

Solenn Patalano

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ACADEMIC POSITIONS

May 2018 – present **Research Associate / Marie Skłodowska-Curie Research Fellow**
Institute for Fundamental Biomedical Research (IFBR), 'Alexander Fleming',
Athens, Greece

Current Projects:

1. ***Ecological influence in Epigenetic-mediated Learning and Memory formation in Honeybee (MeeLiH)*** – involved fieldwork, behavioural paradigms, molecular technics and bioinformatics (ONT sequencing: library prep, and bioinformatics analysis)
2. ***Evaluation of Honeybee detoxification capacity from veterinary medicines*** – involved molecular technics and bioinformatics (MASS-SPEC and RNA-seq: samples and library prep, and bioinformatics analysis)
3. ***Standardisation of Honey metagenomic analysis*** – involved apiary monitoring, molecular technics and bioinformatics (ION torrent sequencing: sample prep, taxonomic classifiers evaluation and bioinformatic pipeline for eDNA honey analysis, R)

Jan. 2011 – Sept. 2016 **Postdoctoral Researcher Associate**
'Babraham Institute', Epigenetics program, Cambridge, UK with Prof. Wolf Reik (FRS)

Project: DNA methylation Dynamics in Social Insects Societies – involved fieldwork, behavioural observation, molecular technics and bioinformatics (Illumina sequencing: sample and library prep, and bioinformatics analysis, R)

May 2009 – Dec. 2010 **Research Associate**
Zoological Society of London (ZSL), London Zoo, UK with Dr. Seirian Sumner

Project: Gene expression study in castes of Polistes wasps – involved fieldwork, behavioural observation, molecular technics

EDUCATION

Sept. 2003 – June 2008 **Ph.D. in Cellular, Molecular and Developmental Biology (E.U. label)**

Centre for Genomic Regulation (CRG), Barcelona, Spain and University of Nice Sophia-Antipolis, France

Thesis: Translational control mechanisms of Drosophila dosage compensation. Dr Fatima Gebauer, Dr Christian Sardet

Sept. 2001 – June 2003 **MSc. in Biology and Cellular Physiology**

CNRS-UMR 7009, Observatoire Océanologique Villefranche/Mer, France

Thesis: Characterization of the PAR polarity genes in the ascidian embryo.

Dr Janet Chenevert, Dr Christian Sardet

Sept. 2000 – June 2001 **BSc. in Biology of the Organisms**

University Francois Rabelais, Tours, France / University of Valencia, Spain

Thesis: Development of an immuno-detection technique for glial cells in the dorsal ganglion of mouse embryos. Dr. Isabel Fariñas (ERASMUS 6months for BSc thesis)

PEER-REVIEWED PUBLICATIONS

[Full list of publications](#) (Google Scholar h-index:11, Citations: 681)

* Corresponding author.

1. Galanis A., Vardakas P., Reczko M., Harokopos V., Hatzis P., Skoulakis E.M.C, Pavlopoulos G.A., **Patalano S.*** Bee foraging preferences, microbiota and pathogens revealed by direct shotgun metagenomics of honey (2021). BioRxiv DOI: [10.1101/2021.06.09.447678](https://doi.org/10.1101/2021.06.09.447678)
2. Hatjina F., Adjlane N., Charistos L., Raffaele Dall'Olio R., Drazic M.M., Filipi J., **Patalano S.**, and Kezic N. Citizen Scientist Initiative for Measuring Varroa Damage Thresholds: Common Efforts for Data Collection - CSI Varroa. (2021) Bee World TBEE. DOI: [10.1080/0005772X.2021.1935611](https://doi.org/10.1080/0005772X.2021.1935611)
3. Lengronne T., Mlynski D., **Patalano S.**, Richard J., Keller L., Sumner S. (2021). Multi-level social organization and nest drifting behavior in a eusocial insect. Proceedings of the Royal Society B. DOI: [10.1098/rspb.2021.0275](https://doi.org/10.1098/rspb.2021.0275)
4. **Patalano S.***, Alsina A., Gregorio-Rodriguez C., Bachman M., Dreier S., Hernando-Herraez I., Nana P., Balasubramanian S., Sumner S., Reik W., Rulands S. Specialisation and plasticity in a primitively social insect. (2020). BioRxiv DOI : [10.1101/2020.03.31.007492](https://doi.org/10.1101/2020.03.31.007492).
5. Cini A., Branconi R., **Patalano S.**, Cervo R., Sumner S. (2020). Behavioural and neurogenomic responses of host workers to social parasite invasion in a social insect. Insect Socioux (67), 295–308. DOI: [10.1007/s00040-020-00765-6](https://doi.org/10.1007/s00040-020-00765-6)
6. COLOSS monitoring group including **Patalano S.** (2020). Honey bee colony winter loss rates for 35 countries participating in the COLOSS survey for winter 2018-2019, and the effects of a

