# Coline C. JAWORSKI

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# ----- Profile summary

I hold a PhD in Evolutionary Ecology. My research programme focuses on the ecology and evolution of **plant-insect interactions** within agricultural and natural terrestrial communities. I am especially interested in researching how we can **mitigate the impacts of global change** (climate change and land-use change) on the underlying **ecosystem services** of **pollination** and **biological pest control**. My research is embedded in the theoretic fields of **community dynamics**, **chemical ecology** and **adaptation**. I use field, experimental and laboratory settings and a variety of approaches from modelling, insect genomics and behavioural manipulation to field observations.

## ------ Education and academic career

Dec. 2022 – **Research Associate**. ISA Agrobiotech, INRAE, Sophia-Antipolis. Team Community present Ecology in Agroecosystems (CEA).

**Project: ADOPT-IPM**: develop and promote IPM tools and packages in Europe and China. **Adopt-IPM Scientific Co-coordinator**.

- June 2021 Postdoctoral Research Associate in Agroecology. Department of Zoology, University
- Sept. 2022 of Cambridge, U.K. in collaboration with Dr. Lynn Dicks and Prof. Peter Jackson (U. Sheffield).

 Project:
 Landscape-scale impacts of regenerative agriculture to improve soil, wider

 environmental outcomes and food quality.
 WP3 of the research programme

 Healthy Soil, Healthy Food, Healthy People".

- Dec. 2019 **Research Associate**. Institute of Plant and Environment Protection, Beijing Academy of Agricultural and Forestry Sciences, Beijing, China, in collaboration with Prof. Su Wang. **Project**: Habitat management for conservation biological control.
- Dec. 2019 Academic Visitor. Department of Zoology, University of Oxford, UK. In collaboration with Prof. Owen Lewis.
- Dec. 2017 AXA Postdoctoral Fellow. Mediterranean Institute of marine and terrestrial Biodiversity and Ecology (IMBE), Aix-Marseille University, France. In collaboration with Dr. Benoît Geslin and Prof. Catherine Fernandez. Incl. Academic Visitor, University of Oxford, from Sept. 2018.

**Project**: <u>Pollination in a drier world</u>: <u>using floral scent to predict and restore pollination</u> <u>networks</u>. How altered floral traits due to wildfire and experimental drought affect the structure and function of pollination networks.

Dec. 2015 – **Fyssen Postdoctoral Fellow**. Department of Entomology, the University of Arizona, Nov. 2017 Tucson, U.S.A. in collaboration with Prof. Luciano Matzkin.

**Project**: Genomics of adaptation to new hosts in cactophilic *Drosophilas*.

Assembly of highly contiguous genomes, structural analysis and identification of chromosomal inversions and gene duplications.

- Feb. 2015 **Invited postdoctoral candidate** in collaboration with Prof. Kathleen Kay, Ecology & Oct. 2015 Evolutionary Biology Department, University of California Santa-Cruz, U.S.A., including six months of **maternity leave**.
- Oct. 2011 **PhD in evolutionary ecology**. Evolution & Biological Diversity Laboratory, Université May 2015 Toulouse III Paul Sabatier, Toulouse, France. Supervisor: Dr. Jérôme Chave.
- Thesis: <u>Plant-insect interactions within the Antirrhinum majus species network</u>.
   Metacommunity dynamics (modelling and field data), floral scent measures (dynamic headspace, GC-FID/MS), attractiveness of floral traits to pollinators (behavioural experiments); including three months of maternity leave.
- Sept. 2010 Master degree Msc "Plant Protection and Environment". AgroParistech, Paris, France.
- Sept. 2011 **Thesis** (6 months): <u>Resource- and apparent-competition between two tomato pests</u> <u>sharing a predator</u>. Supervisor: Dr. Nicolas Desneux (INRA Sophia-Antipolis). Monitoring of insect population dynamics in a greenhouse experiment, and molecular analyses of predator gut content.
- Sept. 2009 Sabbatical cultural and touristic bike tour in South America.
- Aug. 2010
- Sept. 2006 Advanced Master in Science and Technology at the Ecole Supérieure de Physique et
- Aug. 2009 de Chimie Industrielles (ESPCI), Paris, France. Engineering degree in Physics and Chemistry.

