CURRICULUM VITAE

Frederic Libersat

1. PERSONAL DETAILS

Date of Birth: March 20, 1960, Arcachon, France.
Marital status: Divorced + three.
Citizenship: French and Israeli
French Military Service: French cooperation (16 months).
Date of immigration: Nov. 1990.
Language competence: Fluent in French, English, Hebrew and some knowledge of German.

Work address: Dept. of Life Sciences,
Ben Gurion University; Beer Sheva, Israel.
Phone: 972-8-6472112/3; Fax: 972-8-6479216
E-mail: libersat@bgumail.bgu.ac.il
Home address: Nahum Sarig 5/9; Beer Sheva, 84719, Israel.
Phone: 972-5052029643

2. EDUCATION

B.Sc. 1981: University of Bordeaux; Biology.
M.Sc. 1983: University of Bordeaux; Neuroscience. Advisor: Prof. B. Cardo; Thesis: Neuronal substrate of self-stimulation behavior in the lateral hypothalamus of the rat brain (First place in Masters (D.E.A.) competition in Academy of Bordeaux, awarded a National Fellowship Award of the French Ministry of Industry and Research, in support of doctoral research).
Ph.D. 1986: University of Bordeaux (Summa Cum Laude); Neuroscience and Pharmacology. Advisor: Dr. Francois Clarac; Thesis: Sensory control of the locomotory cycle: Role of leg mechanoreceptors in the modulation of the crab locomotory motor pattern.

3. EMPLOYMENT HISTORY

a) Employment

1983-84: Teaching assistant in a yearlong course in Mammalian Sensory Biology; University of Bordeaux.
1984-85: Teaching assistant in laboratory course in Invertebrate Sensory Physiology; University of Bordeaux.
1986-88; 1989-91: Postdoctoral Fellow: Department of Zoology, Hebrew University. Subject: Neurobiology of peripheral and central feedback loops in locomotion. Advisor, Prof. Jeffrey M. Camhi.
1988-1989: Postdoctoral Fellow: Section of Neurobiology & Behavior, Cornell University, N.Y. Subject: Neurobiology of acoustic startle behavior in flying insects. Advisor, Prof.

Ronald R. Hoy.
1991-1995: Lecturer in the Dept of Life Sciences, Ben Gurion University. Beer Sheva.
1995-2001: Senior Lecturer in the Dept of Life Sciences, Ben Gurion University. Beer Sheva.
1998-1999: Visiting Scholar in the Division of Neurobiology, Arizona Research Labs, University of Arizona, Tucson, AZ
2001- 2005: Associate Professor in the Dept of Life Sciences, Ben Gurion University. Beer Sheva
2004-2005: Visiting Professor in the Dept of Entomology and Neuroscience, University of California Riverside, Riverside, CA, USA and California Institute of Technology, Pasadena, CA, USA
April 2005-present: Full Professor in the Dept of Life Sciences, Ben Gurion University. Beer Sheva
February 2008-October 2010: Full Professor, Universite d'Aix Marseille 2 et INMED-INSERM, Parc scientifique de Luminy, Marseille. France

b) Positions in academic administration
1992-1993: Representative of Department of Life Sciences lecturers in the Faculty of Natural Sciences
1994-2001: Head of the Cell and Animal Physiology discipline in the Department of Life Sciences.
1995-1996: Responsible for the departmental seminar
1995-1998: Member of the Board of Directors of the Zlotowski Center of Neurosciences at Ben Gurion University.
2001-2002. Head of the Graduate Students Committee in the Dept of Life Sciences at Ben Gurion University:
2001-2003 Elected Director of the Zlotowski Center for Neurosciences at Ben Gurion University.
2011-2013. Elected Chairman of the department of Life Sciences, Ben Gurion University.

c) Committees
1. Life Sciences Undergraduate Teaching Committee (Cell and Animal Physiology; 1993-2000; 2006-present)
2. Neuroscience Teaching Committee (1996-present)
3. Department Planning Council Committee (1996-present)
4. Zlotowski Center for Neuroscience Steering Committee (1995-1998; 2000-present)
5. Reorganization of the Life Sciences Undergraduate Teaching Program.
6. Advisor and member of the Planning Council Committee for establishing an imaging facility at Ben Gurion University (1998)
7. Elected member of the board of the Israel Society for Neurosciences (1999-2000)

8. Elected Officer of the International Society for Invertebrate Neurobiology (2003)
9. Member of the appointment and promotion committee in the Dept of Life Sciences at BGU
10. Member of the Research council of Ben Gurion University (2006-2008)
11. 2004-today: Member of the appointments and promotion committee of the Department of Life Sciences.
12. 2010-2011. Representative of Department of Life Sciences in the appointment's committee of the Dean, Faculty of Natural Sciences
13. 2016-today: Member of the recruitment committee of the Department of Brain and Cognitive Sciences.
14. 2016-today: Member of the steering Committee in the School of Neurosciences at Ben Gurion University.
15. 2016-2020: Representative of the faculty of Natural Sciences in the promotion of committee of the rector.
16. 2018-today. Elected Member of the Disciplinary Committee and the Court of Appeals for the Academic Staff.
17. 2022: ועדה מנהלת- בית הספר למדעי המוח ולקוגניציה. Member of the directing Committee of the School of Neurosciences at Ben Gurion University.

d) Other academic activities

Organization of workshops

1. Organization of the first workshop on Neuroscience at Ben Gurion University held the 24th of December 1995
2. Chairperson of the Symposium on Psychobiology at the Annual Meeting of the Israel Society for Neurosciences (Eilat 1996)
3. Workshop on advanced techniques in light microscopy and imaging.
The Carolina Workshop in Molecular Biology and Biotechnology; University of North Carolina; Chapel Hill (April 1997).
4. Chairperson of the symposium on Neurotoxins at the 5th International Conference on Invertebrate Neurochemistry & Neurophysiology 1997

Organization of international meetings

1. Member of the organizing committee of 5th International Conference on Invertebrate Neurochemistry & Neurophysiology 1997 (local organizing committee)
2. Member of the program committee for the 2001 meeting of the International Neuroethology Society in Bonn, Germany.

Refereeing grant applications for the following Foundations

1. The German-Israeli Foundation for Scientific Research and Development (GIF).
2. The National Science Foundation (NSF, USA).
3. The National Institute for Psychobiology in Israel.
4. The US-Israel Binational Science Foundation

5. The Israel National Academy of Science

Referee of M.Sc and Ph.D theses at the Haifa University, Hebrew University, Tel Aviv University, and Ben Gurion University.
Reviewer for the Journal of Comparative Neurology, the Journal of Comparative Physiology, the Journal of Experimental Biology, Plos One, Toxicon, frontiers in physiology and toxins.

e) Courses taught.
* At Bordeaux University (1984)
Laboratories in Electrophysiology of Sensory Receptors; M.Sc students (joint teaching).

* At the Hebrew University (1987 and 1990)
Laboratory Techniques in Neurobiology of Animal Behavior; M.Sc students (joint teaching).
1990: Advanced Invertebrate Zoology; second year (joint teaching).

* At Ben Gurion University
Past
Introduction to Zoology, first year (joint teaching; 1991-1996).
Neurobiology of Animal Behavior (1993-1998), an intense three-week laboratory summer course taught at the Hebrew University jointly with Prof. Camhi and open to graduate students from all Israeli universities as well as foreign students (joint teaching).
Present
Animal Physiology, second year (joint teaching).
Introduction to Neurobiology, third year.
Mechanisms of Animal Behavior; graduate studies
Laboratory project, third year.
Graduate student Neuroscience seminar series – Ben-Gurion University of the Negev (coordinator)

f) Society Memberships
Society for Neuroscience, 1987-present
Society for Neuroethology, 1991-present
International Brain Research Organization, 1991-present
International Society for Invertebrate Neurobiology, 1997-present
The American Physiological Society 1998-present
Israel Society for Neurosciences, 1991-present

g) Editorial boards
Editorial board: the **Journal of Comparative Physiology A**
Editorial board: **Zoology**; Urban & Fischer Verlag
Editorial board: **Neural Plasticity**; Hindawi Publishing Corporation

Editorial board of **Frontiers in Physiology**: Associate editor.

4. AWARDS, HONORS, RESEARCH FELLOWSHIPS

a) Honors and Awards

1. 1983: First place in Masters (D.E.A.) competition in the Academy of Bordeaux.
2. 1983-85: National Fellowship Award of the French Ministry of Industry and Research, in support of doctoral research.
3. 1991: **Guastalla Fellowship Award** from the Rashi Foundation.
4. 1995: The Belle and Murray Nathan Career Development Chair in Neurobiology
5. 1998: **Bernard Katz Prize winner and lecturer** (Feb. 1998, Heidelberg)
6. 2005: **Selected invited evening speaker in the Neural Systems and Behavior course, Woods Hole, MA, USA**
7. **2015: The Abraham and Bessie Zacks Chair in Neurobiology**

b) Research Fellowships

1. 1987: Marine Biological Laboratory Fellowship for participation in the Neural Systems and Behavior Course in Woods Hole.
2. 1989: **Grass Foundation Fellowship** at the Marine Biological Laboratory at Woods Hole, to study the neurobiology of acoustic startle behavior in insects.
3. 1991: Human Science Frontier Fellowship Program: Short Term Fellowship; to study the effect of a neurotoxin on the cockroach nervous system.

5. SCIENTIFIC PUBLICATIONS

Refereed Articles in Scientific Journals

1. Nassif S, Cardo B, **Libersat** F and Velley L (1985). Comparison of deficits in electrical self-stimulation after ibotenic acid lesions of the lateral hypothalamic and the medial prefrontal cortex. *Brain Res.* **322**(2):247-258
2. Zill SN, **Libersat** F and Clarac F (1985). Single unit sensory activity in free walking crabs: Force sensitive mechanoreceptors of the dactyl. *Brain Res.***366**:337-341.
3. Bevengut M, **Libersat** F and Clarac F (1986). Dual locomotor activity controlled by force sensitive mechanoreceptors. *Neuroscience Letters* **66**(3):323-328.
4. **Libersat** F, Zill S and Clarac F (1987). Single unit responses and reflex effects of force-sensitive mechanoreceptors of the dactyl of the crab *J. Neurophysiol.* **57**:1601-1617.
5. **Libersat** F, Clarac F and Zill S (1987). Force mechanoreceptors of the dactyl of the crab: Single unit response during walking and evaluation of function. *J. Neurophysiol.* **57**:1618-1637.

