

# Markus Knaden

## List of Publications by Year in descending order

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90  
papers

4,754  
citations

87888

38  
h-index

118850

62  
g-index

111  
all docs

111  
docs citations

111  
times ranked

3600  
citing authors

#	ARTICLE	IF	CITATIONS
1	A Conserved Dedicated Olfactory Circuit for Detecting Harmful Microbes in <i>Drosophila</i> . <i>Cell</i> , 2012, 151, 1345-1357.	28.9	533
2	Pheromones mediating copulation and attraction in <i>Drosophila</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, E2829-35.	7.1	231
3	Spatial Representation of Odorant Valence in an Insect Brain. <i>Cell Reports</i> , 2012, 1, 392-399.	6.4	181
4	Olfactory Specialization in <i>Drosophila suzukii</i> Supports an Ecological Shift in Host Preference from Rotten to Fresh Fruit. <i>Journal of Chemical Ecology</i> , 2015, 41, 121-128.	1.8	179
5	A Deceptive Pollination System Targeting <i>Drosophilids</i> through Olfactory Mimicry of Yeast. <i>Current Biology</i> , 2010, 20, 1846-1852.	3.9	165
6	<i>Drosophila</i> Avoids Parasitoids by Sensing Their Semiochemicals via a Dedicated Olfactory Circuit. <i>PLoS Biology</i> , 2015, 13, e1002318.	5.6	145
7	Decoding odor quality and intensity in the <i>Drosophila</i> brain. <i>ELife</i> , 2014, 3, e04147.	6.0	135
8	Olfactory receptor and circuit evolution promote host specialization. <i>Nature</i> , 2020, 579, 402-408.	27.8	131
9	Combinatorial Codes and Labeled Lines: How Insects Use Olfactory Cues to Find and Judge Food, Mates, and Oviposition Sites in Complex Environments. <i>Frontiers in Physiology</i> , 2018, 9, 49.	2.8	130
10	Smells like home: Desert ants, <i>Cataglyphis fortis</i> , use olfactory landmarks to pinpoint the nest. <i>Frontiers in Zoology</i> , 2009, 6, 5.	2.0	110
11	Uncertainty about nest position influences systematic search strategies in desert ants. <i>Journal of Experimental Biology</i> , 2006, 209, 3545-3549.	1.7	101
12	The Sensory Ecology of Ant Navigation: From Natural Environments to Neural Mechanisms. <i>Annual Review of Entomology</i> , 2016, 61, 63-76.	11.8	97
13	Desert Ants Locate Food by Combining High Sensitivity to Food Odors with Extensive Crosswind Runs. <i>Current Biology</i> , 2014, 24, 960-964.	3.9	84
14	A novel multicomponent stimulus device for use in olfactory experiments. <i>Journal of Neuroscience Methods</i> , 2011, 195, 1-9.	2.5	83
15	Mutagenesis of odorant coreceptor <i>Orco</i> fully disrupts foraging but not oviposition behaviors in the hawkmoth <i>Manduca sexta</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 15677-15685.	7.1	80
16	Inverse resource allocation between vision and olfaction across the genus <i>Drosophila</i> . <i>Nature Communications</i> , 2019, 10, 1162.	12.8	80
17	Desert ants benefit from combining visual and olfactory landmarks. <i>Journal of Experimental Biology</i> , 2011, 214, 1307-1312.	1.7	79
18	A high-throughput behavioral paradigm for <i>Drosophila</i> olfaction - The Flywalk. <i>Scientific Reports</i> , 2012, 2, 361.	3.3	78

