

MONTICELLI Lucie S.

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Research and professional experience

2020 – *Present*: Invited researcher, INRAE Sophia Antipolis, France.

2019 – 2020: Researcher, Postdoc position, INRAE Dijon, France.

2018 – 2019: Assistant in Teaching and Research, Nice Côte d’Azur University & INRAE Sophia Antipolis, France.

2016 – 2017: Visiting scientist in the lab of George Heimpel in the University of Minnesota, working on “Short- and long-term parasitoid-mediated indirect interactions between unsuitable and suitable hosts” (6 months).

2015 – 2018: Ph.D. Research Assistant, INRAE Sophia Antipolis, France.

2015: Internship. Environment factors influencing parasitoid specialization. Supervisor: Desneux Nicolas and Wajnberg Eric. INRAE Sophia Antipolis, France. 8 months.

2014: Internship. Non-associative habituation in protest. Supervisor: Dussutour Audrey. CNRS Toulouse, France. 6 months.

2012: Internship. Environment factors influencing the mortality of the symbiosis gorgonian *Eunicella singularis*. Supervisor: Merle Pierre Laurent and Furla Paola. CNRS Nice, France. 1 month.

Education

Ph.D. 2018. Ecological factors modulating parasitoid host range, University of Nice Côte d’Azur & INRA Sophia Antipolis, France (first class with distinction).

Master. 2015. Ecology and Plant protection and Agroecosystems, Toulouse and Nice Côte d’Azur Universities (first class, rank 3/45).

License. 2013. Organism and ecosystem biology, Nice Côte d’Azur University (16/265).

Technical competences

Evolutionary ecology: experimental protocols, insect taxonomy, life history traits measurement (fitness, survival, fecundity, development, pathogenicity), insect rearing.

Biology: Molecular biology (DNA/RNA extraction, PCR, (RT)qPCR), Microbiology (gene cloning in *E. coli* and *A. tumefaciens*, agro-infiltration), Biochemistry (anthrone test) and others (micro-injection in insects, insect dissections).

Biostatistics and modeling: Statistical analysis (R software); Population dynamic modeling (R software); Phylogenetic signal measurement (Phylocom software); Food web (Food Web Designer software).

Teaching

- 2019-2020: **Host range**, Master, 4 hours of courses, Nice Côte d'Azur University.
- 2019: **Diversity of living systems**, License 1, 16 hours of courses, 44 hours of practical classes, Nice Côte d'Azur University.
- 2018: **Antagonist interactions and biocontrol**, Master, 4 hours of courses, Nice Côte d'Azur University.
- 2018: **Statistics**, License 3, 20 hours of directed exercises, Nice Côte d'Azur University.
- 2016-2019: **Vegetal nutrition and physiology**, License 2, 88 hours of practical classes, Nice Côte d'Azur University.
- 2016-2018: **Eukaryote cell organization**, License 1, 66 hours of practical classes, Nice Côte d'Azur University.
- 2011-2012: **Organic chemistry**, License 1, 10 hours of tutorial classes.

Scientific publications

Publications in refereed journals:

- Monticelli LS**, Desneux N, Heimpel GE. (2021). Parasitoid-mediated indirect interactions between unsuitable and suitable hosts can generate apparent predation over both short and long time frames. *Ecology and Evolution*, 10.1002/ece3.6896. IF: 2.392.
- Qu Y, Chen X, **Monticelli LS**, Zhang F, Desneux N, Huijie S, Ramirez-Romero R, Wang S. (2020). Parasitism performance of the parasitoid *Trichogramma dendrolimi* on the plum fruit moth *Grapholitha funebrana*. *Entomologia Generalis*, 40(4): 385-395. IF: 4.333.
- Qu Y, Ullah F, Luo C, **Monticelli LS**, Lavoit AV, Gao X, Song D, Desneux N. (2020). Sublethal effects of beta-cypermethrin modulate interspecific interactions between specialist and generalist aphid species on soybean. *Ecotoxicology and Environmental Safety*, 206, 111302. IF: 4.872.
- Yao FL, Lin S, Wang LX, Mei WJ, **Monticelli LS**, Zheng Y, Desneux N, He YX, Weng QY. (2020). Oviposition preference and adult performance of the whitefly predator *Serangium japonicum* (Coleoptera: Coccinellidae): effect of leaf microstructure associated with ladybeetle attachment ability. *Pest management science*, 77(1): 113-125. IF: 3.75.
- Iqbal A, Hou YY, Chen YM, Ali A, **Monticelli LS**, Desneux N, Zang L. (2020). Impact of *Trichogramma* parasitoid age on the outcome of multiparasitism in the factitious host eggs of Chinese oak silkworm, *Antheraea pernyi*. *Journal of Pest Science*, 93 (4), 1347-1357. IF: 4.578.

