

Yoav Ram — CV

School of Zoology, Faculty of Life Sciences, Tel Aviv University

yoav@yoavram.com www.yoavram.com +972 (545) 383136

Education

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| 2010–2016 | Ph.D. , Direct Ph.D. track, Tel Aviv University Thesis title: <i>The Evolution of Stress-Induced Mutagenesis: Causes and Consequences</i> |
| 2010–2012 | M.Sc. , Direct Ph.D. track, Tel Aviv University Theoretical and Computational Biology |
| 2007–2010 | B.Sc. , Biology and Mathematics <i>magna cum lauda</i> , Tel Aviv University |

Employment

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| 2020– | Senior lecturer , School of Zoology, Faculty of Life Sciences, and Sagol School of Neurosciences, Tel Aviv University |
| 2018–2020 | Senior lecturer , Efi Arazi School of Computer Science, Interdisciplinary Center Herzliya |
| 2016–2018 | Postdoctoral fellow , Center for Computational, Evolutionary, and Human Genomics, Stanford University Mentor — Prof. Marcus W. Feldman, Department of Biology |
| 2016 | Postdoctoral fellow , Hadany Lab, Tel Aviv University Mentor — Prof. Lilach Hadany, Department of Plant Sciences |
| 2016 | Data scientist , Neura |
| 2010–2016 | Ph.D. student , Hadany Lab, Tel Aviv University Mentor — Prof. Lilach Hadany, Department of Plant Sciences |
| 2008–2010 | Research assistant , Hadany Lab, Tel Aviv University Mentor — Prof. Lilach Hadany, Department of Plant Sciences |
| 2008–2009 | Software developer , NetAlign |
| 2006–2008 | Software developer , XLNet |

Grants & Awards

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| 2020 | Israel Science Foundation (ISF) KillCorona research grant, 2020-2022 |
| * | John Templeton Foundation grant, Co-PI, 2021-2024 |
| * | Minerva Center on Lab Evolution, Co-PI, 2020-2025 |
| * | Excellence in Teaching award from IDC Herzliya |
| 2019 | Israel Science Foundation (ISF) Personal Research grant, 2019-23 |
| * | AWS Cloud Credits for Research program |
| * | NVIDIA Accelerated Data Science GPU grant |
| 2016-17 | Postdoctoral fellowship from the Stanford Center for Computational, Evolutionary, and Human Genomics |
| 2015-16 | Dean's Award for Excellence in Teaching, Engineering Faculty, Tel Aviv University |
| 2015 | The Israel Society for Microbiology travel award |
| * | The Anat Karuskopf Fund travel award |
| * | The Manna Institute for Plants BioSciences travel award |
| 2014 | The Israeli Ministry of Science and Technology International Education Scholarship |
| 2013-2014 | Research achievements scholarship, Life Sciences Faculty, Tel Aviv University. |
| * | Fellowship from the Manna Program in Food Safety and Security |
| 2013 | The Manna Institute for Plants BioSciences travel award |
| 2012 | Registration & accommodation waiver for PopGroup45 in Nottingham, UK |
| * | Crowd-funded travel expenses for PopGroup45 via The #SciFund Challenge |
| 2011-2012 | Research achievements scholarship, Life Sciences Faculty, Tel Aviv University |
| 2011 | Society for the Study of Evolution International travel award |
| 2010-2015 | Direct Ph.D. scholarship , Department of Plant Sciences, Tel Aviv University |
| 2010 | Society for Molecular Biology & Evolution Undergraduate Diversity Mentoring Program award |
| * | Best poster award at Mathematical Methods in Systems Biology workshop, Tel Aviv, Israel |
| 2009 | Amos de-Shalit Ulpana for excellent students in Life Sciences, Weizmann Institute. |

