

Léna Barascou

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700 W Magnolia Avenue – Auburn – 36832 AL - USA

Research fields: ecotoxicology, agroecology, apiculture



EDUCATION

October 2022 - **Qualifications as Associate Professor**, section 67 (Population and ecosystem biology), section 68 (Organismal biology).

2019 - 2022 - **PhD in Agricultural Sciences**, specializing in ecotoxicology of honey bees, Avignon University (Avignon, France). *Congratulations from the jury.*

2016 - 2018 - **Master's degree in Biodiversity, Ecology and Evolution**, specializing in functional, behavioral and evolutionary ecology, with honors, University of Rennes 1 (Rennes, France).

2015 - 2016 - **Bachelor's degree in Life Sciences**, specializing in ecology and biology of organisms, honors, University of Poitiers (Poitiers, France).

2013 - 2015 – **Preparatory Classes**, biology, chemistry, physics, earth sciences courses, Camille-Guérin High School (Poitiers, France).

PROFESSIONAL RESEARCH EXPERIENCES

June 2025 - June 2026 - **Postdoctoral Research Fellow**, Auburn University, Entomology and Plant Pathology Department (Auburn, Alabama, USA). Supervisor: Dr. Geoffrey Williams. *Management of Varroa destructor and Tropilaelaps mercedesae on honey bee colonies (Apis mellifera).*

January 2024 - June 2025 - **Postdoctoral Research Fellow**, University of Florida, Entomology and Nematology Department (Gainesville, Florida, USA). Supervisor: Dr. Cameron Jack. *Non-target impacts of mosquito larvicides and adulticides on Florida honeybees (Apis mellifera).*

October 2022 - December 2023 - **Postdoctoral Research Fellow**, INRAE, UMR 1349 Institut de Génétique Environnement et Protection des Plantes (Le Rheu, France). Coordinator: Pr. Anne Le Ralec. *Evaluation of the effectiveness of agroecological infrastructures to reinforce biological control of aphid vectors of beet yellows.*

September 2022 - **Research Scientist**, INRAE, UMR 406 Abeilles et Environnement (Avignon, France). Coordinator: Dr. Cédric Alaux. *Evaluation of the toxicity of an insecticide on honey bees (Apis mellifera) at the colony level.*

January 2019 - June 2022 - **PhD**, INRAE, UMR 406 Abeilles et Environnement (Avignon, France). Supervisors: Dr. Cédric Alaux and Dr. Yves Le Conte. *Contributions to a better assessment of pesticide toxicity in honey bees.*

January. 2018 - June 2018 - **Master's student internship**, University of Rennes 1, CNRS, UMR ECOBIO (Rennes, France). Supervisor: Pr. Joan Van Baaren. *Influence of hedgerow network on biological control ecosystem services in cereal fields.*

May. 2017 - June 2017 - **Master's student internship**, University of Rennes 1, CNRS, UMR ECOBIO (Rennes, France). Supervisors: Pr. Joan Van Baaren and Dr. Cécile Le Lann. *Decision-making in female parasitoids Aphidius Rhopalosiphii: influence of mating, flower quality and female age.*

TEACHING AND SCIENTIFIC MANAGEMENT

2022 - 2023 - **Co-supervision of students:** one Master student (Rennes-Angers Agronomic Institute), one master's degree student (AgroParisTech school) and two bachelor's degree students (University of Rennes and University of Lille).

I co-supervised students during my first postdoc to carry out some of my experiments as part of the research project. I taught them how to follow a protocol, analyze the results and write reports.

2022 - **Honey bee biology**, Henri Matisse elementary school, Tonnay-Boutonne (France) (8 h).

I provided an overview of the bee world to kids grades 2-4. It was an interactive class where I talked about the importance of pollinators, the different species of bees in France and the beekeeping world.

2019 - **Toxicology** (22 h tutorial), students in master's degree « Agrosiences, Sciences et Technologie de l'Agriculture, de l'Alimentation et de l'Environnement, Université d'Avignon ».

