*curriculum vitae*

**Shahar Sukenik**

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**Education and training:**

2014-2018: Postdoctoral Associate, University of Illinois at Urbana-Champaign. Advisor: Prof. Martin Gruebele

2010-2014: Ph.D. Chemistry, Hebrew University of Jerusalem, Israel.

Dissertation Topic: Cosolute effects on protein folding and aggregation. Thesis Advisors: Prof. Assaf Friedler and Prof. Daniel Harries, Dept. of Chemistry.

2008-2009: M.Sc. Chemistry, *Magna cum Laude*, Hebrew University of Jerusalem.

Dissertation Topic: Cosolute effects on amyloid aggregation. Thesis Advisors: Prof. Assaf Friedler and Prof. Daniel Harries, Dept. of Chemistry.

2005-2008: B.Sc. Chemistry, Hebrew University of Jerusalem.

**Employment:**

July 2018-now: Assistant Professor, Department of Chemistry and Chemical Biology, University of California, Merced.

**Publications:**

1. Shraddha KC, Nguyen KH, Nicholson V, Walgren A, Trent T, Gollub E, Romero S, Holehouse, AS, **Sukenik, S. †** & Boothby, TC†, Disordered proteins interact with the chemical environment to tune their protective function during drying. *eLife* 13:RP97231 (2024)
2. Hao, S., Fuehrer, H., Flores, E., Demmerle, J., Lippincott-Schwartz, J., Liu, Z., **Sukenik, S.** & Cai, D. YAP condensates are highly organized hubs for YAP/TEAD transcription. *iScience,* 27(6) 109927 (2024)
3. S Biswas, E Gollub, F Yu, G Ginell, A Holehouse, **S Sukenik**, TC Boothby, Helicity of a tardigrade disordered protein contributes to its protective function during desiccation. *Prot. Sci.* **33**, e4872 (2024)
4. Sanchez-Martinez, S., Nguyen, K., Biswas, S., Nicholson, V., Romanyuk, A. V., Ramirez, J., Kc, S., Akter, A., Childs, C., Usher, E. T., Ginell, G. M., Yu, F., Gollub, E., Malferrari, M., Francia, F., Venturoli, G., Martin, E. W., Caporaletti, F., Giubertoni, G., Woutersen, S., **Sukenik, S.**, Woolfson, D. N., Holehouse, A. S. & Boothby, T. C. Labile assembly of a tardigrade protein induces biostasis. *Prot Sci.* 33(4) e4941
5. Moses, D., Guadalupe, K., Yu, F., Flores, E., Perez, A., McAnelly, R., Shamoon, N. M., Cuevas-Zepeda, E., Merg, A. D., Martin, E. W., Holehouse, A. S. & **Sukenik, S.**† Structural biases in disordered proteins are prevalent in the cell. *Nat. Struct Mol Biol.* **31**, 283–292 (2024)
6. Moses, D., Ginnell, G., Holehouse, A. S., **Sukenik, S.**† Intrinsically disordered regions can function as cellular sensors. *Trends Biochem. Sci.,* **48** 1019-1034 (2023)
7. Romero-Perez, P. S., Dorone, Y., Flores, E., **Sukenik, S.**† & Boeynaems, S. When Phased without Water: Biophysics of Cellular Desiccation, from Biomolecules to Condensates. *Chem. Rev.* **123,** 9010–9035 (2023).
8. Yu, F. & **Sukenik, S.**†Structural Preferences Shape the Entropic Force of Disordered Protein Ensembles. *J. Phys. Chem. B* **127,** 4235–4244 (2023).
9. Kucherova, A., Strango, S., **Sukenik, S.** & Theillard, M. Computational modeling of protein conformational changes - Application to the opening SARS-CoV-2 spike. *J. Comput. Phys.* **444,** 110591 (2021).
10. Cuevas-Velazquez, C. L. †, Vellosillo, T., Guadalupe, K., Schmidt, H. B., Yu, F., Moses, D., Brophy, J. A. N., Cosio-Acosta, D., Das, A., Wang, L., Jones, A. M., Covarrubias, A. A., **Sukenik, S.**† & Dinneny, J. R. † Intrinsically disordered protein biosensor tracks the physical-chemical effects of osmotic stress on cells. *Nat. Commun.* **12,** 5438 (2021).
11. Peng, H., Zhang, J., Ya, A., Ma, W., Villa, S., **Sukenik, S.** & Ge, X. Myomegalin regulates Hedgehog pathway by controlling PDE4D at the centrosome. *Mol. Biol. Cell* **32,** 1807–1817 (2021).
12. Dorone, Y., Boeynaems, S., Flores, E., Jin, B., Hateley, S., Bossi, F., Lazarus, E., Pennington, J. G., Michiels, E., De Decker, M., Vints, K., Baatsen, P., Bassel, G. W., Otegui, M. S., Holehouse, A. S., Exposito-Alonso, M., **Sukenik, S.**, Gitler, A. D. & Rhee, S. Y. A prion-like protein regulator of seed germination undergoes hydration-dependent phase separation. *Cell* **184,** 4284–4298.e27 (2021).
13. Moses, D., Yu, F., Ginell, G. M., Shamoon, N. M., Koenig, P. S., Holehouse, A. S. & **Sukenik, S.**†Revealing the Hidden Sensitivity of Intrinsically Disordered Proteins to their Chemical Environment. *J. Phys. Chem. Lett.* **11,** 10131–10136 (2020).
14. Holehouse, A. S. † & **Sukenik, S.**† Controlling Structural Bias in Intrinsically Disordered Proteins Using Solution Space Scanning. *J. Chem. Theory Comput.* **16,** 1794–1805 (2020).
15. Cai, D., Feliciano, D., Dong, P., Flores, E., Gruebele, M., Porat-Shliom, N**., Sukenik, S.**, Liu, Z. & Lippincott-Schwartz, J. Phase separation of YAP reorganizes genome topology for long-term YAP target gene expression. *Nat. Cell Biol.* **21,** 1578–1589 (2019).

