

Ariel Amir - Curriculum Vitae

CONTACT INFORMATION

Department of Physics of Complex Systems
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EDUCATION AND TRAINING

- ★ 2010, Ph.D., Department of Condensed Matter Physics, The Weizmann Institute of Science
 - Thesis Topic: *Dynamics of the Electron Glass*
 - Advisers: Prof. Yuval Oreg, Prof. Yoseph Imry
- ★ 2005, M.Sc., Department of Condensed Matter Physics, The Weizmann Institute of Science
 - Thesis Topic: *Effect of Junction Geometry on Tunneling*
 - Advisers: Prof. Yuval Oreg, Prof. Yoseph Imry
- ★ 2000, B.Sc. Hebrew University of Jerusalem
 - *Summa cum Laude*, in Physics and Mathematics

ACADEMIC POSITIONS

- ★ September 2022 – present, Full Professor, The Weizmann Institute of Science,
- ★ July 2021-September 2022, Gordon McKay (Full) Professor of Applied Mathematics and Applied Physics, SEAS, Harvard University
- ★ July 2020-June 2021, Thomas D. Cabot Associate Professor of Applied Mathematics and Applied Physics, SEAS, Harvard University
- ★ 2019, Associate Professor of Applied Mathematics and Applied Physics, SEAS, Harvard University
- ★ 2014-2018, Assistant Professor of Applied Mathematics and Applied Physics, SEAS, Harvard University
- ★ 2011-2014, Junior Fellow, Harvard Society of Fellows

HONORS AND AWARDS

- 2025 Recipient of the Helen and Martin Kimmel award for Innovative investigation.
- 2025 Selected as member of Israel Young Academy.
- 2025 Tel Aviv University International Biophysics Prize laureate.
- 2024 Selected as member of European Molecular Biology Organization (EMBO).
- 2023 ERC Consolidator grant for “Biophysical Models of Bacterial Growth”
- 2023 Award from the Kreter-Katz center for Interdisciplinary Research at the Interfaces of Life and Exact Sciences.
- 2019 Björkman-Strominger-Wiley Prize for Collaboration.
- 2019 SUPA (Scottish Universities Physics Alliance) distinguished visitor award.

- 2018 NSF CAREER award.
- 2017 Dean’s Competitive Fund for Promising Scholarship.
- 2017 Award from the Volkswagen foundation program “Life? – A fresh scientific approach to the basic principles of life”.
- 2014-2016 Scialog Fellow, “Molecules come to life”.
- 2016 Student’s Faculty Choice Colloquium, ETH Zurich.
- 2015 A. P. Sloan Fellow, physics.
- 2012 Milton grant awarded for the project “Memory and relaxation phenomena in materials science”.
- 2011-2014 Harvard Junior Fellow.
- 2011-2012 Rothschild Fellow (Yad Hanadiv Foundation).
- 2010 Recipient of the D. N. Chorafas International Award.
- 2010 Recipient of the Fulbright Fellowship.
- 2010 Recipient of the Bikura Fellowship.
- 2009 Menashe-Milo Memorial Prize, awarded by the Feinberg Graduate School of the Weizmann Institute of Science, for academic excellence and scientific accomplishment.
- 2008 Levi Eshkol Scholarship for Excellence, awarded by the Israeli Ministry of Science.
- 2005-2009 Weizmann Institute Ph.D. Scholarship.
- 2000 Rector’s prize, Hebrew University of Jerusalem.
- 2000 Amirim Scholarship for outstanding students, Hebrew University of Jerusalem.
- 1999 Gold medal in the International Physics Olympiad, Italy. First place in the Israeli National Physics Olympiad. First place in the Grossman Mathematics Olympiad.

SCIENTIFIC LEADERSHIP

- Reviewing Editor, eLife (2022-present).
- Organizer of SRITP conference on “Stochasticity in microbial physiology” (Weizmann Institute, January 2026).
- Co-organizer of Erwin Schrödinger Institute workshop on “Extremal statistics in biology” (Vienna, June 2025).
- Co-organizer of conference on “Deciphering Microbial Physiology and Community” (Shenzhen, May 2025).
- Co-organizer of Israeli Physical Society annual meeting (Tel-Aviv, April 2023).
- Co-organizer of EMBO conference on “Cell size and growth regulation” (virtual, June 2021).
- Organizer of Aspen winter conference on “New physical models for cell growth”, Aspen, Colorado (January, 2020).
- Organizer of March meeting Focus session on “Microbial and Viral Quantitative Evolution”, Boston (March, 2019).