I provided weekly lectures for 2 months to 60 master's students on topic related to toxicology, through the honey bee model. Through this course, I taught about scientific publication and how to read, understand and write scientific publication.

GRANT & AWARD

2024 - **ABRC Postdoc Travel Award (2025)** from American Association of Professional Apiculturists. Price: \$1,000.

2023 - 2024 - **Postdoctoral fellowship.** Non-target impacts of mosquito larvicides and adulticides to Florida honeybees (*Apis mellifera*). Sponsor: Florida Department of Agriculture and Consumer Services. Project leaders: Dr. Cameron Jack and Dr. Jamie Ellis. Total Costs: \$127,152/1year

2023 - **1st Price PHYTOPHARMA**, French Pesticides Research Group (GFP). Price: 1000€.

PEER-REVIEWED PUBLICATIONS

Published

13. **Barascou L.**, Rawn D., Qualls W.A., Oliva D., Cody P., Kleckner K., Ellis J., Jack C., 2025. The effects of mosquito larvicides and adulticides applied via truck-mounted and aerial spray on honey bees (*Apis mellifera*) in Florida. *Chemosphere*. 392: 144741. <https://doi.org/10.1016/j.chemosphere.2025.144741>
12. Barraud B., Askri D., **Barascou L.**, Szwarcz J.M., Toktas Y., Nicodème L., Alaux C., Albrecht M., Arafah K., Bocquet M., Vanderplanck M., Bulet P., Michez D., 2025. Facing multiple threats: Diet–pesticide interactions in bumblebees. *Science of The Total Environment*. 1004: 180716. <https://doi.org/10.1016/j.scitotenv.2025.180716>
11. Bourdon S., Mouillard-Lample L., Lemoine T., Lewin, M. Guilbaud L., **Barascou L.**, Schatz B., Henry M., 2025. How much nectar can wild bees take away? Allometric equations of nectar crop capacities for investigating bee nutrition and foraging ecology. *J. Insect Physio*. 164: 104840. <https://doi.org/10.1016/j.jinsphys.2025.104840>.
10. **Barascou L.**, Doehler M., Buzy S., Arnoult A., Salembier E., Richard V., Daniel L., Duval F., Le Ralec A., 2025. Quantification of the biological control of aphids by their natural enemies in sugar beet crops. *Biological control*. 205: 105773. <https://doi.org/10.1016/j.biocontrol.2025.105773>
9. Schwarz J. M., Knauer A.C., Alaux C., **Barascou L.**, Barraud A., Dievart V., Ghazoul J., Michez D., Albrecht M., 2024. Real-time monitoring of honeybee colony daily activity and bee loss rates can highlight the risk posed by a pesticide: the case of the neurotoxic insecticide sulfoxaflor. *Science of The Total Environment*. 912: 169494. <https://doi.org/10.1016/j.scitotenv.2023.169494>

