

# ***CURRICULUM VITAE***

**Maria CAPOVILLA**

UMR7275 CNRS/UCA

Institut de Pharmacologie Moléculaire et Cellulaire

660, route des Lucioles

06560 Sophia Antipolis Valbonne

FRANCE

Office: +33 (0) 4 93 95 77 49

Port.: +33 (0) 6 33 93 29 54

Fax: +33 (0) 4 93 95 77 08

Email: maria.capovilla@ipmc.cnrs.fr

## **BIOGRAPHICAL DATA**

Born November 14<sup>th</sup>, 1962, in Ravenna (Italy)

Married

One son born 26/01/2002

Italian citizen

## **PRESENT POSITION (2018-present)**

Chargé de Recherche de Classe Normale du CNRS in the group “Métabolisme de l’ARN et maladies liées au neuro-développement” of Dr. Barbara Bardoni in the UMR7275 UCA-CNRS at the Institut de Pharmacologie Moléculaire et Cellulaire (IPMC, Valbonne, France).

## **PROFESSIONAL EXPERIENCE**

- 2011-2017 Chargé de Recherche de 1<sup>ère</sup> Classe du CNRS in the group of Alain Robichon, UMR 7254 INRA-CNRS-UNSA, Institut Sophia Agrobiotech (ISA, Sophia Antipolis, France)
- 2004-2011 Assistant Telethon Scientist of the Dulbecco Telethon Institute at the Dept. of Internal Medicine, Cardioangiology and Hepatology of the University of Bologna (Bologna, Italy; 1/8/2004-31/1/2006) and at the Dept. of Biology and Evolution of the University of Ferrara (Ferrara, Italy; 1/2/2006-31/7/2011)
- 2004-2011 Chargé de Recherche de 1<sup>ère</sup> Classe du CNRS on leave of absence from August 1<sup>st</sup> 2004 to July 31<sup>st</sup> 2011 for an Assistant Telethon Scientist position of the Dulbecco Telethon Institute of the Fondazione Telethon (Italy)
- 1998-2004 Chargé de Recherche de 1<sup>ère</sup> classe, UPR 9022 du CNRS, Institut de Biologie Moléculaire et Cellulaire (IBMC) (Strasbourg, France)
- 1997 Assistant Professor, Dept. of Molecular and Human Genetics, Baylor College of Medicine (Houston, TX, USA)
- 1992-1996 Postdoctoral Fellow in the laboratory of Prof. Juan Botas, Dept. of Molecular and Human Genetics, Baylor College of Medicine (Houston, TX, USA)
- 1987-1992 Research Associate in the laboratory of Prof. Vincenzo Pirrotta, Dept. of Cell Biology, Baylor College of Medicine (Houston, TX, USA)

## **EDUCATION**

- 2002 Habilitation à Diriger des Recherches, Université Louis Pasteur (Strasbourg, France)
- 1994 *Dottorato di Ricerca* in Genetics, University of Ferrara (Ferrara, Italy)

1986 *Laurea cum Laude* in Biological Sciences, University of Bologna (Bologna, Italy)