- Co-organizer of Radcliffe Institute Exploratory Symposium on: “An Interdisciplinary Approach to the Bacterial Cell Cycle”, Boston (June, 2018).
- Organizer of March meeting Focus session on “Implications of single-cell variability: from cells to populations”, Los Angeles (March, 2018).
- Co-editor of special issue of *Frontiers in Microbiology*, “The Bacterial Cell: Coupling Between Growth and Major Cell Cycle Processes” (2018).
- Co-organizer of International Physics of Living Systems annual conference, Harvard (July, 2016).
- Co-organizer of Institute of Advanced Studies workshop on “Stochastic Processes in the Cell-Cycle”, Institute of Advanced Studies, Jerusalem (June ,2016).

TEACHING

Harvard University

- 2021 Complex and Fourier analysis
- 2014-2021 Created new course, ‘[Introduction to Disordered Systems and Stochastic Processes](#)’ (graduate level) A book based on this course is now published with Cambridge University Press (January 2021).
- 2014-2020 Developed course on ‘[Mathematical modeling](#)’ (undergraduate level)
- 2011-2014 Mentor for supervised research courses at Harvard University.

The Weizmann Institute of Science(graduate level)

- 2025 [Basic Concepts in Complex Systems](#)
- 2024 [Seminal papers in the physics of living systems](#)
- 2023-2025 [Data analysis](#)
- 2022 [Statistical Physics](#)
- 2011 Instructor for course ‘[Fluctuations and Noise](#)’
- 2007 Instructor for course ‘[Renormalization group](#)’
- 2006-2008 Instructor for course ‘[Quantum Mechanics I](#)’
- 2006-2009 Instructor in [Ulpana de Shalit](#) for undergraduate students, The Weizmann Institute of Science.

ACADEMIC

ADMINISTRATION

- 2024-present, Director of the Weizmann Physics School.
- 2023-present, Director of the Clore Center for Biological Physics.
- 2022-present, Co-organizer of the Clore seminar on soft matter and biological physics.
- 2015- 2022, Microbial Sciences Initiative (MSI) associated faculty member, Harvard University

- 2016- 2022, Kavli Institute Bionano Science and Technology (KIBST), Harvard University, member
- 2016- 2022, Molecules Cells and Organisms (MCO) graduate program, Harvard University, faculty mentor
- 2017- 2022, Harvard Materials Research and Engineering Center (MRSEC), member
- 2014- 2019, Dissertation Advisory Committee, SEAS, Harvard University
- 2015-2016, Director of Graduate Studies, Applied Mathematics, Harvard University
- 2017-2021 Member of Hoopes prize committee.
- Member of several faculty search committees at Harvard SEAS and MCB.
- Chair of George. F. Carrier Fellowship search committee.

VOLUNTARY,
OUTREACH AND
EDUCATIONAL
ACTIVITY IN THE
COMMUNITY

- Keynote speaker in the Israel Annual Meeting of Physics Teachers.
- Invited speaker to ICTP spring college for students from developing countries (Italy, March 2025)
- 2022-2024 Outreach lectures to high-school students and in the community.
- 2015-2021 Creator and head of the Harvard Physics Circle, preparing high school students for the Physics Olympiad.
- 2019-2020 Member of team creating problems for the US Physics Olympiad exams.
- 2016-2019 K-12 outreach, through Harvard's "Teach" project, and through mentoring in the Research Science Institute program.
- 2011-2019 Mentor for Harvard College Program for Research in Science and Engineering, advising Harvard undergraduates in physics research.
- 2015-2017 Support of the Association of Computational and Mathematical Modeling by creating problems and serving as judge.
- 2010-2011 Member of the Academic Committee for the 12th Asian Physics Olympiad, held in Israel in May 2011.
- 2009 Member of the International Board of the International Physics Olympiad.
- 2004-2009 Leader of Israeli team to the International Physics Olympiad, Mexico, and the Asian Physics Olympiad in Mongolia (2008), Kazakhstan (2006) and Vietnam (2004).
- 2000-2011 Senior Instructor in the Israeli National Physics Olympiad project. Composer of entrance exams and instructor in preparation camps.