Preprints:

1. Emenecker, R. J., Guadalupe, K., Shamoon, N. M., **Sukenik S.**† & Holehouse, A.S.† Sequence-ensemble-function relationships for disordered proteins in live cells. *bioRxiv* (2023)

† corresponding author

**Full publication record available on Google scholar:** <https://scholar.google.com/citations?user=MID9HCgAAAAJ&hl=en>

**Patents:**

A.Friedler, R. Gabizon, D.B. Veprintsev, **S. Sukenik**, T. Brandt. Peptides that Bind the p53 C-Terminal Domain Modulate the Oligomerization Equilibrium of p53, US provisional patent application 61/380,591 (2010)

**Research support:**

Active

1. NSF MRI, Co-PI: Acquisition of a timsTOF mass spectrometer for UC Merced (2024-2026). Awarded sum: 940,303 USD
2. Sloan research fellowship (2024-2026). Awarded sum: 75,000 USD
3. NSF Biological Integration Institute, Key personnel. Project title: Life without water: protecting micromolecules, cells, and organisms during desiccation and rehydration across kingdoms of life (2022-2026). Awarded sum: 282,394 USD (12.5 million total)
4. NSF IntBIO, PI. Project title: Collaborative research: Functional synergy between disordered proteins and their environment in desiccation protection (2021-2025). Awarded sum: 773,379 USD (2.3 million total)
5. NIH NIGMS R35 Outstanding Researcher Award, PI. Project title: The Cellular Environment as a Regulator of Intrinsically Disordered Proteins (2020-2025). Awarded sum: 1,860,000 USD

Completed

1. UC-CONACYT US-Mexico binational research grant, Co-PI. Project title: Environmental sensitivity of dehydration-induced intrinsically disordered plant proteins (2021-2023). Awarded sum: 25,000 USD
2. XSEDE research grant, Co-PI (w/ Alex Holehouse). Project title: Understanding the solution-dependence of intrinsically disordered proteins with a high-throughput simulation pipeline. (2019-2021) Awarded sum: 1.6 mil SUs (equivalent of 35,000 USD)
3. HSRI Seed grant. PI. Project title: Measuring the interplay between viral infection and host cellular environment by live cell microscopy. (2019) Awarded sum: 10,000 USD
4. Cottrell SEED award, Co-PI. Project title: Revealing whole-cell diffusion and reaction using fluorescence correlation-anticorrelation microscopy. (2016) Awarded sum: 50,000 USD.

**Teaching Experience:**

2019-2024: CHEM 10H General Chemistry II (Honors), UC Merced

2019-2023: CHEM 260 Introduction to scientific computing, UC Merced

2018-2021: CHEM 181/281 Introduction to Biomolecular Simulations, UC Merced

2013-2014: Advanced chemistry lab for pharmacology majors, TA, Jerusalem College of Engineering.

2010-2013: Organic chemistry for biology majors, TA, Hebrew University.

2009-2013: General chemistry for biology majors, TA, Hebrew University.

2009-2010: General chemistry lab for chemistry majors, TA, Hebrew University.

2008-2010: Physical chemistry lab, TA, Hebrew University.

**Service activities:**

To scientific community:

2023-now: TSRC macromolecular crowding workshop, co-chair

2022-now: Gordon Conference on Intrinsically Disordered Proteins, vice chair

2019-now: Extreme biophysics research coordination network member

2019-2021 Biopolymers in vivo Subgroup: secretary/treasurer

2019-2020 Biophysical Society Education Committee: member

2018-2021: Protein Folding Consortium research coordination network member

Ad hoc referee activity for Mol. Cell; Nat. Chem.; Nucl Acid Res.; Cell Reports; Proc. Natl. Acad. Sci. USA; Phys. Rev. Lett.; J. Am. Chem. Soc.; J. Phys. Chem. Let; Mol. Biosys.; J. Phys. Chem.; PROTEINS: Struct. Fun. Bio.; Sci. Rep.; BBA: Biomembranes; Macromolecules; Trends in Biomol. Sci.; Biophysical J.; National Science Foundation; Israeli Science Foundation

At UC Merced

2023-now: Development of Biochemistry major at UC Merced

2022-now: Grad admissions committee chair in Chemistry & Biochemistry Dept.

2021-2022: Grad admissions committee member Chemistry & Biochemistry Dept.

2019-2021: Grad admissions committee member in Quantitative Systems Biology