**TEACHING EXPERIENCE**

- 2022-2023 Training of Sarah Belaid, post-graduate student Licence Sciences de la Vie, parcours Biochimie/Neurologie/Physiologie at the Université Côte d’Azur (Nice, France) for three months
- 2022 Supervision of Lucas Niderkorn, 1<sup>st</sup> year BTS student in BioAnalyses et Contrôles, Lycée Jules Ferry (Cannes, France)
- 2022 Supervision of Julia Hocquet, 2<sup>nd</sup> year BTS student in Biotechnologie, Lycée Jules Ferry (Cannes, France)
- 2022 Supervision of Camille Courtieu, 1<sup>st</sup> year BTS student in Biotechnologie, Lycée Jean Mermoz, Montpellier
- 2018-2020 Co-Direction of Arnaud Fernandez, MD/PhD student, Université Côte d’Azur (Nice, France)
- 2018-2020 Supervision of Gosia Drozd, 4<sup>th</sup> year LABEX PhD student in Life Sciences ED85, Université Côte d’Azur (Nice, France)
- 2019 class entitled “Drosophila as a model for therapeutic studies” for the Summer School Brain Innovation Generation of the Université Côte d’Azur
- 2019 Supervision of Oussama Ourimi, 2<sup>nd</sup> year BTS student in Biotechnologie, Lycée Jules Ferry (Cannes, France)
- 2018 Supervision of Inès Krawczyk, 3<sup>rd</sup> year student in Licence Science de la Vie et de la Santé, Université Côte d’Azur (Nice, France)
- 2018 Supervision of Aurore Souef, 1<sup>st</sup> year BTS student in Biotechnologie, Lycée Simone Weil (Le Puy en Velay, France)
- 2017 Supervision of Laetitia Gibart, 1<sup>st</sup> year ingénieur en génie-biologique, Ecole Polytechnique Universitaire Polytech’Nice-Sophia (Sophia-Antipolis, France)
- 2011-2013 Supervision of Hussein Raad, PhD student in Molecular and Cellular Interactions, Institut Sophia Agrobiotech (Sophia Antipolis)
- 2006-2009 Lecturing as *Professore a Contratto* for the course “Molecular Embriology” for Master 2 students at the University of Ferrara (Ferrara, Italy)
- 2004-2008 Direction of Maria Florencia Tevy, PhD student in Biochemistry, University of Bologna (Bologna, Italy)
- 2006 Direction of Nadia Ranieri, Master student, University of Bologna (Bologna, Italy)
- 2001-2002 Supervision of Rosalba D’Alessandro, PhD student in Genetics and Molecular Evolution, University of Bari (Bari, Italy)
- 1999-2002 Direction of Zakaria Kambris, PhD student in Cellular and Molecular Biology, Université Louis Pasteur (Strasbourg, France)
- 1998 Direction of Zakaria Kambris, Master student, Université Louis Pasteur (Strasbourg, France)
- 2001 Lecturing on Developmental Biology and fly Innate Immunity as visiting Professor at the University of Bari (Bari, Italy)
- 2001 Supervision of Gregory Curiel, BTS student, the Lycée J. Rostand (Strasbourg, France)
- 2001 Training of Ariane Hertzog, undergraduate student, Université Louis Pasteur (Strasbourg, France)
- 2000 Training of Nathalie Schmitt, undergraduate student, Université Louis Pasteur (Strasbourg, France)

- 1999 Supervision of Francesca Amodeo, BTS student, the Lycée J. Rostand (Strasbourg, France)
- 1993-1997 Supervision of undergraduate students, PhD students and postdocs in the laboratory of Juan Botas, Baylor College of Medicine (Houston, Texas, USA)

### RESEARCH GRANTS AND FELLOWSHIPS

- 2021 *Crédits Scientifiques Incitatifs (CSI)* “Proteomics and lipidomics as tools to model Fragile X Syndrome in *Drosophila*” from the Université Côte d’Azur (Nice, France): 10 000€.
- 2021 *Financement de stages de Master environnés en binômes interdisciplinaires* “Identification of new therapeutics to treat Fragile X Syndrome and autism (TREAT-X)” from the Université Côte d’Azur (Nice, France) in collaboration with Maria Duca at the Institut de Chimie de Nice (Nice, France): 2 Master fellowships and 26 790€ for functioning.
- 2004-2011 Assistant Telethon Scientist Career, University of Ferrara (Ferrara, Italy; February 2006-July 2011) and University of Bologna (Bologna, Italy; August 2004-January 2006): 224 000€ for salary and 445 000€ for functioning.
- 2010 Funding from WeTechOff for the spinoff company Transflyer
- 2009 Funding from Spinner2013 for the spinoff company Transflyer
- 2005 Funding from Ministero dell’Istruzione dell’Università e della Ricerca, GALILEO project in collaboration with Michel Sémériva (Marseille, France)
- 1999 Funding from the Association pour la Recherche sur le Cancer
- 1999 Funding from the Ligue Regionale Contre le Cancer
- 1998 Aide à l’Implantation de Nouvelles Equipes from Fondation pour la Recherche Medicale: 300 000€
- 1998 Funding from the Université Louis Pasteur (Strasbourg, France): 100 00€
- 1995-1996 N.I.H. Postdoctoral Training Grant
- 1989-1994 Research Fellowship sponsored by the Italian Government