Publications *equal contribution | citation counts from Scholar

- Preprints** Kohanovski, I., Obolski, U., **Ram, Y.** (2020) *Inferring the effective start dates of non-pharmaceutical interventions during COVID-19 outbreaks.* medRxiv. DOI: [10.1101/2020.05.24.20092817](https://doi.org/10.1101/2020.05.24.20092817)
- Arthur, R.F., Jones, J.H., Bonds, M.H., **Ram, Y.**, Feldman, M.W. *Adaptive social contact rates induce complex dynamics during epidemics.* bioRxiv. DOI: [10.1101/2020.04.14.028407](https://doi.org/10.1101/2020.04.14.028407)
- Cohen, O., **Ram, Y.**, Hadany, L., Gafny, S., Geffen, E. *Annual climatic fluctuations and short-term variations in population genetics.* Submitted.
- Cohen, O. **Ram, Y.**, Hadany, L., Gafny, S., Geffen, E. *The effect of habitat and climatic factors on microsatellite allele length variation.* Submitted.
- Cohen D, Lewin-Espstein O, Feldman MW, **Ram Y.** *Non-Vertical Cultural Transmission, Assortment, and the Evolution of Cooperation.* bioRxiv. DOI: [10.1101/2020.12.08.416560](https://doi.org/10.1101/2020.12.08.416560)
- Denton KK, **Ram Y.**, Feldman MW. *Oblique Transmission, Conformity, and Preference in the Evolution of Altruism.* bioRxiv. DOI: [10.1101/2020.12.10.420513](https://doi.org/10.1101/2020.12.10.420513)
- Published** Kolodny, O., Berger, M., Feldman, M.W., **Ram, Y.** (2020) *A new perspective for mitigation of SARS-CoV-2 infection: priming the immune system for attack.* Open Biology. DOI: [10.1098/rsob.200138](https://doi.org/10.1098/rsob.200138)
- Krebs Denton, K., **Ram, Y.**, Liberman, U., Feldman, M.W. (2020) *Cultural evolution of conformity and anticonformity.* Proceedings of the National Academy of Sciences USA. DOI: [10.1073/pnas.2004102117](https://doi.org/10.1073/pnas.2004102117)
- Ram, Y.**, Obolski, U., Feldman, M.W., Berman, J. and Hadany, L. (2020) *Reply to Balsa-Canto et al.: Growth models are applicable to growth data, not to stationary-phase data.* Proceedings of the National Academy of Sciences USA. DOI: [10.1073/pnas.1917758117](https://doi.org/10.1073/pnas.1917758117)
- Liberman, U., **Ram, Y.**, Altenberg, L., Feldman, M.W. *The Evolution of Frequency-Dependent Cultural Transmission.* Theoretical Population Biology. DOI: [10.1016/j.tpb.2019.12.004](https://doi.org/10.1016/j.tpb.2019.12.004)
- Ram, Y.**, Dellus-Gur, E., Bibi, M., Karkare, K., Obolski, U., Feldman, M.W., Cooper, T.F., Berman, J. and Hadany, L. (2019) *Predicting Microbial Growth in a Mixed Culture from Growth Curve Data.* Proceedings of the National Academy of Sciences USA, 201902217. DOI: [10.1073/pnas.1902217116](https://doi.org/10.1073/pnas.1902217116).
- Ram, Y.**, Hadany, L. (2019) *Evolution of stress-induced mutagenesis in the presence of horizontal gene transfer.* The American Naturalist, 194:1. DOI: [10.1086/703457](https://doi.org/10.1086/703457).
- Zinger, E., Guiejman, A., Obolski, U., **Ram, Y.**, Ruby, E., Binder, M., Yechieli, N., Ohad, N., Hadany L. (2019) *Less fit Lamium amplexicaule plants produce more dispersible seeds.* Scientific Reports, Accepted. DOI: [10.1038/s41598-019-42158-1](https://doi.org/10.1038/s41598-019-42158-1).
- Ram, Y.**, Liberman, U., Feldman, M.W. (2019) *Vertical and oblique cultural transmission fluctuating in time and in space.* Theoretical Population Biology, 125:11-19. DOI: [10.1016/j.tpb.2018.11.001](https://doi.org/10.1016/j.tpb.2018.11.001).
- Ram, Y.**, Liberman, U., Feldman, M.W. (2018) *Evolution of vertical and oblique transmission under fluctuating selection.* Proceedings of the National Academy of Sciences USA, 201719171. DOI: [10.1073/pnas.1719171115](https://doi.org/10.1073/pnas.1719171115).