**Research project** (3 months): Analytical Sciences Lab, ESPCI. Supervisor: Dr. Florence Hugon-Chapuis. <u>Development of an analytical method to quantify a polar pesticide, aminotriazole, at very</u> <u>low concentration in water</u>.

**R & D project** (5 months): Biology Herbicides Research Laboratory, Bayer CropScience, Frankfurt-am-Main, Germany; Supervisor: Martin Hills. Mode of action and efficacy of a new potential herbicide molecule.

Sept. 2004 – Preparatory Classes to the Concours des Grandes Ecoles. Physics and Chemistry (1<sup>st</sup> and 2<sup>nd</sup> years of undergrad). Lycée Georges Clémenceau, Nantes, France.

## ----- Professional awards and fellowships

- & Peach Orchard Project (co-PI avec Pr. Su Wang, Chinese Ministery of Agriculture, 2022-2026).
- X AXA Postdoctoral Fellowship (PI; December 2017, 2 years, 130k€ from AXA Research Funds + 120k€ from Aix-Marseille University). <u>https://www.axa-research.org</u>.
- & Fyssen Postdoctoral Fellowship (PI; December 2015, 2 years, 48k€). <u>http://www.fondationfyssen.fr</u>.
- & Grant from the  $\underline{FRAIB}$  (co-I; 2013; 8k€).
- A PhD grant from the Conseil Scientifique de l'Ecole Doctorale SEVAB, Université Toulouse III Paul Sabatier (October 2011, 3 years, 60k€).
- & Concours des Grandes Ecoles ESPCI (2006).
- & Grant from the French Government for deserving students with modest background (September 2004, 5 years, 32.5k€).

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- [29] Konan KAJ, Jaworski CC, Monticelli LM, Zuma CM, Bearez P, Boll R, Kouadio MFN, Martin T, Lavoir AV & Desneux N. Combined use of zoophytophagous mirids for sustainable biological protection of greenhouse tomato crops. Submitted to CABI Agriculture & Bioscience.
- [28] Ahmad S, Jamil M, Jaworski CC, Palma-Onetto V, Luy B, Luo Y. Knockdown of the ecdysone receptor disrupts development and causes mortality in the melon fly, *Zeugodacus cucurbitae*.

Under review for Journal of Integrative Agriculture (JIA-2023-1024).