### EDITORIAL ACTIVITIES

- 2019-present Editorial Board Member of the Biology journal.
- 2021-present Associate Editor of Behavioral and Psychiatric Genetics (specialty section of Frontiers in Genetics and Frontiers in Psychiatry)

### EXTRA ACTIVITIES

Installation and responsibility of a recycling site and a composting site at the Institut de Pharmacologie Cellulaire et Moléculaire (Valbonne).

### PRESENTATIONS AT CONFERENCES

#### Oral presentations

- May 2022 «New insights into the pathophysiology of the Fragile X Syndrome using a *Drosophila* model»: oral presentation at the Club de Neurobiologie des Insectes (Montpellier, France)
- May 2016 «Paramutation in the Delta gene of *Drosophila* is mediated by RNA»: oral presentation at the “RNA metabolism: from transcription to degradation” conference at IPMC (Valbonne, France)

- October 2015 «Identification of a new paramutation-like event in *Drosophila melanogaster*» oral presentation at the 29<sup>th</sup> French *Drosophila* Conference (La Grande Motte, France)
- October 2014 «Genome Environment and Plasticity: flies, aphids and worms to understand epigenetic heredity»: oral presentation at the IX Scientific Retreat of the Dulbecco Telethon Institute (Pozzuoli, NA, Italy)
- October 2014 «*Drosophila* wings carry functional gustatory receptors that are associated to chemo-perception and flight»: oral presentation at the XVII Convegno della *Drosophila* Italiana (Anagni, RM, Italy)
- November 2013 «Functional gustatory receptors in *Drosophila* wings and their role in flight-associated chemoperception»: oral presentation at the 27<sup>th</sup> Annual French *Drosophila* Conference (Obernai, France)
- June 2010 «Transactivation in *Drosophila* of human enhancers by human transcription factors involved in Congenital Heart Diseases»: oral presentation at the XV Convegno Italiano della *Drosophila* (Lecce, Italy)
- October 2008 «*Drosophila* as a model to study human regulatory networks in heart development»: oral presentation by postdoc Florencia Tevy at the Journées Francophones de la Drosophile (Carré-le-Rouet, France)
- September 2006 «Identification of direct Hox target genes in the *Drosophila* cardiac tube»: oral presentation by PhD student Florencia Tevy at the XIII Convegno della *Drosophila* Italiana (Bologna, Italy)
- June 2006 «Identification of the heart-specific enhancers of putative Hox target genes in *Drosophila*»: oral presentation at the 52<sup>nd</sup> Convegno G.E.I. (Otranto, Italy)
- May 2005 «Molecular mechanisms underlying the functional specificity of Hox proteins in the control of cardiac development in *Drosophila melanogaster*»: oral presentation at the Dulbecco Telethon Institute III Retreat (Orvieto, Italy)
- April 2005 «*In silico* analysis of putative HOX target genes in the *Drosophila* cardiac tube»: oral presentation by student Florencia Tevy at the workshop Cardiovascular development: towards biomedical applicability (Baeza, Spain)
- October 2004 «Molecular Mechanisms of Hox functional specificity in the cardiac tube»: oral presentation at the XII Convegno della *Drosophila* Italiana (Napoli, Italy)
- September 1998 «Regulation d'*apterous* par les protéines Hox chez l'embryon» : oral presentation at the 13<sup>th</sup> Journées Francophones de la Drosophile (Cannes, France)
- April 1994 «Molecular mechanisms of phenotypic suppression in a direct target of homeotic regulation»: oral presentation orale at the 35<sup>th</sup> Annual *Drosophila* Research Conference (Chicago, Illinois, USA)
- September 1993 «Direct homeotic regulation of *decapentaplegic*»: oral presentation at the 39<sup>th</sup> Conference of the Italian Genetic Society (Senigallia, Italy)
- September 1993 «Homeotic regulation of *decapentaplegic*»: oral presentation at the 13<sup>th</sup> European *Drosophila* Research Conference (Crete, Greece)
- April 1993 «Homeotic regulation of *decapentaplegic*»: oral presentation at the 34<sup>th</sup> Annual *Drosophila* Research Conference (San Diego, California, USA)
- March 1991 «*Giant* is a repressor of *Kruppel* and *knirps*»: oral presentation at the 32<sup>th</sup> Annual *Drosophila* Research Conference (Chicago, Illinois, USA)

