

**Name, First name:** BESSE Florence  
**Birth Date (age):** 4<sup>th</sup> june 1976 (46)  
**Children :** 2 (2012, 2015)  
**Current position:** Group leader, iBV (Nice, France)  
DR1, CNRS

**ORCID ID:** [orcid.org/0000-0003-4672-1068](https://orcid.org/0000-0003-4672-1068)

**Group webpage:** <http://ibv.unice.fr/FR/equipe/besse.php>

**Publications in peer-review journals:** 32 accepted (*incl Nat. Rev. Cel. Biol., Nat. communications, Genes and Dev, Development, J. Cell Biol., Cur. Biol, eLife, J. Neurosc ...*)

## EDUCATION

- 2012: **HDR** in Life Sciences, University of Nice, France (*top 5%*)
- 2002: **PhD thesis**, University of Paris VII, France (*Mention très honorable avec Félicitations du jury*)
- 1999: Master degree in molecular and cellular developmental biology, University Paris VII (*Mention TB*)  
**Magistère** de Biologie Moléculaire et Cellulaire, ENS-Lyon I (1<sup>er</sup>/40)
- 1996-2000: Student of the **Ecole Normale Supérieure de Lyon** (ENS-Lyon)

## PROFESSIONAL EXPERIENCE

- 2022: **DR1 CNRS** appointment
- 2016: « Directeur de Recherche » appointment (**DR2 CNRS**)
- 2012- present: **member of the INRIA/i3S/iBV Morpheme team**  
Computational approaches in image processing and modeling (<http://www.sop.inria.fr/morpheme/>)
- 2009- present: **Group leader at the iBV**  
Post-transcriptional control of neuronal plasticity (<http://ibv.unice.fr/FR/equipe/besse.php>)
- 2009: « Chargé de Recherche » appointment (**CR1 CNRS**)
- 2007-2008: **Staff scientist**, Ephrussi lab, EMBL, Heidelberg, Germany
- 2003- 2007: **Post-doc**, Ephrussi lab, EMBL, Heidelberg, Germany  
Cell polarity and RNA localization

## HONORS

2018: Equipe FRM  
2015: Prime d'encadrement à diriger la recherche CNRS  
2009: HFSP Career Development Award  
2008: ATIP Biologie du Développement (CNRS)  
2003: HFSP, EMBO et FEBS Long-term Fellowships  
2000: Allocation Moniteur Normalien (AMN)

## ADMINISTRATIVE RESPONSABILITES

2021-présent: Member of the CoNRS evaluation committee – section 22, membre nommée  
2020-présent: Member of the EUR Life council (COSP; University Côte d'Azur)  
2016-2018: Member of the scientific council of the « complex systems » Academy (JEDI IDEX, Université Côte d'Azur)  
2015-2017: Membre du conseil académique d'UCA (Université Côte d'Azur)  
2011-2019: Member of the scientific council of the LabeX Signalife  
2012-present: Coordinateur scientifique de la plateforme d'imagerie iBV PRISM

## EXPERTISE

- Member of **HCERES committees**: IGH, Montpellier (2020)
- Member of the “Génétique des tumeurs” **scientific committee, La Ligue contre le Cancer** (2020- present)
- **Editorial board member**: Frontiers in Molecular Biosciences (Review editor)
- **Reviewer** for: *Nature, Science Advances, EMBO J., EMBO Reports, PNAS, Current Biol., eLife, PLoS Genetics, Development, J. Neurosci, Developmental Dynamics, Development Gene Evol., Neural Dev., Bioassays, RNA, Life science alliance, PLoS ONE, WIREs Dev Biol., WIREs RNA, Scientific reports ...*
- **Evaluation of research grants for**: ERC, Wellcome Trust (UK), MRC (UK), BBSRC (UK), FWF (Austria), DFG (Germany), ANR (France), Boehringer Ingelheim Fonds (Germany), NSF (USA)
- Member of **PhD thesis committees**: 25 (incl 15 as a reviewer and 4 as a president)
- Member of **HDR committees**: 10 (incl 5 as a reviewer and 1 as a president)
- Member of **University recruitment committees**: 2 (Univ Nice), 2 (Univ Marseille)

