

# MICHAEL P. SHAHANDEH

MichaelParviz.Shahandeh@unil.ch

## Position

---

*February 2020-present*

Postdoctoral research fellow, Benton Lab  
Center for Integrative Genomics, University of Lausanne

## Education

---

*December 2019*

PhD Student, Department of Ecology, Evolution, and Marine Biology, University of California Santa Barbara. Advisor: Dr. Thomas Turner

*December 2019*

Certificate in College and University Teaching (CCUT). University of California Santa Barbara.

*December 2016*

M.A. Ecology, Evolution and Marine Biology, University of California Santa Barbara. Advisor: Dr. Thomas Turner

*July 2011*

B.Sc. Biological Sciences, concentration in Ecology, Evolution, and Marine Biology, University of California Santa Barbara

## Fellowships and Awards - \$66,083.13

---

<i>2013-2014</i>	University of California, Santa Barbara Department of Ecology, Evolution, and Marine Biology Block fellowship (\$25,850)
<i>2016</i>	University of California, Santa Barbara Department of Ecology, Evolution, and Marine Biology Block grant continuing fellowship. 1 quarter stipend (\$6000).
<i>2016</i>	GSA Conference travel award (\$250)
<i>2017</i>	Instructional Improvement Grant, Department of Instructional Development and Consultation, University of California, Santa Barbara. Awarded to design and implement a multi-week laboratory exercise in the UCSB Intro Biology Core laboratory class (\$8,111.37).
<i>2017</i>	University of California, Santa Barbara Department of Ecology, Evolution, and Marine Biology Block grant continuing fellowship. 1 quarter full support (\$11,321.76).

2017	UC Leads Scholars Program Graduate Student Mentor (\$800)
2018	GSA Conference travel award (\$200)
2018	Broida-Hirschfelder Fellowship, Shoreliners UCSB (\$8000)
2018	Academic Senate Travel Award (\$1,350)
2018	Ellen Schamberg Burley Graduate Award (\$500)
2018	Charles A. Storke Graduate Fellowship (\$2,500)
2019	GSA Conference travel award (\$200)
2023	Best Talk, Swiss <i>Drosophila</i> meeting (\$1000)

## Publications

\*co-first author    ^undergraduate co-author    +Master co-author

1. **Shahandeh, M.P.**, Abuin, L., Lescuyer De Decker, L.<sup>+</sup>, Cergneux, J.<sup>+</sup>, Kock, R., Nagoshi, E., and Benton, R. Evolution of circadian behavioral plasticity through cis-regulatory divergence of a neuropeptide gene. *Under review at Nature*. bioRxiv: <https://doi.org/10.1101/2023.07.05.547553>
2. Alvarez-Ocaña, R., **Shahandeh, M.P.**, Ray, V., Auer, T.O., Gompel, N., and Benton, R. (2023) Odor-gated oviposition behavior in an ecological specialist. *Nature Communications*, 14(1): 3041.
3. Auer, T.O.\* , **Shahandeh, M.P.\***, and Benton, R. (2021) *Drosophila sechellia*: a genetic model for behavioral evolution and neuroecology. *Annu. Rev. Genet.* 55.
4. **Shahandeh, M.P.**, Brock, C. ^, and Turner, T.L. (2020) Light dependent courtship behavior in *Drosophila simulans* and *D. melanogaster*. *PeerJ*, 8: e9499.
5. **Shahandeh, M.P.** and Turner, T.L. (2020) Complex genetic architecture of male mate choice evolution between *Drosophila* species. *Heredity*, 124(6): 737-750.
6. **Shahandeh, M. P.**, Pischedda, A., Rodriguez^, J. M., & Turner, T. L. (2020) The Genetics of Male Pheromone Preference Difference Between *Drosophila melanogaster* and *Drosophila simulans*. *G3: Genes, Genomes, Genetics*, 10(1): 401-415.
7. A. Pischedda\*, **Shahandeh, M.P.\***, Turner, T.L. (2019) The loci of behavioral evolution: evidence that *Fas2* and *tilB* underlie differences in pupation site choice behavior between *Drosophila melanogaster* and *D. simulans*. *Molecular Biology and Evolution*, 37(3): 864-880.
8. **Shahandeh, M.P.**, Pischedda, A. and Turner, T.L. (2018) Male mate choice via cuticular hydrocarbon pheromones drives reproductive isolation between *Drosophila* species. *Evolution*, 72(1): 123-135.
9. Pischedda, A., **Shahandeh, M.P.**, Cochrane, W.G.^, Cochrane, V.A., and Turner, T.L. (2014) Natural Variation in the Strength and Direction of Male Mating Preferences for Female Pheromones in *Drosophila melanogaster*. *PLoS ONE* 9(1): e87509.