- [27] Jaworski CC, Thomine E, Rusch A, Lavoir AV, Wang S & Desneux N. Crop diversification to promote arthropod pest management: a review. In revision for *Agriculture Communications* (AGRCOM-D-23-00014R1).
- [26] Jackson P, Beacham J, Jaworski CC, Krzywoszynska AD, Dicks LV. Realising regeneration? Farmer perspectives on regenerative agriculture in the UK. In revision for *Journal of Rural Studies* (RURAL-D-22-01737R1).
- [25] Ahmad S, Jamil M, **Jaworski CC** & Luo Y. Double-Stranded RNA Degrading Nuclease Affects RNAi Efficiency in the Melon fly, *Zeugodacus cucurbitae*. Accepted in *Journal of Pest Science*.
- [24] Jaworski CC, Dicks LV, Leake JR & Krzywoszynska AD (2023) Sustainable soil management in the UK: A survey of current practices and how they relate to the principles of regenerative agriculture. Accepted in *Soil Use & Management*.
- [23] Luke SH, Roy HE, Thomas CD, Tilley LAN, Ward S, Watt A, Carnaghi M, Jaworski CC, Tercel MPTG, Woodrow C, Aown S, Banfield-Zanin JA, Barnsley SL, Berger I, Brown MJF, Bull JC, Campbell H, Carter RAB, Charalambous M, Cole LJ, Ebejar MJ, Farrow RA, Fartyal RS, Grace M, Highet F, Hill JK, Hood ASC, Kent ES, Krell FT, Leather SR, Leybourne DJ, Littlewood NA, Lyons A, Matthews G, Mc Namara L, Menéndez R, Merrett P, Mohammed S, Murchie AK, Noble M, Paiva MR, Pannell MJ, Phon CK, Port G, Powell C, Rosell S, Sconce F, Shortall CR, Slade EM, Sutherland JP, Weir JC, Williams CD, Zielonka NB, Dicks L (2023) Grand challenges in entomology: Priorities for action in the coming decades. *Insect Conservation and Diversity* 16: 173-189.
- [22] Ahmad S, Jaworski CC, Ullah F, Jamil M, Bashah H & Luo Y (2023) Efficacy of lure mixtures in baited traps to attract different fruit fly species in guava and vegetable fields. <u>Frontiers in Insect</u> <u>Science</u> 2: 62.
- [21] Ahmad S, Jamil M, Jaworski CC & Luo Y (2023) Comparative transcriptomics of the irradiated melon fly (*Zeugodacus cucurbitae*) reveal key developmental genes. <u>Frontiers in Physiology</u> 14.
- [20] Benowitz KM, Allan CW, Jaworski CC, Sanderson M, Diaz F, Chen X & Matzkin LM (2022) Chromosome-length genome assemblies of cactophilic *Drosophila* illuminate links between structural and sequence evolution. *BiorXiv*. <u>http://dx.doi.org/10.1101/2022.10.16.512445</u>.
- [19] Jaworski CC, Thomine E, Rusch A, Lavoir A-V, Xiu C, Di N, Lu Y, Su W & Desneux N (2022) At which spatial scale does crop diversity enhance natural enemy populations and pest control? An experiment in a mosaic cropping system. <u>Agronomy</u> 12(8).
- [18] Jaworski CC, Geslin B, Zakardjian M, Lecareux C, Caillault P, Nève G, Meunier JY, Dupouyet S, Sweeney ACT, Lewis OT, Dicks L &, Fernandez C (2022). Long-term experimental drought alters floral scent and pollinator visits in a Mediterranean plant community despite limited impacts on plant phenotype and reproduction. *Journal of Ecology* 110: 2628-2648.
- [17] Chen X\*, **Jaworski CC**\*, Dai H, Liang Y, Desneux N, Guo X, Wang S & Zang L (2022) Combining banker plants to achieve long-term pest control in multi-pest and multi-natural enemy cropping systems. *Journal of Pest Science* 95: 685-697. *\*Equal contributors*.
- [16] Liang Y, Xu C, Dai H, Wang J, Guo X, Wang S & Jaworski CC (2022). Flower provision reduces intraguild predation between predators and increases aphid biocontrol in tomato. <u>Journal of Pest</u> <u>Science</u> 95: 461-472.
- [15] Desneux N, Han P, Mansour R, Arnó J, Brévault T, Campos MR, Chailleux A, Guedes RNC, Karimi J, Lavoir AV, Luna MG, Perez-Hedo M, Urbaneja A, Verheggen FJ, Zappalà L, Abbes K, Ali A, Bayram Y, Cantor F, Cuthbertson A, De Vis R, Erler F, Firake DM, Haddi K, Ismoilov K, Hajjar MJ, Jaworski CC, Kenis M, Liu H, Madadi H, Martin T, Mazih A, Messelink G, Mohamed SA, Nofemela RS, Oke A, Ramos C, Ricupero M, Roditakis E, Shashank PR, Wan F, Zhang YB & Biondi A (2022) Integrated Pest Management of *Tuta absoluta*: practical implementations across different world regions. *Journal of Pest Science* 95: 17-39.

