

Simona Casarosa - Curriculum Vitae

Last Name	Casarosa
First Name	Simona
Date of birth	
Place of birth	
Citizenship	
Spoken languages	Fluent English (Cambridge University Certificate of Proficiency in English) and French (French Baccalaureat), German (written and spoken) basic level.
Work Address	Laboratory of Neural Development and Regeneration, Department of Cellular, Computational and Integrative Biology (CIBIO), University of Trento Via Sommarive 9, 38123 Trento, ITALY

Professional and Research Experience

June 2015/present: Associate Professor (Professore Associato SSD BIO/06), Department of Cellular, Computational and Integrative Biology (CIBIO), University of Trento.

January 2009/present: Principal Investigator, Laboratory of Neural Development and Regeneration, Centre for Integrative Biology (CIBIO), University of Trento.

Research topics: Extracellular matrix molecules involved in retinal development and regeneration. Neuronal and retinal differentiation of stem cells. Biomaterials as modulators of stem cell differentiation. Patient-derived induced pluripotent stem cells as in vitro models of neurodevelopmental and degenerative disorders for the discovery of novel therapeutic strategies.

March 2010/present: Member of the Committee of the International Doctoral School in Biomolecular Sciences of the University of Trento.

July 2009/May 2015: Assistant Professor (Ricercatore a tempo determinato SSD BIO/06), Centre for Integrative Biology (CIBIO), University of Trento.

January 2000/December 2008: Post-doctoral Research Fellow and Research associate in the Cell and Developmental Biology Laboratory, University of Pisa.

Research topics: Stem cell differentiation in retinal cells. Nervous system and retinal development, role of homeobox transcription factors.

November 1996/December 1999: Post-doctoral fellow at the Institut de

Génétique et de Biologie Moléculaire et Cellulaire, Strasbourg, France. (Supervisor: Dr. François Guillemot).

Research topics: Role of bHLH transcription factors in neurogenesis and development of the mouse forebrain.

July/October 1996: Visiting Researcher, laboratory of Dr. Paolo Sassone Corsi, Institut de Genetique et Biologie Moleculaire, Strasbourg, France.

Collaborative project: Retinal homeobox genes during mouse development and establishment of circadian rhythms.

July/September 1994: Visiting researcher, laboratory of Dr. Antonio Simeone Istituto di Genetica e Biofiica, CNR, Naples, Italy.

Collaborative project: Isolation and characterization of novel retinal homeobox transcription factors.

April 1992/November 1993: Research training in the Cell and Developmental Biology Laboratory, University of Pisa (Supervisor: Prof. G. Barsacchi).

Research training: Engineering of the newt (hammerhead) ribozyme, creating a “cassette” transcriptional unit in order to inactivate gene functions in mammalian cells.

April 1990/March 1992: Undergraduate project as Degree Thesis: “Expression of *Xfin*, a Zn-finger protein, during cone differentiation in *X.laevis* retina” Supervisor: Prof G. Barsacchi.

Education/Qualifications

April 2020: National Scientific Habilitation as Full Professor. (Abilitazione Scientifica Nazionale Settore Istologia 05/H2 – I Fascia)

April 2018: National Scientific Habilitation as Full Professor. (Abilitazione Scientifica Nazionale Settore Anatomia Comparata e Citologia 05/B2 - I Fascia)

February 2014: National Scientific Habilitation as Associate Professor. (Abilitazione Scientifica Nazionale Settore Anatomia Comparata e Citologia 05/B2 - II Fascia)

July 8, 1997: Ph.D. defense.

November 1993/October 1996: Ph.D. student in Developmental Biology at the University of Pisa (Supervisor: Prof. G. Barsacchi). Thesis Title: "Identification of a novel homeobox-containing gene expressed during eye development in *X.laevis*."

March 27, 1992: Graduated with honours (110/110 cum laude) in Biology.

November 1986/March 1992: Faculty of Sciences, University of Pisa. Course in Biology.

July 1986: Baccalaureat à Option Internationale at the Lycée International, St. Germain en Laye, France.

Awards and Distinctions

2010: Selected in first-round evaluation of the European Research Council (ERC) Starting Grants 2009 (Research proposal evaluated as fundable, reserve list).

2010: University of Trento 10.000 Euros prize for ERC Starting Grants finalists.

March 2007: Poster Prize awarded for the study "How to drive embryonic stem cells toward a retinal fate: the role of eye specific transcription factors." XIV Telethon Scientific Convention, Salsomaggiore Terme, March 12-14, 2007.

November 1997/October 1999: Post-doctoral fellowship from the Human Frontier Science Program Organization to work at the Institut de Genetique et Biologie Moleculaire-IGBMC, Strasbourg, France.

November 1996/October 1997: Post-doctoral fellowship from the Association pour la Recherche sur le Cancer to work at the Institut de Genetique et Biologie Moleculaire-IGBMC, Strasbourg, France

June 1995: Fellowship awarded from the Marine Biological Laboratory, Woods Hole, Massachusetts, U.S.A., to attend the Summer Course on "Embryology: Cell Differentiation and Gene Expression in Early Development" (June, 13-July, 26).

Research Grants Awarded

2018: Italian Ministry of University and Research (MIUR) funding dedicated to basic research (FFABR), awarded following a peer-reviewed competition. 3.000 Euros.

2017: University of Trento: 5x1000 Funding awarded following an internal peer-reviewed competition. 24.000 Euros.

2012: University of Trento. International Summer School 2012 Funding. For the organization of the Summer School "Neural Stem Cells in Development and Disease" Levico Terme (Trento) September 4-8, 2012. 10.000 Euros

2012: Fondazione Cassa di Risparmio di Trento e Rovereto. "Driving pluripotent cells toward photoreceptor differentiation: a strategy for the cure of retinal degenerations." 70.000 Euros/2 years. Applicant's role: Co-PI with Dr. Federico Cremisi (Scuola Normale Superiore, Pisa, Italy).

2011: Italian Ministry of University and Research (MIUR) – PRIN. "Molecular and functional characterization of degenerating photoreceptors: identification of novel pathways to be targeted by molecules to enhance rod survival in a murine model of retinal degeneration". 66.000 Euros/2 years. applicant's role: PI of Research Unit.

2010: Italian Ministry of Health - Bando Giovani Ricercatori. "Antisense RNA-mediated

gene therapy of retinal dystrophies and dysfunctions." 3-year project, 100.000 Euros/year. Applicant's role: co-PI with Dr. MA Denti (CIBIO, Univ. Trento).

2009: 5 years start-up grant for CIBIO Principal Investigator. 25.000 Euros/year. Applicant's role: PI.