**Posters**

- October 2022 «Understanding the pathophysiology of the Fragile X Syndrome using a *Drosophila* model»: poster at the 34<sup>th</sup> French *Drosophila* Conference (Sète, France)
- May 2018 «Functional characterization of new genes implicated in Early Onset Schizophrenia and Autism»: poster at the Journées de l'Ecole Doctorale de Nice (Nice, France)
- September 2012 «Functional gustatory receptors in *Drosophila* wings reveal their role in guidance and exploration associated to flight»: poster at the 14<sup>th</sup> European *Drosophila* Neurobiology Conference (Padova, Italy)
- October 2011 «Sensory signaling pathways modified by the frequency- and density-dependent gene *foraging* controlling dispersive behavior in *Drosophila*»: poster at the 25<sup>th</sup> Annual French *Drosophila* Conference (Lyon, France)
- September 2011 «*Ndae1* expression and regulation in *Drosophila* embryos»: poster at the 2<sup>nd</sup> joint meeting of the French and British Societies for Developmental Biology (Nice, France)
- March 2011 «A frequency- and density-dependent gene that orchestrates dispersive behavior in *Drosophila* is a modifier of sensory signaling pathways»: poster at the 52<sup>nd</sup> Annual *Drosophila* Conference (San Diego, CA, USA)
- September 2010 «*Drosophila melanogaster* as a model system to investigate the genetic and molecular functions of transcription factors involved in Congenital Heart Diseases» poster at the Dulbecco Telethon Institute Retreat (Palermo, Italy)
- November 2009 «Transactivation in *Drosophila* of human enhancers by human transcription factors involved in Congenital Heart Diseases»: poster at the European *Drosophila* Conference (Nice, France)
- November 2009 «Trans-flyer, a new startup company for the production of *Drosophila* transgenics»: poster at the European *Drosophila* Conference (Nice, France)
- March 2009 «Identification of co-regulated genes and *cis*-regulatory modules in *Drosophila* contractile cardiomyocytes»: poster at the 50<sup>th</sup> Annual *Drosophila* Research Conference (Chicago, IL, USA)
- March 2009 «*Drosophila* as a model to study in vivo the normal and abnormal functions of human TFs involved in CHDs»: poster at the XV Telethon Scientific Convention (Riva del Garda, Italy)
- May 2008 «Identification of direct Hox target genes in the *Drosophila* heart»: poster at the Weinstein Cardiovascular Development Conference (Houston, USA)
- March 2008 «Identification of direct Hox target genes in the *Drosophila* heart»: e-poster at the Bi-Annual Meeting of the Working Group on Developmental Anatomy and Pathology (European Society of Cardiology) (Alberobello, Italy)
- September 2007 «Identification of direct Hox target genes in the *Drosophila* heart»: poster at the 9<sup>th</sup> FISV Conference (Riva del Garda, Italy)
- May 2007 «Identification of direct Hox target genes in the *Drosophila* cardiac tube»: poster at the Dulbecco Telethon Institute 5<sup>th</sup> Scientific Retreat (Foligno, Italy)
- March 2007 «Transcriptional control of *Drosophila* heart development as a model system to investigate the molecular mechanisms underlying inborn human heart diseases»: poster at the Telethon Scientific Convention (Riva del Garda, Italy)
- May 2006 «Identification of the heart-specific enhancers of two putative Hox target genes in *Drosophila*»: poster at the Dulbecco Telethon Institute IV Retreat (Terni, Italy)

