Curriculum Vitae

Daniel Moshe Knebel

Personal

Date and place of birth: March 6th, 1987; Tel Aviv, Israel
Nationality: Israeli & German (Israeli resident)
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Education

30.10.2011 – 20.03.2018	Ph.D. in Neuroscience, Sagol School of Neuroscience, Dept. of Zoology, George S. Wise Faculty of Life Sciences, Tel Aviv University, Tel Aviv, Israel **Supervisors**: Prof. Amir Ayali (TAU, Tel Aviv) and Prof. Hans-Joachim Pflüger (FU, Berlin) **Dissertation**: *Higher motor centers and central-pattern-generator interactions*
02.11.2008 – 01.09.2011	B.Sc. in Biology ***magna cum laude*** & Psychology with Emphasis on Brain Sciences, George S. Wise Faculty of Life Sciences and Gershon H. Gordon Faculty of Social Sciences, Tel Aviv University, Tel Aviv, Israel
22.10.2006 – 26.06.2020	Courses in Philosophy, Lester and Sally Entin Faculty of Humanities, Tel Aviv University, Tel Aviv, Israel

Professional experience

01.08.2021 –	Postdoctoral researcher, Max Planck Institute for Chemical Ecology, Jena, Germany **Supervisor**: Dr. Yuko Ulrich
01.05.2021 – 31.07.2021	Research associate in **Prof. Yuko Ulrich** lab, Department of Environmental Systems Science, ETH Zürich, Zürich, Switzerland
01.12.2017 – 30.04.2021	Postdoctoral researcher, Department of Computer Science & Department of Mathematics, Bar-Ilan University **Supervisor**: Prof. Noa Agmon & Prof. Gil Ariel

Research visits

20.06.2021 – 31.08.2021	Guest researcher in the laboratory of **Prof. Ofer Finerman**, Department of Physics of Complex Systems, Weizmann Institute of Science, Rehovot, Israel
13.12.2018 – 27.12.2018	Guest researcher in the laboratory of **Prof. Dr. Paul A. Stevenson**, Institute for Biology, University of Leipzig, Leipzig, Germany.
2016 – 2017	Guest researcher (two stays) in the laboratory of **Dr. Einat Couzin-Fuchs**, Department of Neurobiology, Universität Konstanz, Konstanz, Germany
17.01.2016 – 19.02.2016	Guest researcher in the laboratory of **Prof. Fabrizio Gabbiani**, Department of Neuroscience, Baylor College of Medicine, Houston, Texas, USA
15.04.2013 – 15.09.2013	Guest researcher in the laboratory of **Prof. Dr. Hans-Joachim Pflüger**, Institut für Biologie, Neurobiologie, Freie Universität Berlin, Berlin, Germany
15.03.2012 – 21.06.2012	Guest researcher in the laboratory of **Prof. Dr. Hans-Joachim Pflüger**, Institut für Biologie, Neurobiologie, Freie Universität Berlin, Berlin, Germany

Teaching experience

01.10.2014 – 28.02.2017	Teaching Assistant: Neurophysiology Laboratory, The Sagol School of Neuroscience, Tel Aviv University
01.10.2012 – 30.09.2013	Teaching Assistant: Neuroanatomy Laboratory, The Sagol School of Neuroscience, Tel Aviv University

Supervision of students

18.10.2021 – 31.04.2021	Ori Knafo, BSc project, Tel Aviv University, Tel Aviv, Israel
01.10.2018 – 1.10.2020	Ciona Sha-Ked, Master project, Tel Aviv University, Tel Aviv, Israel
01.04.2014 – 29.10.2014	Tim Schendzielorz, BSc project, Tel Aviv University, Tel Aviv, Israel

International meetings, conferences, and seminars

03.07.2022 – 07.07.2022	International Union for the Study of Social Insects Conference in San Diego, USA **Oral presentation:** *Group composition and network structure in the clonal raider ant*

05.05.2021	WWNeuRise - A Neuroscience seminar series for PhD students and PostDocs (online) **Oral presentation:** *Three levels of variability in the collective behavior of locusts*
26.08.2019 – 28.08.2019	The Association for the Study of Animal Behaviour 2019 Summer Conference: New Frontiers in the Study of Animal Behaviour in Konstanz, Germany **Oral presentation:** *Individual heterogeneity and intergroup variance in collective behavior*
23.10.2018 – 26.10.2018	Champalimaud Research Symposium: Quantitative approaches to behaviour & neuronal systems in Lisbon, Portugal **Poster presentation:** *Intra- vs. inter-group variance in collective behavior*
18.06.2017 – 23.06.2017	Gordon Research Conference on Neuroethology: Behavior, Evolution & Neurobiology in Les Diablerets, Switzerland **Poster presentation:** *Interactions of central pattern generators, higher motor center, and sensory inputs in the locust leg control*
17.06.2017 – 18.06.2017	Gordon Research Seminar on Neuroethology: Behavior, Evolution & Neurobiology in Les Diablerets, Switzerland **Poster presentation:** *Interactions of central pattern generators, higher motor center, and sensory inputs in the locust leg control*
28.6.2015 – 3.7.2015	Gordon Research Conference on Neuroethology: Behavior, Evolution & Neurobiology in Lucca (Barga), Italy **Poster presentation:** *Central-pattern-generators and higher motor centers interactions.*
27.6.2015 – 28.6.2015	Gordon Research Seminar on Neuroethology: Behavior, Evolution & Neurobiology in Lucca (Barga), Italy **Oral presentation:** *Higher motor centers and central-pattern-generators interactions in locust walking* **Poster presentation:** *Central-pattern-generators and higher motor centers interactions*