## Conference Presentations

*Invited talks:*

- 2023 **Evolution of circadian behavioral plasticity through cis-regulatory divergence of a neuropeptide gene**, Michael P. Shahandeh and Richard Benton, 15-minute talk presented to the Swiss *Drosophila* meeting i  
\*Winner of best talk award
- 2022 **Genetic and neuronal mechanisms of circadian plasticity loss in the equatorial endemic *Drosophila sechellia***, Michael P. Shahandeh and Richard Benton, 15-minute talk presented at *Neurofly*
- 2022 **Genetic and neuronal mechanisms of circadian plasticity loss in the equatorial endemic *Drosophila sechellia***, Michael P. Shahandeh and Richard Benton, 15-minute talk presented at *ESEB*
- 2018 **The genetic evolution of reproductively isolating male pheromone preference in *Drosophila simulans* and *sechellia***, Michael P. Shahandeh and Thomas L. Turner, 15-minute talk presented to the Joint Congress on Evolutionary biology
- 2018 **The genetic evolution of reproductively isolating male pheromone preference in *Drosophila simulans* and *sechellia***, Michael P. Shahandeh and Thomas L. Turner, 15-minute talk presented to SICB
- 2016 **From genes to neurons to behavior: connecting genotype and pheromone preference phenotype in *Drosophila***, Michael P. Shahandeh and Thomas L. Turner, 25-minute talk presented at Janaelia

**Poster presentations:**

- 2016 **The genetic basis of reproductive isolation in *Drosophila*: divergent male pheromone preferences isolate sympatric species**, Michael P. Shahandeh and Thomas L. Turner, Society for the Study of Evolution.
- 2014 **Mapping male preference for a species-specific female pheromone in *Drosophila***, Michael P. Shahandeh, Alison Pischedda and Thomas L. Turner, 55<sup>th</sup> Annual *Drosophila* Research Conference
- 2013 **Genes of Attraction: Mapping male preference for a species-specific female pheromone in *Drosophila***, Michael P. Shahandeh, Alison Pischedda and Thomas L. Turner, SoCal Evolutionary Genetics and Genomics.

## **Professional Memberships**

---

- The Society for the Study of Evolution (SSE)
- The Genetics Society of America (GSA)
- Society for Integrative and Comparative Biology (SICB)
- European Society for Evolutionary Biology (ESEB)

## Reviewer

---

- *Behavioral Ecology*
- *BMC Evolution*
- *Ecological Entomology*
- *National Science Foundation*
- *PeerJ*
- *PLoS ONE*

## Instruction Experience

---

- Fall 2020-2023*      **Project mentor, TP :Experimental design.** Proposed a topic for student led experimental design project, “Do species of *Drosophila* differ in habitat illumination preference?” Provide guidance on project proposal, experimental design, execution and analysis, written and oral presentation of results.
- Summer 2019*      **Teaching Associate (*Instructor of record*), INT 93LS: Human population genetics, University of California, Santa Barbara.** Responsible for the conception, creation, and execution of course learning objectives for high school students attending their first college course. Composed and delivered 18 lectures, designed 4 laboratory exercises, supervised a final research paper with oral presentation, and held weekly office hours. 28 students; lower division.
- Spring 2019*      **Teaching associate (*Instructor of record*), EEMB131: Principles of Evolution, University of California, Santa Barbara.** Responsible for the execution of course learning objectives. Delivered 20 lectures, weekly homework assignments, a midterm and final exam, held weekly office hours, and managed 2 graduate student teaching assistants. 140 students; upper division.
- Winter 2018, Winter 2019*      **Teaching Associate (*Instructor of record*), EEMB7: Evolution and physiology for brain science majors, University of California, Santa Barbara.** Responsible for the conception, creation, and execution of course learning objectives. Composed and delivered 30 lectures, designed weekly assignments, a midterm and final exam, and held weekly office hours. 210 students, lower division.
- Summer 2013 Summer 2014*      **Assistant Instructor, MCDB161L: Research Immersion in Molecular Biosciences, University of California, Santa Barbara.** Responsible for the design, scheduling, and fly husbandry for an original research project for a two-week module of an intensive research class, giving a one-hour guest lecture, as well as supervising student

experiment execution in the instructor's absence. Instructor:  
Dr. Alison Pischedda.