8. **Barascou L.**, Godeau U., Pioz M., Olivier M., Sené D., Crauser D., Le Conte Y., Alaux C., 2023. Real-time monitoring of honeybee colony daily activity and bee loss rates can highlight the risk posed by a pesticide: the case of the neurotoxic insecticide sulfoxaflor. *Science of The Total Environment*. 886: 163928. <https://doi.org/10.1016/j.scitotenv.2023.163928>
7. **Barascou L.**, Sené D., Le Conte Y., Alaux C., 2022. Pesticide risk assessment: Honeybee workers are not all equal regarding the risk posed by exposure to pesticides. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-022-21969-2>
6. Tougeron K., Couthouis E., Marrec R., **Barascou L.**, Baudry J., Boussard H., Burel F., Couty A., Doury G., Francis C., Hecq F., Le Roux V., Pétilion J., Spicher F., Hance T., van Baaren J., 2022. Multi-scale approach to biodiversity proxies of biological control service in European farmlands. *Science of The Total Environment*. 822: 153569. <https://doi.org/10.1016/j.scitotenv.2022.153569>
5. Barraux A., **Barascou L.**, Lefevre V., Sené D., Le Conte Y., Alaux C., Michez D., 2022. Interspecific variation in nutritional requirements across bees. *Frontiers in Sustainable Food Systems*. 6: 824750. <https://doi.org/10.3389/fsufs.2022.824750>
4. **Barascou L.**, Requier F., Sené D., Crauser D., Le Conte Y., Alaux C., 2021. Delayed effects of a single neurotoxic pesticide dose on honeybee foraging activity. *Science of The Total Environment*. 805: 150351. <https://doi.org/10.1016/j.scitotenv.2021.150351>
3. **Barascou L.**, Sené D., Barraud A., Michez D., Lefevre V., Medrzycki P., Di Prisco G., Yanez O., Neumann P., Le Conte Y., Alaux C., 2021. Pollen fosters honeybee resistance to pesticides. *Royal Society Open Science*. 8: 210818. <https://doi.org/10.1098/rsos.210818>
2. **Barascou L.**, Brunet J.-L., Belzunces L., Decourtye D., Henry M., Fourrier J., Le Conte Y., Alaux C., 2021. Pesticide risk assessment in honeybees: toward the use of behavioral and reproductive performances as assessment endpoints. *Chemosphere*. 276:130134. <https://doi.org/10.1016/j.chemosphere.2021.130134>
1. Damien M., **Barascou L.**, Ridet A., Van Baaren J., Le Lann C., 2019. Food or host: do physiological state and flower type affect foraging decisions of parasitoids? *Behavioral Ecology and Sociobiology*. 73:156. <https://doi.org/10.1007/s00265-019-2758-9>

Under review

3. **Barascou L.**, Ellis J., Jack C. Mosquito larvicide and adulticide impacts on adult western honey bees (*Apis mellifera*) in *in vitro* cage studies reared in vitro. *Environmental Science and Pollution Research*.
2. **Barascou L.**, Ellis J., Jack C. Mosquito larvicide and adulticide impacts on honey bee larvae (*Apis mellifera*) reared *in vitro*. *Environmental challenges*.
1. Tougeron K., Denoirjean T., Arnoult A., **Barascou L.**, Buzy S., Canard E., Doehler M., Le Lann C., Maupas F., Plantegenest M., Tricault Y., van Baaren J., Marrec R., Le Ralec A. Climate and landscape modulate the biological control potential of aphids by in-field agroecological infrastructures in sugar beet crops.

Publications in scientific magazines

1. **Barascou L.**, Sené D., Barraud A., Michez D., Lefevre V., Medrzycki P., Di Prisco G., Yanez O., Neumann P., Le Conte Y., Alaux C., 2021. « Les pollens réduisent la sensibilité des abeilles aux pesticides... mais pas de manière égale. », in: *Fruits et Abeilles*, 9 : 290-291 ; *L'Abeille de France*, 1095 : 8-9 & *La Santé de l'Abeille*, 306 : 555-559.

SCIENTIFIC ORAL COMMUNICATIONS

International conferences

5. **Barascou L.**, Ellis J., Jack C., 2025. Toxicity tests of mosquito control larvicides and adulticides on honey bee larvae (*Apis mellifera*) reared *in vitro*. Apimondia 2025: 49th International Federation of Beekeepers' Associations, September 24 – 27, Copenhagen, Denmark.
4. **Barascou L.**, Rawn D., Qualls W., Cody P., Ellis J., Jack C., 2025. Effects of mosquito larvicides and adulticides applied via truck-mounted and aerial spray on honey bees (*Apis mellifera*) in Florida. American Bee Research Conference, January 9 – 11, Reno, NV, USA.
3. **Barascou L.**, Ellis J., Jack C., 2024. Laboratory toxicity of mosquito control products to honey bees (*Apis mellifera*). Eurbee 2024: 10th European conference of apidology, September 15-19, Tallinn, Estonia.
2. **Barascou L.**, Requier F., Sené D., Crauser D., Le Conte Y., Alaux C., 2023. A single dose but long-term effect: the case of sulfoxaflor in honeybees (*Apis mellifera*). Eurbee 2023: 9th European conference of apidology, September 20-22, Belgrade, Serbie.
1. **Barascou L.**, Sené D., Barraud A., Michez D., Lefevre V., Medrzychki P., Di Prisco G., Yanez O., Neumann P., Le Conte Y., Alaux C., 2021. Pollen nutrition fosters honeybee tolerance to pesticides. EU IUSSI online symposium series, November 11.