## MEETING ORGANIZATION -----

2022: European neurofly meeting (450 attendees), St Malo, France  
2022: The multiple facets of RNA in development and disease (120 attendees), Nice, France  
2022: EMBO India alliance lecture course on RNA binding proteins (100 attendees), Pune, India – *funded by EMBO*  
2021: European neurofly meeting (450 attendees) Toledo, Spain – *member of the scientific committee*  
2018: The multiple facets of RNA in development and disease (120 attendees) Nice, France  
2016: 30<sup>e</sup> french *Drosophila* meeting (100 attendees), Grasse, France  
2016 : workshop Maths-Bio (50 participants ; local), Sophia Antipolis, France  
2014 : 1<sup>er</sup> meeting LabeX signalife (international), Nice, France  
2011 : 2<sup>e</sup> meeting joint entre les Sociétés de Biologie du Développement française et anglaise (240 participants ; international), Nice, France

## INVITED TALKS AT INTERNATIONAL CONFERENCES (2016-2021 only) -----

2022 : EMBO conference : The complex life of RNA – EMBL, Heidelberg, Germany  
2022 : FOR2333 RNA transport meeting, Düsseldorf, Germany  
2022 : EMBO India lecture on RNA binding proteins – Pune, India  
2021 : Club de neurobiologie des invertébrés - virtual  
2021: NeuroFrance, Symposium on local translation in neurons – Strasbourg, virtual  
2021 : EMBO conference on RNA localization and local translation - Sant Feliu de Guíxols, Spain – *postponed to 2022*  
2020 : FENS Symposium on local translation - Glasgow, UK (virtual)  
2020: EMBO Conference Series on the Molecular and Developmental Biology of *Drosophila*- Kolymbari, Crete  
2019 : EDRC meeting, Chair of the RNA biology session - Lausanne, Suisse  
2018 : Conference Jacques Monod : Modeling cell fate - Roscoff, France  
2018 : French *Drosophila* meeting - Presqu'île de Giens, France  
2018 : Gordon Research Conference on Neural Development- Newport, USA  
2018: Workshop on integrative approaches in neurodegeneration – Lisbon, Portugal  
2017 : German Society for Biochemistry and Molecular Biology (GBM) meeting- Bochum, Germany  
2017 : 42nd FEBS congress- Jerusalem, Israel  
2016 : Biochemical Society Harden Conference on RNA regulation- Winchester, UK  
2016 : EMBO Conference Series on the Molecular and Developmental Biology of *Drosophila*- Chania, Crete

## INVITED SEMINARS (2016-2021 only) -----

2021 : London, ISMB  
2021 : CBI, Toulouse  
2021 : IBAB Research Seminar, Bangalore, India, virtual  
2021 : EMBL, alumni board meeting, virtual  
2019 : IGMM, Montpellier  
2018 : DZNE, Bonn, Germany  
2018 : Bordeaux RNA Club  
2017 : DENA workshop, Nice  
2017 : Cajal Institute, Madrid, Spain  
2016 : IJM, Paris, France  
2016 : Institut Curie, Paris, France

## MAIN RESEARCH CONTRACTS -----

2022- 2024: INCA PREVBIO (274 k€) – coordinator  
2021-2024: CNRS- 80 prime (60 k€) – partner  
2021-2024: CEFIPRA project (108 k€) – co-coordinator  
2021-2024: ANR MEMORNA (312 k€) - coordinator  
2018-2021: ANR MASTERMOD (75 k€) - partner  
2018-2021: Equipe FRM (376 k€) - coordinator  
2016-2020: ANR RNAGRIMP (290 k€) - coordinator  
2015-2017: ANR JPND FlySMALS (137 k€) - partner  
2015-2016: ARC Fixe (50 k€) – coordinator  
2015: Cancéropôle PACA – Emergence (27 k€) – coordinator  
2012-2015: ANRJCJC (250 k€) – coordinator  
2011-2019: Signalife LabeX (150 k€) – partner  
2010: FRM Implantation (70 k€) – coordinator  
2010-2011: ARC Fixe (50 k€) – coordinator  
2009- 2012: HFSP- Career Development Award (300 k\$) – coordinator  
2009-2011 : ATIP- CNRS (150 k€ + 100 k€) – coordinator

*Contracts obtained for the iBV imaging platform:*

2017: Région PACA and CD06 (320 k€) – LSM880 confocal microscope equipped with a fast airy scan module  
2011: ARC – Equipement lourd (420 k€) – LSM780 confocal microscope equipped with ultrasensitive spectral detector