Technology Transfer

2010: Progetto IMPRESA (www.consorzioimpat.it) for the generation of academic spin-off of the University of Trento. Acronym of the spin-off project: STEMSCREEN. 12.500 Euros/ 1 year. Applicant's role: PI.

Research contracts

January/July 2009: Research contract at Centre for Integrative Biology (CIBIO), University of Trento.

November 2003/December 2008: Research contract with the Italian Telethon Foundation to work at the Biology Department, University of Pisa.

November 1999/October 2003: Research contract (Assegno di Ricerca) at the Biology Department, University of Pisa.

Editorial Board Member

Since 2014: Member of the Review Editorial Board of Tissue Engineering and Regenerative Medicine, a specialty of Frontiers in Bioengineering and Biotechnology.

2013-2017: Member of the Editorial Board of BioMed Research International, Hindawi Publishing Corporation

Reviewer Activities

2013: Reviewer for Human Brain Project (EU). Member of External Evaluator Panel (EEP) in January 2014.

Since 2012: ad hoc reviewer for EU Cost Actions Biomedicine and Molecular Biology Domain. Member of External Evaluator Panel (EEP) in September 2013.

Since 2011: ad hoc grant reviewer for FRM (Fondation pour la Recherche Medicale en France), Canada Foundation for Innovation, Graduate Women In Science Organisation, Czech Science Foundation.

Since 2010: ad hoc reviewer for the journals *Stem Cells*, *Scientific Reports*, *Journal of Neuroscience Methods*, *Journal of Biomaterial Sciences*, *Molecular Biotechnology*, *European Journal of Neuroscience*, *PLoS One*, *Neuroscience*, *International Journal of*

Molecular Sciences.

Organization of Scientific Congresses

Co-organizer of the 5th European Zebrafish Principal Investigator Meeting, Trento March 20-23, 2018. <http://events.unitn.it/en/ezpm2018>

Organizer of the 60° Convegno Gruppo Embriologico Italiano, Trento June 15-18, 2014. <http://events.unitn.it/gei2014>

Co-organizer: Summer School "Neural Stem Cells in Development and Disease" Levico Terme (TN) Sept. 4-8, 2012. <http://events.unitn.it/en/neuralstemcells2012>

Co-Organizer: "The Biotechnology Program @ Unitn: Today and Tomorrow", University of Trento, Trento 24-25 June 2011.

Invited Seminars

Role of extracellular matrix proteins in retinal degenerations. Second Joint Meeting of Société Zoologique de France and Unione Zoologica Italiana. Torino, Italy. September 18-23, 2017.

Alginate-based hydrogel for brain tissue regeneration approaches. EU FP7 Project Glowbrain Workshop "Visualization of Molecular Markers in the Brain" Zagreb, Croatia. January 28 - 31, 2015.

Role of BMP inhibition and sonic hedgehog signaling for *in vivo* and *in vitro* retinal differentiation. Master Degree Course in Neurobiology, University of Rome "La Sapienza", January 19, 2015.

In vivo and *in vitro* models of retinogenesis: from frog to mouse. PhD School in Molecular and Translational Medicine, University of Milano-Bicocca, December 5, 2014.

Retinal development (and regeneration): more than meets the eye? PhD School in Biology, University of Pisa. September 17, 2013.

Alginate encapsulation enhances neural differentiation of mouse embryonic stem cells. EU FP7 Project Glowbrain Workshop "Stem Cell Techniques" Zagreb, Croatia. May 23 – May 25, 2013.

Effects of three-dimensional scaffolds on neural differentiation of embryonic stem cells. International PhD Summer School on Biomaterials and Regenerative Medicine. Riva del Garda, July 16, 2012.

Stem cells and the retina - challenges for regenerative medicine. International PhD Summer School on Biomaterials and Regenerative Medicine. Riva del Garda, Sept. 19, 2011.

Turning stem cells into retina: possible strategies for the cure of retinal degenerations. Department of Neurology, Faculty of Medicine, University of Verona. Invited by Prof. P. Fabene. June 20, 2011.

Specification of retinal cell fate: the role of neural inducers and of microRNAs. XV Telethon Convention, March 11, 2009.

Induction of a retinal fate in *Xenopus* embryonic stem cells. Centre for Integrative Biology, University of Trento. Invited by Prof. Alessandro Quattrone, January 21, 2008.

Induction of a retinal fate in *Xenopus* embryonic stem cells. Department of Developmental and Cell Biology, University of California, Irvine. Invited by Prof. Anne L. Calof, November 7, 2007.

Induction of a retinal fate in *Xenopus* embryonic stem cells. Italian Tumors Institute, Firenze. Invited by Prof. Lucio Luzzatto, February 28, 2007.

Science Dissemination Activities

June 2017: Speaker at the Science Dissemination Day "Anche la Comunicazione Scientifica è una Scienza", University of Pisa.

2015-present: "Delegata all'Orientamento" for CIBIO Department

February 2014: Science Conference for high-school students and teachers "From the egg to the embryo: why do bats have wings and dolphins have fins?" Liceo Scientifico Rosmini, Rovereto.

2012-present: Organizer and speaker of the yearly Unistem Day (explaining stem cell biology to high school students), CIBIO, University of Trento. http://users2.unimi.it/unistem/index.php/archivio/archivio_unistemday/

September 24, 2010: Organization of a booth for the Centre for Integrative Biology (CIBIO) during the Researchers' Night (Trento).

November-December 2009: Theoretical and practical course for high school teachers (5 hours) "Genetica, biologia e salute" (Genetics, biology and health) organized by the Museo Tridentino di Scienze Naturali (Trento Science Museum), Trento.

Educational Activities

Course Instruction:

2020/present: Histology Course for 1st year students in Laurea a Ciclo Unico in Medicina e Chirurgia, University of Trento. 84 hrs/yr (7 credits).

2017/present: Animal Models of Disease Course for 1st year Master students in Cellular and Molecular Biotechnology, University of Trento. 36 hrs/yr (4 credits).

2012/2020: Cell Therapy Course for 1st year Master students in Cellular and Molecular Biotechnology, University of Trento. 65 hrs/yr (6 credits).

2012/2017: Developmental Biology Course for 3rd year Bachelor students in Biomolecular Science and Technology, University of Trento. 65 hrs/yr (6 credits).

2009/2012: Developmental Biology Course for 2nd year Bachelor students in Biomolecular Science and Technology, University of Trento. 90 hrs/yr (9 credits).

2004-2007: Embryology course for 2nd year Bachelor students in Biology, University of Pisa. 32 hrs/yr (4 credits).