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19	The olfactory coreceptor IR8a governs larval feces-mediated competition avoidance in a hawkmoth. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 21828-21833.	7.1	73
20	Path Integration Controls Nest-Plume Following in Desert Ants. <i>Current Biology</i> , 2012, 22, 645-649.	3.9	72
21	Gut microbiota affects development and olfactory behavior in <i>Drosophila melanogaster</i> . <i>Journal of Experimental Biology</i> , 2019, 222, .	1.7	68
22	Tissue-Specific Emission of (E)- $\beta$ -Bergamotene Helps Resolve the Dilemma When Pollinators Are Also Herbivores. <i>Current Biology</i> , 2017, 27, 1336-1341.	3.9	67
23	The Molecular Basis of Host Selection in a Crucifer-Specialized Moth. <i>Current Biology</i> , 2020, 30, 4476-4482.e5.	3.9	67
24	Do desert ants smell the scenery in stereo?. <i>Animal Behaviour</i> , 2010, 79, 939-945.	1.9	66
25	The CCHamide 1 receptor modulates sensory perception and olfactory behavior in starved <i>Drosophila</i> . <i>Scientific Reports</i> , 2013, 3, 2765.	3.3	64
26	Ant navigation: resetting the path integrator. <i>Journal of Experimental Biology</i> , 2006, 209, 26-31.	1.7	61
27	Olfactory channels associated with the <i>Drosophila</i> maxillary palp mediate short- and long-range attraction. <i>ELife</i> , 2016, 5, .	6.0	59
28	Odor mixtures of opposing valence unveil inter-glomerular crosstalk in the <i>Drosophila</i> antennal lobe. <i>Nature Communications</i> , 2019, 10, 1201.	12.8	58
29	Hawkmoths evaluate scenting flowers with the tip of their proboscis. <i>ELife</i> , 2016, 5, .	6.0	56
30	Nest Defense and Conspecific Enemy Recognition in the Desert Ant <i>Cataglyphis fortis</i> . <i>Journal of Insect Behavior</i> , 2003, 16, 717-730.	0.7	54
31	Pathogenic bacteria enhance dispersal through alteration of <i>Drosophila</i> social communication. <i>Nature Communications</i> , 2017, 8, 265.	12.8	54
32	Electrical synapses mediate synergism between pheromone and food odors in <i>Drosophila melanogaster</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, E9962-E9971.	7.1	54
33	Plant Species- and Status-specific Odorant Blends Guide Oviposition Choice in the Moth <i>Manduca sexta</i> . <i>Chemical Senses</i> , 2013, 38, 147-159.	2.0	53
34	Spatial Representation of Feeding and Oviposition Odors in the Brain of a Hawkmoth. <i>Cell Reports</i> , 2018, 22, 2482-2492.	6.4	53
35	Adult Frass Provides a Pheromone Signature for <i>Drosophila</i> Feeding and Aggregation. <i>Journal of Chemical Ecology</i> , 2016, 42, 739-747.	1.8	52
36	Desert ants use olfactory scenes for navigation. <i>Animal Behaviour</i> , 2015, 106, 99-105.	1.9	51