- [14] Monticelli, LS, Bishop J, Desneux N, Gurr GM, Jaworski CC, McLean AH, Thomine E & Vanbergen AJ (2021) Multiple global change impacts on parasitism and biocontrol services in future agricultural landscapes. <u>Advances in Ecological Research</u> 65: 245-304.
- [13] Li S\*, Jaworski CC\*, Hatt S, Zhang F, Desneux N & Wang S (2021) Flower strips adjacent to greenhouses help reduce pest populations and pesticide applications inside organic commercial greenhouses. *Journal of Pest Science* 94: 679-689. \**Equal contributors*.
- [12] Pan H, Liu B, Jaworski CC, Yang L, Liu Y, Thomine E, Lu Y & Desneux N (2020) Effects of Aphid Density and Plant Taxa on Predatory Ladybeetle Abundance at Field and Landscape Scales. <u>Insects</u> 11, 695.
- [11] Huang NX, Jaworski CC, Desneux N, Zhang F, Yang PY & Wang S (2020) Long-term and largescale releases of *Trichogramma* promote pesticide decrease in maize in northeastern China. *Entomologia Generalis* 40: 331-335.
- [10] Ropars L, Affre L, Aubert M, Fernandez C, Flacher F, Genoud D, Guiter F, Jaworski C, Lair X, Mutillod C, Nève G, Schurr L & Geslin B (2020) Pollinator specific richness and their interactions with local plant species: ten years of sampling in Mediterranean habitats. <u>Environmental</u> <u>Entomology</u>, 49: 947-955.
- [9] Jaworski CC, Allan CW & Matzkin LM (2020) Chromosome-level hybrid *de novo* genome assemblies as an attainable option for non-model organisms. (1) *BiorXiv*, doi: <u>10.1101/748228</u>; (2) <u>Molecular Ecology Resources</u> 20: 1277-1293.
- [8] Li W, Wang L, Jaworski CC, Yang F, Liu B, Jiang Y, Lu Y, Wu K & Desneux N (2020) The outbreaks of non-target mirid bugs promote arthropod pest suppression in Bt cotton agroecosystems. *Plant Biotechnology Journal* 18: 322-324.
- [7] Jiao Z\*, Jaworski CC\*, Lu Y, Ye L, Wu K & Desneux N (2019) Maize fields are a potential sink for an outbreaking mirid bug pest in Chinese Bt-cotton agro-landscapes. <u>Agriculture, Ecosystems</u> <u>and Environment</u> 279: 122-129. \*Equal contributors.
- [6] Jaworski CC\*, Xiao D\*, Xu Q, Ramirez-Romero R, Wang S & Desneux N (2019) Varying the spatial arrangement of synthetic herbivore-induced plant volatiles and companion plants to improve conservation biological control. *Journal of Applied Ecology* 56: 1176-1188. \**Equal contributors*.
- [5] Jaworski CC, Thébaud C & Chave J (2016) Dynamics and persistence in a metacommunity centred on the plant Antirrhinum majus: theoretical predictions and an empirical test. Journal of Ecology 104: 456-468.
- [4] Jaworski CC, Chailleux A, Bearez P & Desneux N (2015) Apparent competition between major pests reduces pest population densities on tomato crop, but not yield loss. *Journal of Pest Science* 88: 793-803.
- [3] Jaworski CC, Andalo C, Raynaud C, Simon V, Thébaud C & Chave J (2015) The influence of prior learning experience on pollinator choice: an experiment using bumblebees on two wild floral types of *Antirrhinum majus*. <u>PLoS ONE</u> 10: e0130225.
- [2] Jaworski CC, Bompard A, Genies L, Amiens-Desneux E & Desneux N (2013) Preference and prey switching in a generalist predator attacking local and invasive alien pests. <u>PLoS ONE</u> 8: e82231.
- [1] Bompard A\*, **Jaworski CC**\*, Bearez P & Desneux N (**2013**) Sharing a predator: can an invasive alien pest affect the predation on a local pest? <u>*Population Ecology*</u> 55: 433-440. \**Equal contributors*.

#### **Publications in preparation**

- [27] Jaworski CC, Geslin B, Fernandez C., *et al.* Effects of wildfire on flowering plant and pollinator communities. *In preparation.*
- [28] **Jaworski CC**, ... Dicks LV. Measuring the systemic regenerative transformation in the UK with a co-designed experiment by farmers, social scientists and natural scientists: experimental design and methods. *In preparation* for *Frontiers in Food Systems*.

#### **Broad-audience publications**

- X <u>AXA Research Guide</u> (December 2019): *Biodiversity at Risk: Preserving the Natural World for our Future.*
- Article in *The Conversation UK*. Jaworski CC, Geslin B, Fernandez C (June 2019) *Climate change: bees are disorientated by flowers' changing scents*. >3,000 views on 1<sup>st</sup> July 2019.
- Article in *The Conversation France*. Jaworski CC, Geslin B, Fernandez C (June 2019) *Changement climatique: les abeilles déboussolées par la nouvelle odeur des fleurs*. >35,000 views on 1<sup>st</sup> July 2019.