- March 2006 «Identification of the heart-specific enhancers of two putative Hox target genes in *Drosophila*»: poster at the 47<sup>th</sup> Annual *Drosophila* Research Conference (Houston, Texas, USA)
- March 2005 «Molecular mechanisms underlying the functional specificity of Hox proteins in the control of cardiac development in *Drosophila melanogaster*»: poster at the Telethon Scientific Convention (Salsomaggiore Terme, PC, Italy)
- March 2000 (1) «Hox proteins directly regulate *apterous* expression in the somatic mesoderm», (2) «*Drosophila* as a model system to study human neurodegenerative diseases» and (3) «The Jak and Toll pathways are both involved in the induction of novel complement C3/ $\alpha$ 2-macroglobulin like molecules during the immune response of *Drosophila*»: posters at the 41<sup>st</sup> Annual *Drosophila* Research Conference (Pittsburgh, PA, USA)
- March 1999 «*Drosophila* as a model system to investigate neurodegeneration»: poster at the 40th Annual *Drosophila* Research Conference (Bethesda, Maryland, USA)
- November 1999 «*apterous* is a direct target of Hox regulation in the embryonic somatic mesoderm» : poster at the European *Drosophila* Conference (Zurich, Switzerland)
- April 1997 (1) «Mechanisms of homeotic function» and (2) «*apterous* function in muscle development is dependent on direct homeotic regulation»: posters at the 38<sup>th</sup> Annual *Drosophila* Research Conference (Chicago, IL, USA)
- July 1995 «In vivo regulation of a direct target of homeotic proteins»: poster at the European Developmental Biology Conference (Toulouse, France)
- April 1995 «Molecular mechanisms of homeotic regulation»: poster at the 36<sup>th</sup> Annual *Drosophila* Conference (Atlanta, Georgia, USA)

#### INVITATIONS TO CONFERENCES

- March 2001 «*Drosophila*, a breeder reactor to pose and solve problems» for the Euroconference on Animal Models of Human Diseases organized by the European School of Haematology (Sesimbra, Portugal).

#### PUBLICATIONS

1. Qian, S., Capovilla, M., and Pirrotta, V. (1991). The *bx* region enhancer, a distant *cis*-control element of the *Drosophila Ubx* gene and its regulation by *hunchback* and other segmentation genes. **EMBO J.** 10: 1415-1525.
2. Capovilla, M., Eldon, E. D., and Pirrotta., V. (1992). The *giant* gene of *Drosophila* encodes a b-ZIP DNA-binding protein that regulates the expression of other segmentation gap genes. **Development** 114: 99-112.
3. Qian, S., Capovilla, M., and Pirrotta, V. (1993). Molecular mechanisms of pattern formation by the BRE enhancer of the *Ubx* gene. **EMBO J.** 12: 3865-3877.
4. Capovilla, M, Brandt, M., and Botas, J. (1994). Direct regulation of *decapentaplegic* by *Ultrabithorax* and its role in *Drosophila* midgut morphogenesis. **Cell** 76: 461-475.
5. Chan, S., Jaffe, L., Capovilla, M., Botas, J., and Mann, R.S. (1994). The DNA-binding specificity of Ultrabithorax is modulated by cooperative interactions with extradenticle, another homeoprotein. **Cell** 78: 603-615.
6. Capovilla, M., and Botas, J. (1998). Functional dominance among Hox genes: repression dominates activation in the regulation of *dpp*. **Development** 125:4949-4957.