INVITED TALKS
AND LECTURES

- Invited speaker to international course on "Multiscale Integration in Biological Systems", (Curie Institute, November 2025).

- Invited speaker to “ConFlowNet2025” conference (Germany, September 2025).
- Invited speaker to conference on “Frontiers in Non-equilibrium Physics” (Chennai, January 2025).
- Invited speaker to Meeting of the EMBO Communities (Germany, October 2024).
- Invited speaker to Frontiers of Physics workshop (Munich, October 2024).
- Invited speaker to Israeli Society for Microbiology annual meeting (Bar-Ilan University, September 2024).
- Invited speaker to International Physics of Living Systems Annual meeting (Italy, June 2024).
- Keynote speaker in Nir Friedman commemoration event on quantitative immunology (Weizmann, May 2024).
- Invited speaker to Israeli Physical Society annual meeting (Tel-Aviv, April 2024).
- Invited lecture at the Collège de France (Paris, March 2024).
- Invited speaker to DICE conference, stochastic effects in cells and embryos (NYC, November 2023).
- Invited speaker to conference on “Physics of Open Systems and Beyond” and Hokkaido Summer Institute summer institute school on biophysics (Japan, August 2023).
- Invited speaker to Israel Statistical Physics day (Weizmann, March 2023).
- Invited speaker to EMBO conference on “Bacterial Cell Biophysics” (Israel, December 2022).
- Invited participant to KITP workshop on non-growing microbes (KITP, October 2022).
- Invited speaker to ESI Program “Large Deviations, Extremes and Anomalous Transport in Non-equilibrium Systems” (Vienna, September 2022).
- Invited speaker to workshop on statistical physics approaches to ecology (South-Africa, September 2022).
- Invited speaker to GRC conference on “Single Molecule Approaches to Biology” (Spain, July 2022).
- Invited speaker to Quantitative Biology Munich retreat (Italy, May 2022).
- Invited speaker to APS March meeting session on “Optimal trade-offs” (Chicago, March 2022).
- Invited speaker to Israeli Society for Evolutionary Biology Conference (Weizmann, March 2022).

- Invited speaker to EMBL Symposium “Multiomics to Mechanisms - Challenges in Data Integration” (Heidelberg, September 2021).
- Keynote speaker in NORBIS Summer School (Norway, August 2021).
- Invited speaker to EMBO conference on “Cell Size and Growth” (Israel, June 2021).
- Invited speaker to workshop on “Random Matrix Theory and Networks” (Max Planck Institute for the Physics of Complex Systems, Dresden, June 2021)
- Invited speaker to APS March meeting session on “Noise and Correlations in Bacterial Growth and Division: molecular mechanisms, single-cell phenomenology, and population effects” (Denver, Colorado March 2020).
- Invited speaker to Arnold Sommerfeld school on “Physics of Life” (Munich, October 2019).
- Invited speaker to school on “Physics of Bacteria” (Bonn, August 2019).
- Participant in workshop on “Information Processing in Single Cells” (Aspen, 2019).
- Distinguished Professor lectureship from Scottish Universities Physics Alliance (Edinburgh, June 2019).
- Invited speaker to NSF-Simons symposium “The future of quantitative biology” (Harvard, May 2019).
- Invited speaker to Berkeley “Statistical Mechanics Meeting” (Berkeley, January 2019).
- Invited speaker to conference on “Key Challenges in Biophysics” (Munich, 2018).
- Invited speaker to workshop on “Integrative Cell Models for Disease Intervention” (Banff, 2018).
- Invited speaker to American Society for Microbiology conference (Atlanta, 2018).
- Invited speaker to Greater Boston Statistical Mechanics Meeting (MIT, 2017).
- Invited speaker to CUNY symposium on “Physics of bacterial growth” (NY, 2017).
- Invited speaker to summer school “Stochastic Processes with Application to Physics and Biophysics” (Acre, 2017).
- Invited speaker to International Physics of Living Systems meeting (Paris, July 2017).
- Invited speaker to workshop on “Quantitative cell biology of bacteria” (Burghausen, Bavaria, 2017).