#### ---- Conference talks and posters

- **Jaworski CC** (November 2021) Exploring the wider environmental benefits of regenerative agriculture. Cambridge Zero Symposium Nature & Biodiversity, Cambridge, UK.
- Jaworski CC, Geslin B, Zakardjian M, Caillault P, Nève G, Meunier JY, Dupouyet S, Lecareux C, Sweeney A, Lewis OT, Fernandez C (October 2020). Pollination in a drier world: the role of floral scent. Oral communication at the GDR Pollineco (French Research Group on Pollination and ecosystems), Mons, Belgium.
- **Jaworski CC**, Geslin B, Zakardjian M, Caillault P, Nève G, Meunier JY, Dupouyet S, Lecareux C, Lewis OT, Fernandez C (March 2019). Pollination in a drier world. Oral communication at the GDR Pollineco (French Research Group on Pollination and ecosystems), Montpellier, France.
- **Jaworski CC**, Geslin B, Zakardjian M, Caillault P, Nève G, Meunier JY, Dupouyet S, Lecareux C, Fernandez C (December 2018). Pollination in a drier world. Oral communication at the 2018 BES meeting, Birmingham, UK.
- **Jaworski CC**, Geslin B, Zakardjian M, Caillault P, Nève G, Meunier JY, Dupouyet S, Lecareux C, Fernandez C (October 2018). Pollination in a drier world. Oral communication at the 2018 SFE2 meeting, Rennes, France.
- **Jaworski CC**, Allan CW, Matzkin LM (October 2017). Hybrid *de novo* genome assemblies as a valid option for non-model organisms: reduced cost but not quality. Oral communication at the 2017 BES Joint Meeting, Ghent, Belgium.
- **Jaworski CC**, Thébault C, Chave J (August 2017) Dynamics and persistence in a metacommunity centred on the plant *Antirrhinum majus*: theoretical predictions and an empirical test. Oral communication at the 2017 ESA (Ecological Society of America) Meeting, Portland, OR, USA.
- **A Jaworski CC**, Allan CW, Matzkin LM (June 2017). Identifying genome-scale structural differences between ecologically divergent populations of cactophilic *Drosophila*. Poster for the 2017 Evolution Meeting (American Society of Naturalists, Society for the Study of Evolution, and Society of Systematic Biologists), Portland, OR, USA.
- **Jaworski CC** (October 2016) Wikipedia: a tool to learn and spread high-quality knowledge. Annual Meeting of the French Research Group in Chemical Ecology (GDR MediatEC), Marseille, France.
- **Jaworski CC** & Becerra JX (October 2016) The odorant receptor repertoire of *Blepharida verdea*: Revisiting the history of olfaction in Coleoptera. Oral communication at the Sfé 2016 Conference (French Ecological Society), Marseille, France.
- **Jaworski CC**, Thébaud C, Chave J (May 2016) Dynamics and persistence in a metacommunity centred on the plant *Antirrhinum majus*: theoretical predictions and an empirical test. Oral communication at the 2016 ISEM Conference (International Society for Ecological Modeling), Baltimore, MD, USA.
- **Jaworski CC**, Andalo C, Pujol B, Raynaud C, Simon V, Chave J (October 2014) Influence of visual and olfactive signals of *Antirrhinum majus* on bumblebee constancy. Annual meeting of the French research group in chemical ecology (GDR MediatEC), Paris, France.
- & Jaworski CC, Chave J (May 2014) Spatio-temporal variations and stability in a multitrophic

network. Oral communication for the 15th Ecology & Behaviour Conference, Montpellier, France.

- **Jaworski CC**, Simon V, Raynaud C, Pujol B, Chave J (June 2013) Variation pattern of floral scent of *Antirrhinum majus* along altitude. Poster for the 1st Meeting of the French Association of Young Researchers in Chemical Ecology, Montpellier, France.
- **Jaworski C**, Bompard A, Béarez P, Desneux N (October 2011) Potential for apparent competition between endemic and invasive pests on tomato. Poster for the 9<sup>th</sup> International congress of research in agronomy, by the French association for plant protection (AFPP), Montpellier, France. <u>2<sup>nd</sup> poster student prize</u>.

