

# Elodie Ey

Date of birth: 23<sup>rd</sup> of March 1982

Nationality: French

Physiopathologie des Aneuploidies, gène à effet de dose et Trisomie 21

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## RESEARCH PROJECTS

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Since 2020 IGBMC, Illkirch. Chargée de recherche CNRS in the team Physiopathologie des Aneuploidies, gène à effet de dose et Trisomie 21 (Yann Herault). Social communication in mice and rats, in normal and pathological conditions.

2014-2020 Institut Pasteur, Paris. Chargée de recherche CNRS (section 26: Brain, cognition and behaviour) in the Human Genetics and Cognitive Functions laboratory of Prof. Dr. Thomas Bourgeron (CNRS UMR 3571): unravelling the social communication system in mice, in normal and pathological conditions (application to mouse models of autism spectrum disorders).

2008-2014 Institut Pasteur, Paris. Post-doctoral fellow in the Human Genetics and Cognitive Functions laboratory of Prof. Dr. Thomas Bourgeron: unravelling the social communication system in mice, in normal and pathological conditions (application to mouse models of autism spectrum disorders).

2005-2008 German Primate Centre, Göttingen. PhD study with data collected in 10-months field work in Gashaka-Gumti National Park, Nigeria: "The influences of ecological factors on vocal communication in olive baboons (*Papio hamadryas anubis*)".

Feb.-Jun. 2005 German Primate Centre, Göttingen. Master thesis: "Age- and sex-related variations in clear calls of chacma baboons (*Papio cynocephalus ursinus*)".

Jun.-Aug. 2004 Institute of Zoology, School of Veterinary Medicine, Hanover. Three-month training period: "Social signals in chimpanzees (*Pan troglodytes*), focusing on laughter and smile".

## ACADEMIC EDUCATION

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2017 Institut Pasteur, Paris. Experimentation with laboratory animal: surgical formation.

2015 Univ. Paris Diderot, Paris. Habilitation à Diriger les Recherches.

2011 Institut Pasteur, Paris. Experimentation with laboratory animals: level I.

2005-2008 German Primate Centre, Göttingen. PhD study: "The influences of ecological factors on vocal communication in olive baboons (*Papio hamadryas anubis*)". Tutor: Prof. Dr. J. Fischer.

2002-2005 Institut National Agronomique Paris-Grignon. Specialisation in Animal Sciences, Behavioural Sciences and Evolution Sciences. "Diplôme d'ingénieur" and Master degree "Sciences and Techniques of Living being".

2000-2002 Lycée Jean Rostand, Strasbourg. Preparatory class for admission to post-graduate engineering schools, specialising in biology, mathematics, physics, and chemistry.

2000 Baccalauréat (secondary school leaving diploma), majored in mathematics.

## FIVE MAIN PUBLICATIONS

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de Chaumont F\*, **Ey E\***, Torquet N, Lagache T, Dallongeville S, Imbert A, et al. (2019) Real-time analysis of the behaviour of groups of mice via a depth-sensing camera and machine learning. *Nature Biomedical Engineering*. doi:10.1038/s41551-019-0396-1 (\*: equally contributed).

**Ey E**, Torquet N, de Chaumont F, Lévi-Strauss J, Ferhat A-T, Le Sourd A-M, Boeckers TM, Bourgeron T. (2018) Shank2 mutant mice display hyperactivity insensitive to methylphenidate and reduced flexibility in social motivation, but normal social recognition. *Frontiers in Molecular Neuroscience*. doi: 10.3389/fnmol.2018.00365

Torquet N., de Chaumont F., Faure P., Bourgeron T., **Ey E**. (2016) mouseTube – a database to collaboratively unravel mouse ultrasonic communication. *F1000 Research* 5:2332. doi: 10.12688/f1000research.9439.1

**Ey E.**, Torquet N., Le Sourd A-M., Leblond C. S., Boeckers T. M., Faure P., Bourgeron T. (2013) The autism ProSAP1/Shank2 mouse model displays quantitative and structural abnormalities in ultrasonic vocalisations. *Behavioural Brain Research* 256: 677-689.