Ram, Y., Altenberg, L., Liberman, U., Feldman, M.W. (2018) *Generation of variation and a modified mean fitness principle: Necessity is the mother of genetic invention*. Theoretical Population Biology, 123:1-8. DOI: [10.1016/j.tpb.2018.02.004](https://doi.org/10.1016/j.tpb.2018.02.004).

Harari, Y., **Ram, Y.**, Rappoport, N., Hadany, L., Kupiec, M. (2018) *Spontaneous changes in ploidy are common in yeast*. Current Biology, 28:111. DOI: [j.cub.2018.01.062](https://doi.org/10.1016/j.cub.2018.01.062). 4 citations

Harari, Y., **Ram, Y.**, Kupiec, M. (2018) *Frequent ploidy changes in growing yeast cultures*. Current Genetics, 0:14.. DOI: [10.1007/s00294-018-0823-y](https://doi.org/10.1007/s00294-018-0823-y). 1 citation

Obolski, U.*, **Ram, Y.***, Hadany, L. (2018) *Evolution on rugged adaptive landscapes*. Reports on Progress in Physics, 81: 12602. DOI: [10.1088/1361-6633/aa94d4](https://doi.org/10.1088/1361-6633/aa94d4). 2 citations

Dellus-Gur, E., **Ram, Y.**, Hadany, L. (2017) *Errors in mutagenesis and the benefit of cell-to-cell signalling in the evolution of stress-induced mutagenesis*. Royal Society Open Science, 4:170529. DOI: [10.1098/rsos.170529](https://doi.org/10.1098/rsos.170529). 1 citation

Obolski, U., Lewin-Epstein, O., Even-Tov, E., **Ram, Y.**, Hadany, L. (2017) *With a little help from my friends: cooperation can accelerate the rate of adaptive valley crossing*. BMC Evolutionary Biology, 17:143. DOI: [10.1186/s12862-017-0983-2](https://doi.org/10.1186/s12862-017-0983-2). 2 citations

Rougier, N.P., ... , **Ram, Y.**, et al. (2017) *Sustainable computational science: the ReScience initiative*. PeerJ Computer Science, 3: e142. DOI:[10.7717/peerj-cs.142](https://doi.org/10.7717/peerj-cs.142). 11 citations

Ram, Y., Hadany, L. (2016) *Condition-dependent sex: who does it, when, and why?*. Philosophical Transactions of the Royal Society B, 371: 20150539. DOI: [10.1098/rstb.2015.0539](https://doi.org/10.1098/rstb.2015.0539). 14 citations

Ram, Y., Hadany, L. (2015) *The probability of improvement in Fisher's geometric model: a probabilistic approach*. Theoretical Population Biology, 99: 1-6. DOI: [10.1016/j.tpb.2014.10.004](https://doi.org/10.1016/j.tpb.2014.10.004). 5 citations

Ram, Y., Hadany, L. (2014) *Stress-induced mutagenesis and complex adaptation*. Proceedings of the Royal Society B. 281: 20141025. DOI: [10.1098/rspb.2014.1025](https://doi.org/10.1098/rspb.2014.1025). 33 citations

Gueijman, A., Ayali, A., **Ram, Y.**, Hadany, L. (2013) *Dispersing away from bad environments: The evolution of fitness-associated dispersal (FAD) in homogeneous environments*. BMC Evolutionary Biology, 13:125. DOI: [10.1186/1471-2148-13-125](https://doi.org/10.1186/1471-2148-13-125). 15 citations

Ram, Y., Hadany, L. (2012) *The evolution of stress-induced hypermutation in asexual populations*. Evolution 66: 2315-2328. DOI: [10.1111/j.1558-5646.2012.01576.x](https://doi.org/10.1111/j.1558-5646.2012.01576.x). 55 citations

Datasets & Software

Ram, Y., Hadany, L. (2019) *Data from: Evolution of Stress-Induced Mutagenesis in the Presence of Horizontal Gene Transfer*. Dryad Digital Repository. DOI:[10.5061/dryad.5t9211b](https://doi.org/10.5061/dryad.5t9211b).