2002-2006: Seminars in the Developmental Biology course for 3rd year Bachelor students in Biology, University of Pisa. 8 hrs/yr.

2000-2003: Lab Demonstrator/Teaching Assistant (Developmental Biology, Molecular Biology), University of Pisa. 1 hr/wk.

Training and Supervision:

Post-doctoral Fellows and Research Associates:

Roberta Defilippis, Post-doctoral Fellow January 2012 - October 2013. Research contract (Assegno di Ricerca) "Identification of new molecules to enhance rod survival in a murine model of retinal degeneration".

Tania Incitti, Post-doctoral Fellow September 2010 - November 2014. Research contract (Assegno di Ricerca) " Derivation of induced pluripotent stem cells (iPS) from human and mouse tissues and differentiation toward neural and retinal cells".

Elisa Murenu, Research Associate January 2010 - January 2011. Fellowship (Borsa di Studio "STEMSCREEN: generation of patient-specific in vitro models of disease and their use for novel drugs screening".

Andrea Messina, Post-doctoral Fellow June 2009 - November 2017. Research contract (Assegno di Ricerca) ""Molecular bases of retinal neuron differentiation".

PhD Students:

Maria Elena Castellini (2018-2022). International Doctoral School in Biomolecular Sciences, University of Trento. Project Title: "The role of extracellular matrix proteins in retinal degenerations".

Alessandra Speccher (2016-2019). International Doctoral School in Biomolecular Sciences, University of Trento. Project Title: "Brain Tissue Engineering Strategies".

Xuwen Zhang (2014-2017) International Doctoral School in Biomolecular Sciences, University of Trento. Project Title: " Characterization of Retinal Defects in Engrailed-2 Knockout (En2-/-) Mice, a Model for Autism Spectrum Disorders (ASD)".

Angela Bozza (2012-2014). International Doctoral School in Biomolecular Sciences, University of Trento. Thesis title " Modulation of stem cells differentiation by biomaterials: development of new models for retinal regeneration".

Lan Lei (2007-2010). Doctoral School in Biomolecular Sciences, University of Pisa. Thesis title "How to drive embryonic stem cells toward a retinal fate". (*current position: Assistant Professor, Nanjing University, China*).

Master Students (Laurea Magistrale):

Matteo Nicolin (December 2020 – October 2021) Master Degree in Cellular and Molecular Biotechnology (Corso di Laurea in Biotecnologie Cellulari e Molecolari), University of Trento. Thesis Title: "Characterization of IMPG2, a retinal proteoglycan, in zebrafish and human cell cultures".

Francesca Agostinacchio (February - October 2017) Master Degree in Cellular and Molecular Biotechnology (Corso di Laurea in Biotecnologie Cellulari e Molecolari), University of Trento. Thesis Title: " Challenges for three-dimensional co-culture: human Neural Stem Cells and human Mesenchymal Stem Cells as in vitro brain regeneration model".

Maria Elena Castellini (October 2016 - March 2017) Master Degree in Cellular and Molecular Biotechnology (Corso di Laurea in Biotecnologie Cellulari e Molecolari), University of Trento. Thesis Title: "Expression analysis of zebrafish IMPG2, a protein of the interphotoreceptor matrix".

Enrico Pontello (October 2016 - March 2017) Master Degree in Cellular and Molecular Biotechnology (Corso di Laurea in Biotecnologie Cellulari e Molecolari), University of Trento. Thesis Title: " Functional analysis of IMPG2 protein domains".

Alessandra Speccher (October 2015 - March 2016) Master Degree in Cellular and Molecular Biotechnology (Corso di Laurea in Biotecnologie Cellulari e Molecolari), University of Trento. Thesis Title: "Alginate-based hydrogels for brain tissue regeneration". (Graduated on 03/24/2016 with vote 110/110 cum laude).

Bartolomeo Bosco (March - October 2015) Master Degree in Cellular and Molecular Biotechnology (Corso di Laurea in Biotecnologie Cellulari e Molecolari), University of Trento. Thesis title: "Antitumoral and dedifferentiating properties of newly synthesized analogues of reversine - in vitro studies". (Graduated on 10/23/2015 with vote 105/110).

Camilla Boschian (March 2014 - February 2015) Master Degree in Biotechnology (Corso di Laurea in Biotecnologie Mediche, Veterinarie e Farmaceutiche), University of Parma. Thesis title: "Analysis of GABAergic neuron differentiation in an autism mouse model".

(Graduated on 04/16/2015 with vote 110/110 cum laude).

Simone Bridi (October 2012 - September 2013) Master Degree in Cell and Molecular Biology (Corso di Laurea in Biologia Molecolare e Cellulare), University of Bologna. Thesis title: "Role of the secreted protein Noggin during retinal development of *Xenopus laevis*". (Graduated on 10/15/2013 with vote 110/110 cum laude).

Angela Bozza (January - July 2011) Master Degree in Medical Biotechnology (Corso di Laurea in Biotecnologie Mediche), University of Padova. Thesis title: "The secreted protein Noggin is expressed in the embryonic and adult mouse retina". (Graduated on 07/18/2011 with vote 110/110).

Elisa Murenu (2008-2009) Master Degree in Molecular Neurobiology (Corso di Laurea in Neurobiologia Molecolare), University of Pisa. Thesis title "Induction of retinal fate in mESCs by Noggin treatment". (Graduated on 10/26/2009 with vote 110/110 cum laude).

Michele Bertacchi (2008-2009) Master Degree in Molecular Neurobiology (Corso di Laurea in Neurobiologia Molecolare), University of Pisa. Thesis title "Generation of photoreceptors from *Xenopus laevis* animal cap cells by Noggin and Xotx5 overexpression". (Graduated on 09/28/2009 with vote 110/110 cum laude).

Between 2000 and 2006 co-tutor of the following Master students: Antonio Vitobello (2005-2006); David Bottari (2004-2005); Paola Leone (2003-2004); Paolo Facella (2001-2002); Marcos A. Amato (2000-2001).

Undergraduate Students (Laurea Triennale):

Chiara Antonini (January - June 2016) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title: "Oxygen-glucose deprivation effects on neural stem cells lacking the *Engrailed2* gene". Graduated on 09/26/2016 with vote 101/110.

Mattia Tanel (June - November 2014) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title: "Extracellular matrix proteins during zebrafish development". Graduated on 03/25/2015 with vote 98/110.

Chiara Campregher (March - September 2014) BSc Degree in Laboratory Techniques (Corso di Laurea Triennale in Tecnico di Laboratorio Biomedico), University of Verona.