## PARTICIPATION TO JOINT PROJECTS -----

- FlySMALS project (european JPND program ; 6 groups involved)

- Morpheme team (INRIA/i3S/iBV project team)

## SUPERVISION of students and researchers

Position	Durée	Type contrat	Nom (pays d'origine)
Chercheurs CNRS Enseignants-chercheurs	2012-	CRCN CNRS	Caroline Medioni (Fr)
	2012-	MdC UNS	Fabienne De Graeve (Fr)
Post-docs	2019-2021	Bourse ARC	Marine Dehecq (Fr)
	2012-2013	Bourse UNS	Sylvain Prigent (Fr)
	2010-2013	CDD ATIP et HFSP	Giovanni Marchetti (Italie)
	2009-2012	CDD ATIP et Ville de Nice	Caroline Medioni (Fr)
PhD students	2021- pr	Bourse MITI CNRS	Aurélien Darnas (Fr)
	2021- pr	Bourse ED	Mathilde Solyga (France)
	2020- pr	Bourse EUR - UCA	Yogesh More (Inde)
	2019- pr	Bourse ED	Bruna de Queiroz (Brésil)
	2016-2021	LabeX Signalife + La Ligue	Kavya V. Pushpalatha (Inde)
	2015-2019	LabeX Signalife + fonds propres	Nadia Formicola (Italie)
	2014-2018	Bourse ED + ARC	Jeshlee Vijayakumar (Inde) ‡
	2014-2018	LabeX Signalife	Agustina Razetti * (Argentine)
	2011-2014	Bourse ED	Alejandro Mottini * (Argentine)
	2009-2012	Financement ministériel	Hélène Bruckert (Fr)
ITAs	2021- pr	IE, CDD ANR	Lauren Blot (Fr)
	2020-2021	AI, CDD ANR	Léa Verdes (Fr)
	2018-2020	IE, CDD FRM	Anne-Sophie Lancelot (Fr)
	2014-2017	IE, CDD ANR	Marjorie Heim (Fr)
	2012-2014	IE, CDD ANR	Charlène Perrois (Fr)
	2010-	AJT puis TCN CNRS	Lucile Palin (Fr)
	2009-2010	TCN UNS	Aline Chessel (Fr)
Etudiants Master <sup>s</sup>	2019		Aline Martins (Fr)
	2018		Loan Vaillant-Beuchot (Fr)
	2017		Laure Parel (Fr)
	2016		Céline Boutres (Fr)
	2013		Marion Manceau (Fr)
	2011		Emilie Boone (Fr)
	2010		Guillaume Dolla (Fr)
	2009		Hélène Bruckert (Fr)

\*, co-supervision, <sup>s</sup> étudiants directement encadrés ; ‡ prix de thèse

## TEACHING ACTIVITIES

- 2021-present: **Master Biology ENS Ulm**, Paris (3h/year: *Spatio-temporal regulation of gene expression in the developing nervous system*)
- 2021: **Cours Curie** international on Post Transcriptional Gene Regulation and Genome Instability – Lecture on subcellular RNA targeting
- 2019-present: L3 - **Licence ENS Ulm**, Paris (3h/year: Subcellular RNA targeting)
- 2016: Lecture **Master international RNAES**, Université de Lorraine, Nancy, France (3h: *post-transcriptional regulation in the nervous system*)
- 2014-present : **Master Sciences de la Vie**, UNS, Nice, France
  - 6h UE « Neurobiologie cellulaire et moléculaire » (4h : *outils génétiques pour l'étude des circuits neuronaux ; 2h : transport axonal*)
  - 4h UE « Problèmes spécifiques de biologie du développement » (2h: *mise en place et remodelage de la morphologie neuronale*; 2h: *localisation des ARNs*)