- Luo C, Gatti JL, **Monticelli LS**, Poirié M, Desneux N, Zhao H, Hu Z. An increased risk on parasitism mediated by the facultative symbiont *Regiella insecticola*. *Journal of Pest Science*, 93(2): 737-745. IF: 4.578.
- Thomine E, Rusch A, Supplisson C, **Monticelli LS**, Amiens-Desneux E, Lavoit AV, Desneux N. (2020). Highly diversified crop systems can promote the dispersal and foraging activity of the generalist predator *Harmonia axyridis*. *Entomologia Generalis*, 40 (2), 133-145. IF: 4.333.
- Campos MR, **Monticelli LS**, Béarez P, Amiens-Desneux E, Wang Y, Lavoit AV, Zappalà L, Biondi A, Desneux N. (2020). Impact of a shared sugar food source on biological control of *Tuta absoluta* by the parasitoid *Necremnus tutae*. *Journal of Pest Science*. 93(1): 207-218. IF: 4.578.
- Monticelli LS**, Tena A, Idier M, Amiens-Desneux E, Desneux N. (2020). Quality of aphid honeydew for a generalist parasitoid varies as a function of both aphid species and host plant. *Biological control*, 140: 104099. IF: 2.754.
- Monticelli LS**, Nguyen LTH, Amiens-Desneux E, Luo C, Gatti JL, Lavoit AV, Desneux N. (2019). The preference-performance relationship as a means for classifying parasitoids according to their specialization degree. *Evolutionary applications*, 12:1626-1640. IF: 4.013.
- Sylla E Brévault, T, **Monticelli LS**, Diarra K, Desneux N. (2019). Geographic variation of host preference by the invasive tomato leafminer *Tuta absoluta*: implications for host range expansion. *Journal of pest science*. 92:1387-1396. IF: 4.578.
- Luo C, **Monticelli LS**, Li D, Ahmed SS, Pandharikar G, Zhao H, Desneux N and Hu Z. (2019). Comparison of life-history traits and resistance for *Sitobion avenae* (Fabricius) harboring a facultative symbiont. *Entomologia generalis*, In Press. IF: 4.333.
- Monticelli LS**, Outreman Y, Frago E, Desneux N. (2019). Impact of host endosymbionts on parasitoid host range – From mechanisms to communities. *Current Opinion in Insect Science* 32:77-82. IF: 4.565.
- Mohammed AAAH, **Monticelli LS**, Desneux N, Fan YY, Shi XY, Guedes RNC, Gao XW. (2019). Potential for insecticide-mediated shift in ecological dominance between two competing aphid species. *Chemosphere*, 226:651-658. IF: 5.778.
- Li TH, Tian CY, Zang LS, Hou YY, Ruan CC, Yang X, **Monticelli LS**, Desneux N. (2019). Multiparasitism with *Trichogramma dendrolimi* on egg of Chinese oak silkworm, *Antheraea pernyi*, enhanced emergence of *Trichogramma ostrinae*. *Journal of pest science*, 92:707-713. IF: 4.578.
- Nguyen LTH, **Monticelli LS**, Desneux N, Metay-Merrien C, Amiens-Desneux E, Lavoit AV. (2018). Bottom-up effect of water stress on the aphid parasitoid *Aphidius ervi*. *Entomologia Generalis*, 38:15–27. IF: 4.333.

- Hou YY, Yang X, Zang LS, Zhang C, **Monticelli LS**, Desneux N. (2018). Effect of oriental armyworm *Mythimna separata* egg age on the parasitism and host suitability for five Trichogramma species. Journal of Pest Science, 91:1181–1189. IF: 4.578.
- Desneux N, Asplen MK, Brady CM, Heimpel GE, Hopper KR, Luo C, **Monticelli LS**, Oliver KM. (2018) Intraspecific variation in facultative symbiont infection among native and exotic pest populations: potential implications for biological control. Biological Control 116:27-35. IF: 2.754.
- Luo C, **Monticelli LS**, Meng L, Li D, Fan J, Zhao H, Hu Z. (2017). Effect of the endosymbiont *Regiella insecticola* on an aphid parasitoid. Entomologia Generalis 36:300-307. IF: 4.333.
- Becker C, Desneux N, Michel T, **Monticelli LS**, Lavoit AV. (2015). Effects of abiotic factors on HIPV-mediated interactions between plants and parasitoids. BioMed Research International, 2015: article ID 342982. IF: 2.276.