Schmeisser M.J.\*, **Ey E.\***, Wegener S.\*, Bockmann J., Stempel A.V., Kuebler A., Janssen A.-L., Udvardi P.T., Shiban E., Spilker C., Balschun D., Skryabin B.V., tom Dieck S., Smalla K.-H., Montag D., Leblond C.S., Faure P., Torquet N., Le Sourd A.-M., Toro R., Grabrucker A.M., Shoichet S.A., Schmitz D., Kreutz M.R., Bourgeron T., Gundelfinger E.D., Boeckers T.M. (2012) Autistic-like behaviours and hyperactivity in mice lacking ProSAP1/Shank2. *Nature* 486: 256-260 (\*: equally contributed).

## LANGUAGE AND COMPUTER SKILLS

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French, English fluently spoken and written, German fluently spoken and written.

Computing skills: Avisoft SASLab Pro Recorder (bio-acoustical software), LMA 2005 (bio-acoustical software), Ethovision (video tracking software from Noldus Information Technology, The Netherlands), The Observer (ethological software from Noldus Information Technology, The Netherlands), R (statistical computing and graphic software), Python. Initiation to MySQL.

## STUDENT SUPERVISION

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Jun.-Sep. 2015 Institut Pasteur, Paris. Supervision of Julie Lévi-Strauss from the Ecole de l'INSERM (level Licence 3): Social recognition in mice – insights from the literature and from pilot experiments.

2014-2018 Institut Pasteur, Paris. Supervision of the Ph.D. project of Allain-Thibeault Ferhat: Caractérisation comportementale et neurobiologique de souris *Shank3*-KO pour comprendre les bases neurobiologiques des troubles du spectre autistique.

Jan.-July 2014 Institut Pasteur, Paris. Supervision of the Master II project of Allain-Thibeault Ferhat: Caractérisation comportementale de souris modèles des autisms: étude comparative des souris invalidées pour Shank2 et Shank3.

2008-2014 Institut Pasteur, Paris. Supervision of 3 students during short internships (Licence 3 and Master II).

2007-2008 German Primate Center, Göttingen. Supervision of the Diploma thesis (equivalent to Master II) of a student (Charlotte Rahn) working on a parallel project.

## SCIENTIFIC INVOLVMENT

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- 2019 ENS, Paris. Teaching in the M2 module “Neuropathology” (2h, level Master II): “Social communication in mice, a model to understand the mechanisms behind autism”.
- 2019 Institut Imagine, Paris. Member of the jury for the selection of international PhD students.
- 2018 Fondation de France, Paris. Consulting expert in the jury of the Grand Prix de la Recherche.
- 2018 Institut Pasteur, Paris. Teaching in the “Comportement et bien-être animal” training course: Mice as social animals – communication and social abilities.
- 2018 Labex BioPsy, Paris. Member of the decision board for the financing of fourth year Ph.D theses.
- 2014-2017 Institut Pasteur, Paris. Teaching during the training for animal experimentation level I: “The behaviour of laboratory animals – implications for welfare and experiments” (2 sessions per year; 2h).
- 2015 Institut Pasteur, Paris. Member of the animation committee of the Neuroscience Department.
- January 2014 Noldus Information Technology user meeting. Co-organiser of a meeting for users of softwares and hardwares from Noldus Information Technology (The Netherlands) at the Institut Pasteur, Paris.
- 2013-2015 Institut Pasteur, Paris. Member of the ethical committee for experimentation with animals (CETEA) at the Institut Pasteur.
- April 2012 International Workshop on Mouse Ultrasonic Communication. Organisation of the first 2-day workshop gathering more than 60 worldwide scientists working on mouse vocal communication in April 2012 ([http://www.ura2182.cnrs-bellevue.fr/workshop\\_usv](http://www.ura2182.cnrs-bellevue.fr/workshop_usv)). The 2014 edition will be held at the University of Tokyo, Japan in August 2014.
- 2008-2012 Université Paris Sud. Teaching on Vocal Communication in Primates (2h, Master I).
- Paper reviewing in Animal Behaviour, Physiology & Behavior, Translational Psychiatry, Journal of Neuroscience Methods, PLoS One, Molecular Autism, Neuroscience, International Journal of Primatology, Scientific Reports, eLife, Cerebral Cortex, JoVE, Biological Psychiatry, Autism Research, Neuron.

## GRANTS

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- 2019 Fondation de France (financing of one year salary for a post-doctoral researcher)
- 2017 Fondation pour la Recherche Médicale (financing of a fourth year for the PhD student A-T. Ferhat)
- 2014-2015 PHC Procope Exchange grant: 6 800 euros
- 2006-2007 Ph.D grant from the German Academic Exchange Service (DAAD) (7 950 euros for 10 months)