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37	Nest mark orientation in desert ants <i>Cataglyphis</i> : what does it do to the path integrator?. <i>Animal Behaviour</i> , 2005, 70, 1349-1354.	1.9	50
38	The Olfactory Logic behind Fruit Odor Preferences in Larval and Adult <i>Drosophila</i> . <i>Cell Reports</i> , 2018, 23, 2524-2531.	6.4	50
39	Innate olfactory preferences for flowers matching proboscis length ensure optimal energy gain in a hawkmoth. <i>Nature Communications</i> , 2016, 7, 11644.	12.8	48
40	Large-scale characterization of sex pheromone communication systems in <i>Drosophila</i> . <i>Nature Communications</i> , 2021, 12, 4165.	12.8	48
41	Desert Ants Learn Vibration and Magnetic Landmarks. <i>PLoS ONE</i> , 2012, 7, e33117.	2.5	47
42	Egocentric and geocentric navigation during extremely long foraging paths of desert ants. <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 2015, 201, 609-616.	1.6	41
43	An unbiased approach elucidates variation in ( <i>S</i> )-(+)-linalool, a context-specific mediator of a tri-trophic interaction in wild tobacco. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 14651-14660.	7.1	41
44	Mate discrimination among subspecies through a conserved olfactory pathway. <i>Science Advances</i> , 2020, 6, eaba5279.	10.3	41
45	Transition from sea to land: olfactory function and constraints in the terrestrial hermit crab <i>Coenobita clypeatus</i> . <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2012, 279, 3510-3519.	2.6	38
46	Intracellular regulation of the insect chemoreceptor complex impacts odor localization in flying insects. <i>Journal of Experimental Biology</i> , 2016, 219, 3428-3438.	1.7	37
47	Mapping odor valence in the brain of flies and mice. <i>Current Opinion in Neurobiology</i> , 2014, 24, 34-38.	4.2	35
48	Functional integration of <i>œ</i> neurons in the olfactory system. <i>Science Advances</i> , 2020, 6, eaaz7238.	10.3	31
49	Mass spectrometry imaging of surface lipids on intact <i>Drosophila melanogaster</i> flies. <i>Journal of Mass Spectrometry</i> , 2014, 49, 223-232.	1.6	30
50	Towards plant-odor-related olfactory neuroethology in <i>Drosophila</i> . <i>Chemoecology</i> , 2010, 20, 51-61.	1.1	28
51	Compound valence is conserved in binary odor mixtures in <i>Drosophila melanogaster</i> . <i>Journal of Experimental Biology</i> , 2014, 217, 3645-55.	1.7	28
52	Pollination in the Anthropocene: a Moth Can Learn Ozone-Altered Floral Blends. <i>Journal of Chemical Ecology</i> , 2020, 46, 987-996.	1.8	25
53	Intraspecific Combinations of Flower and Leaf Volatiles Act Together in Attracting Hawkmoth Pollinators. <i>PLoS ONE</i> , 2013, 8, e72805.	2.5	24
54	Desert ants possess distinct memories for food and nest odors. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 10470-10474.	7.1	23

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55	Path Integration in Desert Ants Controls Aggressiveness. <i>Science</i> , 2004, 305, 60-60.	12.6	22
56	Evaluation of the DREAM Technique for a High-Throughput Deorphanization of Chemosensory Receptors in <i>Drosophila</i> . <i>Frontiers in Molecular Neuroscience</i> , 2018, 11, 366.	2.9	22
57	Flower movement balances pollinator needs and pollen protection. <i>Ecology</i> , 2019, 100, e02553.	3.2	20
58	Host Plant Odors Represent Immiscible Information Entities - Blend Composition and Concentration Matter in Hawkmoths. <i>PLoS ONE</i> , 2013, 8, e77135.	2.5	20
59	Plant-Based Natural Product Chemistry for Integrated Pest Management of <i>Drosophila suzukii</i> . <i>Journal of Chemical Ecology</i> , 2019, 45, 626-637.	1.8	19
60	Variable dependency on associated yeast communities influences host range in <i>Drosophila</i> species. <i>Oikos</i> , 2020, 129, 964-982.	2.7	18
61	Phylogeny of three parapatric species of desert ants, <i>Cataglyphis bicolor</i> , <i>C. viatica</i> , and <i>C. savignyi</i> : A comparison of mitochondrial DNA, nuclear DNA, and morphological data. <i>Zoology</i> , 2005, 108, 169-177.	1.2	17
62	The importance of procedural knowledge in desert-ant navigation. <i>Current Biology</i> , 2006, 16, R916-R917.	3.9	17
63	Floral Trait Variations Among Wild Tobacco Populations Influence the Foraging Behavior of Hawkmoth Pollinators. <i>Frontiers in Ecology and Evolution</i> , 2018, 6, .	2.2	17
64	Competing beetles attract egg laying in a hawkmoth. <i>Current Biology</i> , 2022, 32, 861-869.e8.	3.9	17
65	Divergent sensory investment mirrors potential speciation via niche partitioning across <i>Drosophila</i> . <i>ELife</i> , 2020, 9, .	6.0	14
66	Fundamental difference in life history traits of two species of <i>Cataglyphis</i> ants. <i>Frontiers in Zoology</i> , 2006, 3, 21.	2.0	13
67	Flexible weighing of olfactory and vector information in the desert ant <i>Cataglyphis fortis</i> . <i>Biology Letters</i> , 2013, 9, 20130070.	2.3	13
68	Homing Ants Get Confused When Nest Cues Are Also Route Cues. <i>Current Biology</i> , 2017, 27, 3706-3710.e2.	3.9	13
69	Functional olfactory evolution in <i>Drosophila suzukii</i> and the subgenus <i>Sophophora</i> . <i>IScience</i> , 2022, 25, 104212.	4.1	12
70	Desert ants: is active locomotion a prerequisite for path integration?. <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 2006, 192, 1125-1131.	1.6	11
71	Optimization of Insect Odorant Receptor Trafficking and Functional Expression Via Transient Transfection in HEK293 Cells. <i>Chemical Senses</i> , 2019, 44, 673-682.	2.0	10
72	Learning and processing of navigational cues in the desert ant. <i>Current Opinion in Neurobiology</i> , 2019, 54, 140-145.	4.2	9