6. Clarac F, **Libersat** F, Pfluger JJ and Rathmayer W (1987). Motor pattern analysis in the shore crab (*Carcinus maenas*) walking freely in the water and on land. *J. Exp. Biol.* **133**:395-414.
7. Libersat F, Goldstein RS and Camhi JM (1987). Non-synaptic regulation of sensory activity during movement in cockroaches. *Proc. Natl. Acad. Sci.* **84**:8150-8154.
8. Libersat F and Camhi JM (1988). Control of sensory feedback by movement during flight in the cockroach. *J. Exp. Biol.* **136**:483-488.
9. Libersat F, Selverston A, Camhi JM and Goldstein RS (1989). Photoinactivation of a portion of a neuron for long term studies of its role in behavior. *J. Exp. Biol.* **142**:453-459.
10. Libersat F, Levy A and Camhi JM (1989). Multiple feedback loops in the flying cockroach: Excitation of the dorsal and inhibition of the ventral giant interneurons. *J. Comp. Physiol.* **165**:651-668.
11. Libersat F and Hoy RR (1991). Ultrasonic startle behavior in bushcrickets (*Orthoptera; Tettigonidae*). *J. Comp. Physiol.***169**:507-514.
12. Libersat F (1992). Modulation of flight by the giant interneurons of the cockroach. *J. Comp. Physiol.* **170**:379-392.
13. Libersat F, Murray JA, and Hoy RR (1994) Frequency as a releaser in the courtship song of two crickets: *Gryllus bimaculatus* (De Geer) and *Teleogryllus oceanicus; A* neuroethological analysis. *J. Comp. Physiol.* **174**:485-494.
14. Ganihar D, **Libersat** F, Wendler G and Camhi JM (1994). Wind-evoked evasive responses of flying cockroaches. *J. Comp. Physiol.* **175**:49-65
15. Libersat F (1994). Physiological properties of an identified giant interneuron as related to the escape and flight circuitries of the cockroach *Periplaneta americana*. *J. Insect. Physiol.* **40**:431-438.
16. Fouad K, **Libersat**, F and Rathmayer W (1994) The venom of the cockroach-hunting wasp *Ampulex compressa* changes motor thresholds: A novel tool for studying the neural control of arousal. *Zoology* **98**:23-34.
17. Libersat F (1994) The dorsal giant interneurons mediate evasive behavior in flying cockroaches. *J. Exp. Biol.* **197**:405-411.
18. Fouad F, **Libersat** F and Rathmayer W. (1996) Neuromodulation of the escape behavior in the cockroach *Periplaneta americana by* the venom of the parasitic wasp *Ampulex compressa. J. Comp. Physiol. A* **178**:91-100.
19 Weisel-Eichler A and **Libersat** F (1996) Neuromodulation of flight initiation by octopamine in the cockroach. *J. Comp. Physiol. A*.**179**:103-112.
20. Libersat F and Mizrahi A (1996) In situ visualization and photoablation of individual neurons using a low cost fiber optic based system *J. Neurosci. Methods* **67**:157.162.
21. Mizrahi A and **Libersat** F. (1997) Independent coding of wind direction in the cockroach giant interneurons. *J. Neurophysiol.* **178:** 2655-2661.
22. Weisel-Eichler, A., Haspel, G. and **Libersat**, F. (1999). Venom of a parasitoid wasp induces prolonged grooming in the cockroach. *J. Exp. Biol.* **202**, 957-964.

23. **Libersat** F., Haspel G, Casagrand J. and Fouad K (1999). Localization of the site of effect of a wasp's venom in the cockroach escape circuitry. *J. Comp. Physiol. A* **184** (3), 333-345.

24. **Libersat** F., Moore J. (2000) The parasite *Moniliformis moniliformis* alters the escape response of its cockroach host *Periplaneta americana J. Insect. Behavior*:13 (1):103-110.

25. Mizrahi A., Ben-Er E., Glusman G., Katz M., Kedem K., and **Libersat** F. (2000) Comparative analysis of dendritic architecture of identified neurons using the Hausdorff distance metric. *J. Comp. Neurol*. 422(3) 415-428.)

26. Cattaert D, **Libersat** F, and El Manira A (2001) Presynaptic inhibition and antidromic spikes in primary afferents of the crayfish – a computational and experimental analysis. *J. Neurosci. 21(3):1007-1021.*

27. Mizrahi A and **Libersat** F (2001) Synaptic re-organization induced by selective photoablation of an identified neuron. *J. Neurosci.21 (23) 9280-9290.*

28. **Libersat** F. and Duch C. (2002) Morphometric analysis of dendritic remodeling in an identified motoneuron during postembryonic development. *J. Comp. Neurol. 450:153. 166*.

29. Mizrahi A and **Libersat** F (2002) Afferent input regulates the formation of distal dendritic branches during dendritic maturation. *J. Comp. Neurol 452:1-10.*

30. Weisel-Eichler, A., and **Libersat**, F. (2002). Are monoaminergic systems involved in the lethargy induced by a parasitoid wasp in the cockroach prey? *J Comp Physiol [A]. 188(4):315-24*.

31. Haspel G and **Libersat** F (2003). Wasp venom blocks central cholinergic synapses to induce transient paralysis in cockroach prey. *J. Neurobiol 54:628-637*.

32. Haspel G, Rosenberg, L.A. and **Libersat** F (2003) Direct injection of venom by a predatory wasp into cockroach brain, *J Neurobiol. 56:287-92*.

33. **Libersat** F and Pflueger HJ (2004) Monoamines and the orchestration of behavior. *Bioscience, 54 (1) 17-25*.

34. Haspel G and **Libersat** F (2004) Wasp manipulates cockroach behavior by injecting venom cocktail into prey central nervous system. *Acta Biologica Hungarica, 55 (1-4) 103-112.*

35. Knafo S, Ariav G, Barkai E and **Libersat** F (2004). Olfactory learning-induced increase in spine density along the apical dendrites of CA1 hippocampal neurons. *Hippocampus* 14 (7): 819-825.

36. Gincel D, Haspel G and **Libersat** F. (2004) Channel forming activity in the venom of the cockroach-hunting wasp, *Ampulex compressa Toxicon 43:721. 727.*

37. **Libersat** F, Leung V, Mizrahi A, Mathenia N, and Comer C (2005) Changes in escape circuit function during the lifespan of adult cockroaches *Periplaneta americana. J Neurobiol 62(1):62-71.*

38. Knafo S, Barkai E, **Libersat** F, Sandi C, Venero C. (2005) Olfactory-learning related NCAM expression is state, time and location specific and is correlated with individual learning capabilities. *Hippocampus. 15(3):316-25.*

39. Knafo S, **Libersat** F, Barkai E. (2005) Olfactory learning-induced morphological modifications in single dendritic spines. *Eur J Neurosci 21(8):2217-26.*

40. Knafo S, Barkai E, **Libersat** F, Sandi C, Venero C. (2005) Dynamics of olfactory learning-induced up-regulation of L1 in the piriform cortex and hippocampus. *Eur J Neurosci. 21(2):581-6.*

41. Haspel G, Gefen E, Ar A, Glusman JG, Libersat F. (2005) Parasitoid wasp affects metabolism of cockroach host to favor food preservation for its offspring. J Comp Physiol A 191(6):529-34.

42. Knafo S, **Libersat** F, Barkai E. (2005) Dynamics of learning-induced spine redistribution along dendrites of pyramidal neurons in rats. *Eur J Neurosci. 21 (4) 927-935.*

43. Rosenberg LA, Pflüger HJ, Wegener G and **Libersat** F (2006) Venom of wasp injected into the prey's brain modulates thoracic identified bioaminergic neurons. *J. Neurobiol. 66(2):155-68.*

44. Keasar T, Sheffer N, Glusman G, **Libersat** F. (2006) Host handling: an innate component of foraging behavior in the parasitoid wasp Ampulex compressa. *Ethology 112 699–706*

45. Moore EL, Haspel G, **Libersat** F, and Adams ME. (2006) Parasitoid wasp sting: a cocktail of GABA, taurine and β-alanine opens chloride channels for transient synaptic block and paralysis of a cockroach host. *J Neurobiol. 66(8):811-20*

46. Gal R and **Libersat** F. (2006) New vistas on the initiation and maintenance of insect motor behaviors revealed by specific lesions of the head ganglia. J Comp Physiol A, *192(9):1003-20*

47. Rosenberg LA, Glusman JG and **Libersat** F (2007) Octopamine partially restores walking in hypokinetic cockroaches stung by the parasitoid wasp Ampulex compressa. *J Exp Biol:210: 4411-4417*

48. Gal R, **Libersat** F. (2008) A Parasitoid Wasp Manipulates the Drive for Walking of Its Cockroach Prey. Curr Biol. 18(12):877-82.

49. Gal R, **Libersat** F. (2010) Wasp Manipulates Specific Neuronal Circuitry to Decrease the Drive for Walking in its Cockroach Prey. PLoS One. 7;5(4): e10019.

50. Gal R, **Libersat** F. (2010) On predatory wasps and zombie cockroaches: Investigations of "free will" and spontaneous behavior in insects. Commun Integr Biol. 3(5):458-61

51. Gavra T, **Libersat** F. (2011). Involvement of the opioid system in the hypokinetic state induced in cockroaches by a parasitoid wasp. J Comp Physiol A Neuroethol Sens Neural Behav Physiol. 197(3):279-91.

52. Ferrari DC, Mdzomba J, Dehorter N1, Lopez C, **Libersat** F and Hammond C (2012)

Midbrain dopaminergic neurons generate calcium and sodium currents and release dopamine in the striatum of pups. Frontiers in Cellular Neuroscience; volume 6|Article7 | 1.

53. Gal R, Kaiser M, Haspel G, **Libersat** F (2014) Sensory Arsenal on the Stinger of the Parasitoid Jewel Wasp and Its Possible Role in Identifying Cockroach Brains. PLoS ONE 9(2): e89683. doi: 10.1371/journal.pone.0089683

54. **Libersat** F, Gal R. (2014) Wasp Voodoo Rituals, Venom-Cocktails, and the Zombification of Cockroach Hosts. Integr Comp Biol. Jul; 54(2):129-42.

55. Kaiser M and **Libersat** F. (2015). The role of the cerebral ganglia in the venom-induced behavioral manipulation of cockroaches stung by the parasitoid Jewel Wasp. J Exp Biol. 2015 Apr; 218(Pt 7):1022-7

56. Emanuel S., **Libersat** F. (2017). Quiescence and Wasp Venom-Induced Lethargy Share Common Neuronal Mechanisms in Cockroaches. PLoS One. Jan 3; 12(1): e0168032.