#### ----- Institutional seminars

- & January 2022, Department of Zoology, University of Cambridge. Pollination in a drier world.
- & May 2020, INRAE URFM Avignon, France. Climate change and tree-phytophagous insect interactions.
- April 2020, INRAE ITAP, Montpellier, France. Agroecology & biocontrol.
- X March 2020, School of Biological and Environmental Sciences, Liverpool John Moores University, UK. *Pollination in a drier world*.
- & January 2020, Department of Life Sciences, Imperial College London, Silwood Park, UK. *Ecosystem services in a changing world*.
- & July 2019, CAER research group, University of Reading, UK. Pollination in a drier world.
- & October 2017, Harper Adams University, UK. *Plant-insect interactions: Biodiversity and Ecosystem services*.
- & October 2016, EEB Department noon seminar, The University of Arizona, Tucson, USA. *The* odorant receptor repertoire of Blepharida verdea: *Revisiting the history of olfaction in Coleoptera*.
- & June 2016, INRA Sophia-Antipolis, Sophia-Antipolis, France. *Trophic interactions in wild and agro*ecosystems: implications for species persistence and population regulation.
- April 2014, Biennial meeting on Signalization, Information and Chemistry. EDB Lab, Toulouse, France. Unexpected results: what if they were true? After questioning techniques, methods or experimenters, let's discuss biology.
- April 2012, Biennial meeting on Signalization, Information and Chemistry. EDB Lab, Toulouse, France. *Perception of floral scent: characterization of plant-insect interaction*.

### ----- Workshops and thematic schools

- Spatial analyses in R and QGIS (April 2022), UKCEH, online.
- & Winter School on Macroecology & Macroevolution (December 2014) Ecole Normale Supérieure Ulm (Paris) & University of Arizona, Paris, France.
- Annual meeting of the Antirrhinum working group (March 2013) Vienna, Austria. Oral communication: **Jaworski CC**, Andalo C, Pujol B, Chave J. Reproductive isolation between Anthirrhinum majus pseudomajus and A. majus striatum subspecies: does floral scent influence pollinators behavior?
- & Summer School on Chemical Ecology (June 2012). GDR MediatEC, Saint-Raphaël, France.
- X Joint meeting of the *Antirrhinum-Heliconius* working groups (October 2012) Norwich, U.K. Oral communication: Jaworski CC, Chave J, Pujol B. Environmental variation in plant-insect interactions: What can we learn from flower scent?

## ---- Teaching and mentoring

X French Teaching Qualification for the post of Lecturer ("Maître de Conférences"; January 2017).

Student mentoring and research project supervision: Scientific training (scientific thinking and hypothesis formulation, field data acquisition, statistical analyses, pollinator taxonomy), data acquisition and analysis, report writing and oral communication preparation, grant proposal writing, writing of scientific publications. List starting with most recent:

Year	Duration	Level	Name	Student affiliation
2023	6 months	Msc. (M1)	Macéo Valente	INSA Lyon
2022	3 months	BSc.	Danil Lim	University of Cambridge
2022	3 months	BSc.	Evan Slater	University of Oxford
2021-2022	12 months	MPhil.	Jack Stephen Hargaves	University of Cambridge
2020	3 months	BSc.	Joseph Gent	University of Oxford
2019	3 months	BSc.	Aoife Sweeney	University of Oxford
2018	6 months	MSc. (M1)	Marie Zakardjian	Aix-Marseille University
2018	6 months	MSc. (M1)	Pauline Caillault	Aix-Marseille University
2013	3 months	BSc. (L3)	Manon Vixège	University of Toulouse
2013	6 months	MSc. (M1)	Alexandre Rabottin	University of Toulouse
2013	3 months	BSc. (L3)	Bastien Rousset	University of Toulouse
2013	3 months	BSc. (L3)	Margaux Ertlé	University of Toulouse
2013	3 months	BSc. (L3)	Léa Comolet	University of Toulouse
2012	3 months	BSc. (L2)	Delphine Prévost	University of Toulouse
2012	3 months	BSc. (L2)	Thibaut Poirier	University of Toulouse
2012	3 months	BSc. (L3)	Marie Doumeng	University of Toulouse