7. Lagueux, M., Perrodou, E., Levashina, E., Capovilla, M., and Hoffmann, J.A. Constitutive expression of a novel complement-like protein in Toll and Jak gain-of-function mutants of *Drosophila*. (2000). **Proc. Natl. Acad. Sci. USA** 97: 11427-11432.
8. Fernandez-Funez, P., Nino-Rosales, M. L., de Gouyon, B., She, W. C., Luchak, J. M., Martinez, P., Turieganos, E., Benito, J., Capovilla, M., Skinner, P. J., McCall, A., Canal, I., Orr, H. T., Zoghbi, H. Y., and Botas, J. (2000). Identification of genes that modify ataxin-1-induced neurodegeneration. **Nature** 408, 101-106.
9. Tzou, P., Ohresser, S., Ferrandon, D., Capovilla, M., Reichhart, J. M., Lemaitre, B., Hoffmann, J. A., and Imler, J. L. (2000). Tissue-specific expression of antimicrobial peptide genes in *Drosophila* surface epithelia. **Immunity** 13, 737-748.
10. Capovilla\*, M., Kambris, Z., and Botas, J. Direct regulation of the muscle identity gene *apterous* by a Hox protein in the somatic mesoderm. (2001). **Development** 28, 1221-1230.  
\*corresponding author
11. Tauszig-Delamasure, S., Bilak, H., Capovilla, M., Hoffmann, J. A., and Imler, J. L. (2002). *Drosophila* MyD88 is required for the response to fungal and gram-positive, but not gramnegative, bacterial infections. **Nature Immunology** 3, 91-97.
12. Kambris, Z., Imler, J. L., Hoffmann, J. A., and Capovilla, M. (2002). Tissue and stage-specific expression of the *Tolls* in *Drosophila* embryos. **Gene Expression Patterns** 2, 311-317.
13. Kambris, Z., Bilak, H., D'Alessandro, R., Hoffmann, J. A., Imler, J.-L., Capovilla, M. (2003). *DmMyD88* controls dorsoventral polarity in *Drosophila* embryos. **EMBO Reports** 4, 64-69.
14. Merabet, S., Kambris, Z., Capovilla, M., Berenger, H., Pradel, J., & Graba, Y. (2003). The hexapeptide and linker regions of the AbdA Hox protein regulate its activating and repressive functions. *Dev Cell*, 4(5), 761–768.
15. Munier, A. I., Medzhitov, R., Janeway Jr., C. A., Doucet, D., Capovilla, M., Lagueux, M. (2004). *graa1*: a *Drosophila* gene coding for several serine proteases. **Insect Biochemistry and Molecular Biology** 34, 1025-1035.
16. Vinciguerra,, Hasler, U., Mordasini, D., Rousselot, M., Capovilla, M., Ogier-Denis, E., Vandewalle, A., Martin, P.Y., and Feraille, E. (2005). Cytokines and sodium induce Protein Kinase A–dependent cell-surface Na,K-ATPase recruitment *via* dissociation of NFkb/IkB/ protein kinase A catalytic subunit complex in collecting duct principal cells. **J. Am. Soc. Nephrol.** 16, 2576–2585.
17. Monier, B., Tevy, M.F., Perrin, L., Capovilla, M., and Sémériva, M. (2007). Downstream of Homeotic genes: in the heart of *Hox* function. **Fly** 1, 59-67.
18. Arthaud, L., Ben Rokia-Mille, S., Raad, H., Dombrovsky, A., Prevost, N., Capovilla, M., and Robichon, A. (2011). Trade-Off between Toxicity and Signal Detection Orchestrated by Frequency- and Density-Dependent Genes. **PLoS ONE** 6 (5) pp. e19805
19. Algeri, A., and Capovilla, M. (2011). *Drosophila*, un volano per la ricerca biomedica. In *Nano & Biotech in Audiologia e Otologia*, T. Edizioni Omega, ed. (Martini, A. and Paludetti, G.), pp. 13-24
20. Amodio\*, V., Tevy\*, M. F., Traina, C., Kanti Ghosh, T., and Capovilla, M. (2012). Transactivation in *Drosophila* of human enhancers by human transcription factors involved in congenital heart diseases. **Developmental Dynamics** 241, 205-213. \*Co-first authors
21. Capovilla, M. (2012). The sound and the fly: *Drosophila* in biomedical research on human hearing. **Audiological Medicine** 10, 64-70.
22. Valmalette, J. C., Dombrovsky, A., Brat, P., Mertz, C., Capovilla, M., and Robichon, A. (2012). Light-induced electron transfer and ATP synthesis in a carotene synthesizing insect. **Scientific Reports** 2: 579.