05.08.2012 – 10.08.2012	Tenth International Congress of Neuroethology in Maryland, USA **Poster presentation:** *Neuromodulation and pattern-generator circuit interactions in the locust stomatogastric nervous system*
08.07.2010 – 20.08.2010	Leo Baeck Summer University in Jewish Studies, Humboldt University, in Berlin

Honors and awards

18.06.2017 – 23.06.2017	Heiligenberg Student Travel Award from the International Society for Neuroethology
18.06.2017 – 23.06.2017	Adams Travel Award for International Conferences from the Sagol School of Neuroscience
17.01.2016 – 19.02.2016	One-month European Molecular Biology Organization (EMBO) Short Term Fellowship
09.04.2014	Best blitz-presentation award at the first Sagol School of Neuroscience retreat
15.04.2013 – 15.09.2013	Five-month German Academic Exchange Service (DAAD) research grant for doctoral candidates and young academics and scientists
15.03.2012 – 21.06.2012	Three-month German Academic Exchange Service (DAAD) research grant for doctoral candidates and young academics and scientists
22.03.2012	Dean's honored student
01.09.2011	B.Sc. with Honors (*magna cum laude*)
13.03.2011	Oxford University Press Achievement in Biosciences Prize
08.07.2010 – 20.08.2010	Heinrich Böll Scholarship for the Leo Baeck Summer University in Jewish Studies

List of publications

Book chapters

Ariel G., Ayali A., Be'er A., and **Knebel D.** (2022) Variability and heterogeneity in natural swarms: experiments and modeling. Active Particles, Vol. 3, Advances in Theory, Models, and Applications. Bellomo, N., Degond, P. and Tadmor, E. (Eds.), Birkhauser-Springer.

Reviews

Knebel D., Rigosi E. (2021) Temporal and structural neural asymmetries in insects. Current Opinion in Insect Science 48, 72-78

Ayali A., Couzin-Fuchs E., David I., Gal O., Holmes P., and **Knebel D.** (2015) Sensory feedback in cockroach locomotion: current knowledge and open questions. Journal of Comparative Physiology A 201, 841–850.

Research articles

Jud S., **Knebel D.**, Ulrich Y., (2022) Intergenerational genotypic interactions drive collective behavioural cycles in a social insect. Proceedings of the Royal Society Series B 289, 20221273.

Knebel D., Sha-ked C., Agmon N., Ariel G., Ayali A. (2021) Collective motion as a distinct behavioural state of the individual. iScience 24, 102299.

Reches E., **Knebel D.**, Rillich J., Ayali A., Barzel B. (2019) The metastability of the double-tripod gait in locust locomotion. iScience 12, 53-65.

Knebel D., Ayali A., Guershon M., Ariel G. (2019) Intra- vs. inter-group variance in collective behavior. Science Advances eaav0695.

Knebel D.*, Rillich J.*, Nadler L., Pflüger H.-J., and Ayali,A. (2019) The functional connectivity between the locust leg pattern generators and the subesophageal ganglion higher motor center. Neuroscience Letters 692, 77-82.

Knebel D., Rillich J., Ayali A., Pflüger H.-J., Rigosi E. (2018) Ex vivo recordings reveal desert locust forelimb control is asymmetric. Current Biology 28(22), R1290-R1291.

Knebel D., Assaf Y., Ayali A. (2018) The use of MEMRI for monitoring neuronal activity in behaving locusts. Journal of Insect Physiology 108, 48-53.

Knebel D., Wörner J., Rillich J., Nadler L., Ayali A. Couzin-Fuchs E. (2018) The subesophageal ganglion modulates locust inter-leg sensory-motor interactions via contralateral pathways. Journal of Insect Physiology 107, 116-124.

Knebel D., Ayali A., Pflüger H.-J., and Rillich J. (2017) Rigidity and Flexibility: The Central Basis of Inter-Leg Coordination in the Locust. Frontiers in Neural Circuits 10, 112.

Rand D., **Knebel D.**, and Ayali A. (2012) The effect of octopamine on the locust stomatogastric nervous system. Frontiers in Physiology 3, 288.

* Joint first authors