- Invited speaker to QCBnet workshop “Cells as Dynamical Systems: fluid mechanics, self-organization, and decision making in living cells” (San Francisco, 2017).
- Invited speaker to workshop: “Recent Advances on the Glass and Jamming Transitions” (Lousanne, 2017).
- Invited speaker to workshop: “Molecular and Physical Biology of Chromosomes” (Woods Hole, 2016).
- Invited speaker to conference: “Size and Scale in Biological Systems” (Berlin, 2016).
- Invited speaker to KITP workshop: “Geometry, Elasticity, Fluctuations, and Order in 2D Soft Matter” (Santa Barbara, 2016).
- Invited speaker to International Physics of Living Systems meeting (Virginia, 2015).
- Invited speaker to conference: “Stochastic Modeling of Anomalous Dynamics in Complex Physical and Biological Systems” (Wroclaw, 2015).
- Invited speaker to APS March meeting, session: “From bacteria to eukaryotes: the shapes of living matter” (San Antonio, 2015).
- Invited speaker to Scialog conference, “Molecules Come to Life” (Tucson, 2015).
- Invited speaker to American Society for Cell Biology (Philadelphia, 2014).
- Invited speaker to New England Complex Fluids workshop (Cabot, 2014).
- Participant in workshop on “Physics meets Bacteria” (Aspen, 2014).
- Invited speaker to TIDS conference (Transport in Interacting Disordered Systems) (Spain, 2013).
- Invited speaker to the First International Kavli Nanoscience Nexus Conference (Puerto Rico, 2013).
- Invited speaker to the APS March Meeting, session: “Nonequilibrium relaxation and aging in materials” (Baltimore, 2013).
- Invited speaker to Material Research Society meeting, symposium: “Geometry and Topology of Biomolecular and Functional Nanomaterials” (Boston, 2012).
- Invited speaker to workshop on “Modern Perspectives on Thin Sheets: Geometry, Elasticity, and Statistical Physics”, at Lorentz Center (Leiden, 2012).
- Invited speaker to ICTP workshop on “Complex quantum systems: Nonergodicity, glassiness and localization” (Italy, 2012).
- Talk at the American Physical Society meeting (Boston, 2012).

- Contributing speaker to conference on “Unifying concepts in glass physics” (Paris, 2011).
- Contributing speaker to TIDS conference (Transport in Interacting Disordered Systems) (Acre, 2011).
- Invited speaker to KITP conference “Out of Equilibrium Quantum Systems” (Santa Barbara, 2010).
- Invited participant to KITP workshop on electronic glasses (Santa Barbara, July and August 2010).
- Invited speaker to workshop on electronic glasses at the Hebrew University of Jerusalem (2010).
- Invited speaker to TIDS conference (Transport in Interacting Disordered Systems) (Hungary, 2009).