new queen on the risk of colony winter loss. *Journal of Apicultural Research* (TJAR) DOI:[10.1080/00218839.2020.1797272](https://doi.org/10.1080/00218839.2020.1797272)

7. COLOSS monitoring group including **Patalano S.** (2019). Loss rates of honey bee colonies during winter 2017/18 in 36 countries participating in the COLOSS survey, including effects of forage sources. *Journal of Apicultural Research* 58, (4) 479-485. DOI:[10.1080/00218839.2019.1615661](https://doi.org/10.1080/00218839.2019.1615661)

8. 14 IUSSI consortium authors including **Patalano S.** (2017). Deconstructing Superorganisms and Societies to Address Big Question in Biology. *TREE* 32 (11), 861-872. DOI: [10.1016/j.tree.2017.08.004](https://doi.org/10.1016/j.tree.2017.08.004)

9. **Patalano S.*** et al. (+25 authors) (2015). Molecular signatures of plastic phenotypes in two eusocial insect species with simple societies. *PNAS* 112 (45), 13970 - 13975. DOI: [10.1073/pnas.1515937112](https://doi.org/10.1073/pnas.1515937112)

10. Cini A., **Patalano S.**, Segonds-Pichon A., Bursby G., Cervo R., Sumner S. (2015). Social parasites and the molecular basis of phenotypic evolution. *Frontiers in Genetics* 6, 32. **Joint first authors.** DOI: [10.3389/fgene.2015.00032](https://doi.org/10.3389/fgene.2015.00032)

11. Ferreira P.G., **Patalano S.**, Chauhan R., French-Constant R., Gabaldon T., Guigo R. Sumner S. (2013). Transcriptome analyses of primitively eusocial wasps reveal novel insights into the evolution of sociality and the origin of alternative phenotypes. *Genome Biology*. Feb 26;14(2):R20. [10.1186/gb-2013-14-2-r20](https://doi.org/10.1186/gb-2013-14-2-r20)

12. **Patalano S.**, Hore T.A., Reik W., and Sumner S. (2012). Shifting behaviour: epigenetic reprogramming in eusocial insects. *Curr Opin Cell Biol.* 24, 367-73. DOI: [10.1016/j.ceb.2012.02.005](https://doi.org/10.1016/j.ceb.2012.02.005)

13. Lengronne T., Leadbeater E., **Patalano S.**, Dreier S., Field, J., Sumner S., and Laurent K. (2012). Little effect of seasonal constraints on population genetic structure in eusocial paper wasps. *Ecology and Evolution* 2(10):2615-24. DOI: [10.1002/ece3.366](https://doi.org/10.1002/ece3.366)

14. **Patalano S.**, Mihailovich M., Belacortu Y., Paricio N., and Gebauer F. (2009). Dual sex-specific functions of Drosophila Upstream of N-ras in the control of X chromosome dosage compensation. *Development* 136, 689-698. DOI: [10.1242/dev.027656](https://doi.org/10.1242/dev.027656)

15. Abaza I., Coll O., **Patalano S.**, and Gebauer F. (2006). Drosophila UNR is required for translational repression of male-specific lethal 2 mRNA during regulation of X-chromosome dosage compensation. *Genes Dev* 20, 380-389. DOI: [10.1101/gad.371906](https://doi.org/10.1101/gad.371906)

16. **Patalano S.**, Pruliere G., Prodon F., Paix A., Dru P., Sardet C., and Chenevert J. (2006). The aPKC-PAR-6-PAR-3 cell polarity complex localizes to the centrosome attracting body, a macroscopic cortical structure responsible for asymmetric divisions in the early ascidian embryo. *Journal of cell science* 119, 1592-1603. DOI: [10.1242/jcs.02873](https://doi.org/10.1242/jcs.02873)