Publications submitted to refereed journals:

- Monticelli LS**, Labonté A, Turpin M, Biju-Duval L, Cordeau S, Deytieu V, Felten E, Laurent E, Matejcek A, Vieren E, and Vanbergen AJ. Impact of agroecological infrastructure on mutualistic and trophic interaction governing Centaurea reproduction. Submitted to Journal of Applied Ecology. IF: 5.84.
- Luo C, Gatti JL, **Monticelli LS**, Poirié M, Desneux N, Zhao H, Hu Z. Specificity of a bacterial symbiont in host-parasitoids interactions. Submitted to Journal of Pest Science. IF: 4.578.
- Qu YY, Lavoit AV, Béarez P, Amiens-Desneux E, Castagnone P, **Monticelli LS**, Desneux N. Impact of biodiversity and pest feeding guilds on plant-mediated indirect interactions linking aboveground and belowground pests. Submitted to Journal of Pest Science. IF: 4.578.

Publications in preparation for submission to refereed journals:

- Monticelli LS**, Desneux N, Biondi A, Mohl E, Heimpel GE. Nonadaptive evolution and differences in specialization of parasitoid strains after 45 years of separation. In revision for Biological invasion. IF: 2.897.
- Monticelli LS**, Lasserre A, Koutsovoulos G, Desneux N. Parasitoid specialization through host plant and host phylogeny. In revision for Journal of Ecology. IF: 5.687.
- Nguyen LTH*, **Monticelli LS***, Lavoit AV, Wajnberg E, Metay-Merrien C, Bearez P, Desneux N. Water stress-mediated bottom-up effect on aphid parasitoid diet breadth. In revision for Journal of Animal Ecology. IF: 4.364.
- Monticelli LS***, Biondi A*, Heimpel GE, Desneux N. Dynamic host range in an aphid parasitoid under stress conditions. In revision for Journal of Ecology. IF: 5.687

Qu YY, **Monticelli LS**, Castagnone P, Béarez P, Desneux N, Lavoit AV. Impact of pest functional types on plant mediated indirect interactions. In prep for New phytologist. IF: 7.299.

Mohammed AAAH, Desneux N, **Monticelli LS**, Tianqin F, Yinjun F, Gao XW. Sole and combine impact of imidacloprid and natural enemies on competitions among cereal aphids in wheat fields of Northern China. In prep for Ecological application. IF: 4.378.

*Authors contributed equally.

Scientific communications

Monticelli LS, Desneux N, Heimpel GE. (2019). Short and long term parasitoid-mediated indirect interactions between unsuitable and suitable hosts. Presented at the International Symposium Ecology of Aphidophaga, Montréal, Canada.

Thomine E, Rusch A, Supplisson C, **Monticelli LS**, Amiens-Desneux E, Lavoit AV, Desneux N. (2019). Differential spatial and temporal crop richness impact on biological control and spillover of natural enemies: a case study on *Harmonia axyridis*. Presented at the International Symposium Ecology of Aphidophaga, Montréal, Canada.

Monticelli LS, Desneux N, Heimpel GE. (2018). Short and long term parasitoid-mediated indirect interactions between unsuitable and suitable hosts. Poster at the 10th PhD student days in Nice, France.

Monticelli LS, Desneux N, Heimpel GE. (2018). Short and long term parasitoid-mediated indirect interactions between unsuitable and suitable hosts. Presented at the International Congress of Biological Control, Beijing, China.

Monticelli LS, Nguyen LTH, Amiens-Desneux E, Luo C, Gatti JL, Lavoit AV, Desneux N. (2016). The preference-performance relationship as a means for classifying parasitoids according to their specialization degree. Presented at the European PhD Network “Insect Sciences”, La Colle sur Loup, France.

Monticelli LS, Nguyen LTH, Amiens-Desneux E, Luo C, Gatti JL, Lavoit AV, Desneux N. (2016). The preference-performance relationship as a means for classifying parasitoids according to their specialization degree. Presented at the International Conference of Ecological Sciences, Sféologie, Marseille, France.

Scientific popularization

2018: Animation about **biological control**, 2nd year bachelor students, Henry Matisse, Vence. In association with master students preparing the CAPES.

2015 & 2016: Animation about **parasitoid biology**, Science festival in Côte d’Azur university.

Reviewing in refereed journals

Biological control	Journal of Economic Entomology
Entomologia Generalis	Journal of Pest Science
Entomologia Experimentalis et Applicata	Pest Management Science
International Journal of Pest Management	Plos ONE
Agricultural and Forest Entomology	

Administrative experience

2019: Organization of the **EASY2 symposium** in Nice, France.

2017-2019: Membership of the **council of Agrobiotech institute**.

2017-2018: Head of the organizing team of the **10th SPE PhD student days** in Nice, France.

Student supervising

Apr – July 2019: Garde M. License student (internship), Nice Côte d’Azur university, France.

Feb – June 2018: Idier M. Master student (internship), Nice Côte d’Azur university, France.

Feb – June 2017: Lasserre A. Master student (internship), Nice Côte d’Azur university, France.

Divers

- French and English: speaking, reading, writing
- Driver licence
- Team sport: Volley Ball