1. *Extremal events dictate population growth rate inference*, Trevor GrandPre, Ethan Levien and Ariel Amir, arXiv:2501.08404 (2025).
2. *Are cell length and volume interchangeable in cell cycle analysis?*, Prathitha Kar and Ariel Amir, *Biophysical Journal* 124 9, 1424 (2025) [cover article]
3. *Roles of intrinsically disordered regions in transcription factor search* Wencheng Ji, Ori Hachmo, Naama Barkai and Ariel Amir, eLife, 104956 (2025).
4. *Optogenetic control of pheromone gradients and mating behavior in budding yeast*, Alvaro Banderas¹, Maud Hofmann, Celine Cordier, Matthias Le Bec, M Carolina Elizondo-Cantu, Lionel Chiron, Sylvain Pouzet, Yotam Lifschytz, Wencheng Ji, Ariel Amir, Vittore Scolari and Pascal Hersen, *Life Science Alliance* 8, 6 e202403078 (2025).
5. *Mechanics and wrinkling patterns of pressurized bent tubes*, César L. Pastrana, Luyi Qiu, John Hutchinson, Ariel Amir and Ulrich Gerland, *Physical Review E*, 111, 1, L013502 (2025).
6. *Criticality in the Luria-Delbrück model with an arbitrary mutation rate*, Deng Pan, Jie Lin and Ariel Amir, *Physical Review Letters*, 134, 3, 038401 (2025).
7. *Determining the rate-limiting processes for cell division in Escherichia coli*, Jaana Männik, Prathitha Kar, Chathuddasie Amarasinghe, Ariel Amir and Jaan Männik, *Nature Communications*, 15, 9948 (2024).
8. *Mycobacterium tuberculosis grows linearly at the single-cell level with larger variability than model organisms*, Eun Seon Chung, Prathitha Kar, Maliwan Kamkaew, Ariel Amir and Bree B. Aldridge, *Nature Microbiology*, 1-13 (2024).
9. *Gene expression in growing cells: A biophysical primer*, Ido Golding and Ariel Amir, *Reviews of Modern Physics*, 96, 041001 (2024).
10. *Sound-mediated nucleation and growth of amyloid fibrils*, Anna Kozell, Aleksei Solomonov, Roman Gaidarov, Doron Benyamin, Irit Rosenhek-Goldian, Harry Mark Greenblatt, Yaakov Levy, Ariel Amir, Uri Raviv and Ulyana Shimanovich, *PNAS* 121, 34, e2315510121 (2024).
11. *Self-extinguishing relay waves enable homeostatic control of human neutrophil swarming*, Evelyn Strickland, Deng Pan, Christian Godfrey, Julia S. Kim, Alex Hopke, Maureen Degrange, Bryant Villavicencio, Michael K. Mansour, Christa S. Zerbe, Daniel Irimia, Ariel Amir and Orion D. Weiner, *Developmental Cell* 59, 1 (2024).
12. *Putting cognitive tasks on trial: A measure of reliability convergence*, Jan Kadlec, Catherine Walsh, Uri Sade, Ariel Amir, Jesse Rissman and Michal Ramot, *Communications Psychology* 2, 64 (2024).

13. *Measuring and modeling the dynamics of mitotic error correction*, Gloria Ha, Paul Dieterle, Hao Shen, Ariel Amir and Daniel J. Needleman, *PNAS* 121, 25, e2323009121 (2024).
14. *How microscopic epistasis and clonal interference shape the fitness trajectory in a spin glass model of microbial long-term evolution*, Nicholas M. Boffi, Yipei Guo, Chris H. Rycroft and Ariel Amir, *eLife* 12, RP87895 (2024).
15. *Evolutionary dynamics in non-Markovian models of microbial populations*, Farshid Jafarpour, Ethan Levien and Ariel Amir, *Physical Review E* 108, 3, 034402 (2023).
16. *Physiological stress drives the emergence of a Salmonella subpopulation through ribosomal RNA regulation*, Camilla Ciolli Mattioli, Kfir Eisner, Aviel Rosenbaum, Mengyu Wang, Ariel Amir, Ido Golding and Roi Avraham, *Current Biology* 33, 22, 4880 (2023).
17. *Connecting cooperative transport by ants with the physics of active swimmers*, Tabea Heckenthaler, Tobias Holder, Ariel Amir, Ofer Feinerman and Ehud Fonio, *PRX Life* 1, 2, 023001 (2023).
18. *Conditional probability as found in nature: Facilitated diffusion*, Ori Hachmo and Ariel Amir, *American Journal of Physics* 91, 8, 653 (2023).
19. *Crackling Noise during Slow Relaxations in Crumpled Sheets*, Yoav Lahini, Shmuel M. Rubinstein and Ariel Amir, *Physical Review Letters* 130, 25, 258201 (2023).
20. *Using conditional independence tests to elucidate causal links in cell cycle regulation in Escherichia coli*, Prathitha Kar, Sriram Tiruvadi-Krishnan, Jaana Männik, Jaan Männik, and Ariel Amir, *PNAS* 120, 11, e221479612 (2023).
21. *Pressure-induced shape-shifting of helical bacteria*, César L. Pastrana, Luyi Qiu, Shahaf Armon, Ulrich Gerland and Ariel Amir, *Soft Matter* 19, 12, 2224 (2023).
22. *Tale o' pi by pilota*, Ariel Amir and Tadashi Tokieda *Lecture Notes in Mathematics*, p. 81-84 (2023).
23. *Time-resolved microfluidics unravels individual cellular fates during double-strand break repair*, Nadia Vertti-Quintero, Ethan Levien, Lucie Poggi, Ariel Amir, Guy-Franck Richard and Charles N. Baroud, *BMC biology* 20, 1, 269 (2022).
24. *Universal catastrophe time distributions of dynamically unstable polymers*, Paul B. Dieterle, Jenny Zheng, Ethan Garner, and Ariel Amir, *Physical Review E* 105, 064503 (2022).
25. *The effect of weak clonal interference on average fitness trajectories in the presence of macroscopic epistasis*, Yipei Guo and Ariel Amir, *Genetics* 220, 4, iyac028 (2022).
26. *Bending Instability of Rod-shaped Bacteria*, Luyi Qiu, John W. Hutchinson and Ariel Amir, *Physical Review Letters*, 128, 058101 (2022).