Ram, Y., Hadany, L. (2019) *Curveball: Predicting microbial growth in a mixed culture from growth curve data*. Zenodo. [10.5281/zenodo.3263379](https://doi.org/10.5281/zenodo.3263379).

Ram, Y., Hadany, L. (2019) *Mamba: Version Baptiste*. Zenodo. [10.5281/zenodo.2563549](https://doi.org/10.5281/zenodo.2563549).

Ram, Y., Zinger, E., Hadany, L. (2017) *Sid: Image processing for seed images*. Zenodo. DOI: [10.5281/zenodo.344898](https://doi.org/10.5281/zenodo.344898).

Ram, Y., Hadany L. (2014) *Data from: Stress-induced mutagenesis and complex adaptation*. Dryad Digital Repository. DOI: [10.5061/dryad.3066j](https://doi.org/10.5061/dryad.3066j).

Ram, Y., Guiejman, A. and Hadany L. (2014) *proevolution simulation: Version Dobzhansky*. ZENODO. DOI: [10.5281/zenodo.11400](https://doi.org/10.5281/zenodo.11400).

Ram, Y., Hadany, L. (2014) *proevolution simulation: Version Charles*. ZENODO. DOI: [10.5281/zenodo.11401](https://doi.org/10.5281/zenodo.11401).

Teaching & Mentoring Experience

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| 2018–2020 | Senior Lecturer , IDC Herzliya Introduction to Computer Science (undergraduate mandatory course) Scientific Computing with Python (advanced course) Computational Models in Biology (graduate seminar) |
| 2016– | Technical Instructor , Industry Designed and developed multiple scientific programming workshops Taught 1-5 day workshops in Israel and in California python.yoavram.com |
| 2013–2015 | Lecturer , Tel Aviv University Python Programming for Engineers (Engineering Faculty) Python Programming for Biologists (Life Sciences Faculty) Introduction to Programming for Engineers (summer introductory course) Gentle Introduction to Programming (summer introductory course) |
| 2013–2016 | Mentoring of undergraduate and graduate students at Hadany Lab Supervised five undergraduate students doing research projects Participated in mentoring of three postgraduate students |
| 2011–2015 | Teaching Assistant , Python Programming for Engineers, Tel Aviv University Python Programming for Engineers (Engineering Faculty) Extended Introduction to Computer Science (School of Computer Science) Evolution (Life Sciences Faculty) |