National conferences

14. **Barascou L.**, 2025. Pesticides risk assessment in honey bees. Beekeeping in the Panhandle Conference, April 4 – 5, Chipley, FL, USA.
13. **Barascou L.**, Rawn D., Qualls W., Cody P., Kleckner K., Ellis J., Jack C., 2024. The effects of mosquito larvicides and adulticides applied via truck-mounted and aerial spray on honey bees (*Apis mellifera*) in Florida. The 20th arbovirus surveillance and mosquito control workshop, March 25 – 27, St Augustine, FL, USA.
12. **Barascou L.**, 2025. Non-target impacts of mosquito larvicides and adulticides on Florida honey bees. Spring Bee College, March 21 – 22, Gainesville, FL, USA.
11. **Barascou L.**, Rawn D., Qualls W., Cody P., Kleckner K., Ellis J., Jack C., 2024. The effects of mosquito larvicides and adulticides applied via truck-mounted and aerial spray on honey bees (*Apis mellifera*) in Florida. Florida Mosquito Control Association, November 5 – 7, Orlando, FL, USA.
10. **Barascou L.**, Rawn D., Qualls W., Ellis J., Jack C., 2024. Effects of mosquito larvicides and adulticides applied via truck-mounted and aerial spray on honey bees (*Apis mellifera*) in Florida. Florida State Beekeepers Association conference & meeting, October 3 – 5, Ocala, FL, USA.
9. **Barascou L.**, Rawn D., Qualls W., Ellis J., Jack C., 2024. Non-target impacts of mosquito control larvicides and adulticides on Florida honey bees (*Apis mellifera*). Summer Bee College, August 23 – 24, Panama city, FL, USA.
8. **Barascou L.**, Ellis J., Jack C., 2024. Pesticides risk assessment in honey bees. Spring Bee College, March 15 – 16, Gainesville, FL, USA.
7. **Barascou L.**, Salembier E., Richard V., Daniel, L., Duval F., Le Ralec A., 2023. Quantification of the biological control of aphids by generalist predators on sugar beet crops. 13th Annual Meeting of the BAPOA Network, November 9-10, Lyon, France.

6. **Barascou L.**, E. Salembier, V. Richard, L. Daniel, Le Ralec, A., 2023. Quantification of the biological control of aphids by generalist predators on sugar beet crops. IOBC-WPRS WG Meeting Integrated Protection in Field Vegetables, September 20-21, Rennes, France.
5. **Barascou L.**, Le Conte Y., Alaux C., 2023. Contributions to a better assessment of pesticide toxicity in honey bees (*Apis mellifera*). 51st Congress of the French Pesticide Research Group, May 31–June 2, Paris, France.
4. **Barascou L.**, Le Conte Y., Alaux C., 2021. Towards a better assessment of pesticide toxicity. ADAPI technical day, December 14, Puyloubier, France.
3. Barraux A., **Barascou L.**, Lefevre V., Sené D., Le Conte Y., Alaux C., Michez D., 2021. Interspecific variation in nutritional requirements across bees. 3rd annual meeting of the Pollinéco Research Group, November 16-18, Toulouse, France.
2. **Barascou L.**, Le Conte Y., Alaux C., 2020. Nutritional modulation of pesticide effects in honeybees. 2nd annual meeting of the Pollinéco Research Group, October 14-15, online.
1. **Barascou L.**, Le Conte Y., Alaux C., 2020. Consideration of sublethal doses in risk assessment of pesticides: advances, locks, and perspectives. Workshop ANSES, Overview of sublethal effects on honeybees, January 30, Paris, France.

