

# Morgane Nouvian

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**Date of birth:** 17<sup>th</sup> June 1988

**Nationality:** French

**Maternal leave:** 26/07/2021-31/03/2022  
+ part-time (70%) since then

<https://www.social-neuroethology.com/>

## Scientific career

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- 2019-(2025): **Research fellow of the Zukunftskolleg / Junior group leader**  
Neurobiology and Collective behaviour  
Konstanz Universität, Konstanz, Germany
- 2016-2019: **Post-doctoral fellow**  
Neurobiology of insect olfaction, Lab of Pr. Galizia  
Konstanz Universität, Konstanz, Germany
- 2013-2016: **PhD (cotutelle), awarded the “Prix Dominique Clos” and the UQ Dean’s Award**  
Neuroethology of the olfactory modulation of honeybee aggression  
The University of Queensland, Brisbane, Australia  
Université Paul Sabatier, Toulouse, France
- 2011-2012: **Research engineer**  
Neuroethology of the zebrafish, Lab of Dr. Sumbre  
Ecole Normale Supérieure, Paris, France
- 2009-2011: **Master Biosciences, mention Bien**  
Equivalent to a Master degree in Science (M.Sc.), awarded with distinction; Major: Biology  
Ecole Normale Supérieure de Lyon (ENS), Lyon, France  
*Internships: Neurobiology, CNRS-UMR 5167, Lyon, France*  
*Population Genetics, The University of Sydney, Sydney, Australia*  
*Neurobiology, CNRS-UMR 5020, Lyon, France*
- 2008-2009: **Licence de biologie fondamentale, 3rd year**  
Equivalent to the final year of a Bachelor of Science (B.Sc.); Major: Biology  
Ecole Normale Supérieure de Lyon (ENS), Lyon, France  
*Internship: Ecology, CNRS-UMR 6116, Marseille, France*
- 2006-2008: **Classe préparatoire BCPST (Biologie Physique et Sciences de la Terre)**  
Two-year intensive course before the competitive entrance examinations to French “Grandes Ecoles”; Major: Science  
Lycée Lakanal, Sceaux, France
- 2003-2006: **Baccalauréat S, mention Très Bien**  
Equivalent to A-levels, awarded with the highest distinction; Major: Science  
Lycée de la Vallée de Chevreuse, France

## Additional formations

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2015: **FENS/CAJAL Behaviour and Neural Systems course**, Lisbon, Portugal.

2014: **International Brain Research Organization (IBRO) Advanced School of Neuroethology**, Sapporo, Japan.

2012: **Ecole des Neurosciences de Paris (ENP) Spring School** “Optical imaging and Electrophysiological recordings in Neuroscience” (lectures only), Paris, France.

## Teaching and supervision

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Courses on honeybee physiology, as part of the formation “Apiculture, Pathologie Agricole” of the Veterinary School of Nantes (ONIRIS), France. (2016 – to date)

Participation in the advanced course (VTK) on neurobiology (Universität Konstanz, Germany; 2017 – to date), in the teaching module "self-organization in social insects and other communities" (Universität Konstanz, Germany; 2020 – to date) and in the honeybee neurobiology course (University of Queensland, Australia; 2013).

### Supervision:

- 2 PhD students: Kavitha Kannan, Daniela Ramirez-Moreno
- 2 visiting PhD students: Souvik Mandal (3 months), Sajedeh Sarlak (9 months)
- 3 Master students: Charlène Jamme, Maxime Pocher, Mukilan Deivarajan-Suresh
- 5 Bachelor students: Karoline Weich, Cesar Bertinetti-Cerrato, Sinje Tigges, Aliena Erbe, Lena Seitz
- 1 Erasmus student: Lucrezia Meriggi
- 5 VTK students: Feng Liu, Sven Lauke, Johanna Roller, Ann-Kathrin Pohle, Lea Riede
- 8 Student assistants (HiWi): Feng Liu, Dario Walser, Karoline Weich, Cesar Bertinetti-Ceratto, Aamir Rizwani, Shehide Gashi, Katja Kümmerlen, Nada Mostafa

## Publications

(\*equal contributions)

Petrov T, Hajnal M, Klein J, Safranek D, **Nouvian M.** (2022) Extracting individual characteristics from population data reveals a negative social effect during honeybee defence. *PloS Computational Biology* 19:9.