Other Publication

NEW SCIENTIST - The big idea: What insect societies tell us about cells. [Is the natural world one big soap?](#) By Seirian Sumner and **Solenn Patalano**. Opinion (2012, Issue 2866)

ORAL PRESENTATIONS

International Conferences or External Seminar Series

'VIB Conference series: Revolutionizing Next-Generation Sequencing'. *Specialisation and plasticity of biological systems: when social insects teach us to look further up*. **Selected Speaker**. Antwerp, Belgium (March 2019)

'COLOSS Conference'. *Results of the 1st survey of colonies losses in Greece*. **Invited Speaker**. Ghent University, Belgium (Sept. 2018)

'Molecular Evolution and Bioinformatic Seminar Series'. *Epigenetic mechanisms for phenotypic plasticity in the simple society of Polistes wasps*. **Invited Speaker**. Münster University, Germany (October 2016)

'Centre de Recherche sur la cognition animal Seminar Series'. *Epigenetic mechanism for phenotypic plasticity in the simple society of Polistes wasps*. **Invited Speaker**. Toulouse, France (October 2016)

'Alexander Fleming Institute Seminar Series'. *Epigenetic and transcriptional responsiveness of social insects to environmental changes*. **Invited Speaker**. Athens, Greece (May 2016)

'Evolution and social behaviour JEB symposium'. *Epigenetic and transcriptional responsiveness of social insects to environmental changes*. **Invited Speaker**. Müren, Switzerland (March 2016)

'Behaviour, Ecology and Evolution Seminar Series'. *Genome packaging: is that enough to explain the caste plasticity in social insects?* **Invited Speaker**. Cambridge University, UK (March 2016)

'Centre of Thorax, CHU of Nantes, seminar series'. *Balancing DNA methylation to explain Behaviour*. **Invited Speaker**. France (October 2014)

17th Congress of the International Union for the Study of Social Insects (IUSSI), *Variation in behaviour plasticity by distinct regulation of the brain methylome*. **Selected Speaker**. Cairns, Australia (July 2014)

'UMR7622 Seminar Series'. *Balancing DNA methylation to explain Behaviour*. **Invited Speaker**. University of PARIS VI, France (May 2014)

'ESF-EMBO symposium'. *The epigenetic events underlying phenotypic plasticity in eusocial Polistes wasps*. **Selected Speaker**. St Feliu, Spain (September 2011)

'ZSL annual conference'. *The role of major royal jelly proteins in a fundamental transition in evolution: the "social intron"?* **Selected Speaker**. London, UK (October 2010)

'Protein Synthesis and Translational Control, EMBO Conference'. *The translational regulator UNR controls dosage compensation by multiples mechanisms*. **Selected Speaker**. Germany (September 2007)

SCIENTIFIC RESEARCH EXPEDITIONS

- 2018 – 2020 **Greece (3x3 Months) – Project leader**
Mission: A. mellifera memory dynamic
- 2017 **Greece (1 Month) – Project leader**
Pilot Mission: A. mellifera memory under natural and semi-natural conditions
- 2012 **Panamá (2 Months) – Field Coordinator / Project leader**
Mission: P. canadensis wasps organisation, Behavioural manipulations and tracking
- 2010 **Panamá (3 Months) – Field Assistant / Project leader**
Mission: P. canadensis wasps organisation, Behavioural observations and tracking
- 2009 **Panamá (3 Months) – Field Assistant**
Mission: P. canadensis wasps organisation, Behaviour and Radio Frequency Identification Tracking

FUNDING AND AWARDS

- 2021– 2022 Agriculture Ministry ‘Beekeeping improvement Action 6.1’
- 2021 Foundation Santé Research Grant
- 2020 – 2021 General Secretariat of Research and Technology ‘Flag action Bee Road’
- 2018 – 2020 H2020 Marie Skłodowska-Curie Fellowship
- 2011 – 2016 Wellcome Trust Post-Doctoral position
- 2009 – 2010 NERC Research Assistant position
- 2008 CRG studentship Fellowship
- 2003 – 2007 Spanish Government PhD Fellowship
- 2002 MSc Award for outstanding achievement

Travelling awards

- To the 17th Congress of the International Union for the Study of Social Insects (IUSSI). Cairns, Australia (2014)
- To ESF-EMBO symposium. St Feliu, Spain (2011)