Maria Elena Castellini (June - August 2014) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title: "Differentiation and characterization of mouse embryonic stem cells into retinal precursors". Graduated on 09/26/2014 with vote 110/110.

Linda Meggiolaro (June - August 2014) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title: "Generation of photoreceptors from *Xenopus* animal cap cells". Graduated on

09/26/2014 with vote 101/110.

Veronica Foletto (February - July 2014) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title "Characterization of murine stem cells three dimensional cultures". (Graduated on 07/23/2014 with vote 106/110).

Alessandra Speccher (June - September 2014) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title "Delayed neural differentiation of sorted non-neural precursors". (Graduated on 01/29/2014 with vote 110/110).

Marco Castelli (June - September 2014) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title "Modulation of TGF-beta signaling in *Xenopus laevis* embryos". (Graduated on 01/29/2014 with vote 92/110).

Fabio Marsoner (June - September 2013) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title "Neural differentiation of mouse embryonic stem cells in three dimensional cultures". (Graduated on 09/27/2013 with vote 102/110).

Lara Dal Santo (May - July 2013) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title "Expression analysis of *Noggin* isoforms in *Xenopus laevis* embryos". (Graduated on 07/24/2013 with vote 87/110).

Rossella Corrà (September - December 2012) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title "Characterization of murine induced pluripotent stem cells". (Graduated on 03/26/2013 with vote 89/110).

Laura Mancinelli (September - December 2012) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title "Optimization of a differentiation protocol in GABAergic neurons". (Graduated on 03/26/2013 with vote 88/110).

Marco Santin (May - July 2012) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title "Phenotypic effect of TGF-beta inhibitors on *Xenopus* embryonic development". (Graduated on 09/26/2012 with vote 106/110).

Norma Fustini (January - March 2012) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title "Production of lentiviral vectors for murine fibroblasts reprogramming". (Graduated on 03/28/2012 with vote 102/110).

Roberta Eccheli (July - September 2011) BSc Degree Thesis in Biotechnology (Corso di

Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title "Expression analysis of the secreted protein Noggin in the embryonic mouse retina". (Graduated on 09/28/2011 with vote 108/110).

Simone Bridi (April - July 2011) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title "Characterization of Noggin expression during retinal development". (Graduated on 07/13/2011 with vote 110/110 cum laude).

Nicola Cornella (April - July 2011) BSc Degree Thesis in Biotechnology (Corso di Laurea Triennale in Scienze e Tecnologie Biomolecolari), University of Trento. Thesis title "Characterization of murine stem cells differentiation into retinal neurons". (Graduated on 07/13/2011 with vote 110/110 cum laude).

Between 2005 and 2007 co-tutor of the following BSc students (University of Pisa): Elisa Murenu (2007); Michele Bertacchi (2007); Francesco Gini (2006); Alessandra Romeo (2005).

Examiner:

2009/present: member of evaluating committees for post-doctoral fellowships (assegni di ricerca), research project fellowships (borse di studio a progetto), technical assistant positions (contratti di supporto tecnico alla ricerca) at the Faculty of Sciences, University of Trento.

2000/present: member of committees for student evaluation (Developmental Biology and Embryology courses) and for undergraduate thesis defense at the University of Pisa and University of Trento.

Ai sensi del D.P.R. 28 dicembre 2000, n. 445 dichiaro l'autenticità di quanto dichiarato sopra.

Trento, 26 Gennaio 2022

Publications: Peer-reviewed Articles 2007-2022

Covello G, Ibrahim GH, Bacchi N, **Casarosa S** and Denti MA. (2022). Exon skipping via chimeric antisense U1 snRNAs to correct Retinitis Pigmentosa GTPase-Regulator (RPGR) splice defect. *Nucleic Acids Therapeutics*, in press.

Gilmozzi V, Gentile G, Riekschnitz DA, Von Troyer M, Lavdas AA, Kerschbamer E, Weichenberger CX, Rosato-Siri MD, **Casarosa S**, Conti L, Pramstaller PP, Hicks AA, Pichler I, Zanon A. (2021). Generation of hiPSC-Derived Functional Dopaminergic Neurons in Alginate-Based 3D Culture. *Front Cell Dev Biol.* 9:708389. doi: 10.3389/fcell.2021.708389. eCollection 2021.

Provenzano G, Gilardoni A, Maggia M, Pernigo M, Sgadò P, **Casarosa S**, Bozzi Y. (2020). Altered Expression of GABAergic Markers in the Forebrain of Young and Adult Engrailed-2 Knockout Mice. *Genes (Basel).* 11:384. doi: 10.3390/genes11040384.

Cutarelli A, Ghio S, Zasso J, Speccher A, Scarduelli G, Rocuzzo M, Crivellari M, Maria Pugno N, **Casarosa S**, Boscardin M, Conti L. (2019). Vertically Aligned Functionalized Silicon Micropillars for 3D Culture of Human Pluripotent Stem Cell-Derived Cortical Progenitors. *Cells* 9(1). pii: E88. doi: 10.3390/cells9010088.

Karali M., Guadagnino I., Marrocco E., De Cegli R., Carissimo A., Pizzo M., **Casarosa S.**, Conte I., Surace E.M., Banfi S. (2019). AAV-miR-204 protects from retinal degeneration by attenuation of microglia activation and photoreceptor cell death. *Molecular Therapy* 19:144-156. doi: 10.1016/j.omtn.2019.11.005. Epub 2019 Nov 18. **I.F. 8.4**

Zhang X, Piano I, Messina A, D'Antongiovanni V, Crò F, Provenzano G, Bozzi Y, Gargini C, **Casarosa S.** (2019). Retinal Defects in Mice Lacking the Autism-Associated Gene Engrailed-2. *Neuroscience.* Apr 10. pii: S0306-4522 (19) 30236-2. doi: 10.1016/j.neuroscience.2019.03.061. [Epub ahead of print] **I.F. 3.24**

Chelini G, Zerbi V, Cimino L, Grigoli A, Markicevic M, Libera F, Robbiati S, Gadler M, Bronzoni S, Miorelli S, Galbusera A, Gozzi A, **Casarosa S**, Provenzano G, Bozzi Y. (2019). Aberrant somatosensory processing and connectivity in mice lacking Engrailed-2. *J Neurosci.* 39:1525-1538. doi: 10.1523/JNEUROSCI.0612-18.2018. **I.F. 6.07**

Poggi L., **Casarosa S.**, Carl M. (2018). An eye on the Wnt inhibitory factor Wif1. *Front. Cell Dev. Biol.* doi.org/10.3389/fcell.2018.00167.