Kannan K, Galizia C.G, **Nouvian M.** (2022) Olfactory strategies in the defensive behaviour of insects. *Insects* 13:5.

Lopez-Incera A\*, **Nouvian M\***, Ried K, Müller T, Briegel H.J. (2021) Honeybee communication during colony defence is shaped by predation. *BMC Biology* 19:106.

**Nouvian M**, Breed M. (2021) Colony defense by social insects. In: *Starr C. (eds) Encyclopedia of Social Insects*. Springer, Cham. doi: 10.1007/978-3-030-28102-1\_25.

**Nouvian M**, Galizia C.G. (2020) Complexity and plasticity in honey bee phototactic behaviour. *Scientific Reports* 10:7872.

- Hajnal M, **Nouvian M**, Šafránek D, Petrov T. (2019) Data-Informed Parameter Synthesis for Population Markov Chains. In: Češka M., Paoletti N. (eds) *Hybrid Systems Biology. HSB 2019. Lecture Notes in Computer Science*, vol 11705. Springer, Cham.
- Nouvian M**, Galizia C.G. (2019) Aversive training of honeybees in an automated Y-maze. *Frontiers in Physiology* 10:678.
- Nouvian M**, Deisig N, Reinhard J, Giurfa M. (2018) Seasonality, alarm pheromone and serotonin: insights on the neurobiology of honeybee defence from winter bees. *Biology Letters* 14:20180337.
- Nouvian M**, Mandal S, Jamme C, Claudianos C, d’Ettorre P, Reinhard J, Barron A, Giurfa M. (2018) Cooperative defence operates by social modulation of biogenic amine levels in the honeybee brain. *Proceedings of the Royal Society of London B* 285: 20172653.
- Nouvian M**, Reinhard J, Giurfa M. (2016) The defensive response of the honeybee *Apis mellifera*. *Journal of Experimental Biology* 219: 3505-3517.
- Pérez-Schuster V, Kulkarni A, **Nouvian M**, Romano S.A, Lygdas K, Jouary A, Dippopa M, Pietri T, Haudrechy M, Candat V, Boulanger-Weill J, Hakim V, Sumbre G. (2016) Sustained rhythmic brain activity underlies visual motion perception in zebrafish. *Cell Reports* 17: 1098–1112.
- Nouvian M**, Hotier L, Claudianos C, Giurfa M, Reinhard J. (2015) Appetitive floral odours prevent aggression in honeybees. *Nature Communications* 6, doi: 10.1038/ncomms10247
- Seebacher F, Holmes S, Roosen N, **Nouvian M**, Wilson R, Ward A. (2012) Capacity for thermal acclimation differs between populations and phylogenetic lineages within a species. *Functional Ecology* 26(6):1418-1428.
- Mandairon N, Sultan S, **Nouvian M**, Sacquet J, Didier A. (2011) Involvement of neurogenesis in olfactory associative learning? The operant or non-operant component of the task makes all the difference. *Journal of Neuroscience* 31: 12455-60.

## Conference contributions

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- ICN 2022 (Lisbon, Portugal) – **Nouvian M**. Flexible recruitment during honeybee colony defence. (poster)
- CNI 2021 (online) – **Nouvian M**. Recruitment during honeybee colony defence. (oral)
- IUSSI-NWE 2020 (online) – **Nouvian M**. Recruitment during honeybee colony defence. (oral)
- Etho 2020 (Tübingen, Germany) – **Nouvian M**. Recruitment during honeybee colony defence. (oral)
- GRS/GRC 2019 “Modulation of neural circuits and behavior” (Les Diablerets, Switzerland) – **Nouvian M**, Mandal S, Jamme C, Claudianos C, d’Ettorre P, Reinhard J, Barron A, Giurfa M. Alarm pheromone regulates aggression through dopamine and serotonin brain levels. (poster)
- NWG 2019 (Göttingen, Germany) – **Nouvian M**, Galizia CG. Interactions between phototaxis and colour learning in honeybees. (poster)
- IUSSI 2018 (Guarujá, Brazil) – Chair of symposium “Social and complex forms of learning in social insects” – **Nouvian M**, Galizia G. Towards automated conditioning of honeybees in complex tasks. (oral)