57. Arvidson R, Kaiser M, Lee S, Jean-Paul Urdena J.P, Victor Landa V, Frankenberg S, Dail C, Pan S, E. Stajich J, **Libersat** F, Adams M.E. (2019) Parasitoid Jewel Wasp Mounts Multi-Pronged Neurochemical Attack to Hijack a Host Brain. Mol Cell Proteomics. Jan; 18(1):99-114

58. Kaiser M, Arvidson R, Zarivach R, Adams ME, **Libersat** F. (2019). Molecular cross-talk in a unique parasitoid manipulation strategy. Insect Biochem Mol Biol. Mar; 106:64-78

59. Hugues D and **Libersat** F. (2019). Parasite manipulation of host behavior. Current Biology 29, R1–R4, January 21, 2019

60. Emanuel S. and **Libersat** F. (2019). Nociceptive pathway in the cockroach Periplaneta Americana. Front Physiol. Aug 21; 10:1100

61. Ferch J, Kaiser M, **Libersat** F and Pflüger H-J. Immunocytochemistry of Tyraminergic/octopaminergic neurons in control, stressed and stung cockroaches (Periplaneta americana). Submitted to Physiological Entomology

62. Nordio S, Kaiser M, Adams ME, **Libersat** F. (2022). Parasitoid wasp venom manipulates host innate behavior via subtype-specific dopamine receptor activation. J Exp Biol. Mar 15;225(6):jeb243674

63. Rana A., Emanuel S., Adams M.E., Libersat F. (2022) Modulation of nociception in cockroaches stung by a parasitoid wasp. Front. Physiol., 12 August 2022; https://doi.org/10.3389/fphys.2022.907041

64. Rana A., Adams M.E., Libersat F. (2023) Parasitoid wasp venom re-programs host behavior through downmodulation of brain central complex activity and motor output. J Exp Biol. 2023 Jan 26:jeb.245252. doi: 10.1242/jeb.245252.

Refereed Invited Reviews in Scientific Journals

1. **Libersat** F (2003) Wasp uses venom cocktail to manipulate the behavior of its cockroach prey. *J Comp Physiol [A], 189:497-508.*
2. **Libersat** F and Pflueger HJ (2004) Monoamines and the orchestration of behavior. *Bioscience, 54 (1) 17-25.*
3. **Libersat** F and Duch C. (2004) Mechanisms of dendritic maturation. Mol. Neurobiol. 29(3):303-320.
4. Weisel-Eichler, A., and **Libersat,** F. (2004) Venom effects on monoaminergic systems: A review. *J Comp Physiol A* 190(9):683-90.
5. **Libersat F.** (2005) Maturation of dendritic architecture: lessons from insect identified neurons. *J. Neurobiol. 64(1):11-23.*
6. Gal R, Rosenberg LA and **Libersat** F. (2005) Parasitoid wasp uses a venom cocktail injected into the brain to manipulate the behavior and metabolism of its cockroach prey. *Arch Insect Biochem Physiol 60(4):198-208.*
7. **Libersat** F, Delago A and Gal R. (2009) Manipulation of host behavior by parasitic insects and insect parasites. Annu Rev Entomol. 54: 189-207
8. Frédéric Thomas et Frédéric **Libersat**. (2010) Pour la Science (french edition of Scientific American): Les parasites manipulateurs. Pour la Science - n° 390 - Avril 2010 ; pages 2-8
9. **Libersat** F, Gal R (2013) What can parasitoid wasps teach us about decision-making in insects? J Exp Biol. 2013 216 :47-55.
10. Hugues D and **Libersat** F. (2018). Neuroparasitology of parasite--insect associations. Annu. Rev. Entomol. Vol. 63, pp. 471–487
11. Libersat F., Emanuel S, Kaiser M. (2018) Mind Control: How Parasites Manipulate Cognitive Functions in Their Insect Hosts. Perspective, Front Psychol. May 1; 9:572.
12. Emanuel S, Kaiser M, Pflüger HJ and Libersat F. (2020). On the role of the head ganglia in posture and walking in insects. Front Physiol. Feb 21; 11:135
13. Mathuru AS, Libersat F, Vyas A, Teseo S. (2020) Why behavioral neuroscience still needs diversity?: A curious case of a persistent need. Neurosci Biobehav Rev. 2020 Sep;116:130-141.

Chapters in Books and encyclopedia

1. **Libersat**, F. and Gal, R. (2007). Neuro-manipulation of hosts by parasitoid wasps. In Recent Advances in the Biochemistry, Toxicity and Mode of Action of Parasitic Wasp Venoms (ed. J. Yoder and D. Rivers), pp 96-114. Research Signpost, Kerala, India
2. **Libersat** (2009) Neuroethology of Parasitoid Wasps. Scholarpedia, 4(7):9617
3. **Libersat** (2010) Encyclopedia of Animal Behavior. Chapter 156: Neuroethology of Parasitoid Wasps. M Breed and J Moore Eds, Academic Press, Oxford 2010. 23 pp

Public scientific press (selected)

1. New Scientist: April 1999, Vol 162 (2180) page 54
2. Nature Science update:
http://helix.nature.com/nsu/990401/990401-4.html
3. Science now, 10/14/2004:
http://sciencenow.sciencemag.org/cgi/content/full/2004/812/3
4. National Geographic Magazine Israel (article by Tal Zur), Dec 2004 issue
5. Scientific American Hebrew version, May 2006:
http://clickit3.ort.org.il/Apps/WW/Page.aspx?ws=85a7134d-1c7c-4582-8621-cd2748720225&page=fb76dffb-ac17-4243-a91b-410ff1a3497e&box=5bbd9e16-fbe1-4e1a-bb53-578ae0872339&_pstate=item&_item=9860342c-8360-4c01-9a93-464527af6b55
6. National geographic (2007): "Zombie" Roaches Lose Free Will Due to
Wasp Venom http://news.nationalgeographic.com/news/2007/12/071206-roach-zombie.html
7. Nature News (2007) How to make a zombie cockroach http://www.nature.com/news/2007/071129/full/news.2007.312.html
8. New Scientist April 2007) Parasite hijacks brains with surgical precision. http://www.newscientist.com/article.ns?id=dn11516&print=true
9. Futura Sciences: Comment une guêpe peut robotiser un cafard
http://www.futura-sciences.com/fr/print/news/t/zoologie/d/comment-une-guepe-peut-r... 18/02/2010
10. Science et Vie (fevrier 2008; N° 1085). Guêpe (une) possède l'art de se faire obéir du cafard; page 20
11. Gehirn&Geist Nr. 1-2/2010: Die Marionettenspieler
12. Pour la Science: Les parasites manipulateurs. Frédéric THOMAS et Frédéric LIBERSAT. Pour la Science - n° 390 - Avril 2010; pages 2-8
13. **Los Angeles Times: The zombies with six legs; October 31, 2011**
14. **The Scientist: Animal Mind Control; January 2012: Features**

TV: Interview with Prof Libersat
The Discovery Channel.
The archive of the show is at:http://www.exn.ca/dailyplanet/archivelist.asp; Click on March 7 2006, which is when the story aired as Roach-O-Rama.
Harutz 10 (10 הרעש): London and Kirshenbaum: March 17 2014; http://lnk.nana10.co.il/Article/?ArticleID=1044833

6。 LECTURES AND PRESENTATIONS AT MEETINGS AND INVITED SEMINARS

a) Presentation of papers at conferences/meetings (oral or poster)

1. Nassif S, Cardo B, Libersat F and Velley L (1984). Impairment of lateral hypothalamic and

prefrontal cortex self-stimulation after ibotenic acid lesions. *Neuroscience Letters* **18**: S128.

2. Libersat F, Zill S and Clarac F (1985). Force sensitive mechanoreceptors of the dactyl of the crab: Activity in free-walking. *SEB Soc Abstracts*.

3. Libersat F, Zill S and Clarac F (1985). Modalites d'intervention de differents recepteurs sensoriels au cours de la marche laterale chez le crabe *Carcinus Maenas*. *J. Physiol.* (Paris) **80**:28A.

4. Chrachri A, Bevengut M, Libersat F, Chasserat C and Clarac F (1985). Principe d'expression de differents programmes locomoteurs chez la langouste et le crabe. *J. Physiol.* (Paris) **80**:20A.

5. Clarac F, Libersat F and Zill S (1985). Single mechanoreceptor afferent unit firing during locomotion in the shore crab (*Carcinus maenas*). *J.Physiol.* (Lond) **365**:25P.

6. Bevengut M, Libersat F and Clarac F (1985). Comparative study of the walking and swimming behaviour of the shore crab, *Carcinus maenas*. *Abst. Int. Cong. Ethology*, Toulouse, France.

7. Libersat F and Bevengut M (1985). Codage des programmes de marche et de nage chez le crabe *Carcinus maenas* par differents recepteurs sensoriels. Congress de Locomotion, Marseille.

8. Libersat F, Bevengut M and Clarac F (1986). Role of sensory information in encoding and selecting two locomotory programs in the crab (*Carcinus maenas*). *Abst. Nat. Symp. Neurosci.*, Bordeaux.

9. Libersat F, Goldstein RS and Camhi JM (1987). Mechanisms of non synaptic regulation of sensory activity during movement. *Soc. Neurosci. Abst.* **13**:114.5.

10. Goldstein RS, Libersat F and Camhi JM (1987). Non-synaptic regulation of sensory feedback during movement. *Soc. Neurosci. Abst.* **13**:114.4.

11. Libersat F (1987). Distribution of the flight rhythm and multiple feedback loops in the flying cockroach *Periplaneta americana*. *Isr. J. Zool.* **35**:89

12. Libersat F and Camhi JM (1988). Multiple loops and delay lines in the flying cockroach. *Soc. Neurosci. Abst.* **14**:128.3.