**Laboratory curriculum development:**

June 2016-  
March 2019

**Using the common laboratory model *Drosophila* to demonstrate the driving principles of evolution.**

Responsible for the design and implementation of a multi-week laboratory exercise that experimentally evolves populations of *Drosophila* to demonstrate the principles of genetic drift and natural selection. Constructed laboratory manuals, staff training materials, education materials, teaching assistant training materials, and exam/evaluation materials. Fully funded by a UCSB instructional development grant. Implemented in introductory biology labs. 1000+ students; lower division.

**TA-ships:**

2014	EEMB101: Molecular Evolution, UCSB
2015	EEMB3L: Origins of Diversity Lab, UCSB
2016	MCDB1BL/EEMB2L: Introduction to Biology, UCSB
2016 - 19	EEMB131: Principles of Evolution, UCSB
2016 - 19	EEMB130: Population Genetics, UCSB
2018	EEMB127: Plant Biodiversity, UCSB

**Mentorship Experience**

---

**UNIL Management experience:**

<u>Supervisee</u>	<u>Years</u>	<u>Position</u>
Camille Guerin	2022	Laboratory Intern
Liliane Abuin	2022-present	Laboratory Technician

**UNIL Master student mentorship:**

<u>Student</u>	<u>Years</u>	<u>Position</u>
Julien Cerneux	2021	MLS Master student, UNIL
Lou Lescuyer deDecker	2020	BEC Master student, UNIL

**UCSB Undergraduate Mentorship:**

<u>Student</u>	<u>Years</u>	<u>Position</u>
Jason Rodriguez	2018 – present	4 <sup>th</sup> year Biology major, UCSB
Devon Cooper	2018 – present	4 <sup>th</sup> year Biology major, UCSB
Jordan Caldwell	2017-2018	B.Sc. Zoology, UCSB
Kathryn Feerst	2017	UCSB Leads scholar, Biology
Jeremy McIntyre	2016-2017	Lab Technician, Cornell University
Cameryn Brock	2015-2016	UCSB Bren Master Env. Sci.

Katie Goodspeed	2014 – 2015	UCSB MS Pharmacology
Susanne Tilk	2012 - 2014	PhD, Stanford University

## Advanced pedagogy

---

*November 2022*      **Teaching and learning science.** Offered by the University of Geneva. 24 hours.

*March 2018-  
June 2018*      **ED256: Teaching with technology.** Offered through the Givertz school of graduate education at UCSB.

## Science Outreach & Service

---

*2018 -* **Co-founder and organizer, OUTreach UCSB.** A bi-monthly seminar series at UCSB that highlights the research of LGBTQ+ graduate students, post-docs, and faculty with the goal of increasing representation for LGBTQ+ biology undergrads. Website: [www.outreachucsb.weebly.com](http://www.outreachucsb.weebly.com)

*2018*      **Panelist, OSTEM grad panel.** Undergraduate career Q&A with queer graduate students in STEM fields.

*2018*      **Presenter, UCSB EEMB Graduate Student Symposium.** 15-minute research presentation at a departmental recruitment weekend event.

*2018*      **Invited guest, Apple pie with Alpha Chi, UCSB.** Student-faculty mixer as a guest and panelist.

*2017*      **Graduate student panel member, Biology career panel, Society of Undergraduate Biologists, University of California Santa Barbara.** Discussed the daily life and activities of a graduate student, the application process, and future job prospects to aspiring undergraduate biologists.

*2014-  
2015*      **Graduate Student representative, Job search committee for Behavioral Ecology, University of California Santa Barbara.** Responsible for participating in the applicant review process, attending job talks, coordinating candidate visits with graduate students and providing feedback about the finalists to the search committee

*2013*      **Ambassador, Life Sciences Ambassador Program,** Outreach program targeted toward graduating high school students in low-income areas.

*2013*      **Docent, It's A Small World.** Outreach program targeted toward secondary school students to augment interest in the sciences.