Bosco B., Defant A., Messina A., Incitti T., Sighel D., Bozza A., Ciribilli Y., Inga A., **Casarosa S.**, Mancini I. (2018). Synthesis of 2,6-Diamino-Substituted Purine Derivatives and Evaluation of Cell Cycle Arrest in Breast and Colorectal Cancer Cells. *Molecules* Aug 10;23(8). pii: E1996. doi: 10.3390/molecules23081996. **I.F. 3.1**

Boschian C., Messina A., Bozza A., Castellini M.E., Provenzano G., Bozzi Y., **Casarosa S.** (2018). Impaired Neuronal Differentiation of Neural Stem Cells Lacking the Engrailed-2 Gene. *Neuroscience.* Aug 21 386:137-149. doi: 10.1016/j.neuroscience.2018.06.032.

I.F. 3.38

Bozzi Y., Provenzano G., **Casarosa S.** (2018). Neurobiological bases of autism-epilepsy comorbidity: a focus on excitation/inhibition imbalance. Eur J Neurosci. 47:534-548. doi: 10.1111/ejn.13595. **I.F. 2.83**

Messina A., Bridi S., Bozza A., Bozzi Y., Baudet M-L., **Casarosa S.** (2016). Noggin1 overexpression in retinal progenitors affects bipolar cell generation. International Journal of Developmental Biology 60:151-157. **I.F. 2.26**

Zunino G., Messina A., Sgadò P., Baj G., **Casarosa S.**, Bozzi Y. (2016). Brain-derived neurotrophic factor signaling is altered in the forebrain of Engrailed-2 knockout mice. Neuroscience 324:252-61. doi: 10.1016/j.neuroscience.2016.03.023. Epub 2016 Mar 14. **I.F. 3.23**

Provenzano G., Sgadò P., Genovesi S., Zunino G., **Casarosa S.**, Bozzi Y. (2015). Hippocampal dysregulation of FMRP/mGluR5 signaling in engrailed-2 knockout mice: a model of autism spectrum disorders. NeuroReport 26, 1101-1105. **I.F. 1.52**

Bertacchi M., Lupo G., Pandolfini L., **Casarosa S.**, D'Onofrio M., Pedersen R.A., Harris W.A. and Cremisi F. (2015). Activin/Nodal Signaling Supports Retinal Progenitor Specification in a Narrow Time Window during Pluripotent Stem Cell Neuralization. Stem Cell Reports <http://dx.doi.org/10.1016/j.stemcr.2015.08.011> **I.F. 5.36**

Caputo A., Piano I., Demontis G.C., Bacchi N., **Casarosa S.**, Della Santina L., Gargini C. (2015). TMEM16A is associated with voltage-gated calcium channels in mouse retina and its function is disrupted upon mutation of the auxiliary $\alpha 2\delta 4$ subunit. Front Cell Neurosci. 9:422. doi: 10.3389/fncel.2015.00422.

Bacchi N, Messina A, Burtscher V, Dassi E, Provenzano G, Bozzi Y, Demontis GC, Koschak A, Denti MA, **Casarosa S.** (2015). A New Splicing Isoform of Cacna2d4 Mimicking the Effects of c.2451insC Mutation in the Retina: Novel Molecular and Electrophysiological Insights. Invest Ophthalmol Vis Sci. 2015 Jul 1;56(8):4846-56. doi: 10.1167/iovs.15-16410. **I.F. 3.44**

Sun W., Incitti T., Migliaresi C., Quattrone A., **Casarosa S.**, Motta A. (2015). Viability and neuronal differentiation of neural stem cells encapsulated in silk fibroin hydrogel functionalized with an IKVAV peptide. J Tissue Eng Regen Med. doi: 10.1002/term.2053. [Epub ahead of print]. **I.F. 4.71**

Messina A., Lan L., Incitti T., Bozza A., Andreazzoli M., Vignali R., Cremisi F., Bozzi Y., **Casarosa S.** (2015). Noggin-Mediated Retinal Induction Reveals a Novel Interplay Between Bone Morphogenetic Protein Inhibition, Transforming Growth Factor β , and Sonic Hedgehog Signaling. Stem Cells 33(8):2496-508. doi: 10.1002/stem.2043. **I.F. 6.52**

Provenzano G., Pangrazzi L., Poli A., Sgadò P., Genovesi S., Zunino G., Berardi N., **Casarosa S.**, Bozzi Y. (2014). Hippocampal dysregulation of neurofibromin-dependent

pathways is associated with impaired spatial learning in Engrailed 2 knockout mice. Journal of Neuroscience, 34:13281-8. doi: 10.1523/JNEUROSCI.2894-13.2014. **I.F. 6.91**

Casarosa S., Bozzi Y., Conti L. (2014). Neural stem cells: ready for therapeutic applications? Molecular and Cellular Therapies 2:31 doi:10.1186/2052-8426-2-31.

Bacchi N., **Casarosa S.***, Denti M.* (2014). Splicing-correcting therapeutic approaches for retinal dystrophies: where endogenous gene regulation and specificity matter. Investigative Ophthalmology & Visual Science, 55, 3285–3294. DOI:10.1167/iovs.14-14544. * Co-corresponding authors. **I.F. 3.44**

Incitti T., Messina A., Bozzi Y., **Casarosa S.** (2014). Sorting of Sox1-GFP mouse embryonic stem cells enhances neuronal identity acquisition upon factors-free monolayer differentiation. BioResearch Open Access 3, 127-135. DOI: 10.1089/biores.2014.0009.

Messina A., Incitti T., Bozza A., Bozzi Y., **Casarosa S.** (2014). Noggin expression in vertebrate retina suggests a conserved role during Vertebrate evolution. Journal of Histochemistry & Cytochemistry 62, 532-540. DOI: 10.1369/0022155414534691 **I.F. 2.53**

Bozza A., Coates E.E., Incitti T., Ferlin K., Messina A., Menna E., Bozzi Y., Fisher J.P., **Casarosa S.** (2014). Neural differentiation of pluripotent cells in 3D alginate-based cultures. Biomaterials 35, 4636-4645. **I.F. 7.64**

Sun W., Incitti T., Migliaresi C., Quattrone A., **Casarosa S.**, Motta A. (2014). Genipin-crosslinked gelatin-silk fibroin hydrogels for modulating the behaviour of pluripotent cells. J Tissue Eng Regen Med. 2014 Jan 29. doi: 10.1002/term.1868. [Epub ahead of print]. **I.F. 4.71**