13. Libersat F and Hoy RR (1989). Neuroethological aspects of ultrasound avoidance in Katydids. *Soc. Neurosci. Abst.* **15**: 144.10

14. Hoy RR and Libersat F (1989). The neuroethology of sex and death in crickets: A one-neuron "switch" that depends on behavioral context. *Soc. Neurosci. Abst.* **15**: 144.8

15. Libersat F (1989) Neuroethological aspects of bat-avoidance behavior in Tettigoniidae. *Isr. J. Zool* 36:173

16. Libersat F, Kiflawi M and Camhi JM (1990). Function of feedback loops between the giant interneurons and the flight circuitry of the cockroach. *Soc. Neurosci. Abst.* **16**: 313.16

17. Libersat F (1991) Function of feedback loops from giant interneurons in cockroach flight. Poster presented at the 27th annual meeting of the Zoological Society of Israel

18. Fouad K, Libersat F and Rathmayer W (1992). The venom of the sphecid wasp *Ampulex compressa* modulates the behaviour of its prey, the cockroach. In: Rhythmogenesis in

neurons and networks. *Proceeding of the 20th Göttingen Neurobiology Conference*, Eds N. Elsner and D. Richter, Thieme, Suttgart-New York. **581**

19. Ganihar D, Libersat F and Camhi JM (1992). Wind-evoked responses of flying cockroaches. *Proceedings of the Third International Congress of Neuroethology.* **319**

20. Libersat F (1992) Functional significance of feedback loops between an assembly of giant command neurons and a central rhythm generator in an invertebrate. *Proceedings of the 1st Annual Meeting of the Israel Society for Neuroscience.* p 30

21. Libersat F, Fouad K, Weisel-Eichler A, Rathmayer W (1993) Arousal and the neuromodulation of flight in the cockroach. *Soc. Neurosci. Abst.* **19**:70.3

22. Libersat and Rathmayer (1993) Arousal and the neuromodulation of flight in the cockroach. *Proceedings of the 2nd Annual Meeting of the Israel Society for Neuroscience*

23. Weisel-Eichler A. and Libersat F. (1994) Neuromodulation of flight initiation by octopamine. *Proceedings of the 3rd Annual Meeting of the Israel Society for Neuroscience.* p 27

24. Fouad K, Libersat F and Rathmayer W (1995) Effects of a wasp venom on the escape circuitry of *Periplaneta americana. Proceeding of the 21st Göttingen Neurobiology Conference*, Eds N. Elsner and D. Richter, Thieme, Stuttgart-New York

25. Floyd LD, Freehling M., Moore J and Libersat F (1995) Altered escape response in cockroaches infected with an acanthocephalan (*Moniliformis moniliformis)* and its impact on predation. *Proceedings of the Annual Meeting of the American Society of Parasitologists and the American Association of Veterinary Parasitologists.* Pittsburgh, Pennsylvania

26. Mizrahi A. & Libersat F. (1995) Analysis of the local interactions between giant interneurons of the cockroach as studied with the photoablation technique. In: Nervous Systems and Behaviour. *Proceedings of the 4th International Congress of Neuroethology.* Eds M Burrows, T Matheson, PL Newland and H Schuppe; George Thieme Verlag, Thieme Medical Publishers, Inc, New York. **219**

27. Libersat F, Fouad F. & Rathmayer.W.(1995) Wasp venom modulates cockroach escape behaviour and its underlying circuitry. In: Nervous Systems and Behaviour. *Proceedings of the 4th International Congress of Neuroethology.* Eds M Burrows, T Matheson, PL Newland and H Schuppe; George Thieme Verlag, Thieme Medical Publishers, Inc, New York. **177**

28. Weisel-Eichler A. & Libersat F. (1995) Flight initiation in the cockroach is modulated by octopamine. In: Nervous Systems and Behaviour. *Proceedings of the 4th International Congress of Neuroethology.* Eds M Burrows, T Matheson, PL Newland and H Schuppe; George Thieme Verlag, Thieme Medical Publishers, Inc, New York. **157**

29. Taksir M and Libersat F (1995) Neuronal mechanisms of inhibition of the cockroach escape behavior during flight. Israel Journal of Medical Sciences **31** (12) p721

30. Mizrahi A and Libersat F (1995) Analysis of the directionality of the cockroach giant interneurons using the photoablation technique. Israel Journal of Medical Sciences **31**

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31. Weisel-Eichler A and Libersat F (1996) Grooming behavior is induced by the venom of a parasitic wasp. Israel Journal of Medical Sciences **32** S25

32. Haspel G, K. Fouad and F. Libersat (1996) Localization of the site of effect of a wasp neurotoxin which depresses cockroach arousal. Israel Journal of Medical Sciences **32** S25

33. Mizrahi A and F. Libersat (1996) Photoablation and 3-D reconstruction as tools to study dendritic competition in identified neurons. Israel Journal of Medical Sciences **32** S1

34. Libersat F. (1997). The venom of a parasitoid wasp modulates the initiation of behaviors in cockroaches; Proceedings of the 5th International Conference on Invertebrate Neurochemistry & Neurophysiology (ICINN) September 7-11, 1997, p 108

35. Mizrahi A. and Libersat F. (1997). Quantitative analysis of variability in dendritic architecture in identified neurons; Proceedings of the 5th International Conference on Invertebrate Neurochemistry & Neurophysiology (ICINN) September 7-11, 1997, p 142

36. Weisel-Eichler A. and Libersat F. (1997). Induction of grooming behavior by the venom of a parasitoid wasp; Proceedings of the 5th International Conference on Invertebrate Neurochemistry & Neurophysiology (ICINN) September 7-11, 1997, p 148

37. Haspel G and F. Libersat (1997) Biochemistry of wasp's neurotoxin and its physiological effect on insect's neurons. *Neuroscience Letters* **48**: S24

38. Haspel G and F. Libersat (1998) Biochemical properties of a wasp neurotoxin and its site of effect in the CNS of the cockroach prey. Proceedings of the 5th International Congress of Neuroethology. **199**

39. Weisel-Eichler A. and Libersat F. (1998) Venom of the parasitoid wasp Ampulex compressa: examination of neuromodulatory effects. Proceedings of the 5th International Congress of Neuroethology **200**

40. Mizrahi A. and Libersat F. (1998). Morphometric analysis of competitive interactions among dendritic trees of identified giant interneurons in the cockroach. Proceedings of the 5th International Congress of Neuroethology **265**

41. Libersat F (1998). How does the jewel wasp control the cockroach's mind? Proceedings of the 5th International Congress of Neuroethology **S65**

42. Weisel-Eichler A., Haspel G. and Libersat F. (1998) Dopamine in venom of parasitoid wasp induces prolonged grooming in cockroach prey *Neuroscience Letters* sup.**l 51: 44**

43. Duch C, Libersat F and Levine RB (1999) Changes in the biophysical and morphometric properties of an identified motoneuron during metamorphosis *Soc. Neurosci. Abst.* **25**: 905.3

44. Mizrahi A., Ben-Er E., Glusman G., Katz M., Kedem K., and Libersat F. (1999) Comparative analysis of dendritic architecture of identified neurons using the Hausdorff distance metric *Neuroscience Letters* sup 54: **30**

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shaping the architecture of dendritic trees? *Soc. Neurosci. Abst.***26**: 796.8

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48. Haspel G. and Libersat F (2000) Wasp venom blocks nicotinic receptors inducing transient paralysis in cockroach prey. *Neuroscience Letters* sup55:24

49. Weisel-Eichler A & Libersat F (2000) Dopaminergic system in CNS of the cockroach is affected by venom of a parasitoid wasp. *Neuroscience Letters* sup55:59

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52. Mizrahi A, Fishbein I and F. Libersat (2001) Regulation of high order dendritic branches by afferent input, 6th International Congress of Neuroethology. 344

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56. Rosenberg, L.A. and Libersat, F. (2002) Wasp venom injected into prey's brain affects the activity of bioaminergic neurons to regulate the expression of specific motor patterns. Neural Plasticity, 9(2) P.108

57. Gal R, Haspel G and Libersat F. (2003) A parasitoid wasp uses specialized sensory receptors to locate the CNS of its cockroach prey. Neural Plasticity, 10(3) P.200

58. Rosenberg LA and Libersat F (2003) Venom reveals descending control of a modulatory system, which regulates the expression of locomotory behaviors. Neural Plasticity, 10(3) P.226

59. Rosenberg LA and Libersat F (2004) Venom reveals descending control of a modulatory system, which regulates the expression of locomotory behaviors Proceedings of the 7th International Congress of Neuroethology (Nyborg, Denmark).

60. Gal R, and Libersat F. (2004) Wasp uses "Brain Sensors" to sting cockroach. Proceedings of the 7th International Congress of Neuroethology (Nyborg, Denmark).

61. Rosenberg L. A. and Libersat F (2004) Predatory wasp's venom induces long-term lethargy in prey by modulating central neuronal circuits. *Soc. Neurosci. Abst* 555.15

62. Libersat F. (2004) Parasitoid wasp uses a venom cocktail injected into the brain to manipulate the behavior and metabolism of its cockroach prey. XXII International Congress of Entomology (Brisbane, Australia)

63. Gal R and Libersat F (2005) The effect of parasitoid wasp's venom on cockroach behavior is context-dependent. Reviews in the Neurosciences 16(sup1): S23

64. Libersat F (2005) Chemical neuromodulation of host behavior by neurotoxins injected by a predator. Reviews in Neurosciences 16(1) p75
65. Adams ME, Moore E, Haspel G, and Libersat F. 2005 Direct CNS envenomation of a cockroach host by a parasitoid wasp: subjugation by behavioral modification. Presented at the 7th Asia-Pacific Congress on Animal, Plant and Microbial Toxins. BIOTOXINS AND HUMANITY (Plantation Bay Hotel in Mactan Island, Cebu, Philippines 25-29 October 2005) S5:2
66. Gal R, Gavra T and Libersat F. 2006. A "depressive-like" state induced in cockroaches by a wasp's sting into brain. Neural Plasticity Vol. 2007 (1): 35.
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70. Gal R and Libersat F. 2007. A 'depressive-like' state induced by a wasp's sting into cockroach's brain. Annual meeting of the German Neuroscience Society. Goettingen 2007
71. Gal R. and Libersat F. 2007. Venomous wasp targets different head ganglia to manipulate specific behaviors of its cockroach prey. Neural Plasticity Vol. 2007: 39.
72. Haskel M.1, Rosenberg L.1 and Libersat F. (2007) The contribution of the head ganglia to venom-induced hypokinesia in an insect prey. Neural Plasticity, (1) 44
73. Gavra T, Gal R and Libersat F. 2007. Involvement of the opioid system in the decreased responsiveness induced in cockroaches stung by a parasitoid wasp. Neural Plasticity Vol. 2007: 41.
74. Gavra T and Libersat F (2008) Involvement of the opioid system in the hypokinetic state induced in cockroaches by a parasitoid wasp. Gordon Research Conference; Neuroethology: Behavior, Evolution & Neurobiology, August 10-15, 2008, Magdalen College, Oxford, United Kingdom
75. Gal R and Libersat F. 2008. Wasp manipulates brain local neuronal network to decrease the drive for walking in its cockroach prey.
76. Gal R, Glusman GJ and Libersat F. 2009. Wasp injects venom into locomotory centers in the brain of its cockroach prey to induce hypokinesia. The Journal of Molecular Neuroscience 39 supp 1, S40
77. Gavra T and Libersat F 2009. Is the opioid system of cockroaches manipulated by a parasitoid wasp to induce a hypokinetic state? The Journal of Molecular Neuroscience 39 supp 1, S41
78. Gal and Libersat (2010). Role of the sub-esophageal ganglion in the regulation of insect locomotion: lessons from predatory wasps and zombie cockroaches. Israel Society for Neuroscience 19th Annual Meeting, Hilton Queen of Sheba, Eilat. Dec. 12-14, 2010. J. Mol. Neurosci.