## PUBLICATIONS

- 32 - Heim M, Blot L, Besse F. (2022). An RNA-immunoprecipitation protocol to identify RNAs associated with RNA-binding proteins in cytoplasmic and nuclear *Drosophila* head fractions. **STAR Protoc.** 2022 May 25;3(2):101415. doi: 10.1016/j.xpro.2022.101415.
- 31 - Pushpalatha K, Solyga M, Nakamura A and Besse F (2022). RNP components condense into repressive RNP granules in the aging brain. **Nature communications.** 13(1) :2782. doi: 10.1038/s41467-022-30066-4
- 30 – De Graeve F, Formicola N, Pushpalatha K, Nakamura A, Debreuve E., Descombes X and Besse F. (2022). Detecting Stress Granules in *Drosophila* neurons. **Methods in Molecular Biology**, 2428:229-242. doi: 10.1007/978-1-0716-1975-9\_14.
- 29 - Medioni C, Vijayakumar J, Ephrussi A and Besse F. (2021). High-resolution live-imaging of axonal RNP granules in *Drosophila* pupal brain explants. **Methods in Molecular Biology**, in press
- 28 – Medioni C., Ephrussi A. and Besse F. (2022). Live-imaging of axonal cargoes in *Drosophila* brain explants using confocal microscopy. **Methods in Molecular Biology**, 2417:19-28. doi: 10.1007/978-1-0716-1916-2\_2.