27. *Temporal Evolution of Flow in Pore-Networks: From Homogenization to Instability*, Ahmad Zareei, Deng Pan and Ariel Amir, *Physical Review Letters*, 128, 234501 (2022).
28. *Coupling between DNA replication, segregation, and the onset of constriction in Escherichia coli*, Sriram Tiruvadi-Krishnan, Jaana Männik, Prathitha Kar, Jie Lin, Ariel Amir and Jaan Männik, *Cell Reports* 38, 12, 110539 (2022).
29. *Non-genetic variability in microbial populations: survival strategy or nuisance?*, Ethan Levien, Jane Kondev and Ariel Amir, invited review for *Reports on Progress in Physics*, 84, 116601 (2021).
30. *Unexpected scaling of interstitial velocities with permeability due to polymer retention in porous media*, Shima Parsa, Ahmad Zareei, Enric Santanach-Carreras, Eliza J. Morris, Ariel Amir, Lizhi Xiao and David A. Weitz, *Physical Review Fluids*, 6, L082302 (2021).
31. *Distinguishing different modes of growth using single-cell data*, Prathitha Kar, Sriram Tiruvadi-Krishnan, Jaana Männik, Jaan Männik and Ariel Amir, *eLife*, 10:e72565 (2021).
32. *Understanding Beta-Lactam-Induced Lysis at the Single-Cell Level*, Felix Wong, Sean Wilson, Ralf Helbig, Smitha Hegde, Olga Aftenieva, Hai Zheng, Chenli Liu, Teuta Pilizota, Ethan C. Garner, Ariel Amir and Lars D. Renner, *Frontiers in Microbiology*, 12, 2085 (2021).
33. *Thinking Probabilistically: Stochastic Processes, Disordered Systems, and Their Applications*, Ariel Amir, *Cambridge University Press* (2021).
34. *A transport approach to relate asymmetric protein segregation and population growth*, Jiseon Min and Ariel Amir, *Journal of Statistical Mechanics*, 073503 (2021).
35. *Diffusive wave dynamics beyond the continuum limit*, Paul Dieterle and Ariel Amir, *Physical Review E*, 104, 014406 (2021), highlighted in *Physics* 14, S88 (2021).
36. *Modeling the impact of single-cell stochasticity and size control on the population growth rate in asymmetrically dividing cells*, Felix Barber, Jiseon Min, Andrew W. Murray and Ariel Amir, *Plos Computational Biology*, 17, 6, e1009080 (2021).
37. *Disentangling intrinsic and extrinsic gene expression noise in growing cells*, Jie Lin and Ariel Amir, *Physical Review Letters*, 126, 7, 078101 (2020).
38. *Exploring the effect of network topology, mRNA and protein dynamics on gene regulatory network stability*, Yipei Guo and Ariel Amir, *Nature Communications*, 12, 130 (2020).
39. *Dynamics of diffusive cell signaling relays*, Paul Dieterle, Jiseon Min, Daniel Irimia and Ariel Amir, bioRxiv:887273, *eLife*, 9, e61771 (2020).