79. Ferrari, D.C., Mdzomba, B., Dehorter, N., Lopez, C., Libersat, F., Hammond, C. (2011) Embryonic midbrain dopaminergic neurons begin to release dopamine in the striatum just before birth. 10e Colloque de la Société des Neurosciences, 2011 (SN 2011); Marseille, France.

80. Libersat F (2011). In search for the neural basis of behavioral spontaneity in insects: Lessons from Predatory Wasps and Zombie Cockroaches. 12th Symposium on Invertebrate Neurobiology; August 31 – September 4, 2011, Tihany, Hungary

81. Gal R, Kaiser M, Haspel G, Libersat F (2011), Stereotaxis in the wild: how a parasitoid wasp finds its host's brain. The Israel Society for Neuroscience 20th Annual Meeting Hilton Queen of Sheba, Eilat, December 11–13, 2011 J. Mol. Neurosci.

82. Gal R and Libersat F (2012). Stereotaxis in the Wild: How a Parasitoid Wasp Finds its Host's Brain. Tenth International Congress of Neuroethology. August 5-10, 2012, University of Maryland, College Park, Maryland

83. Adams ME., Arvidson R., Haroun M., Landasuarez V., and Libersat F. (2012). "Direct CNS Envenomation of a Cockroach Host by a Parasitoid Wasp: Subjugation by Behavioral Modification". 224th International Congress of Entomology", South Korea, Daegu, 19-25, August, 2012.

84. Gal R and Libersat F (2013) What can parasitoid wasps teach us about the control of escape behavior in its host? Janelia Conference: Dynamics of Prey Capture and Escape; Howard Hughes Medical Institute; Janelia Farm Research Campus; March 6 - 9, 2013

85. Libersat F (2013) Neuromodulation of host behavior by a parasitoid wasp. Janelia Conference: Hormonal Control of Circuits for Complex Behaviors. Howard Hughes Medical Institute; Janelia Farm Research Campus; October 27 - 30, 2013

87. Gal R., Kaiser M., Emanuel S, Libersat F. (2013) Higher centers' control of motor activity in cockroaches. The 22nd ISFN Annual Meeting held December 14-17, 2013, at Hilton Queen of Sheba Eilat,

88. Kaiser M., Biron D., and Libersat F. (2013) Proteome changes in host's brain behind the parasitoid Wasp manipulation. The 22nd ISFN Annual Meeting held December 14-17, 2013, at Hilton Queen of Sheba Eilat,

89. Libersat, F. and Gal, R (2014). Wasp Voodoo Rituals, Venom-Cocktails and the Zombification of Cockroach host. Symposium: Parasitic manipulation of host phenotype, or how to make a zombie (Weinersmith and Faulkes). Society For Integrative And Comparative Biology; 2014 Annual Meeting; January 3-7, 2014; Austin, TX

90. Libersat F and Kaiser M (2014) Molecular components of wasp venom and their targets involved in a unique behavioral manipulation strategy of the cockroach host. The Seventh International Symposium on Molecular Insect Science, Amsterdam from 13 – 16 July, 2014

91. Kaiser M and Libersat F. (2014). The role of the Central Body Complex in the venom induced behavioral manipulation of cockroaches stung by the Jewel Wasp. International Congress of Neuroethology, July 28 - August 1 2014, Sapporo, Japan

92. Libersat F. (2014). Hokkaido Neuroethology Workshops 2014. Neurological insight of

behavioral control by parasites or symbiosis. July 26-27th. Sapporo, Japan.

93. Kaiser M, Arvidson R, Adams M and Libersat F (2014) Molecular components of wasp venom and their targets involved in a unique behavioral manipulation strategy of the cockroach host" Poster and an oral presentation presented at the conference of the Israeli society for Neuroscience 2014.

94. Libersat F. (2015). The Ernst Florey Memory Lecture: Mechanism of insect-host behavioral manipulation by parasitoid wasp. 13th Symposium on Invertebrate Neurobiology; August 26 – 30, 2015, Tihany, Hungary

95. Emanuel S., Libersat F. (2015) Modulation of cockroach's motor circuit activity during quiescent and venom-induced lethargic states. 13th Symposium on Invertebrate Neurobiology; August 26 – 30, 2015, Tihany, Hungary

96. Emanuel S., Libersat F. (2015) Sleep and venom-induced lethargic states in cockroach prey may share a common mechanism. The 24th ISFN Annual Meeting held December 14-17, 2015, at Hilton Queen of Sheba Eilat.

97. Kaiser M, Arvidson R, Adams M and Libersat F. (2016). The molecular cross-talk in a unique parasitic manipulation strategy. Israeli society for Physiology and Pharmacology. ISPP 2016 Meeting Feb 18th, 2016 in Tel-Aviv University

98. Kaiser M, Arvidson R, Adams M and Libersat F. (2016). The molecular cross-talk in a unique parasitic manipulation strategy. 2016 XXV International Congress of Entomology, Orlando, Florida, USA; September 25-30.

99. Arvidson, R., Kaiser, M., Pan, S., Libersat, F., & Adams, M. E. (2016). Bioinformatic and Functional Analysis of Venom from the Jewel Wasp Ampulex compressa. FASEB Journal, 30(S1), 819.1-819.1. https://doi.org/10.1096/fasebj.30.1_supplement.819.1

100. Emanuel S., Libersat F. (2016) Processing of nociceptive input in cockroaches stung by the parasitoid wasp. The 25th ISFN Annual Meeting December 4-6, 2016, at Hilton Queen of Sheba Eilat, Israel.

101. Kaiser M, Arvidson R, Adams M E, Libersat F. Venom proteins, their targets and changes in host's brain underlying a unique parasitic manipulation strategy. **GRC**: Neuroethology: Behavior, Evolution & Neurobiology Gordon Research Conference: Neural, Behavioral and Evolutionary Strategies for Animal Survival. June 18-23, 2017; Les Diablerets Conference Center, Les Diablerets, Switzerland.

102. Libersat F On behavioral and neural manipulations of insects by parasitic wasps. Symposium: The evolution of neuronal networks: Insects in neurobiological studies, the 6th Conference of the Mediterranean Neuroscience Society (MNS), Malta, June 9-12th 2017

103. Libersat F. The manipulation of cockroach behavior by a wasp reveals insights into mechanisms of motivation and decision. In symposium: Invertebrate neurobiology: how evolution shapes neuronal circuits. Federation of European Neuroscience Societies regional meeting. 20-23 September 2017. Pécs – Hungary.

104. Emanuel S., Libersat F. (2017) The 26th ISFN Annual Meeting December 10-12, 2017, at Hilton Queen of Sheba Eilat, Israel

105. Emanuel S., Libersat F. (2017) The 5th FENS Annual Meeting September 20-23, 2017, at Pecs, Hungary

106. Emanuel S., Libersat F. (2017) The 26th ISFN Annual Meeting December 10-12, 2017, at Hilton Queen of Sheba Eilat, Israel.

107. Kaiser M, Arvidson R, Adams M E, Libersat F. (2017) The 26th ISFN Annual Meeting December 10-12, 2017, at Hilton Queen of Sheba Eilat, Israel.

108. Emanuel S., Libersat F. (2019) Nociception in insects revisited. The 27th ISFN Annual Meeting January 6-8, 2019, at Hilton Queen of Sheba Eilat, Israel.

109. Kaiser M, Arvidson R, Zarivach R, Adams M E, Libersat F. (2019) The 27th ISFN Annual Meeting January 6-8, 2019, at Hilton Queen of Sheba Eilat, Israel.

110. Rana A. and Libersat F. 2021. Wasp venom-induced neuronal central control of behavioral spontaneity in cockroach prey. The 28th ISFN Annual Meeting February 1-2, virtual forum, Israel.

111. Nordio S. and Libersat F. 2021. Dopaminergic signaling impairment in the brain of cockroaches stung by a parasitoid wasp. The 28th ISFN Annual Meeting February 1-2, virtual forum, Israel.

112. Libersat F. Parasitoid wasp venom manipulates host innate behavior via subtype-specific dopamine receptor activation. 26th International Congress of Entomology Helsinki 2022 (17 Jul 2022 - 22 Jul 2022).

113. Rana A., Emanuel S, Libersat F Modulation of nociception in cockroaches stung by a parasitoid wasp. International Congress of Neuroethology 2022. Lisbon, Portugal.

114. Stavtseva N, Verma P, Kaiser M, Libersat F., and Knafo S. Identification of novel pharmacologically active compounds in wasp venom using mammalian neurons on a multielectrode array. ISPP - Israel society for physiology and pharmacology; Haifa, 20/9/2022

115. Stavtseva N, Verma P, Kaiser M, Libersat F., and Knafo S. Parasitoid wasp venom as source for the development of novel drugs. The 30th ISFN Annual Meeting December 4-6 2022, at Hilton Queen of Sheba Eilat, Israel.

116. Rana A, Emanuel S, Adams M. E, Libersat F. Suppression of host nocifensive behavior by parasitoid wasp venom. The 30th ISFN Annual Meeting December 4-6 2022, at Hilton Queen of Sheba Eilat, Israel.

117. Kaiser M and Libersat F. Parasitoid wasp venom manipulates host innate behavior via subtype-specific dopamine receptor activation. The 30th ISFN Annual Meeting December 4-6 2022, at Hilton Queen of Sheba Eilat, Israel.

118. Borbor S, Kaiser M and Libersat F. Do cockroaches recover from a venomous sting by the parasitoid wasp Ampulex compressa? The 30th ISFN Annual Meeting December 4-6 2022, at Hilton Queen of Sheba Eilat, Israel.

b) Invited Seminars at Universities and Institutions

1985: University of Kaiserslautern, Dept of Zoology.