POSTER PRESENTATIONS

4. **Barascou L.**, Aurell D., Broccard-Bell H., Praphawilai P., Chuttong B., Williams G., 2025. Identifying cultural and chemical controls to manage *Tropilaelaps* mites in honey bee colonies. American Bee Research Conference, January 8 – 10, Mobile, AL, USA.
3. **Barascou L.**, Rawn D., Qualls W.A., Oliva D., Cody P., Kleckner K., Ellis J., Jack C., 2025. The effects of mosquito larvicides and adulticides applied via truck-mounted and aerial spray on honey bees (*Apis mellifera*) in Florida. Apimondia 2025: 49th International Federation of Beekeepers' Associations, September 24 – 27, Copenhagen, Denmark.
2. **Barascou L.**, Ellis J., Jack C., 2025. Laboratory Toxicity of Mosquito Control Products to Honey Bees (*Apis mellifera*). American Bee Research Conference, January 9 – 11, Reno, NV, USA.
1. **Barascou L.**, Rawn D., Qualls W., Cody P., Ellis J., Jack C., 2024. Effects of mosquito larvicides and adulticides applied via truck-mounted and aerial spray on honey bees (*Apis mellifera*) in Florida. Eurbee 2024: 10th European conference of apidology, September 15-19, Tallinn, Estonia.

OUTREACH/EXTENSION

September 20, 2025 – **Nature Coast Beekeepers**, online presentation. Non-target impacts of mosquito larvicides and adulticides on Florida honey bees.

March 13, 2025 – **Alaska Certified Pesticide Applicator Workshop**, online presentation. Impact of Mosquito Control Sprays on Honey Bees (*Apis mellifera*) in Florida.

October 17, 2024 - **Pee Dee Beekeeper Association**, online presentation. Effects of mosquito control products on honey bees in Florida.

October 15, 2024 - **UF/IFAS Master Beekeeper Program**, online presentation. Toxicity of mosquito control products in honey bees.

October 7-8, 2019 – **30th birthday of « Fête de la Science »**, Avignon, France. Science village: awareness of the ecology of bees to a non-scientific public. Workshops on the world of bees for primary and secondary schools.

December 4-5, 2019 - **SIMapi « Salon Internationale du Matériel Apicole »**, Avignon, France. Oral presentation: Contributions to a better assessment of pesticide toxicity in honey bees (*Apis mellifera*).

EXPERT ACTIVITIES

Manuscript reviewer - Apidologie, Journal of Apicultural Research, Environmental Toxicology and Chemistry, Environmental Science and Pollution Research, Scientific Reports, Frontiers in Ecology and Evolution, Insects.

Professional memberships - American Association of Professional Apiculturists (AAPA), The International Union for the Study of Social Insects – North American Section (IUSSI – NAS).

SKILLS

Laboratory - Molecular biology (DNA/RNA extraction, quantitative PCR), biochemistry (spectrophotometry: analysis of protein levels in bee heads), insect rearing under controlled conditions (bee larvae, parasitoids, and aphids), acute and chronic toxicological tests on honeybees (larvae and adults), hemolymph sampling on bees.

Computing - Data analysis with R (linear models, generalized linear models with or without mixed effects, survival model), image analysis with ImageJ®, bibliographic monitoring with Zotero®.

Experimentation, field - Beekeeping, behavioral observation and experimentation of honey bee flight activity (bee counter), insect sampling with Barber® and net traps, insect identification by species (bees, carabid beetles, aphids).

Languages - French (native), English