- 28 – Formicola N, Heim M, Dufourt J, Lancelot AS, Nakamura A, Lagha M and Besse F. (2021). Tyramine induces dynamic RNP granule remodeling and translation activation in the *Drosophila* brain. **eLife**, 10:e65742. doi: 10.7554/eLife.65742.
- 27 – Pushpalatha K and Besse F. (2019). Local translation in axons : when membraneless RNP granules meet membrane-bound organelles. **Front Mol. Biosci.** doi: 10.3389/fmolb.2019.00129.
- 26- Genovese S, Clément R, Gaultier C, Besse F, Narbonne-Reveau K, Daian F, Foppolo S, Luis NM, Maurange C. (2019). Coopted temporal patterning governs cellular hierarchy, heterogeneity and metabolism in *Drosophila* neuroblast tumors. **Elife**. pii: e50375. doi: 10.7554/eLife.50375.
- 25 - De Graeve F, Debreuve E, Rahmoun S, Ecsedi S, Bahri A, Hubstenberger A, Descombes X, Besse F. (2019). Detecting and quantifying stress granules in tissues of multicellular organisms with the Obj.MPP analysis tool. **Traffic**. 20(9):697-711. doi: 10.1111/tra.12678.
- 24 - Formicola N, Vijayakumar J and Besse F. (2019) Neuronal RNP granules : remote sensors of localized signals. **Traffic**, 20(9):639-649. doi: 10.1111/tra.12672
- 23- Vijayakumar J, Perrois C, Heim M, Bousset L, Alberti S and Besse F. (2019) The prion-like domain of *Drosophila* Imp promotes axonal transport of RNP granules *in vivo*, **Nature communications**. 10(1):2593. doi: 10.1038/s41467-019-10554-w.
22. Razetti A, Medioni C, Malandain G, Besse F# and Descombes X# (2018). A stochastic framework to model axon interactions within growing neuronal populations. **PLoS Comp Biol**, 14(12):e1006627. doi: 10.1371/journal.pcbi.1006627. (#, co-corresponding authors)
- 21- De Graeve F. and Besse F. (2018). Neuronal RNP granules: from physiological to pathological assemblies. **Biol. Chem**, 399(7):623-635. doi: 10.1515/hsz-2018-0141.
- 20- Dang LT, Tondl M, Chiu MHH, Revote J, Paten B, Tano V, Tokolyi A, Besse F, Quaife-Ryan G, Cumming H, Drvodelic MJ, Eichenlaub MP, Hallab JC, Stolper JS, Rossello FJ, Bogoyevitch MA, Jans DA, Nim HT, Porrello ER, Hudson JE, Ramialison M. (2018). TrawlerWeb : an online de novo motif discovery tool for next-generation sequencing datasets. **BMC Genomics**, 19(1):238. doi: 10.1186/s12864-018-4630-0.
- 19- Khayachi A, Gwizdek C., Poupon G., Alcor D., Chafai M., Cassé F., Maurin T., Prieto M., Folci A., De Graeve F., Castagnola S., Gautier R., Schorova L., Lorient C., Pronot M., Besse F., Brau F., Deval E., Bardoni B. and Martin S. (2018) Sumoylation regulates FMRP-mediated dendritic spine elimination and maturation. **Nat Communications**, 9(1):757. doi: 10.1038/s41467-018-03222-y.
- 18- Medioni C. and Besse F. (2018). The secret life of RNA : lessons from emerging technologies. **Methods in Molecular Biology**, 1649:1-28.
- 17- Gama-Carvalho M., Luque M., Pinto F., Besse F., Weis J., Schulz J.B., De Las Rivas J. (2017). Linking ALS and SMA through RNA transcriptome homeostasis: a genomics perspective. **J. Neurochem.**, 141(1):12-30.
- 16- Bruckert H\*, Marchetti G\*, Ramialison M., Besse F. (2015). *Drosophila* Hrp48 is required for Mushroom Body axon growth, branching and guidance. **PLoS One**, 10(8):e0136610. (\*, co-first).
- 15- Medioni C., Ephrussi A. and Besse F. (2015). Live-imaging of axonal transport in *Drosophila* brains. **Nature protocols**, 10(4):574-84.
- 14- Mottini A., Descombes X, and Besse F. (2015) From curves to trees: a tree-like shapes distance using the elastic shape analysis framework. **Neuroinformatics**, 13(2):175-91.
- 13- Marchetti G., Reichardt I., Knoblich J. and Besse F. (2014) The TRIM-NHL protein Brat promotes axon maintenance by repressing *src64B* expression. **J. Neurosci**, 34(41): 13855-64.
- 12- Medioni C., Ramialison M., Ephrussi A. and Besse F. (2014). Imp promotes axonal remodeling by regulating *profilin* mRNA during *Drosophila* brain development. **Current Biol.**, 24(7):793-800.
- 11- Medioni C., Mowry K. and Besse F. (2012). Principles and roles of mRNA localization in animal development. **Development**, 139(18) :3263-76. doi :10.1242/dev.078626.
- 10- Besse F\*, Lopez-de-Quinto S\*, Marchand V., Trucco A. and Ephrussi A. (2009). *Drosophila* PTB/hnRNPI promotes formation of high-order *oskar* RNP complexes and represses *oskar* translation. **Genes Dev.**, 23(2):195-207. (\*, co-first).
- 9- Besse F. and Ephrussi A. (2008). Translational control of localized mRNA: restricting protein synthesis in space and time. **Nat Rev Mol Cell. Biol.**, 9(12):971-80.
- 8- Besse F., Mertel S., Kittel R., Wichman C., Rasse T, Sigrist S. and Ephrussi A. (2007). The Ig-CAM Basigin controls compartmentalization and vesicle release at *Drosophila* synapses. **J. Cell. Biol.**, 177(5):843-55.
- 7- Martin-Lannere S., Lasbleiz C., Sanial M., Fouix S., Besse F., Tricoire H. and Plessis A. (2006). Characterization of the *Drosophila* myeloid leukemia factor. **Genes Cells**, 11(12):1317-1335.
- 6- Narbonne-Reveau K\*, Besse F\*, Busson D., Lamour-Isnard C. and Pret A.M. (2006). Fused regulates germline cyst mitosis and differentiation during *Drosophila* oogenesis. **Mech. Dev.**, 123(3):197-209. (\*, co-first).
- 5- Besse F., Busson D. and Pret A.M. (2005). Hedgehog signaling controls soma-germen interactions during *Drosophila* ovarian morphogenesis. **Dev Dyn**, 234 :422-431
- 4- Narbonne K., Besse F., Brissard-Zahraoui J., Pret A.M., and Busson D. (2004). Polyhomeotic is required for somatic cell proliferation and differentiation during ovarian follicle formation in *Drosophila*. **Development**, 131(6), 1389-1400.
- 3- Besse F. and Pret A.M. (2003). Apoptosis-mediated cell death within the ovarian polar cell lineage of *Drosophila melanogaster*. **Development**, 130(5), 1017-1027.
- 2- Besse F., Busson D. and Pret A.M. (2002). *fused* –dependant Hedgehog signal transduction is required for somatic cell differentiation during *Drosophila* egg chamber formation. **Development**, 129(17), 4111-24.
- 1- Le Frere-Belda M.A., Cappellen D., Daher A., Gil-Diez-de-Medina S., Besse F., Abbou C.C., Thierry J.P., Zafrani E.S., Chopin D.K. and Radvanyi F. (2001). *p15<sup>INK4b</sup>* in bladder carcinomas: decreased expression in superficial tumours. **Br J Cancer**, 85(10):1515-21