1986: The Hebrew University of Jerusalem, Dept of Zoology.
The Hebrew University of Jerusalem, Dept of Neurobiology.
1987: The Hebrew University, the Institute of Life Sciences.
Section of Neurobiology and Behavior, Cornell University.
1988: The Hebrew University, Dept of Zoology.
1989: The Max Planck Institute for Behavioral Physiology, Max-Planck Society, Seewiesen.
University of Frankfurt, Dept of Zoology.
University of Koeln, Dept of Zoology.
University of Konstanz, Faculty of Biology.
1990. Vulcani Center, Dept of Entomology, Bet Dagan, Israel.
The Hebrew University, Faculty of Agriculture, Dept of Entomology.
Ben Gurion University, Dept of Life Sciences.
1991. Ben Gurion University, Dept of Physiology.
Ben Gurion University, Dept of Life Sciences.
Konstanz University, Faculty of Biology.
1992 Jacob Blaustein Institute for Desert Research, Sde Boker, Israel.
University of Bordeaux, Institute of Comparative Neurobiology and Physiology.
Weizmann Institute of Science, Brain Research Center, Rehovot, Israel.
1993. Tel Aviv University. Dept of Zoology.
Hebrew University; invited lectures in Mechanisms of Animal Behavior course, third year (taught by Prof. Camhi and Prof. M. Devor)
1994. Ben Gurion University. Seminar for graduate students of the Life Sciences Dept.
1995. Hebrew University. Seminar of the Nervous Club. Dept of Neurobiology
1996. Hebrew University. Faculty of Agriculture
Hebrew University. Dept of Cell and Animal Biology
Dept of Biology; University of Colorado, Boulder, Colorado
Division of Neurobiology; University of Arizona, Arizona
Department of Cell and Molecular Neurobiology; University of California, Berkeley, California
1997: University of Gottingen, Dept of Zoology
University of Frankfurt, Dept of Zoology.
University of Mainz, Dept of Biology.
1998: Ben Gurion University, Dept of Chemical Engineering
Heidelberg, Germany: Bernard Katz Annual Lecture
ARL, Div. of Neurobiology, University of Arizona
1999 The Institute for Neurosciences, University of Oregon, Eugene, Oregon
2000. Faculty of Biology; University of Konstanz, Konstanz, Germany
Institut für Biologie- Neurobiologie der Freien Universitaet, Berlin, Germany

Zoologisches Institut, University of Köln, Köln, Germany
Zoologisches Institut, J.W. Goethe-Universitaet, Frankfurt am Main, Germany

2002. Hebrew University. Dept of Cell and Animal Biology
Weizmann Institute of Sciences, Dept of Biological Chemistry, Rehovot, Israel
Institute of Evolutionary and Ecological Sciences University of Leiden, The Netherlands
Department of Biological Sciences and Laboratory of Integrative Neuroscience; University of Illinois at Chicago; USA
Departments of Entomology & Cell Biology and Neuroscience; University of California-Riverside; Riverside, CA ; USA

2003 Dept of Physiology, Hadassah Medical School, Hebrew University.
Dept of Zoology, Faculty of Life Sciences, Tel Aviv University
Dept of Biology, University of Amsterdam, the Netherlands
Dept of Biology, Univ. of Konstanz, Germany

2005. Department of Biological Sciences, University of Southern California, Los Angeles, CA, USA
Division of Biology, California Institute of Technology, Pasadena, CA.
Departments of Entomology and Neurosciences, University of California, Riverside, Riverside, CA, USA
Dept of Biology, Tufts University, Medford/Somerville, MA, USA
Bauer Center for Genomics Research, Harvard University, Cambridge, MA, USA
Neural Systems and Behavior course, Woods Hole, MA, USA
Evolution Systematics and Ecology (ESE), Hebrew University of Jerusalem, Israel
Department of Entomology, Agricultural Research - Vulcani Center, Bet Dagan, Israel

2006. Centre de Recherches sur la Cognition Animale, CNRS - Universite Paul Sabatier - Toulouse III - UMR 5169, Toulouse, France
Institut des Neurosciences de Bordeaux, Institut François Magendie, Bordeaux, France
Center for Neural Computation (ICNC) at the Hebrew University of Jerusalem, Hebrew University of Jerusalem, Israel
Dept of Entomology, Faculty of Agriculture, Hebrew University, Rehovot, Israel

2007. Department of Physiology and Biophysics, Technion, Haifa, Israel

2008. Neuvième Rencontre du club de neurobiologie des invertébrés. Hôtel d'Assézat à Toulouse, Séminaires CRCA. 21-22nd Mai 2008. Toulouse, France.

2008. Libersat F. Invited seminar: L' Institut de Neurobiologie Alfred Fessard GIF/YVETTE: INAF Lectures in Neurosciences. 19/09/2008

2011. Dept of Physiology, Hadassah Medical School, Hebrew University.
Dept of Zoology, Tel Aviv University. Invited speaker in Course "Invertebrates as

model systems in Neuroethology".

2012. Invited seminar, Dept. of Entomology, Faculty of Agriculture, The Hebrew University, Rehovot.
Invited seminar, Dept. of Zoology, Faculty of Life Sciences, Tel Aviv University; Tel Aviv.
Invited seminar, Dept. of Neurobiology, Weizmann Institute, Rehovot,
2013. Invited seminar, the Dept. of Life Sciences, Ben Gurion University, Beer Sheva
2014. Invited seminar Inter University Institute, Eilat,
Invited seminar, Freie Universität Berlin, Fachbereich Biologie, Chemie, Pharmazie Institut für Biologie – Neurobiologie, Berlin, Germany
Invited seminar, Johannes Gutenberg-Universität Mainz, Fachbereich 10 Biologie - Institut für Zoologie (Neurobiologie), Mainz, Germany
Invited seminar: Brain Research Center; Bar-Ilan University; Ramat Gan; Israel
2016. Invited seminar: Institute of Developmental Biology, Russian Academy of Sciences, Moscow, Russia. January 28th 2016
Invited seminar: Sagol Neurobiology Departmental Seminar; Department of Neurobiology; University of Haifa; May 9th 2016
Invited Seminar: Department of Zoology; Tel Aviv University; June 8th 2016
2017. Invited seminar: Neuroscience Seminars. University of California Riverside, CA, October 17th
Invited seminar: Department of Biology; University of California Santa Barbara, CA, October 23rd.
Invited seminar: The Evolution, Systematics and Ecology department at the Hebrew University of Jerusalem. December 19th
Invited seminar: The Department of Animal Physiology, The University of Kassel, Germany, December 21st.
2018. Invited Seminar: Mitrani Department of Desert Ecology, Sde Boker campus, Ben Gurion University. 9th January.
2019. Invited seminar at the Department of Medical Neurobiology at the Faculty of Medicine of the Hebrew University of Jerusalem. March 13th 2019
2019. Invited workshop speaker at Parasitoid forum meeting, BGU 2019
2019. Invited seminar at the Department of Mechanical Engineering, Osaka University, Japan (September 8th 2019).

c) Invited Talks at Conferences/Meetings

1997 Invited symposium speaker; 5th International Conference on Invertebrate Neurochemistry & Neurophysiology (ICINN, Eilat 1997)

1998 **Bernard Katz Prize lecturer** (Feb. 1998, Heidelberg)

1998 Invited workshop speaker; The Third International Symposium on Molecular Insect Science Workshop lecture (Snowbird Utah, June 1998)

1998 Invited symposium speaker; Symposium at the 5th International

Congress of Neuroethology (San Diego, USA, September 1998)

1999 Invited speaker in the session on: Behavioral States, Arousal, & Disposition to Behavior at the **Gordon Research Conference** on Neuroethology: Behavior, Evolution & Neurobiology; Queen's College; Oxford, UK; August 29-September 3, 1999

2003. Invited speaker at the Memorial Symposium in honor of Prof. Dr W Rathmayer, University of Konstanz, Germany

2004. Symposium organizer at the 7th International Congress of Neuroethology, Nyborg, Denmark, August 28-13 2004

2004. Invited symposium speaker at the XXII International Congress of Entomology-Strength in Diversity, in Brisbane, Australia, 15 - 21 August

2004. Invited distinguished speaker for the 6th RIES-Hokudai Symposium; Research Institute for Electronic Science (RIES), Hokkaido University, Japan

2005. **Invited speaker in the Neural Systems and Behavior Course at the MBL in Woods Hole (July)**

2005. Invited speaker at the Annual Meeting of the Israeli Society for Neuroscience, GIF bi-national Meeting on "Neurobiology of Behavior" (November)

2008 Invited speaker; Howard Hughes Medical Institute, Janelia Farm. Janelia conference May 11-14, 2008: Functional Anatomy of the Arthropod Central Complex & Motor System.

2009 **Invited speaker: Plenary and opening lecture at the Annual Meeting of the Entomological Society of Israel (ESI, Oct 2009)**

2012 **Invited speaker:** JEB SYMPOSIUM 2012. Neural parasitology: how parasites manipulate host behavior 17–21 March 2012 Massa Marittima, Tuscany, Italy.

2013 **Invited workshop speaker**: Dynamics of Prey Capture and Escape; Janelia Farm Research Campus; March 6-9, 2013

Invited workshop speaker: Hormonal Control of Circuits for Complex Behaviors; Janelia Farm Research Campus; October 27-30, 2013

2014 **Invited Symposium speaker**: Symposium: Parasitic manipulation of host phenotype, or how to make a zombie. Society for Integrative and comparative Biology; Annual Meeting 2014; January 3-7, 2014; Austin, TX

Invited Symposium Speaker. Hokkaido Neuroethology Workshops 2014. Neurological insight of behavioral control by parasites or symbiosis. July 26-27th. Sapporo, Japan.

2015 **Invited Symposium Speaker: The Ernst Florey Memory Lecture**: 13th Symposium on Invertebrate Neurobiology; August 26 – 30, 2015, Tihany, Hungary

Invited speaker: Marie Curie Initial Training Network (ITN) InsecTIME; En Gedi, November 9, 2015

Invited symposium speaker at the 24th ISFN Annual Meeting held December 14-17, 2015, at Hilton Queen of Sheba Eilat

2016 **Invited symposium speaker** at the Annual Retreat of the Zlotowski Center for

Neuroscience; 10th-11th, 2016

Invited symposium speaker: Jerusalem Brain Community Annual Retreat; June 5-7, 2016, Kibbutz Maagan.

2017 **Invited symposium speaker**: On behavioral and neural manipulations of insects by parasitic wasps. Symposium: The evolution of neuronal networks: Insects in neurobiological studies, the 6th Conference of the Mediterranean Neuroscience Society (MNS), Malta, June 9-12th 2017

Invited symposium speaker: "Predatory Wasps Manufacture a Chemical Arsenal in Venom to Control the Behavior of Its Cockroach Prey" in the session entitled: The Use of Toxins for Survival. Neuroethology: Behavior, Evolution & Neurobiology Gordon Research Conference: Neural, Behavioral and Evolutionary Strategies for Animal Survival. June 18-23, 2017; Les Diablerets Conference Center, Les Diablerets, Switzerland.

