., Danon, T., Shapira, L., Rafael, D., Zimmer, A., Bren, A., Kobilier, O., & Alon, U. (2017). Dynamic proteomics of herpes simplex virus infection. *MBio*, 8(6), e01612-17.
157. Adler, M., & Alon, U. (2018). Fold-change detection in biological systems. *Current Opinion in Systems Biology*, 8, 81–89.
158. Kohanim, Y. K., Levi, D., Jona, G., Towbin, B. D., Bren, A., & Alon, U. (2018). A bacterial growth law out of steady state. *Cell Reports*, 23(10), 2891–2900.
159. Zhou, X., Franklin, R. A., Adler, M., Jacox, J. B., Bailis, W., Shyer, J. A., Flavell, R. A., Mayo, A., Alon, U., & Medzhitov, R. (2018). Circuit design features of a stable two-cell system. *Cell*, 172(4), 744–757.
160. Adler, M., Mayo, A., Zhou, X., Franklin, R. A., Jacox, J. B., Medzhitov, R., & Alon, U. (2018). Endocytosis as a stabilizing mechanism for tissue homeostasis. *Proceedings of the National Academy of Sciences*, 115(8), E1926–E1935.
161. Liron, Y., Raindel, N., & Alon, U. (2018). Dramatic action: A theater-based paradigm for analyzing human interactions. *Plos One*, 13(3), e0193404.
162. Sheftel, H., Szekely, P., Mayo, A., Sella, G., & Alon, U. (2018). Evolutionary trade-offs and the structure of polymorphisms. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 373(1747), 20170105.

163. Glass, D. S., & Alon, U. (2018). Programming cells and tissues. *Science*, 361(6408), 1199–1200.
164. Tendler, A., Wolf, B. C., Tiwari, V., Alon, U., & Danon, A. (2018). Fold-change response of photosynthesis to step increases of light level. *IScience*, 8, 126–137.
165. Levy-Tzedek, S., Moran, G. S., Alon, U., & Sal-Man, N. (2018). Peer power: A women's peer-mentoring program at the workplace: example from the academia. *EMBO Reports*, 19(12), e47246.
166. Hart, Y., Goldberg, H., Striem-Amit, E., Mayo, A. E., Noy, L., & Alon, U. (2018). Creative exploration as a scale-invariant search on a meaning landscape. *Nature Communications*, 9(1), 5411.
167. Hausser, J., Mayo, A., Keren, L., & Alon, U. (2019). Central dogma rates and the trade-off between precision and economy in gene expression. *Nature Communications*, 10(1), 68.
168. Adler, M., Kohanim, Y. K., Tendler, A., Mayo, A., & Alon, U. (2019). Continuum of gene-expression profiles provides spatial division of labor within a differentiated cell type. *Cell Systems*, 8(1), 43–52.
169. Katzir, I., Cokol, M., Aldridge, B. B., & Alon, U. (2019). Prediction of ultra-high-order antibiotic combinations based on pairwise interactions. *PLoS Computational Biology*, 15(1), e1006774.
170. Adler, M., Mayo, A., Zhou, X., Franklin, R. A., Meizlish, M. L., Medzhitov, R., Kallenberger, S.M., & Alon, U. (2020). Principles of cell circuits for tissue repair and fibrosis. *IScience*, 23(2), 100841.
171. Hausser, J., Szekely, P., Bar, N., Zimmer, A., Sheftel, H., Caldas, C., & Alon, U. (2019). Tumor diversity and the trade-off between universal cancer tasks. *Nature Communications*, 10(1), 5423.
172. Karin, O., Agrawal, A., Porat, Z., Krizhanovsky, V., & Alon, U. (2019). Senescent cell turnover slows with age providing an explanation for the Gompertz law. *Nature Communications*, 10(1), 5495.
173. Tendler, A., Zimmer, A., Mayo, A., & Alon, U. (2019). Noise-precision tradeoff in predicting combinations of mutations and drugs. *PLoS Computational Biology*, 15(5), e1006956.
174. Kohanim, Y. K., Tendler, A., Mayo, A., Friedman, N., & Alon, U. (2020). Endocrine autoimmune disease as a fragility of immune surveillance against hypersecreting mutants. *Immunity*, 52(5), 872–884.
175. Hausser, J., & Alon, U. (2020). Tumour heterogeneity and the evolutionary trade-offs of cancer. *Nature Reviews Cancer*, 20(4), 247–257.
176. Karin, O., Raz, M., Tendler, A., Bar, A., Korem Kohanim, Y., Milo, T., & Alon, U. (2020). A new model for the HPA axis explains dysregulation of