Sgadò P., Dassi E., Adami V., Zunino G., Genovesi S., **Casarosa S.**, Bozzi Y. (2013). Transcriptome profiling in Engrailed2 knockout mice reveals common molecular pathways associated with autism spectrum disorders. Molecular Autism, 4, 51-62. doi:10.1186/2040-2392-4-51 **I.F. 5.41**

Sgadò P., Genovesi S., Kalinowsky A., Zunino G., Macchi F., Allegra M., Murenu E., Provenzano G., Tripathi PP., **Casarosa S.**, Joyner AL., Bozzi Y. (2013). Loss of GABAergic neurons in the hippocampus and cerebral cortex of Engrailed-2 null mutant mice: Implications for autism spectrum disorders. Exp Neurol. 247:496-505. doi: 10.1016/j.expneurol.2013.01.021. **I.F. 4.64**

Bertacchi M., Pandolfini L., Murenu E., Viegi A., Capsoni S., Cellerino A., Messina A., **Casarosa S.**, Cremisi F. (2013). The positional identity of mouse ES cells-generated neurons is affected by BMP signaling. Cell Mol Life Sci. 70:1095-111. doi: 10.1007/s00018-012-1182-3. Epub 2012 Oct 16. **I.F. 5.62**

Bozzi Y., **Casarosa S.**, Caleo M. (2012). Epilepsy as a neurodevelopmental disorder. Frontiers in Psychiatry 3:19-24. Epub 2012 Mar 19.

Lan L., Vitobello A., Bertacchi M., Cremisi F., Vignali R., Andreazzoli M., Demontis G.C., Barsacchi G., **Casarosa S.**, (2009). Noggin elicits retinal fate in *Xenopus* animal cap embryonic stem cells. Stem Cells 27, 2146-2152. DOI 10.1002/stem.167. **I.F. 7.74**

Tripathi P., Sgado' P., Scali M., Viaggi C., **Casarosa S.**, Simon H., Vaglini F., Corsini G.U., Bozzi Y., (2009). Increased susceptibility to kainic acid-induced seizures in Engrailed-2 knockout mice. Neuroscience 159, 842-849. DOI: 10.1016/j.neuroscience.2009.01.007 **I.F. 3.3**

Brilli E., Scali M., **Casarosa S.**, Köhler M., Bozzi Y., (2009). Seizures increase importin- α 1 expression in NG2+ cells in the rat hippocampus. J Neurosci Research 87, 636-643. DOI: 10.1002/jnr.21879 **I.F. 2.98**

Castellano S., **Casarosa S.**, Sweatt AJ., Hutson SM., Bozzi Y., (2007) Expression of cytosolic branched chain aminotransferase (BCATc) mRNA in the developing mouse brain. Gene Expression Pattern, 7, 485-90. **I.F. 2.24**

Book Chapters

Marigo V. and **Casarosa S.** (2014). Photoreceptor Transplantation and Regeneration. In: Vertebrate Photoreceptors: Functional Molecular Bases. Edited by T. Furukawa, J. B. Hurley, S. Kawamura. Springer Japan.

Casarosa S., Zasso J., Conti L. (2012). Systems for ex-vivo isolation and culturing of neural stem cells. In: NEURAL STEM CELLS. Edited by L. Bonfanti. InTech Open Access Publisher. ISBN 980-953-307-863-7.

Messina A., **Casarosa S.**, Murenu E. (2011). Stem Cells and the Retina - Challenges for Regenerative Medicine. In: Embryonic Stem Cells - Recent Advantages in Pluripotent Stem Cell-based Regenerative Medicine. Edited by Craig Atwood. InTech Open Access Publisher. ISBN 978-953-307-198-5.

Technical papers and notes

Messina A., Dunleavy M., Sgadò P., Adami V., Bozzi Y., **Casarosa S.** (2012). Region-specific gene expression in adult mouse CNS tissues. Leica Laser Microdissection Short Application Note, February 2012.

Messina A., Dunleavy M., Sgadò P., Adami V., Bozzi Y., **Casarosa S.** (2012). Region-specific gene expression in adult mouse CNS tissues. Leica Science Lab website. <http://www.leica-microsystems.com/science-lab/laser-microdissection/region-specific-gene-expression-in-adult-mouse-cns-tissues/>

BIOGRAPHICAL SKETCH

NAME: Matthias Carl, Ph.D.

POSITION TITLE: Associate Professor of Physiology, University of Trento, Italy

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Göttingen University, Germany Center for Hygiene and Human Genetics, Göttingen University, Germany	M.Sc. Research assistant	1995 1995-1996	Biology Virology
EMBL-Heidelberg/Heidelberg University, Germany	Ph.D.	1999	Biology
EMBL-Heidelberg, Germany	Postdoc	2000-2002	Molecular Neuroscience
University College London, UK	Postdoc	2002-2008	Molecular Neuroscience

A. Personal statement regarding the technical commission “gara stabulario”

I have been working with fish model systems since 1996 using zebrafish (*Danio rerio*) and Medakafish (*Oryzias latipes*) at Göttingen University, Heidelberg University, EMBL-Heidelberg and University College London as well as Kyoto and Bergen University during collaborative work activities. I have working experience with facilities built by companies such as Müller & Pflieger, Aquatic habitats, Aqua Schwarz and Tecniplast. In 2009, I have led the building of my own fish facility (400 aquaria, Müller & Pflieger) at Heidelberg University and published a work on this topic in the peer-reviewed journal “Zebrafish” (McNabb et al., 2012). Between 2009 and 2017 I have been managing director of this facility.

B. Positions and Memberships

2005 – present	Member British Society for Developmental Biology (BSDB), UK
2010 – present	Member European Network of Fish Biomedical Models (EUFishBioMed), KIT, Germany
ended 12/2011	Member Collaborative Research Center 488 (SFB), Heidelberg, Germany (associated)
ended 12/2015	Member Wnt-Research Unit 1036/2, Heidelberg, Germany (associated)
ended 10/2017	Member Hartmut Hoffmann-Berling International Graduate School of Molecular and Cellular Biology (HBIGS), Heidelberg, Germany
ended 10/2017	Member Interdisciplinary Center for Neurosciences (IZN), Heidelberg, Germany
2017 – present	Member Societa Italiana di Neuroscienze – SINS, Italy
2012 – present	Review Editor, Frontiers in Systems Biology
2018 – present	Review Editor, Frontiers Stem Cell Research
2015	Habilitation and Venia Legendi in Cell- and Molecular Biology, Heidelberg University, Germany
2017	Habilitation in Comparative Anatomy and Cell Biology (Fascia I and Fascia II), Genetics (Fascia II) as well as Applied Biology (Fascia II) in Italy
2018	Habilitation in Physiology (Fascia II) in Italy
2008-2017	Principal Investigator and Lecturer; Department for Cell- and Molecular Biology, Medical Faculty Mannheim, University Heidelberg, Germany
2017 - 2020	Assistant Professor of Physiology, University of Trento, Italy
2020 - present	Associate Professor of Physiology, University of Trento, Italy