Invited symposium speaker: The manipulation of cockroach behavior by a wasp reveals insights into mechanisms of motivation and decision. In symposium: Invertebrate neurobiology: how evolution shapes neuronal circuits. Federation of European Neuroscience Societies regional meeting. 20-23 September 2017. Pécs – Hungary.

2018 **Invited symposium speaker**: Lessons in Mind Control: Mechanisms behind Parasite-Host Behavioral Manipulation. At Professor H.J. Pflüger Farewell Symposium; Motor Control and Behavior; October 6-7 2017; Molecular and cellular Neurobiology; Guttenberg Universitat, Mainz

Invited conference speaker: What can parasitoid wasps teach us about the descending control of locomotion in insects? Janelia Conferences: Neural Circuits of the Insect Ventral Nerve Cord (April 2018)

2019 **Invited Symposium speaker:** Neurobiology through lens of diverse models. International Behavioral Neuroscience Society 28th Annual meeting. June 23-27, 2019. Cairns, Queensland, Australia

Invited Symposium speaker: Cellular and molecular mechanisms of a unique parasitic behavioral manipulation. 1st Symposium on Invertebrate Neuroscience; Tihany; Hungary; August 13-18 2019

Invited speaker at the 5th International Seminar in the annual conference of the Zoological Society of Japan, September 12th -14th, 2019 (Osaka city University in Osaka, Japan.

Invited Speaker at the Predator-Prey Interactions Gordon Research Conference: An Integrated View of Predator-Prey Interactions Through Proximate and Ultimate Perspectives. January 26 - 31, 2020; Ventura, CA, USA

2022. **Invited Speaker.** MSc course called "Conflict & Cooperation in Nature" at Ecology & Evolution for MSc students in Ecology & Evolution; Amsterdam Institute for Life and Environment (A-LIFE); Vrije Universiteit; Amsterdam; Netherland

7. RESEARCH GRANTS

1991: The Rashi Foundation (Equipment grant: $ 30,000): To establish laboratory at Ben Gurion University: The first project addressed the question of how behavior is initiated by groups of neurons. The second project was concerned with how the environment shapes an animal's behavioral repertoire.

1991/94: G.I.F (with Hebrew Univ.; DM 18,000); Title: *The role of an assembly of identified interneurons in controlling the flight of an insect.*

1991/93: National Institute for Psychobiology in Israel ($ 14,000); Title: *Mechanism of initiation of behavior by a cell assembly*

1993/95: D.F. G (with Konstanz Univ.; traveling funds for joint project): Title: *Effect of a neurotoxin on the cockroach nervous system.*

1992/93; Whitehall Foundation ($ 15,000); Title: *Neural mechanisms and development of initiation of a behavior*

1995: Dean of the Faculty of Natural Sciences (NIS 20,000); Title: *Analysis of dendritic plasticity of identified neurons using in situ laser photo-ablation technique.*

1992/95: Israel Academy of Sciences and Humanities ($142,000); Title: *Functional, developmental and evolutionary aspects of the neuronal mechanisms underlying behavioral initiation*

1994/97: U.S-Israel B.S.F ($110,000); Title: *Analysis of dendritic plasticity of identified neurons using in situ laser photo-ablation technique*

1995: Israel Academy of Sciences and Humanities; VATAT Equipment Grant ($50,000) *Analysis of Dendritic Plasticity of Identified Neurons Using In Situ Laser Photo-Ablation Technique Combined with Confocal Microscopy*

1996/98: National Institute for Psychobiology in Israel ($ 20,000); Title: *Neuronal mechanisms underlying modulation of arousal state in cockroaches induced by a wasp's venom*

1997/2000: U.S-Israel B.S.F ($ 144.000); Title: *Biochemistry and Physiological actions of Ampulex compressa venom on identified neurons*

1997: Toman foundation; Equipment grant ($ 15,000): Title: *Video Fluorescence Microscopy & Computerized Image Analysis System*

1998: Arc en Ciel (French/Israel program; FF 30.000) Title: *Neuromodulatory control of simple motor networks using a novel neurotoxin*

1998: Research Achievement Grant from the Zlotowski Center for Neuroscience (equipment grant: $ 5.000); Title: *Video Tracking of Movement and Behavior*

1999-2001: National Institute for Psychobiology in Israel ($ 10,000/year); Title: *Dopaminergic mediation of grooming in cockroaches induced by a wasp's neurotoxin*

2000: Arc en Ciel (French/Israel program; FF 30.000) Title: *Neuromodulatory control of simple motor networks using a novel neurotoxin.*

2000-2003: Israel Academy of Sciences and Humanities ($ 40.000/year). Title: *Quantitative analysis of dendritic growth and regression in identified neurons*

2000-2001 Yael Research Fund ($ 10,000): Title: *Quantitative analysis of dendritic growth and regression in identified neurons*

2001-2002: NATO grant. ($ 5,000): Title: *Aging in the central nervous system: from identified synapses to behavior*

2002-2007: U.S-Israel B.S.F ($ 230,000); Title: *Biochemical identification and cellular effects of wasp neurotoxins on Identified Neurons*

2007-2010: Israel Academy of Sciences and Humanities ($ 45.000/year). Title: *Wasp stings into the brain to manipulate behavior of its prey: Mechanisms underlying the stereotactic sting and its cellular and molecular effects on neuronal centers.*

2008 : BQR Preciput: 10.000 Euros Title: *Effet de la surexpression de l' α-synucleine sur l'activité développementale des neurones de la substance noire et du striatum.*

2011-2014: Israel Academy of Sciences and Humanities ($ 60.000/year). Title: *Cellular and molecular mechanisms of host behavior manipulation by a parasitoid wasp*

2012-2015: DFG: Deutsche Forschungsgemeinschaft. Decision making in insects: a parasitic wasp modulates behavior of its cockroach prey by targeting octopaminergic systems." 72.180 Euros for 3 years.

2016-2017: Committee for Research and Exploration of the **National Geographic Society**: Project "Characterization of two solitary parasitoids wasps Southeast Asia: A comparative behavioral study and identification of venom compounds responsible for the zombification of the cockroach host." $14,750.00

2016-2019: U.S-Israel B.S.F ($ 230,000) Proteomic and transcriptomic approaches to crosstalk in a host parasite association. 3 years

2019-2020: Multi-disciplinary Neuroscience grant from BGU (70.000 NIS; with Dr Shira Knafo, Medical School). The Identification of novel pharmacologically active compounds in wasp venom using mammalian neurons.

2020-2023: U.S-Israel B.S.F ($ 240,000). Parkinson-like syndrome in cockroaches stung by a parasitoid wasp.

2021-2023: NIBN grant at BGU. (275,000 NIS). The Identification of novel pharmacologically active compounds in wasp venom using mammalian neurons on a multielectrode array.

8. VISITING SCIENTISTS

Prof. J. Moore, DOZOR FELLOW, from the Dept. of Biology, Colorado State University. To examine the evolution of parasite-induced behavioral alterations (spring 1994). Her studies have focused on an *acantocephalan* parasite that uses the American cockroach as an intermediate host and various rodents as final hosts. We have investigated the effect of parasite infection on the escape behavior of the cockroach using behavioral assays as well as single neuron recording approaches, financed by the Dozor Travel Grant of the Faculty of Natural Sciences, Ben Gurion University.

Prof. Richard Levine (BSF partner; Division of Neurobiology; University of Arizona (February 1997). To study dendritic plasticity within the framework of the BSF grant.

Prof. Norman T. Davis (Division of Neurobiology; University of Arizona (Nov 1996). To establish immunocytochemistry in the lab and collaborate on identifying changes in the immunoreactivity of specific neuromodulatory neurons in the brain following injection of a wasp neurotoxin

Dr. Pierre Meyrand (June 1998); Director of the Institute for Comparative Neurobiology and Physiology; Univ. Bordeaux, France. To analyze the neuromodulatory control of simple motor networks using a novel neurotoxin ARC EN CIEL EXCHANGE PROGRAM

Prof. Brian Hermann (July 1998). DOZOR FELLOW, Department of Cell Biology & Anatomy, University of North Carolina at Chapel Hill USA; Co-Director of the Digitized Video Microscopy Facility in the Department of Cell Biology & Anatomy

Prof. Michael Adams. (September 2000) BSF partner, Depts. of Entomology and Cell Biology/Neuroscience, University of California, Riverside, CA Prof. Richard Levine: (Research collaborator, Division of Neurobiology; University of Arizona (February 2001)

Prof. Dr. Hans-Joachim Pflueger, Institut fur Biologie, Neurobiologie der Freien Universitaet, Berlin, Germany. Fellowship from the foreign visitor exchange program of Ministry of Science. (February 2001).

Prof. Joanne P. Webster, DOZOR FELLOW, Imperial College London, London. Supported by the Faculty of Natural Sciences Distinguished Scientist Visitor Program (April 2013).

Prof. Dr. Hans-Joachim Pflueger, Distinguished Professor of the Faculty of natural sciences award, Institut fur Biologie, Neurobiologie der Freien Universitaet, Berlin, Germany. Fellowship from the foreign visitor exchange program of Ministry of Science. (February 2017).

Prof. Michael Adams. (August 2019) BSF partner, Depts. of Entomology and Cell Biology/Neuroscience, University of California, Riverside, CA

9. STUDENTS

High school

1. Adina Cohen: High school research project; awarded 2nd Prize in the competition of the Dr. Bernard Cwikel Memorial Fund for outstanding final-year projects in the life sciences at secondary schools in the Negev.
2. Benjamin Libersat. High school research project.

