

Name: Moshe Gish

Date: 4/5/2020

CURRICULUM VITAE

1. Personal Details

Affiliation: University of Haifa, Department of Natural Resources and Environmental Management

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Note: * Marks activities and publications since my last appointment to Senior Lecturer on October 2017.

2. Higher Education

a. Undergraduate and Graduate Studies

Period of Study	Name of Institution and Department	Degree
October 2001- July 2004	University of Haifa – Oranim Department of Biology	B.Sc. in Biology
October 2005 – October 2006	University of Haifa Department of Evolutionary and Environmental Biology	M.Sc. in Ecology of Herbivores
October 2006- May 2012	Department of Evolutionary and Environmental Biology University of Haifa	Ph.D. in Ecology of Herbivores

b. Post-Doctoral Studies

Period of Study	Name of Institution and Department/Lab	Name of Host
September 2012- July 2016	Pennsylvania State University, Department of Entomology and Department of Biology	Consuelo De Moraes

3. Academic Ranks and Tenure in Institutes of Higher Education

Years	Name of Institution and Department	Rank/Position
October 2016- October 2017	University of Haifa Department of Natural Resources and Environmental Management	Teaching fellow (part time)
*October 2017-present	University of Haifa Department of Natural Resources and Environmental Management	Senior Lecturer

4. Offices in Academic Administration

Years	Name of Institution and Department	Role
None	None	None

5. Scholarly Positions and Activities outside the University

Years	Memberships in Academic Professional Associations
2017	Entomological Society of Israel
2004-2012	Zoological Society of Israel
2008-2009	International Society for Behavioral Ecology
2014	Ecological Society of America
*2018-2019	Entomological Society of Israel

Years	Reviewing for Refereed Journal
2014	Journal of Experimental Biology
2015	PLOS ONE
2016	American Journal of Botany
*2018	Oecologia

6. a. Active Participation in Scholarly Conferences

a1. International Conferences - Held Abroad

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
2008	12 th International Behavioral Ecology Congress	Ithaca, New York	How do tiny insect herbivores avoid being eaten by large mammalian herbivores?	Speaker
2014	30 th annual meeting of the International Society for Chemical Ecology	<u>Urbana, Illinois</u>	The chemical defense of extrafloral nectaries	Speaker
2014	99 th annual meeting of the Ecological Society of America	<u>Sacramento, California</u>	Destructive consumption of extrafloral nectaries: An overlooked cost of an indirect defense mechanism	Speaker
2014	99 th annual meeting of the Ecological Society of America	<u>Sacramento, California</u>	Non-destructive detection across landscapes of mass marked insects	Poster presenter

a2. International Conferences - Held in Israel

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
2017	Plant Ecology	Sde-Boker	Localized chemical defense of extrafloral nectary tissue	Speaker

a3. Local Conferences

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
2003	40 th annual meeting of the Zoological Society of Israel	Sde-Boker	Dropping behavior in aphids as an escape response: suicide or calculated risk?	Speaker
2008	27 th annual meeting of the Entomological Society of Israel	Oranim	Jump or die: How to avoid being eaten by an herbivore	Speaker
2008	45 th annual meeting of the Zoological Society of Israel	Mikhmoret	How aphids avoid being eaten by mammalian herbivores	Speaker
2009	28 th annual meeting of the Entomological Society of Israel	Tel-Aviv	Young aphids ride mature aphids back to the plant after dropping off the plant	Speaker
2009	46 th annual meeting of the Zoological Society of Israel	Haifa	Riding on adults to get back to the host	Speaker
*2018	Disappearing open landscapes-conference held by the Society for the Protection of Nature in Israel	Kfar-Tavor	The Mediterranean phrygana- a heaven for insects	Invited plenary speaker
*2019	38 th annual meeting of the Entomological Society of Israel	Volcani Center	How do aphids sense an approaching predator?	Speaker