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73	Evolutionary neuroecology of olfactory-mediated sexual communication and host specialization in <i>Drosophila</i> – a review. <i>Entomologia Experimentalis Et Applicata</i> , 2022, 170, 289-302.	1.4	7
74	Human Impacts on Insect Chemical Communication in the Anthropocene. <i>Frontiers in Ecology and Evolution</i> , 2022, 10, .	2.2	7
75	The Neural and Behavioral Basis of Chemical Communication in Terrestrial Crustaceans. , 2010, , 149-173.		6
76	Host Plant Constancy in Ovipositing <i>Manduca sexta</i> . <i>Journal of Chemical Ecology</i> , 2021, 47, 1042-1048.	1.8	5
77	Moths sense but do not learn flower odors with their proboscis during flower investigation. <i>Journal of Experimental Biology</i> , 2021, 224, .	1.7	5
78	Unique neural coding of crucial versus irrelevant plant odors in a hawkmoth. <i>ELife</i> , 0, 11, .	6.0	5
79	Fast Learners: One Trial Olfactory Learning in Insects. <i>Frontiers in Ecology and Evolution</i> , 2022, 10, .	2.2	4
80	High-resolution Quantification of Odor-guided Behavior in <i>Drosophila melanogaster</i> ; Using the Flywalk Paradigm. <i>Journal of Visualized Experiments</i> , 2015, , e53394.	0.3	3
81	Functional loss of yeast detectors parallels transition to herbivory. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 2927-2928.	7.1	3
82	Potencies of effector genes in silencing odor-guided behavior in <i>Drosophila melanogaster</i> . <i>Journal of Experimental Biology</i> , 2017, 220, 1812-1819.	1.7	2
83	Acetoin, a key odor for resource location in the giant robber crab, <i>Birgus latro</i> . <i>Journal of Experimental Biology</i> , 2019, 222, .	1.7	2
84	<i>Drosophila melanogaster</i> chemical ecology revisited: 2-D distribution maps of sex pheromones on whole virgin and mated flies by mass spectrometry imaging. <i>BMC Zoology</i> , 2020, 5, .	1.0	2
85	Specialized But Flexible. <i>Science</i> , 2013, 339, 151-152.	12.6	1
86	Navigation: How the Recent Past Shapes Future Routes in Desert Ants. <i>Current Biology</i> , 2020, 30, R435-R437.	3.9	1
87	Variation in <i>Manduca sexta</i> Pollination-Related Floral Traits and Reproduction in a Wild Tobacco Plant. <i>Frontiers in Ecology and Evolution</i> , 2021, 9, .	2.2	1
88	Sense of achievement. <i>ELife</i> , 2013, 2, e01605.	6.0	1
89	How ants send signals in saliva. <i>ELife</i> , 2016, 5, .	6.0	0
90	Insect Host Choice: Don't Put All the Eggs in One Basket. <i>Current Biology</i> , 2020, 30, R1363-R1365.	3.9	0