40. *Large deviation principle linking lineage statistics to fitness in microbial populations*, Ethan Levien, Trevor GrandPre, and Ariel Amir, *Physical Review Letters*, 125, 048102 (2020).
41. *Cell-size regulation in budding yeast does not depend on linear accumulation of Whi5*, Felix Barber, Ariel Amir and Andrew W. Murray, *Proceedings of the National Academy of Sciences*, 117, 25, 14243 (2020).
42. *Evolution of microbial growth traits under serial dilution*, Jie Lin, Michael Manhart and Ariel Amir, *Genetics*, 215, 3, 767 (2020).
43. *A model for the regulation of the timing of cell division by the circadian clock in the cyanobacterium Synechococcus elongatus*, Po-Yi Ho, Bruno M.C. Martins and Ariel Amir, *Biophysical Journal*, 118, 12, 2905 [cover article] (2020).
44. *Thermal conductance of one dimensional disordered harmonic chains*, Biswarup Ash, Ariel Amir, Yohai Bar-Sinai, Yuval Oreg and Yoseph Imry *Physical Review B* 101, 12, 121403 (2020).
45. *An elementary renormalization-group approach to the Generalized Central Limit Theorem and Extreme Value Distributions*, Ariel Amir, *Journal of Statistical Mechanics*, 1, p.013214 (2020).
46. *The interplay of phenotypic variability and fitness in finite microbial populations*, Ethan Levien, Jane Kondev and Ariel Amir, *Journal of The Royal Society Interface*, 17, 166, p.20190827 (2020).
47. *From single-cell variability to population growth*, Jie Lin and Ariel Amir, *Physical Review E*, 101, 1, p.012401 (2020).
48. *Stochastic tunneling across fitness valleys can give rise to a logarithmic long-term fitness trajectory*, Yipei Guo, Marija Vucelja and Ariel Amir, *Science Advances*, 5(7), p.eaav3842 (2019).
49. *Length regulation of multiple flagella that self-assemble from a shared pool of components*, Thomas G. Fai, Lishibanya Mohapatra, Jane Kondev and Ariel Amir, *eLife* 8, e42599 (2019).
50. *Quantum diffusion in the strong tunneling regime*, Nisarga Paul and Ariel Amir, *Physical Review B*, 100, 2, 024110 (2019).
51. *Mechanics and dynamics of bacterial cell lysis*, Felix Wong and Ariel Amir, *Biophysical Journal*, 116, 12, 2378 [cover article] (2019).
52. *Mechanics and dynamics of translocating MreB filaments on curved membranes*, Felix Wong, Ethan Garner and Ariel Amir, *eLife*, 8, e40472 (2019).
53. *Optimal segregation of proteins: phase transitions and symmetry breaking*, Jie Lin, Jiseon Min and Ariel Amir, *Physical Review Letters*, 122, 068101 (2019).