6. b. Participation in Scholarly Conferences presented by co-author(s) including students (#)

b3. Local Conferences

- Student

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
*2019	38 th annual meeting of the Entomological Society of Israel	Volcani Center	Spiders and vineyards	#

6. c. Organization of Conferences or Sessions

Year	Name of Conference	Place of Conference	Subject of Conference	Role
*2017	Plant Ecology	Sde-Boker	Plant ecology	Session Co-chair And Panel Co-chair
*To be held in July 2020	Annual Conference on Science and Environment- Israel Society of Ecology and Environmental Science	University of Haifa	Science and Environment	Co-chair of the scientific committee

7. Invited Scholarly Lectures (Others than in Conferences)

Abroad

Year	Name of Forum	Place of Lecture	Subject of Lecture	Role
None	None	None	None	None

In Israel

Year	Name of Forum	Place of Lecture	Subject of Lecture	Role
None	None	None	None	None

8. Colloquium or Seminar Talks

Year	Name of Forum	Place of Lecture	Presentation
2014	Juniata College, Huntingdon, PA	From aphid defenses to defenses against aphids	Speaker
2016	Department of Entomology, Hebrew University, Rehovot	Insect herbivory and plant chemical defense: ecological and evolutionary implications	Speaker

9. Research Grants

a. Grants Awarded

Years	Role in Research (PI, Co-PI, CI)	Other Researchers (Name & Role)	Title	Funded by	Amount	Relevant Publications
2014	CI	Rice K.B., CI Fleischer S.J., PI Tooker J.F., PI	Tracking brown marmorated stink bug dispersal among multiple crop systems	Stoy G. and Della A. Sunday Program Support for Fruit Production Research	\$4216	D7
*2018	PI	None	The impact of house cats on fauna near residential areas in Israel	Research forum of the Faculty of Management, University of Haifa	3900₪	None

b. Submission of Research Proposals – Pending

Years	Role in Research (PI, Co-PI, CI)	Other Researchers (Name & Role)	Title	Funds Requested From	Amount
None	None	None	None	None	None

c. Submission of Research Proposals – Not Funded in the last three years.

Role in Research	Other Researchers (Name & Role)	Title	Funds requested from	Years
*PI	None	Drought effects on insect-plant synchronization in the Mediterranean scrubland: ecosystem resistance and resilience	Nitzoz Cleantec-Israeli Ministry of Science and Technology	2018

10. Scholarships, Awards and Prizes

Years	Name of Award	Purpose of Award or Achievement	Source	Amount
2012-2016	Postdoctoral fellowship	Fellowship	The Pennsylvania State University, Center for Chemical Ecology	\$152,259
*2018	Donation for research	Donation for research	Ronit and Amalia Magen	20,000₪

11. Teaching

a. Courses Taught in Recent Years

Years	Name of Course	Type of Course Lecture/Seminar/ Workshop/ Online Course/ Introduction Course (Mandatory)	Level	Number of Students
2016 *2017	Introduction to biological sciences	Lecture, Introduction Course	MA	12, 8
*January 2018 *October 2018 *January 2020	Introduction to Ecology	Lecture, Introduction Course	MA	13, 12, 19
*2018 *2019	Nature Conservation	Lecture, Elective	MA	7, 14
*2018 *2019	Introduction to biological sciences	Online Course, Introduction Course	MA	14, 22
*2019	Scientific writing	Lecture, International course, given in East China Normal University, Shanghai	PhD + Msc	25

