Shaul Pollak

Postdoc
Department of Civil and Environmental Engineering
Massachusetts Institute of Technology
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Employment

Postdoctoral scholar — **Massachusetts Institute of Technology**
Advisor: Prof. Otto X. Cordero
2018-2022

Postdoctoral scholar — **Massachusetts Institute of Technology**
Advisor: Prof. Sallie (Penny) Chisholm
2022-2023

Education

B.Sc. Life Science. — **Tel-Aviv University**
Graduated *magna cum laude*.
2007 – 2010

M.Sc. Genetics — **Tel-Aviv University**
Graduated *summa cum laude*
2011 – 2013
Advisor: Prof. Avigdor Eldar
Thesis: “Social Dynamics Drive the Evolutionary Diversification of Bacterial Quorum Sensing Systems”

Ph.D. Evolutionary Systems Biology — **Tel-Aviv University**
Advisor: Prof Avigdor Eldar
2014-2018
Thesis: “Evolutionary dynamics of social traits and genome evolution in *Bacillus Subtilis*”

Awards and Honors

2018 EMBO Long-Term Fellowship

2017 Second place and honorary mention for poster presentation at the 12th Safra Bioinformatics retreat

2016 Excellence in research award granted by the faculty of Life-Science at Tel-Aviv University to Ph.D students

2016 BSF Prof. Rahamimoff Travel Grants Program for Young Scientists

2015 Best lecture award at the 4th Graduate students’ conference in Genetics, Genomics, and Evolution

2010 Dean’s list for excellence in undergraduate studies

Publications

Gralka M, **Pollak S**, Cordero OX. Fundamental metabolic strategies of heterotrophic bacteria. BioRxiv. 2022 Aug; https://doi.org/10.1101/2022.08.04.502823.

Szabo RE, Pontrelli S, Grilli J, Schwartzman JA, **Pollak S**, Sauer U, Cordero OX. Historical contingencies and phage induction diversify bacterioplankton communities at the microscale. PNAS. 2022 Jul; 119(30):e2117748119

Pontrelli S, Szabo R, **Pollak S,** Schwartzman J, Ledezma-Tejeida D, Cordero OX, Sauer U. Metabolic cross-feeding structures the assembly of polysaccharide degrading communities. Science Advances. 2022 Feb. 8(8):eabk3076

Pollak S, Gralka M, Sato Y, Schwartzman J, Lu, L, Cordero, OX. Public good exploitation in natural bacterioplankton communities. Science Advances. 2021 Jul; 7(31):eabi4717

Liao J, Guo X, Weller DL, **Pollak S**, Buckley DH, Wiedmann M, Cordero OX. Nationwide genomic atlas of soil-dwelling Listeria reveals effects of selection and population ecology on pangenome evolution. Nature Microbiology. 2021 Jul; 6:1021–1030

Ben-Zion I., **Pollak S**., Eldar A. Clonality and non-linearity drive facultative-cooperation allele diversity. The ISME journal. 2019 Mar;13(3):824.

Bareia T., **Pollak S**., Eldar A. Self-sensing in Bacillus subtilis quorum-sensing systems. Nature Microbiology. 2018 Jan; 3(1):83.

Even-Tov E, Omer Bendori S, **Pollak S**, Eldar A. Transient Duplication-Dependent Divergence and Horizontal Transfer Underlie the Evolutionary Dynamics of Bacterial Cell-Cell Signaling. PLoS Biol. 2016 Dec 29;14(12):e2000330.

Even-Tov E, Omer Bendori S, Valastyan J, Ke X, **Pollak S**, Bareia T, Ben-Zion I, Bassler BL, Eldar A. Social Evolution Selects for Redundancy in Bacterial Quorum Sensing. PLoS Biol. 2016 Feb 29;14(2):e1002386.

Pollak S, Omer-Bendori S, Even-Tov E, Lipsman V, Bareia T, Ben-Zion I, Eldar A. Facultative cheating supports the coexistence of diverse quorum-sensing alleles. PNAS. 2016 Feb 23;113(8):2152-7.

> Commentary by Pérez-Escudero A., Gore J. Selection favors incompatible signaling in bacteria. PNAS 2016 February 23;113(8):1968-1970

Pollak S, Omer Bendori S, Eldar A. A complex path for domestication of B. subtilis sociality. Curr Genet. 2015 Nov;61(4):493-6.

Bendori SO, **Pollak S**, Hizi D, Eldar A. The RapP-PhrP quorum sensing system of Bacillus subtilis strain NCIB3610 affect biofilm formation through multiple targets, due to an atypical signal-insensitive allele of RapP. J Bacteriol. 2014 Nov 24. pii: JB.02382-14.

Halimi Y, Dessau M, **Pollak S**, Ast T, Erez T, Livnat-Levanon N, Karniol B, Hirsch JA, Chamovitz DA. COP9 signalosome subunit 7 from Arabidopsis interacts with and regulates the small subunit of ribonucleotide reductase (RNR2). Plant Mol Biol. 2011 Sep;77(1-2):77-89.

Talks, Posters, and Workshops

6.2022 Talk at the Evolutionary Dynamics and Processes meeting, Plon, Germany

6.2021 Virtual talk at Evolutionary and Ecological Systems Biology talks, MIT

9.2019 Talk at the Simons Foundation Annual PriME meeting

7.2019 Poster at the Gordon Research Conference (GRC) on Microbial Population Biology

3.2019 Talk at the third annual MIT-Harvard Microbiome Symposium

5.2017 Poster at the 12th Safra Center for Bioinformatics Retreat, Israel

12.2015 Poster at the first Pearl Seiden International meeting in Life Sciences: From synthetic biology to discovery and applications, Israel

9.2015 Talk at the 4th Graduate students' conference in Genetics, Genomics, and Evolution, Israel

2.2015 Poster at the Israel Society for Microbiology annual meeting, Israel

7.2014 QBio advanced summer research school at the KITP in UCSB, USA

2.2014 Poster at ILANIT/FISEB 2014, Israel

6.2013 Talk at the 2nd TAU Biophysical student meeting, Israel

3.2013 Poster at the One2Many systems biology symposium, Israel

2.2013 Poster at the First Annual Winter qBio Meeting, Hawaii, USA

7.2010 Annual Kupcinet-Getz International Science School for outstanding undergraduate students at the Weizmann Institute, Israel

Teaching Experience

Microbial Genetics and Evolution. MIT (2018, 2019, 2020,2021)
Guest lecturer.

Mentorship

EMBO lab leadership course 2021
TAU: Valeria Lipsman (M.Sc student), Nitzan Aframian (B.Sc research student)
MIT: Martin Guillemet (visiting master student), Jingqiu Liao (visiting Ph.D student), Brynne Coulam (Highschool summer research), Paul Torillo (Ph.D rotation student)