Undergraduates (3rd year):

1. Michal Taksir
2. Galit Biron
3. Adi Mizrachi
4. Gal Haspel
5. Lior Rosenberg
6. Yanai Fishbein
7. Gal Ariav
8. Elad Rubin
9. Ram Gal
10. Idan Harpaz
11. Rotem Livne
12. Noa Sheffer
13. Itamar Harelit
14. Ze'ev Itsekzon
15. Noa Kahana.
16. Michal Haskel
17. Tali Gavra

18. Nir Werbner
19. Baya Mdzomba
20. Yam Ben Tzvi
21. Maayan Keissar
22. Ariel Cohen
23. Bar Erhenberg
24. Doron Reboh
25. Guy Hyman
26. Tal Fisher
27. Valeria Molkandov
28. Dor Zlotkin
29. Olga Goikhman

Students in stage
Cesar Echavarria
Manuela Rosero
Sena Borbor

Graduates (PhD)
Past students

1. Karim Fouad. Ph.D student. in the laboratory of Dr. W. Rathmayer at the University of Konstanz and Dr. F. Libersat, Ben-Gurion University in Beer-Sheva, (Israel)
Awarded PhD 1995;
Karim Fouad is a tenured full Professor at the Faculty of Rehabilitation Medicine and Center for Neurosciences, University of Alberta, Edmonton, Canada

Fouad K, Libersat, F and Rathmayer W (1994). *Zoology* **98**:23-34
Fouad F, Libersat F and Rathmayer W. (1996) .*J. Comp. Physiol. A* **178**:91-100
Libersat F., Haspel G, Casagrand J. and **Fouad** K (1999). *J Comp Physiol A* **184** (3), 333-345

2. Aviva Weisel-Eichler: PhD student; **Rector's Prize** for excellence. **King Solomon Prize** in Neural Mechanism of Animal Behavior (deceased).
Selected for the Neural Computation course, Wood Hole.
Awarded PhD 2000
Aviva Weisel-Eichler is a Scientific Writer, Editor and Consultant

Weisel-Eichler A and Libersat F (1996) *J. Comp. Physiol. A*.**179**:103-112
Weisel-Eichler, A., Haspel, G. and Libersat, F. (1999). *J. Exp. Biol.* **202**, 957-96
Weisel-Eichler, A., and **Libersat,** F *(2002) J Comp Physiol [A]. 188(4):315-24*
Weisel-Eichler, A., and **Libersat,** F *(2004) J Comp Physiol A* 190(9):683-90

2. Adi Mizrachi: PhD student. Student mitztayen, **Kreitman fellowship** (1997), **Dean's Prize** for excellence; The Zlotowski Student Fellowship for Excellence, **Chateaubriand Fellowship** to collaborate with Pierre Meyrand, Univ of Bordeaux, France. Dr. Bernard **Cwikel Memorial Fund Prize** for outstanding MSc dissertation in the Life Sciences. **Awarded PhD 2001**.

Adi Mizrahi was **a Human Science Frontier Post-Doctoral Fellow** with Prof. Lawrence Katz, Department of Neurobiology, Duke University Medical Center, Durham, USA.

Adi Mizrahi is currently a tenured full professor in the Dept of Neurobiology at the Hebrew University of Jerusalem.

Libersat F and **Mizrahi** A (1996) *J. Neurosci. Methods* 67:157.162
Mizrahi A and Libersat F. (1997) *J. Neurophysiol.* 178: 2655-2661
Mizrahi A., Ben-Er E., Glusman G., Katz M., Kedem K., and Libersat F. (2000) *J. Comp. Neurol.* 422(3) 415--428
Mizrahi A and Libersat F (2001) *J. Neurosci.21:9280-9290*
Mizrahi A and Libersat F (2002) *J. Comp. Neurol 452:1-10*
Libersat F, Leung [V], **Mizrahi** A, Mathenia N, and Comer C. (2005) *J Neurobiol. 62:62-71*

4. Gal Haspel: PhD student. Student "mitztayen; **Kreitman fellowship** (1997), The Zlotowski Student Fellowship for Excellence, **Journal of Experimental Biology fellowship** (1998) to collaborate with M. Adams in UC Riverside. Selected for the Neurobiology summer course and Grass Foundation Fellowship in Woods Hole.

Awarded PhD 2003.

Gal Haspel is currently an assistant Professor in the biology Department at the New Jersey Institute of Technology

Libersat F., **Haspel** G, Casagrand J. and Fouad K (1999). *J Comp Physiol A* 184 (3), 333-345
Weisel-Eichler, A., **Haspel**, G. and Libersat, F. (1999). *J. Exp. Biol*. 202, 957-964
Haspel G and Libersat F (2003). *J. Neurobiol 54:628-637*
Haspel G, Rosenberg, L.A. and Libersat F (2003) *J. Neurobiol. 56(3):287-92*
Haspel G and Libersat F. (2004) *Acta Biologica Hungarica, 55 (1-4) 103-112*
Gincel D, **Haspel** G and Libersat F. (2004) *Toxicon 43) 721. 727*
Haspel G., Gefen [E.], Ar A., and Libersat F. (2005) *J Comp Physiol [A] 191(6):529-34*
Moore EL, **Haspel** G, Libersat F, and Adams ME. (2005) *J. Neurobiol. 66(8):811-20.*

5. Shira Knafo: MD/PhD student. With Dr Edi Barkai
Awarded PhD 2004.
Shira Knafo was the head of the Molecular Cognition Laboratory and an Ikerbasque research Professor at The University of the Basque Country (Biophysics Unit, Leioa); Spain. Since 2018, she is currently a senior lecturer in the department of physiology and cell biology at Ben Gurion University.

Knafo, S., Grossman, Y., Barkai, E. & Benshalom, G. (2001) *Eur. J. Neurosci.*, 13, 633-638.
Knafo S, Ariav G, Barkai E and **Libersat** F (2004) *Hippocampus* 14 (7): 819-825
Knafo S, Barkai E, Libersat F, Sandi C, Venero C. *2005 Hippocampus. 2005;15(3):316-25.*

Knafo S, Libersat F, Barkai E. 2005 *Eur J Neurosci*. 2005 *21(8):2217-26.*

Knafo S, Barkai E, Libersat F, Sandi C, Venero C. 2005 *Eur J Neurosci. 21(2):581-6.*

Knafo S, Libersat F, Barkai E. 2005 *Eur J Neurosci. 21 (4) 927-935*

6. Lior Rosenberg: PhD student. Student "mitztayen; **Kreitman fellowship** (2001)
Selected for the Neural Systems and Behavior summer course in Woods Hole
Awarded PhD 2007.
Lior Ann Rosenberg Belmaker is currently the Biology Research Manager at Precise Bio, Modiin, israel.
Haspel G, **Rosenberg**, L.A. and Libersat F (2003) *J. Neurobiol. 56(3):287-92*
Gal R, **Rosenberg** LA and Libersat F. (2005) *Arch Insect Biochem Physiol. 2005 Dec;60(4):198-208.*

Rosenberg LA, Pflüger HJ, Wegener G and Libersat F (2006) *J Neurobiol. 6 66(2):155-68.*

Rosenberg LA, Glusman JG and Libersat F (2008) *J. Exp. Biol.*

7. Ram Gal: Ph.D. student. Selected for the Neural Systems and Behavior summer course in Woods Hole **Awarded PhD 2010. Ram Gal is currently a scientific editor at the R&D at Ben Gurion University**

Gal R, Rosenberg LA and Libersat F. (2005) *Arch Insect Biochem Physiol. 60(4):198-208.*
Gal R and Libersat F. (2006) *J Comp Physiol A, 192(9):1003-20*

Libersat F. and **Gal R**. (2007) Neuro-manipulation of hosts by parasitoid wasps. In: Recent Advances in the Biochemistry, Toxicity and Mode of Action of Parasitic Wasp Venoms. J. Yoder and D. Rivers Eds

Gal R, Libersat F. (2008) Curr Biol. 18(12):877-82.

Libersat F, Delago A and **Gal R**. (2009) Annu Rev Entomol. 54:189-207

Gal R, Libersat F. (2010) PLoS ONE PLoS One. 7;5(4): e10019

Gal R, Libersat F. (2010) Commun Integr Biol. 3(5):458-61

8. Tali Gavra: Msc. Student (2010)

Gavra T, Libersat F. (2011). J Comp Physiol A 197(3):279-91.

Tali Gavra is currently a Research Unit Director at Assuta Medical Centers

9. Maayan Kaiser: PhD student (since 2012); **Awarded PhD 2019.**

Gal R, **Kaiser M**, Haspel G, Libersat F (2014). PLoS ONE 9(2): e89683. doi: 10.1371/journal.pone.0089683

Kaiser M and Libersat (2015). J Exp Biol. 2015 Apr;218(Pt 7):1022-7

Libersat F, **Kaiser M**, Emanuel S. (2018). Front Psychol 9, 572, doi:10.3389/fpsyg.2018.00572.

Arvidson R, **Kaiser M**, Lee S, Jean-Paul Urdena J.P, Victor Landa V, Frankenberg S, Dail C, Pan S, E. Stajich J, **Libersat** F, Adams M.E. (2018) Mol Cell Proteomics. 2019 Jan;18(1):99-114.

Kaiser M, Arvidson R, Zarivach R, Adams ME, Libersat F. (2018). Insect Biochem Mol Biol. 2019 Mar; 106:64-78.

10. Stav Emannuel: Msc Student (since 2013-2016) PhD Student (since 2016)

Selected for the Neural Systems and Behavior summer course in Woods Hole; **Awarded PhD 2021**

Emanuel S., Libersat F. (2017). PLoS One. 2017 Jan 3;12(1): e0168032.
Libersat F, Kaiser M, **Emanuel S**. (2018). Front Psychol 9, 572, doi:10.3389/fpsyg.2018.00572.

Libersat F., **Emanuel** S, Kaiser M. (2018) Front Psychol. May 1;9:572.

Emanuel S., Libersat F. (2019). Aug 21; 10:1100.

Emanuel S, Kaiser M, Pflüger HJ and Libersat F. (2020). Front Physiol. Feb 21; 11:135

Emanuel S, Rana A., Adams M.E., Libersat Modulation of nociception in cockroaches stung by a parasitoid wasp".

11. Amit Rana: PhD student (2019)

12. Stefania Nordio: MSc student (2019)

13. Sena Borbor: MSc student (February 2021)

Post-doctoral Fellows

1. Dr. Karim Fouad (February-June 1993) [but you said he received PhD in 1995]. To study

the effect of the cockroach-hunting wasp venom on locomotory behaviors and the central nervous system of the cockroach (joint project with Prof. Rathmayer from Konstanz University and supported by **DFG**).

2. Dr. Janet Casagrand (January-May 97): **Human Science Frontier Fellowship Program**: Short Term Fellowship; to study the effect of a neurotoxin on the cockroach nervous system

3. Dr Dan Gincel (April-May 2003). To study the channel-forming properties of neurotoxins from a venomous predatory wasp.

4. Dr Antonia Delago (September 2006-present). To study the molecular mechanisms of hypokinesia in stung cockroaches. Specifically, to look for possible changes in Dopamine receptors density.

5. Dr Ram Gal (April 2010-2012). To study the sensory mechanisms of the wasp stinger mediating host CNS localization.