b. Supervision of Graduate Students

Name of Student /	Name of Other Mentors	Title of Thesis	Degree	Year of Completion/ In Progress	Students' Achievements
M.A. Students (with thesis)					
*Zeana Ganem	Prof. Yael Lubin Dr. Efrat Gavish Regev	Spiders in an agroecological system- vineyards	M.A.	2018	Ph.D student in the Hebrew University of Jerusalem
*Lyan Wolovelsky	None	The impact of house cats on fauna near residential areas in Israel	M.A.	In Progress	Scholarship for excellence- The Graduate Studies Authority of the University of Haifa
*Kayla Kaplan	Prof. Andrea Ghermandi	Developing a novel, internet-based image-recognition system for ecological monitoring: an application to the painted lady butterfly <i>Vanessa cardui</i> (Lepidoptera: Nymphalidae)	M.A.	In Progress	
M.A. Students (with final project)					
*Yael Lavi Efrat	Dr. Doron Merkel	Compensative irrigation as a novel management strategy for natural habitats	M.A. (project)	2018	
*Yaniv Zelig					
*Yaron Bartov	Prof. Ofira Ayalon	Pine seedling management after fire	M.A. (project)	2018	
*Ehud Geva					
*Shiri Valershtein	Dr. Tali Raveh	Pesticide use in Israeli homes	M.A. (project)	2019	
*Hagit Shalev					
Ph.D. Students					
None					
Post Doctorate Students					
None					

12. Miscellaneous

Significant change in academic field: When I started working as a senior lecture at the University of Haifa, I changed my academic field from "insect ecology" to "nature conservation".

PUBLICATIONS

A. Ph.D. Dissertation

Title: Escape of herbivorous insects from incidental ingestion by mammalian herbivores.

Date of submission: February 2012

Number of pages: 72

Language: English

Name of supervisor: Professor Moshe Inbar and Professor Amots Dafni

University: University of Haifa

Publications: D2, D3, D4

Index:

I.F. = Impact Factor (when published). Taken from JCR.

R = Ranking in specified category (when published). Taken from JCR.

Q = Quartile (when published).

†These authors equally contributed to this work.

For all publications, first author is the main contributor, last author is the group head, the rest appear according to their relative contribution (unless otherwise specified).

B. Scientific Books (Refereed)

None

C. Monographs

None

D. Articles in Refereed Journals

Published

1. **Gish M.** and Inbar M. (2006) Host location by apterous aphids after escape dropping from the plant. *Journal of Insect Behavior* 19: 143-153.
I.F. (JCR, 2006)= 0.967; R (JCR, 2006)=25/69 (Q2) in Entomology.
2. **Gish M.**, Dafni A. and Inbar M. (2010) Mammalian herbivore breath alerts aphids to flee host plant. *Current Biology* 20: R628-R629.
I.F. (JCR, 2010)= 10.026; R: (JCR, 2010) 16/286 (Q1) in Biochemistry & molecular Biology, 18/178 (Q1) in Cell Biology.
3. **Gish M.**, Dafni A. and Inbar M. (2011) Avoiding incidental predation by mammalian herbivores: accurate detection and efficient response in aphids. *Naturwissenschaften* 98: 731-738.
I.F. (JCR, 2011)= 2.278; R: (JCR, 2011) 11/56 (Q1) in Multidisciplinary Sciences.

4. **Gish M.**, Dafni A. and Inbar M. (2012) Young aphids avoid erroneous dropping when evading mammalian herbivores by combining input from two sensory modalities. *PLoS ONE* 7(4): e32706.
I.F. (JCR, 2012)= 3.730; R: (JCR, 2012) 7/56 (Q1) in Multidisciplinary Sciences.

5. Ribak G.†, **Gish M.**†, Weihs D. and Inbar M. (2013) Adaptive aerial righting during the escape dropping of wingless pea aphids. *Current Biology* 23: R102-R103.
† These authors **equally contributed** to this work.
I.F. (JCR, 2013)= 9.916; R: (JCR, 2013) 19/291 (Q1) in Biochemistry & molecular Biology, 19/185 (Q1) in Cell Biology.

6. Ben-Ari M., **Gish M.** and Inbar M. (2015) Walking aphids can partake in within-field dispersal to distant plants. *Basic and Applied Ecology* 16(2): 162-171.
I.F. (JCR, 2015)= 1.836; R: (JCR, 2015) 75/150 (Q2) in Ecology.