C. Contributions to Science

Publications (H-index WoS: 20)

1. Bühler, A. and Carl, M. (2021). Zebrafish tools for deciphering habenular network-linked mental disorders. **Biomolecules**, 11(2):324.
2. Albadri, S., Armant, O., Aljand-Geschwill, T., Del Bene, F., Carl, M., Strähle, U., Poggi, L. (2020). Expression of a Barhl1a reporter in subsets of retinal ganglion cells and commissural neurons of the developing zebrafish brain. **Scientific Reports**, 10(1):8814.
3. Guglielmi, L., Bühler, A., Moro, E., Argenton, F., Poggi, L. and Carl, M. (2020). Temporal control of Wnt signaling is required for habenular neuron diversity and brain asymmetry. **Development**, 147(6), in press, doi: 10.1242/dev.182865.
4. Imle, R., Wang, B.-T., Stützenberger, N., Birkenhagen, J., Tandon, A., Carl, M., Himmelreich, N., Thiel, C., Gröne, H.-J., Poschet, G., Völkers, M., Gülow, K., Schröder, A., Carillo, S., Mittermayr, S., Bones, Jo., Kaminski, M.M., Kölker, S., Sauer, S.W. (2019). ADP-dependent glucokinase regulates energy metabolism via ER-localized glucose sensing. **Scientific Reports**, 9(1):14248.
5. Breuer, M., Guglielmi, L., Zielonka, M., Hemberger, V., Kölker, S., Okun, J.G., Hoffmann, G.F., Carl, M. [#], Sauer, S.W. [#], Opladen, T. [#] (2019). Qdpr homologues in *Danio rerio* regulate melanin synthesis, early gliogenesis, and glutamine homeostasis. **Plos One**, 14(4):e0215162. ([#]equal contribution)
6. Zielonka, M., Probst, J., Carl, M., Hoffmann, G.F., Kölker, S., Okun, J.G. (2019). Bioenergetic dysfunction in a zebrafish model of acute hyperammonemic decompensation. **Experimental Neurology**, 314:91-99.
7. Poggi, L., Casarosa, S., Carl, M. (2018). An eye on the Wnt inhibitory factor Wif1. **Frontiers in Cell and Developmental Biology**, 6:167. (invited review)
8. Roussigné, M., Wei, L., Tsingos, E., Kuchling, F., Alkobtawi, M., Tsalavouta, M., Witbrodt, J.W., Carl, M., Blader, P., Wilson, S.W. (2018). Left/right asymmetric collective migration of parapineal cells is mediated by focal FGF signalling activity in leading cells. **Proceedings of the National Academy of Sciences USA**, 115(42):E9812-E9821.
9. Zielonka, M., Breuer, M., Okun, J. G., Carl, M., Hoffmann, G. F., Kölker, S. (2018). Pharmacologic rescue of hyperammonemia-induced toxicity in zebrafish by inhibition of ornithine aminotransferase. **Plos One**, 13(9):e0203707.
10. Dimitrov, B., Himmelreich, N., Hipgrave Ederveen, A.L., Lüchtenborg, C., Okun, J.O., Breuer, M., Hutter, A.-M., Carl, M., Guglielmi, L., Hellwig, A., Thiemann, K.C., Jost, M., Peters, V., Staufner, C., Hoffmann, G.F., Hackenberg, A., Paramasivam, N., Wiemann, S., Eils, R., Schlesner, M., Strahl, S., Brügger, B., Wuhrer, M., Korenke, G.C., and Thiel, C. (2018). Cutis laxa, exocrine pancreatic insufficiency and altered cellular metabolism as additional symptoms in a new patient with ATP6AP1-CDG. **Molecular Genetics and Metabolism**, 123(3):364-374.
11. Choi, J.-H., Jeong, Y.-M., Kim, S., Lee, B., Ariyasiri, K., Kim, H.-T., Jung, S.-H., Seung, Hwang, K.-S., Choi, T.-I., Park, C.O., Huh, W.-H., Carl, M., Rosenfeld, J.A., Raskin, S., Ma, A., Gecz, J., Kim, H.-G., Kim, J.-S., Shin, H.-C., Park, D.-S., Gerlai, R., Jamieson, B.B., Kim, J.S., Iremonger, K.J., Lee, S.H., Shin, H.-S., Kim, C.-H. (2018). Targeted knockout of a chemokine-like gene increases anxiety and fear responses. **Proceedings of the National Academy of Sciences USA**, 115(5):E1041-E1050.
12. Cepero Malo, M., Duchemin, A.-L., Guglielmi, L., Patzel, E., Sel, S., Auffarth, G.U., Carl, M., and Poggi, L. (2017). The zebrafish Anillin-eGFP reporter marks late dividing retinal precursors and stem cells entering neuronal lineages. **Plos One**, 12(1):e0170356.
13. Beretta, C.A., Dross, N., Guglielmi, L., Bankhead, P., Soulika, M., Gutierrez-Triana, J.A., Paolini, A., Poggi, L., Falk, J., Ryu, S., Kapsimali, M., Engel, U., Carl, M. (2017). Early commissural diencephalic neurons control habenular axon extension and targeting. **Current Biology**, 27:270-278.
14. Kopajtich, R., Murayama, K., Janecke, A.R., Haack, T.B., Breuer, M., Knisely, A.S., Harting, I., Ohashi, T., Okazaki, Y., Watanabe, D., Tokuzawa, Y., Kotzaeridou, U., Kölker, S., Sauer, S., Carl, M., Straub, S., Entenmann, A., Gizewski, E., Feichtinger, R.G., Mayr, J.A., Lackner, K., Strom, T.M., Meitinger, T., Müller, T., Ohtake, A., Hoffmann, G.F., Prokisch, H., Staufner, C. (2016). Biallelic mutations in *IARS*, encoding cytosolic isoleucyl-tRNA synthetase, cause growth retardation with prenatal onset, intellectual disability, muscular hypotonia, and infantile hepatopathy. **American Journal of Human Genetics**, 99:414-422.
15. Beretta, C.A., Dross, N., Engel, U., and Carl, M. (2016). Tracking cells in GFP-transgenic zebrafish using the photoconvertible PSmOrange system. **J. Vis. Exp.** (108), e53604.
16. Hüsken, U., Stickney, H.L., Gestri, G., Bianco, I.H., Faro, A., Young, R.M., Roussigne, M., Hawkins, T.A.,