- ICN 2018 (Brisbane, Australia) – **Nouvian M**, Galizia CG, Mercer A. Effect of group size on the stinging responsiveness of honeybees. (poster)
- IUSSI-SF 2017 (Paris, France) – **Nouvian M**, Mandal S, Jamme C, Claudianos C, d’Ettorre P, Reinhard J, Barron A, Giurfa M. Alarm pheromone regulates aggression through dopamine and serotonin brain levels. (poster)
- NeuroFrance 2017 (Bordeaux, France) – **Nouvian M**, Mandal S, Jamme C, Claudianos C, d’Ettorre P, Reinhard J, Barron A, Giurfa M. Alarm pheromone regulates aggression through dopamine and serotonin brain levels. (poster)
- ICN 2016 (Montevideo, Uruguay) – **Nouvian M**, Hotier L, Claudianos C, Giurfa M, Reinhard J. Appetitive floral odours prevent aggression in honeybees. (poster)
- CNI 2015 (Gif-sur-Yvette, France) – **Nouvian M**, Barron A, Giurfa M, Reinhard J. Changes in brain biogenic amines levels after aggression and alarm pheromone exposure in honeybees. (oral)
- ICN 2014 (Sapporo, Japan) – **Nouvian M**, Giurfa M, Reinhard J. Insights into honeybee aggression: role of the olfactory context. (poster)
- IUSSI 2014 (Cairns, Australia) – **Nouvian M**, Giurfa M, Reinhard J. Olfactory modulation of honeybee aggressiveness. (oral)
- ASSAB 2014 (Katoomba, Australia) – **Nouvian M**, Giurfa M, Reinhard J. Olfactory modulation of honeybee aggressiveness. (oral)

## Academic services

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**Review of journal articles for:** Science; Scientific reports; BMC Biology; Brain, Behavior & Evolution; PeerJ; Ecological Entomology; Journal of Insect Behavior; Frontiers in Insect Science.

**Review of grant proposals for:** Swiss National Science Foundation; National Science Foundation (USA); Centre for the Advanced Study of Collective Behaviour (Uni KN).

**Committees:** Zukunftskolleg Executive Committee (2020, 2021)

## Awards and Grants

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### Awards:

**Prix Dominique Clos**, Académie des Sciences et Belles Lettres de Toulouse, rewarding an outstanding thesis in biology (2017)

**Dean’s Award**, the University of Queensland, rewarding an outstanding thesis (2017)

### Research grants:

**Big Chunk grant**, Centre for the Advanced Study of Collective Behaviour, for a PhD position and equipment (2022)

**Small project grant**, Centre for the Advanced Study of Collective Behaviour, for equipment (2021)

**Research fellowship**, Zukunftskolleg, 5-year funding for position and start-up grant (2019)

**DFG Research grant**, 3-year funding for position and equipment (2019)

**Young Scholar Fund Bridge fellowship**, 2-month funding for position (2018)

**Independent Research Start-up grant**, Zukunftskolleg, for laboratory equipment (2017)

**Post-doctoral fellowship**, Fyssen Fondation, 2-year funding for position (2016)

**Bourse d’aide à la cotutelle**, Université Paul Sabatier, support for joint PhD (2015)

**Centennial Scholarship + International tuition fee waiver**, the University of Queensland, 3.5-year PhD scholarships (2013)