7. Rice K.B.†, Fleischer S.J., De Moraes C.M., Mescher M.C., Tooker J.F. and **Gish M.**† (2015) Handheld lasers allow efficient detection of fluorescent marked organisms in the field. *PLoS ONE* 10(6): e0129175.
I.F. (JCR, 2015)= 3.057; R: (JCR, 2015) 11/63 (Q1) in Multidisciplinary Sciences.
† These authors **equally contributed** to this work.

8. **Gish M.**, De Moraes C.M. and Mescher M.C. (2015) Herbivore-induced plant volatiles in natural and agricultural ecosystems: open questions and future prospects. *Current Opinion in Insect Science* 9: 1-6.
I.F. (JCR, 2015)= 2.719; R: (JCR, 2015) 20/86 (Q1) in Biology, 52/150 (Q2) in Ecology, 8/94 (Q1) in Entomology.

9. **Gish M.**, Mescher M.C. and De Moraes C.M. (2015) Targeted predation of extrafloral nectaries by insects despite localized chemical defense. *Proceedings of the Royal Society B* 282: 20151835.
I.F. (JCR, 2015)= 4.823; R: (JCR, 2015) 9/86 (Q1) in Biology, 19/150 (Q1) in Ecology, 8/46 (Q1) in Evolutionary Biology.

10. **Gish M.**, Mescher M.C. and De Moraes C.M. (2016) Mechanical defenses of plant extrafloral nectaries against herbivory. *Communicative & Integrative Biology* 9(3): e1178431.
SJR (2016)= 0.765; R: (SJR, 2016) 48/271 (Q1) in Agricultural and Biological Sciences.

11. **Gish M.**, Ben-Ari M. and Inbar M. (2017) Direct consumptive interactions between mammalian herbivores and plant-dwelling invertebrates: prevalence, significance and prospectus. *Oecologia* 183: 347-352.
I.F. (JCR, 2017)= 3.127; R: (JCR, 2017) 46/160 (Q2) in Ecology.
12. *Berman, T.S., Ben-Ari, M., Glasser, T.A., **Gish, M.** and Inbar, M. (2017) How goats avoid ingesting noxious insects while feeding. *Scientific Reports* 7: 14835.
I.F. (JCR, 2017)= 4.122; R: (JCR, 2017) 12/64 (Q1) in Multidisciplinary Sciences.
13. ***Gish, M.**, & Inbar, M. (2018). Standing on the shoulders of giants: young aphids piggyback on adults when searching for a host plant. *Frontiers in zoology* 15: 49.
I.F. (JCR, 2018)= 2.982; R: (JCR, 2018) 9/170 (Q1) in Zoology.

Accepted for Publication

None

E. Articles or Chapters in Scientific Books (Refereed)

None

F. Articles in Conference Proceedings

None

G. Entries in Encyclopedias

None

H. Other Scientific Publications

None

I. Other Works and Publications

Selected Media Coverage (Public Impact)

- Humid breath fells insects. **Science News**. August 9, 2010.
- Insects sense danger on mammals' breath. **Science Daily**. August 9, 2010.
- Bad breath prompts insects to keel over. **Discovery News**. August 9, 2010.
- Hot and heavy: Insects sense the breath of approaching herbivores and flee plants. **Scientific American**. August 9, 2010.
- Impressive aerial maneuvers of the pea aphid. **Science Daily**. February 4, 2013.
- Aphids always land on their feet. **Discover**. February 5, 2013.
- How falling aphids land on their feet like cats. **National Geographic**. February 5, 2013.
- *An insect flees danger. Suddenly, it picks up a tiny hitchhiker. **The New York Times**. December 6, 2018.
- *Little aphids ride big ones to safety. **Scientific American**. December 11, 2018.

Opinion Journalism

- *Who's really in danger of extinction? **Haaretz**, 20.1.2019.