SUPERVISING AND TEACHING ACTIVITIES

- 2018 – current **Project supervisor**, for master research project (1 student) and undergraduate projects (2 students), Institute for Fundamental Biomedical Research (IFBR), ‘Alexander Fleming’, Athens, Greece

2015 **Project co- supervisor**, for undergraduate research projects, 'Babraham Institute', Epigenetics program, Cambridge, UK (2 students)

2007 – 2012 **Lectures**, to undergraduate and graduate students at the University of Colón, Panamá and University of Valencia, Spain (In Spanish)

ORGANISATION OF SCIENTIFIC EVENTS

2011 – 2015 **Coordinator of the organizing committee “CAMBRIDGE EPIGENETIC CLUB”** (team of 6) – Outstanding speaker talks – Trimestral. Cambridge, UK

2015 **Coordinator of the symposium “Comparative sociogenomics: the importance of choosing your tools”** (team of 3). In association with the North European Section of IUSI Annual Meeting, Bristol, UK

2014 & 2015 **Coordinator of the “Annual Epigenetic Symposium”**. In association with the Epigenetic Club, Cambridge, UK

2006 **Coordinator of “First student symposium between CRG and CMIMA Institutes”** (Team of 3). Barcelona, Spain

CITIZEN SCIENCE AND OUTREACH ACTIVITIES

Citizen science – National Coordinator of the survey of the honeybee losses in Greece for the international organization [“COLOSS”](#) (Prevention of honey bee COlony LOSSes) (2017- present)

Public outreach activities – Organised and participated in interactive public outreach events:

- [LA NUIT DES IDÉES](#) – « Être Vivant : Au-delà de l'humain». Athens French Institute. Discussion around the idea of intelligence in non-human species, Greece (2020)
- Epigenetic Exhibition for the Royal Society of London and Cheltenham Science Festival, UK (2012 and 2013)
- “SCIENCE MEETS SOCIETY” – Scientific cafés – In collaboration With PRBB (Parc de Reserca de Biomedica de Barcelona) and CCCB (Centro Comtemporano de la Ciudad de Barcelona), Barcelona, Spain (2008)

School interventions

[BEE DAY](#) – ‘Discovering the importance and life of the bees’. Organizer of one-day school activities (100 children, 5 teachers) with local beekeepers and public primary schools (2018, 2019)

[A/R ART SCHOOL](#) – Process and questioning around the writing project of the writer Anne Penders following my research work.. Brussels, Belgium (2019)

REVIEWING AND WRITING ACTIVITIES

Peer reviewer For >20 manuscripts in PLOS Genetics, PLOS ONE, Development, Nature Ecology and Evolution, Open Biology (Royal Social Publishing), Frontiers in Physiology, Proceedings of the Royal Society B, Molecular Ecology, Naturwissenschaften, Scientific report, Apidology

Grant reviewer ANR Grant revision (French Government)

Experienced writer and co-writer for grant application (Unfunded) "RESEARCH-CREATE-INNOVATE SECOND CYCLE" (2019), EL.ID.EK. Research projects (2019), DSHB (2018), EVA CRANE foundation (2017 and 2020), H2020 Marie Skłodowska-Curie Fellowship (2016), ESRC-BBSRC join research call (2015), BBSRC responsive mode research grants (2011 and 2015), NERC standard grant (2011)

TRAINING COURSES AND MEMBERSHIPS

Bioinformatic and Statistical training Courses, participant in various Bioinformatics and Statistical Courses (SeqMonk, R, GraphPad), organised by the Bioinformatics group at the Babraham Institute and the School of Biological Sciences - Bioinformatics Training – University of Cambridge. Cambridge, UK (2012 – 2015)

Management course, participant 'the art of leadership – fewer conflicts, more results' by EMBO. Heidelberg, Germany (2014)

Trained Beekeeper by the Cambridge Beekeeper association and **active beekeeper** (Since 2017)

Member of the Hellenic society of Neuroscience (Since 2019)

Member of the international, non-profit "COLOSS association (Since 2017)

LANGUAGES

French: native proficiency,

Spanish: full professional proficiency,

English: full professional proficiency,

Italian: limited working proficiency,

Greek: B2 level: accelerate 8 months course (2016-2017)

Modern Greek Language Centre, University of Athens, Greece