Selected Presentations

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| 2020 | Invited speaker, <i>Gruter Institute Squaw Valley Conference</i> on The Evolution of Co-operation, virtual conference * Poster presentation, <i>EMBL Conference</i> on Molecular Mechanisms in Evolution and Ecology, virtual conference * Invited speaker, <i>TAU Theory-fest</i> , Tel Aviv University * Invited speaker, <i>The Language of Evolution & Evolution of Language</i> conference, Weizmann Institute * Oral presentation, <i>FISEB/ILANIT</i> , Eilat. |
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- 2019 Oral presentation, **Gordon Research Conference** on Molecular Mechanisms in Evolution, Stonehill College, Easton, MA, USA
- * Oral presentation, *Israel Society for Microbiology* annual meeting, Weizmann Institute
 - * Oral presentation, *Socio-Technological Evolution of the Human Species* workshop, Safed, Israel
 - * Seminar, *Center for Genomics and Systems Biology*, New York University, New York
 - * Session chair & Oral presentation, the **First Meeting of the Israeli Society for Evolutionary Biology**, Steinhardt Museum of Natural History, Tel Aviv
 - * Poster presentation by student, the *First Meeting of the Israeli Society for Evolutionary Biology*, Steinhardt Museum of Natural History, Tel Aviv
 - * Poster presentation by student, *Genetics, Genomics & Evolution*, Tel Aviv University
- 2018 Invited speaker, *Genome Evolution Conference*, Weizmann Institute
- 2017 Oral presentation, *Evolgenome* seminar, Stanford University
- * Poster, *Gordon Research Conference* on Biological Mechanisms in Evolution, Stonehill College, Easton, MA, USA
 - * Oral presentation, *Israel Society for Microbiology* annual meeting.
 - * Oral presentation, *FISEB / ILANIT*, Eilat.
- 2016 Seminar, the *Instituto Gulbenkian de Ciência*, Portugal.
- 2015 Oral presentation, **Gordon Research Conference** on Biological Mechanisms in Evolution, Stonehill College, Easton, MA, USA
- * Poster at the "*Forecasting Evolution?*" SFB 680 conference in Lisbon, Portugal
 - * Seminar, *Institute of Science and Technology*, Austria
 - * Short oral presentation, *Two2Many* Systems Biology Conference, Weizmann Institute
- 2013 Poster, *ESEB 2013* in Lisbon, Portugal
- * Poster, *Gordon Research Conference* on Biological Mechanisms in Evolution, Stonehill College, Easton, MA, USA
 - * Oral presentation, 5th Annual *SIDEER Graduate Symposium*, Ben-Gurion University of the Negev, Sede-Boqer Campus
- 2012 Oral presentation, *Genetics, Genomics, and Evolution*, Ben-Gurion University of the Negev. DOI: [10.6084/m9.figshare.96049](https://doi.org/10.6084/m9.figshare.96049).
- * Oral presentation, **PopGroup 45** in Nottingham, UK. DOI: [10.6084/m9.figshare.95939](https://doi.org/10.6084/m9.figshare.95939).
- 2011 Poster, *ESEB 2011* in Tübingen, Germany. F1000 Posters 2011, 2: 1484.
- 2010 Poster, *SMBE 2010* in Lyon, France.
- as undergrad Poster, *MMSB* in Tel Aviv, Israel, 2010 – **Best poster award**

Other Academic Activities

Service

- 2020 Program committee & Session chair, *Second Meeting of the Israeli Society for Evolutionary Biology*
- * ISF proposal reviewer
 - * BSF proposal reviewer
 - * MSc referee, The Hebrew University of Jerusalem
 - * PhD committee, Tel Aviv University
- 2019 Program committee & Session chair, *First Meeting of the Israeli Society for Evolutionary Biology*
- * PhD committee, Technion Israel Institute of Technology
- 2011-2014 Co-organizer, [BioMath Student Journal Club](#), Tel Aviv University

Outreach

- 2020 European Researchers' Night, Steinhardt Museum of Natural History
- 2019 Mentoring at [DjangoGirls Ra'anana](#)
- 2017 *Dive into Scientific Python* — Oral presentation, DataTalks meetup, Herzliya — [YouTube](#)
- 2016 *How to study evolution using Scientific Python* — Oral presentation, PyCon Israel, Tel Aviv — [YouTube](#)
- 2013 *Evolution and mutation in stressful times* — Oral presentation, The Evolution Series, Tel Aviv University Botanical Gardens — [PDF](#)

Popular Media

Even-Tov, E., Obolski, U., Gueijman, A., **Ram, Y.**, Hadany, L. (2010) *The Evolutionary Riddle of Sexual Reproduction*. Galileo, an Israeli journal for popular science: June, 32-41

Reviewer

- 2011–
- PLOS Genetics
 - Proceeding of the Royal Society B
 - Evolution
 - Journal of Evolutionary Biology
 - PLOS ONE
 - Theoretical Population Biology
 - Integrative Zoology
 - Quarterly Review of Biology
 - ReScience
 - Israel Journal of Ecology & Evolution