Yuval Scher – Curriculum Vitae

PERSONAL DETAILS

- Address: Northwestern University, Feinberg School of Medicine, Department of Cell & Developmental Biology, Chicago, Illinois.
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- Male, born on 26.12.1992.
- Fluent: English, Hebrew. Intermediate: Japanese. Beginner: French.

- Personal Website: yuvalscher.com

EDUCATION

2013 – 2015	B.Sc. in Chemistry at Tel Aviv University.
2016 – 2017	M.Sc. in Physical Chemistry, *Magna Cum Laude*, School of Chemistry, Tel Aviv University. Thesis: *"Measurement of Transmembranal Exchange Rates by Diffusion Nuclear Magnetic Resonance Methods"*. Supervisor: Prof. Yoram Cohen.
2018 – 2024	Ph.D., School of Chemistry, Tel Aviv University. Thesis: *"Kinetics of Gated Reactions and Sticky Particles"*. Supervisor: Prof. Shlomi Reuveni.
2025 -	Postdoctoral Scholar, Northwestern University, Feinberg School of Medicine, Department of Cell & Developmental Biology. Supervisor: Prof. Yogesh Goyal.

ACADEMIC AND PROFESSIONAL EXPERIENCE

2020 – 2022	Lab Instructor, *Advanced Chemical Physics Labs – NMR experiments*, Third Year Students in Chemistry, Tel Aviv University.
2019 – 2023	Teaching Assistant, *An Introduction to Stochastic Phenomena*, Graduate Students in Chemistry, Tel Aviv University.
2016 – 2022	Teaching Assistant, *Introduction to Inorganic Chemistry*, Third Year Chemistry Students, Tel Aviv University.
2016 – 2017	Teaching Assistant, *General Chemistry II*, First Year Chemistry Students, Tel Aviv University.

FIELDS OF INTEREST

Nuclear Magnetic Resonance Spectroscopy and Imaging, Reaction Kinetics, Gated Reactions, Stochastic Processes, Adsorption Kinetics, Synthetic Biology, Developmental Biology.

SCHOLARSHIPS AND AWARDS

1. Tel Aviv University Dean's Scholarship for excellent PhD students (2022).
2. Eran and Avital Rabani award for groundbreaking scientific work in Chemistry (2022), on Phys. Rev. Lett. **127**, 018301 (2021).
3. David and Paulina Trotsky Foundation Award for Ph.D. Students Excellence (2023).
4. ICS-Uri Golik Prize for an Excellent Graduate Student (2024).

SCIENTIFIC VISITS

1. Denis Grebenkov, CNRS, Ecole Polytechnique, France (2022).
2. Arnab Pal, IMSc, India (2023).
3. M.S. Santhanam, IISER Pune, India (2023).

REVIEWER IN ACADEMIC JOURNALS

1. Journal of Statistical Mechanics: Theory and Experiment, IOPscience (2024).
2. Journal of Chemical Physics, AIP Publishing (2024).

ACTIVE PARTICIPATION IN WORKSHOPS AND CONFERENCES

1. **Poster**, *Measurements of Transmembranal Exchange Rates by Diffusion Nuclear Magnetic Resonance Methods.* Israel Biophysical Society, Tel-Aviv, Israel (2019).
2. **Invited Talk**, *RNA Thermometers*, SPARC Workshop, DNA Bubble Formation: From Physics to Biological Function, Banaras Hindu University, India (2020).
3. **Talk**, *Unified Approach to Gated Reactions on Networks*, 34th M. Smoluchowski Symposium on Statistical Phystics (Online), Zakopane, Poland (2021).
4. **Talk**, *Unified Approach to Gated Reactions on Networks*, IPS Conference, Ben-Gurion University, Israel (2022).
5. **Poster**, *Unified Approach to Gated Reactions on Networks,* Venice meeting on Fluctuations in small complex systems VI, Italy (2022).
6. **Talk**, *Gated First Passage Processes*, Frontiers in Non-Equilibrium Physics, IMSc, India (2023).
7. **Talk**, *Unified Approach to Gated Reactions*, 28th International Conference on Statistical Physics, The University of Tokyo, Japan (2023).

8. **Talk**, *Escape of a Sticky Paricle*, IPS Conference, EXPO convention center, Israel (2024).

LECTURES IN SEMINARS

1. **Seminar Talk**, *Measurements of Transmembranal Exchange Rates by Diffusion-NMR methods*, Physical-Chemistry Seminar, Tel Aviv University, Israel (2017).
2. **Seminar Talk**, *Gated First Passage Processes*, LPTMS, Université Paris Saclay, France (2022).
3. **Seminar Talk**, *Gated First Passage Processes*, CNRS, Ecole Polytechnique, France (2022).
4. **Seminar Talk**, *Gated Reactions*, Physical-Chemistry Seminar, Tel Aviv University, Israel (2023).

LIST OF PUBLICATIONS

1. **Y. Scher**, S. Reuveni, Y. Cohen, *Constant Gradient FEXSY: A Time-Efficient Method for Measuring Exchange,* J. Magn. Reson. **311,** 106667 (2019).
2. **Y. Scher**, S. Reuveni, *Unified Approach to Gated Reactions on Networks*, Phys. Rev. Lett. 127, 018301 (2021).
3. **Y. Scher**, S. Reuveni, *Gated Reactions in Discrete Time and Space*, J. Chem. Phys. 155 (23), 234112 (2021).
4. **Y. Scher**, O. Lauber-Bonomo, A. Pal, S. Reuveni, *Theory of Single-Particle Adsorption Kinetics*, J. Chem. Phys. 158, 094107 (2023).
5. A. Kumar*, **Y. Scher***, S. Reuveni, M.S. Santhanam, *Inference from Gated First Passage Times,* Phys. Rev. Res. 5 (3), L032043 (2023).
6. **Y. Scher,** S. Reuveni, D. S. Grebenkov, *Escape of a Sticky Particle,* Phys. Rev. Res. 5 (4), 043196 (2023).
7. **Y. Scher,** S. Reuveni, D. S. Grebenkov, *Escape from Textured Surfaces,* J. Chem. Phys. 160, 184105 (2024).
8. **Y. Scher*,** A. Kumar*, M.S. Santhanam, S. Reuveni, *Continuous Gated First Passage Processes,* Rep. Prog. Phys. 87, 108101 (2024).
9. S. Margalit, Z Tulpova, Y. Michaeli, T.D. Zur, J. Deek, S. Louzoun-Zada, A. Grunwald, **Y. Scher**, L. Schutz, E. Weinhold, Y. Gnatek, D. Omer, B. Dekel, E. Friedman, Y. Ebenstein, *Optical genome and epigenome mapping of clear cell renal cell carcinoma.* NAR Cancer. 7, zcaf008 (2025).

*** Equal contribution**

DISSERTATIONS

1. **Y. Scher**, *Measurements of Transmembranal Exchange Rates by Diffusion Nuclear Magnetic Resonance Methods,* M.Sc. Thesis, School of Chemistry, Tel Aviv University (2017).
2. **Y. Scher**, *Kinetics of Gated Reactions and Sticky Particles,* Ph.D. Thesis, School of Chemistry, Tel Aviv University (2024).