23. Bratt, P., Valmalette, J. C., Mertz, C., de Sousa, G., Dombrovsky, A., Capovilla, M., and Robichon, A. (2012). Analysis of carotenoid compounds in aphids by Raman imaging and mass spectrometry. **Protocol Exchange**.
24. Tevy, M.F., Seyres, D., Traina, C., Perrin, L., and Capovilla, M. (2014). Ndael expression and regulation in *Drosophila* embryos. **PLoS ONE** 9, e92956.
25. Pasquier, C., Clément, M., Dombrovsky, A., Penaud, S., Da Rocha, M., Rancurel, C., Ledger, N., Capovilla, M., and Robichon, A. (2014). Environmentally selected aphid variants in clonality context display differential patterns of methylation in the genome. **PLoS ONE** 9, e115022.
26. Valmalette, J.C., Raad, H., Qiu, N., Ohara, S., Capovilla, M., and Robichon, A. (2015). Nano-architecture of gustatory chemosensory bristles and trachea in *Drosophila* wings. **Scientific Reports** 5, 14198.
27. Raad, H., Ferveur, J. F., Thibert, J., Ledger, N., Capovilla, M., Robichon, A. (2016). Functional gustatory role of chemoreceptors in *Drosophila* wings. **Cell Reports** 15, 1442–1454.
28. Verrando, P., Capovilla, M., and Rahmani, R. (2016). Trans-nonachlor decreases miR-141-3p levels in human melanocytes in vitro promoting melanoma cell characteristics and shows a multigenerational impact on miR-8 levels in *Drosophila*. **Toxicology** 368-369, 129–141.
29. Capovilla\*, M., Robichon, A., and Rassoulzadegan, M. (2017). A new paramutation-like example at the Delta gene of *Drosophila*. **PLoS ONE** 12, e0172780. <https://insb.cnrs.fr/fr/cnrsinfo/la-mouche-aussi-se-moque-des-lois-de-mendel> \*Corresponding author
30. Bardoni, B., Capovilla, M., and Lalli, E. (2017). Modelling Fragile X syndrome in neurogenesis: an unexpected phenotype and a novel tool for future therapies. **Neurogenesis** 4, e1270384.
31. Drozd, M., Bardoni, B., & Capovilla, M. (2018). Modeling Fragile X Syndrome in *Drosophila*. **Frontiers in Molecular Neuroscience**, 11, 124.
32. Drozd, M., Delhayé, S., Maurin, T., Castagnola, S., Grossi, M., Brau, F., Jarjat, M., Willemsen, R., Hukema, R. K., Capovilla, M., Lalli, E., and Bardoni, B. (2019). Reduction of Fmr1 mRNA levels rescues pathological features in cortical neurons from a model of FXTAS. **Molecular Therapy Nucleic Acids** 18:546-553.
33. Fernandez, A., Drozd, M., Dor, E., Thümmeler, S., Capovilla, M., Askenazy, F., and Bardoni, B. (2019). Childhood-onset schizophrenia: a systematic overview of its genetic heterogeneity from classical studies to the genomic era. **Frontiers in Genetics** 10:1137
34. Suranyi, G., Capovilla, M., Metelkina-Fernandez, V., Askenazy, F., Fernandez, A. (2020) Mayer-Rokitansky-Küster-Hauser Syndrome and Psychiatric Conditions: Toward the Importance of a Genetic Link. **Psychosomatics** Feb 18. pii: S0033-3182(20)30038-4.
35. Fernandez, A., Drozd, M., Thümmeler, S., Bardoni, B., Askenazy, F., & Capovilla, M. (2021). A novel microduplication in INPP5A segregates with schizophrenia spectrum disorder in the family of a patient with both childhood onset schizophrenia and autism spectrum disorder. **American Journal of Medical Genetics Part A**, 185(6), 1841.
36. Drozd, M. M., Capovilla, M., Previderé, C., Grossi, M., Askenazy, F., Bardoni, B., & Fernandez, A. (2021). A Pilot Study on Early-Onset Schizophrenia Reveals the Implication of Wnt, Cadherin and Cholecystokinin Receptor Signaling in Its Pathophysiology. *Frontiers in genetics*, 12, 792218.
37. Stojkovic, M., Petrovic, M., Capovilla, M., Milojevic, S., Makevic, V., Budimirovic, D. B., Corscadden, L., He, S. and Protic, D. (2024). Using a Combination of Novel Research Tools to Understand Social Interaction in the *Drosophila melanogaster* Model for Fragile X Syndrome. *Biology* 13, 432.