### Travel grants:

**Erasmus+ Staff mobility**, for co-supervision of a MSc student at the University of Trento (2019)  
**Mentorship grant**, Zukunftskolleg, continuing cooperation with Pr. Alison Mercer (2018)  
**IUSSI-SF Travel Grant**, International Union for the Study of Social Insects – French Section, travel to IUSSI (2018)  
**Mentorship grant**, Zukunftskolleg, enabling cooperation with Pr. Alison Mercer (2017)  
**Heiligenberg Student Travel Award**, International Society of Neuroethology, travel to ICN (2016)  
**Graduate School International Travel Award**, the University of Queensland, travel to partner university in France (2015)  
**IBRO grant**, International Brain Research Organization, travel to ICN and associated Advanced School of Neuroethology (2014)  
**Heiligenberg Student Travel Award**, International Society of Neuroethology (returned, 2014)  
**IUSSI Travel Grant**, International Union for the Study of Social Insects, travel to IUSSI (2014)  
**ExploRA'Sup**, Région Rhône Alpes, 4-month allowance for MSc internship abroad (2010)

### Outreach

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**Press release** "Honeybees are less likely to sting in larger groups" on the university of Konstanz and the Centre for the Advanced Study of Collective Behaviour websites (2022)

<https://www.campus.uni-konstanz.de/wissenschaft/honigbienen-stechen-in-groesseren-gruppen-seltener>; <https://www.exc.uni-konstanz.de/collective-behaviour/news-and-events/news/details/honeybees-are-less-likely-to-sting-in-larger-groups/>

**Invited seminar** "Das Stechverhalten der Biene" for Konstanz's beekeeping club (07.04.2022)

**Interview for podcast** "Bee Communication During Collective Defense & Harvesting Honey" in "Two bees in a podcast", University of Florida (2021) <https://podcasts.apple.com/lv/podcast/bee-communication-during-collective-defense-harvesting/id1494010558?i=1000537742705>

**Interview for podcast** "Wie Honigbienen stechen" in "Bienengespräch" (2021) <https://www.bienenpodcast.at/bg069/>

**Interview for article** "Auf ihn mit Bananenduft!" in the journal "Bienen & Natur" (08.2021)

**Press release** "To sting or not to sting?" on the university of Konstanz website (2021)

<https://www.uni-konstanz.de/en/university/news-and-media/current-announcements/news-in-detail/stechen-oder-nicht-stechen/>

**Interview for article** "Don't get stung these holidays" in the online magazine of the University of Konstanz (2020) <https://www.campus.uni-konstanz.de/en/science/avoiding-summer-s-sting>

**Scientific review for Youtube video** "Gare aux dards" in CNRS series "Zeste de science" (2018) [https://www.youtube.com/watch?v=73c00M8AYSI&list=PLVY7WAgrMLDfVIWaeQ9GVk93Trxs1\\_5kR](https://www.youtube.com/watch?v=73c00M8AYSI&list=PLVY7WAgrMLDfVIWaeQ9GVk93Trxs1_5kR)

**Press release** "Gare au dard! Neurobiologie du comportement défensif de l'abeille" on the CNRS website (2018) <https://www.insb.cnrs.fr/fr/cnrsinfo/gare-au-dard-neurobiologie-du-comportement-defensif-de-labeille>

**Interview for article** "When good bees go bad" on website "Chemical & Engineering news" (2018) <https://cen.acs.org/biological-chemistry/biochemistry/bees-bad/96/web/2018/06>

**Interview for issue** "La résilience des abeilles" in the journal "La Recherche" (10.2016)

**Interview for article** "Floral smells stop stinging bees" on website "Inside Science" (2015) <https://www.insidescience.org/news/floral-smells-stop-stinging-bees>

**Press release** "Flower power: des odeurs qui bloquent l'agressivité des abeilles" on the CNRS website (2015) [http://www2.cnrs.fr/sites/communique/fichier/cp\\_crca\\_vf.pdf](http://www2.cnrs.fr/sites/communique/fichier/cp_crca_vf.pdf)