- stress hormones on the timescale of weeks. *Molecular Systems Biology*, 16(7), e9510.
177. Maimon, L., Milo, T., Moyal, R. S., Mayo, A., Danon, T., Bren, A., & Alon, U. (2020). Timescales of human hair cortisol dynamics. *Isience*, 23(9), 101501.
 178. Shimshoni, E., Adir, I., Afik, R., Solomonov, I., Shenoy, A., Adler, M., et al. (2021). Distinct extracellular--matrix remodeling events precede symptoms of inflammation. *Matrix Biology*, 96, 47–68
 179. Karin, O., & Alon, U. (2021). Senescent cell accumulation mechanisms inferred from parabiosis. *GeroScience*, 43(1), 329–341.
 180. Karin, O., Raz, M., & Alon, U. (2021). An opponent process for alcohol addiction based on changes in endocrine gland mass. *Isience*, 24(3), 102127.
 181. Raindel, N., Liron, Y., & Alon, U. (2021). A Study of Dramatic Action and Emotion Using a Systematic Scan of Stick Figure Configurations. *Frontiers in Physics*, 9, 664948.
 182. Karin, O., & Alon, U. (2021c). Temporal fluctuations in chemotaxis gain implement a simulated-tempering strategy for efficient navigation in complex environments. *Isience*, 24(7), 102796.
 183. Tendler, A., Bar, A., Mendelsohn-Cohen, N., Karin, O., Korem Kohanim, Y., Maimon, L., Milo, T., Raz, M., Mayo, A., Tanay, A., & Alon, U. (2021). Hormone seasonality in medical records suggests circannual endocrine circuits. *Proceedings of the National Academy of Sciences*, 118(7), e2003926118.
 184. Katzir, I., Adler, M., Karin, O., Mendelsohn-Cohen, N., Mayo, A., & Alon, U. (2021). Senescent cells and the incidence of age-related diseases. *Aging Cell*, 20(3), e13314.
 185. Karin, O., & Alon, U. (2022). The dopamine circuit as a reward-taxis navigation system. *PLoS Computational Biology*, 18(7), e1010340.
 186. Adler, M., Tendler, A., Hausser, J., Korem, Y., Szekely, P., Bossel, N., Hart, Y., Karin, O., Mayo, A., & Alon, U. (2022). Controls for phylogeny and robust analysis in Pareto task inference. *Molecular Biology and Evolution*, 39(1), msab297.
 187. McInnis, M. G., Andreassen, O. A., Andreazza, A. C., Alon, U., Berk, M., Brister, T., et al. (2022). Strategies and foundations for scientific discovery in longitudinal studies of bipolar disorder. *Bipolar Disorders*, 24(5), 499–508
 188. Shilo, M., Mayo, A., & Alon, U. (2022). A Mechanism for Ovulation Number Control. *Frontiers in Endocrinology*, 13.
 189. Korem Kohanim, Y., Milo, T., Raz, M., Karin, O., Bar, A., Mayo, A., Cohen, NM., Toledano, Y., & Alon, U. (2022). Dynamics of thyroid diseases and thyroid-axis gland masses. *Molecular Systems Biology*, 18(8), e10919.

190. Wang, S., Li, K., Pickholz, E., Dobie, R., Matchett, K. P., Henderson, N. C., Carrico, C., Driver, I., Jensen, B.J., Chen, L., Petitjean M., Bhattacharya, D., Fiel, M., Liu, X., Kisseleva, T., Alon, U, Adler, M., Medzhitov, R., & Freidman, S.L. (2023). An autocrine signaling circuit in hepatic stellate cells underlies advanced fibrosis in nonalcoholic steatohepatitis. *Science Translational Medicine*, 15(677), eadd3949.
191. Bar, A., Karin, O., Mayo, A., Ben-Zvi, D., & Alon, U. (2023). Rules for body fat interventions based on an operating point mechanism. *Iscience*, 26(2).