38. Milojevic, S., Ghosh, A., Makevic, V., Stojkovic, M., Capovilla, M., Tosti, T., Budimirovic, D., Protic, D. (2024). Circadian Rhythm and Sleep Analyses in a Fruit Fly Model of Fragile X Syndrome Using a Video-Based Automated Behavioral Research System. In. J. mol. Sci. 25, 7949.
39. Makević, V, Stojković, M., Bioraci, M., Milojević, S., Capovilla, M., Protić, D. (2024) Climbing as a measurement of locomotion ability in the *Drosophila* model of fragile X syndrome. Medicinska istaživanja; 57, 27

## REFERENCES

### **Dr. Barbara Bardoni**

UMR7275, IPMC, CNRS  
660, Route des Lucioles  
06560 Valbonne Sophia Antipolis  
(France)  
Tel.: +33 (0) 4 93 95 77 62  
Fax: +33 (0) 4 93 95 77 08  
E-mail: [bardoni@ipmc.cnrs.fr](mailto:bardoni@ipmc.cnrs.fr)

### **Prof. Jules Hoffmann**

UPR 9022 du CNRS  
Institut de Biologie Moléculaire et Cellulaire  
15, rue René Descartes  
67084 Strasbourg Cedex  
(France)  
Tel.: +33 (0) 3 88 41 70 77  
Fax: +33 (0) 3 88 60 69 22  
E-mail: [J.Hoffmann@unistra.fr](mailto:J.Hoffmann@unistra.fr)

### **Prof. Juan Botas**

Dept. of Molecular and Human Genetics  
Baylor College of Medicine  
Houston, TX, 77030 (U.S.A.)  
Tel.: +1 713 798 5937  
Fax: +1 713 798 5386  
E-mail: [jbotas@bcm.tmc.edu](mailto:jbotas@bcm.tmc.edu)

### **Prof. Vincenzo Pirrotta**

Rutgers University  
Dept. Molecular Biology & Biochemistry  
Nelson Biological Labs  
Piscataway, NJ 08854 (U.S.A.)  
Tel.: +1 732 445 2446  
Fax: +1 732 445 2447  
E-mail: [pirrotta@biology.rutgers.edu](mailto:pirrotta@biology.rutgers.edu)