54. *Homeostasis of protein and mRNA concentrations in growing cells*, Jie Lin and Ariel Amir, *Nature Communications*, 9, 4496 (2018).
55. *Thermal conductivity in 1d: disorder-induced transition from anomalous to normal scaling*, Ariel Amir, Yuval Oreg and Yoseph Imry, *Europhysics Letters*, 124, 1, 16001 (2018).
56. *Disorder engineering: From structural coloration to acoustic filters*, Nitin Upadhyaha and Ariel Amir, *Physical Review Materials* 2, 075201 (2018).
57. *Learning from noise: how observing stochasticity may aid microbiology*, Ariel Amir and Nathalie Q. Balaban, invited review for themed issue of *Trends in Microbiology* on “Broad Concepts in Microbiology”, 26, 4, 376 [cover article] (2018).
58. *Modeling cell size regulation: From single-cell level statistics to molecular mechanisms and population level effects*, Po-Yi Ho, Jie Lin and Ariel Amir, invited review for *Annual Review of Biophysics*, 47, 251 (2018).
59. *Archaeal cells share common size control with bacteria despite noisier growth and division*, Ye-Jin Eun, Po-Yi Ho, Minjeong Kim, Lars Renner, Salvatore LaRussa, Lydia Robert, Amy Schmid, Ethan Garner, and Ariel Amir, *Nature Microbiology*, 3, 148–154 (2018) [cover article].
60. *An energy-speed-accuracy relation in complex networks for biological discrimination*, Felix Wong, Ariel Amir and Jeremy Gunawardena, *Physical Review E*, 98, 012420 (2018).
61. *MreB Filaments Create Rod Shape By Aligning Along Principal Membrane Curvature*, Saman Hussain, Carl N. Wivagg, Piotr Szwedziak, Felix Wong, Kaitlin Schaefer, Thierry Izore, Lars D. Renner, Yingjie Sun, Alexandre W. Bisson-Filho, Suzanne Walker, Ariel Amir, Jan Lowe and Ethan C. Garner, *eLife*, 7, e32471 (2018).
62. *Details matter: noise and model structure set the relationship between cell size and cell cycle timing*, Felix Barber, Po-Yi Ho, Andrew Murray and Ariel Amir, in special issue of *Frontiers in Cell and Developmental Biology* on “Determinants of Cell Size”, 5, 92 (2017).
63. *A Parallel Adder Coordinates Mycobacterial Cell-Cycle Progression and Cell-Size Homeostasis in the Context of Asymmetric Growth and Organization*, Michelle M. Logsdon, Po-Yi Ho, Kadamba Papavinasasundaram, Kirill Richardson, Christopher M. Sassetti, Ariel Amir and Bree B. Aldridge, *Current Biology* 27, 21, 3367–3374 (2017).
64. *The effects of stochasticity at the single-cell level and cell size control on the population growth*, Jie Lin and Ariel Amir, *Cell Systems*, 5, 4 358–367 (2017).
65. *Mechanical strain sensing implicated in cell shape recovery in Escherichia coli*, Felix Wong, Lars Renner, Gizem Ozbaykal, Jayson Paulose, Douglas Weibel, Sven van Teeffelen and Ariel Amir, *Nature Microbiology*, 2, 17115 (2017).

66. *Is cell size a spandrel?*, Ariel Amir, *eLife*, 6, e22186. (2017).
67. *Effect of interactions and disorder on the relaxation of two-level systems in amorphous solids*, Ofek Asban, Ariel Amir, Yoseph Imry and Moshe Schechter, *Physical Review B*, 2017, 95, 144207 (2017).
68. *Nonmonotonic aging and memory Retention in disordered mechanical systems*, Yoav Lahini, Omer Gottesman, Ariel Amir and Shmuel Rubinstein, *Physical Review Letters*, 118, 085501, selected for a “Viewpoint in Physics” and for the “Editor’s Choice” (2017).
69. *Interrogating the Escherichia coli cell cycle by cell dimension perturbations*, Hai Zheng, Po-Yi Ho, Meiling Jiang, Bin Tang, Weirong Liu, Dengjin Li, Xuefeng Yu, Nancy E. Kleckner, Ariel Amir and Chenli Liu, *PNAS* 113, 52, 15000 (2016).
70. *Theory of chirped photonic crystals in biological broadband reflectors*, Caleb Q. Cook and Ariel Amir, *Optica* 3, 12, 1436 (2016).
71. *Glassy dynamics in disordered electronic systems reveal striking thermal memory effects*, Ariel Eisenbach, Tal Havdala, Julien Delahaye, Thierry Grenet, Ariel Amir and Aviad Frydman, *Physical Review Letters* 117, 11, 116601 (2016).
72. *Single-cell analysis of growth in budding yeast and bacteria reveals a common size regulation strategy*, Ilya Soifer, Lydia Robert and Ariel Amir, *Current Biology*, 26, 3, 356 (2016).
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74. *Surprises in numerical expressions of physical constants*, Ariel Amir, Mikhail Lemeshko and Tadashi Tokieda, *American Mathematical Monthly*, 123, 6, 609 (2016).
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