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- Languages: French (mother tongue), English (fluent; TOEIC score 960/990), Spanish (fluent), German (intermediate).
- **Programming & computing**: R, C, Matlab, Perl, (Python); QGIS. Unix, cluster environment & batch.
- & Statistics: GLMMs, multivariate analyses, spatial analyses in R, non-parametric tests.
- & Genomics: Genome/Transcriptome assembly (Illumina / PacBio: including SOAP, Platanus, SparseAssembler, DBG2OLC+Sparc correction tool, FMLRC, LoRDEC, HALC, Canu, Celera, Quickmerge, Quiver, Pilon; Quast, Busco), sequence alignment for homolog search (BLAST), multiple sequences alignment (MAFFT, MUSCLE, MAUVE, MUMMER), phylogeny inference (FastTree).
- **Molecular biology**: design of primers (Primer 3), RNA/DNA extraction, PCR.
- Analytical chemistry: dynamic headspace volatile collection; GC-FID/MS; LC-MS; extraction / pre-concentration. Peak extraction, quantification, identification.
- Systematics: insect preparation for collection; identification of Apoidea; identification of farmland (big cultures) weeds.
- **Linsect rearing**: Macrolophus pygmaeus, Bemisia tabaci, Tuta absoluta, Bombus terrestris, Drosophila.
- & Greenhouse management: plant growing, climatic regulation (Aria).
- **Experimentation**: behavioural manipulation of insects, monitoring of insects' population densities, plant manipulation.
- **Field work**: insects observations and captures (sweep netting, pitfall/pan trapping), plant measures (floral scent, nectar, weed sampling), logistics.

---- Community services and voluntary roles

2022-present: Section Editor for the peer-reviewed journal Entomologia Generalis (handled

twelve manuscripts so far).

- 2023-present: Associate Editor for the peer-reviewed journal CABI Agriculture & Bioscience.
- 2014-present: Reviewer for the peer-reviewed journals Biological Control, BMC Genomics, Bulletin of Insectology, Ecological Entomology, Emerging Topics in Life Sciences, Entomologia Experimentalis et Applicata, Entomologia Generalis, Entomological Research, Gene, Insect Conservation & Diversity, Journal of Applied Ecology, Journal of Economic Entomology, Journal of Pest Science, Oikos, Pest Management Science, PLoS ONE, Scientific Reports, The Science of Nature. Publons profile (in the 95<sup>th</sup> percentile most active reviewers).
- Reviewer for the French doctoral program AIRD/Cirad "Doctorants du Sud" (2013), the Czech Science Foundation Program (2016), the French Ministère de la Transition Ecologique et Solidaire (2019-2022).
- **2012-present: Membership**: French Ecological Society (SFé2), British Ecological Society (BES), French research groups in chemical ecology (GDR MediatEC) and pollination ecology (GDR Pollineco).
- & Member of the **PhD committee**: Dr. Eva Thomine (graduated in **2020**).
- Member of the **RainDroP steering committee** (2019-2020).
- & Student representative in the education committee of ESPCI (2007-2009).

# ------ Public Engagement

- Collaboration with Eliza Collin, an Italian artistic designer studying in London and a perfumer: creation of an exhibition on "the smell of the future" based on the results from my study (Jaworski *et al.* in revisions), 2020-present.
- X Main contributor to the Biology Society of Cherwell School, Oxford (Years 12-13), Spring Term 2020.
- Science After School Club on pollination ecology, St Nicholas School, Old Marston, Oxford, July 2019 (three 1h-sessions, 158 children each).
- & STEM Week, workshop on insect ecology, St Nicholas School, Old Marston, Oxford, March 2019 (four 1h-sessions, 30 children each).
- & AXA Media Training and Networking Days, Paris: workshop on science communication to the Media, and Networking and outreaching with AXA experts (November 2018).
- & Scientific organizer at the Ricard "Responsible Day", Marseilles: outreach activities on wild bees' preparation for collection (June 2018, 8h, 180 visitors).
- & Scientific organizer at the "Nature en Fête" event, Marseilles: outreach activities on wild bees (March 2018, 6h, ~500 visitors)
- Scientific organizer at the Fly Booth at the Arizona Insect Festival, University of Arizona: outreach activities on *Drosophilas*' life cycle and evolutionary dynamics in the wild (October 2017, 6h, ~5,000 visitors)
- Scientific organizer at the Pollinator Booth at the Science Festival of the Tucson Hebreu School: outreach activities on pollinators' natural history and role in ecosystems and to Human Society (March 2017, 7h, ~300 visitors).
- & Scientific organizer at the Ecology & Evolutionary Biology Department Booth at the Science City event, part of the Tucson Festival of Books, University of Arizona: outreach activities on natural selection, the Tree of Life, food-webs (March 2017, 6h, ~500 visitors).
- Edition of Wikipedia articles. Participation in the 2<sup>nd</sup> Wikipedia Edit-athon (September 2016, one week), Ecology & Evolutionary Biology Department, University of Arizona 1<sup>st</sup> prize winner (\$100).