- Beretta, C.A., Brinkmann, I., Paolini A., Jacinto, R., Albadri, S., Dreosti, E., Tsalavouta, M., Schwarz, Q., Cavodeassi, F., Barth, A.K., Wen, L., Zhang, B., Blader, P., Yaksi, E., Poggi, L., Zigman, M., Lin, S., Wilson, S.W., and Carl, M. (2014). Tcf7l2 is required for left-right asymmetric differentiation of habenular neurons. **Current Biology** 24(19):2217-2227. (Featured in Biomedical Picture of the Day – BPOD)
17. Dross, N., Beretta, C.A., Bankhead, P., Carl, M., and Engel, U. (2014). Zebrafish Brain Development Monitored by Long-Term in Vivo Microscopy: A Comparison Between Laser Scanning Confocal and 2-Photon Microscopy. **Book** Title: Laser Scanning Microscopy and Quantitative Image Analysis of Neuronal Tissue. Springer Science.
 18. Dreosti, E., Llopis, N.V., Carl, M., Yaksi E., and Wilson, S.W. (2014). Left/right asymmetry is required for the habenulae to respond to both visual and olfactory stimuli. **Current Biology** 24(4):440-445.
 19. Mwafi, N., Beretta, C.A., Paolini, A., and Carl, M. (2014). Divergent *Wnt8a* gene expression in teleosts. **Plos One** 9(1):e85303.
 20. Beretta, C.A., Dross, N., Bankhead, P., and Carl, M. (2013). The ventral habenulae in zebrafish develop in prosomere 2 dependent on Tcf7l2 function, **Neural Development** 8(1):19. (Image highlight October 2013)
 21. Demir, K., Kirsch, N., Beretta, C.A., Erdmann, G., Ingelfinger, D., Moro, E., Argenton, F., Carl, M., Niehrs, C., and Boutros, M. (2013). RAB8B is required for activity and caveolar endocytosis of LRP6. **Cell Reports** 4(6):1224-1234.
 22. Hüsken, U. and Carl, M. (2013). The Wnt/beta-catenin signaling pathway establishes neuroanatomical asymmetries and their laterality. **Mech. Dev.** 130: 330-335. (invited review)
 23. McNabb, A., Scott, K., von Ochsensstein, E., Seufert, K. and Carl, M. (2012). Don't be afraid to set up your fish facility. **Zebrafish** 9(3): 120-125.
 24. Beretta, C.A., Dross, N., Guitierrez-Triana, J.A., Ryu, S. and Carl, M. (2012). Habenula circuit development: past, present, and future. **Frontiers in Neuroscience** 6:51. (invited review)
 25. Berns, N., Woichansky, I., Kraft, N., Hüsken, U., Carl, M. and Riechmann, V. (2012). „Vacuum-assisted staining“: a simple and efficient method for screening *Drosophila*. **Dev. Genes Evol.** 222: 113-118.
 26. Beretta, C.A., Brinkmann, I. and Carl, M. (2011). All four zebrafish *Wnt7* genes are expressed during early brain development. **Gene Expression Patterns** 11: 277-284.
 27. Wilkinson, C.J., Carl, M. and Harris, W.A. (2009). Cep70 and Cep131 contribute to ciliogenesis in zebrafish embryos. **BMC Cell Biology** 10:17.
 28. Bianco, I.H., Carl, M., Russell, C., Clark, J. and Wilson, S.W. (2008). Brain asymmetry is encoded at the level of axon terminal morphology. **Neural Development** 3: 9. (Shortlisted for the 2008 Biomed Central Biology Prize)
 29. Carl, M., Bianco, I.H., Bajoghli, B., Aghaallaei, N., Czerny, T., and Wilson, S.W. (2007). Wnt/Axin1/b-catenin signaling regulates asymmetric nodal activation, elaboration, and concordance of CNS asymmetries. **Neuron** 55(3): 393-405. (highlighted by A. Sagasti; Minireview same issue)
 30. Yokoi, H., Shimada, A., Carl, M., Takashima, S., Kobayashi, D., Narita, T., Jindo, T., Kimura, T., Kitagawa, T., Kage, T., Sawada, A., Naruse, K., Asakawa, S., Shimizu, N., Mitani, H., Shima, A., Tsutsumi, M., Hori, H., Wittbrodt, J., Saga, Y., Ishikawa, Y., Araki, K., and Takeda, H. (2007). Mutant analyses reveal different functions of fgfr1 in medaka and zebrafish despite conserved ligand-receptor relationships. **Dev. Biol.** 304(1): 326-337.
 31. Hochmann, S., Aghaallaei, N., Bajoghli, B., Soroldoni, D., Carl, M., and Czerny, T. (2007). Expression of marker genes during early ear development in medaka. **Gene Expression Patterns** 7(3): 355-362.
 32. Gestri, G., Carl, M., Appolloni, I., Wilson, S.W., Barsacchi, G., and Andrezzaoli, M. (2005). Six3 functions in anterior neural plate specification by promoting cell proliferation and inhibiting Bmp4 expression. **Development** 132(10): 2401-2413.
 33. Furutani-Seiki, M., Sasado, T., Morinaga, C., Suwa, H., Niwa, K., Yoda, H., Deguchi, T., Hirose, Y., Yasuoka, A., Henrich, T., Watanabe, T., Iwanami, N., Kitagawa, D., Saito, K., Asaka, S., Osakada, M., Kunimatsu, S., Momoi, A., Elmasri, H., Winkler, C., Ramialison, M., Loosli, F., Quiring, R., Carl, M., Grabher, C., Winkler, S., Del Bene, F., Shinomiya, A., Kota, Y., Yamanaka, T., Okamoto, Y., Takahashi, K., Todo, T., Abe, K., Takahama, Y., Tanaka, M., Mitani, H., Katada, T., Nishina, H., Nakajima, N., Wittbrodt, J. and Kondoh, H. (2004). A systematic genome-wide screen for mutations affecting organogenesis in Medaka, *Oryzias latipes*. **Mech. Dev.** 121, 647- 658.
 34. Elmasri, H., Winkler, C., Liedtke, D., Sasado, T., Morinaga, C., Suwa, H., Niwa, K., Henrich, T., Hirose, Y., Yasuoka, A., Yoda, H., Watanabe, T., Deguchi, T., Iwanami, N., Kunimatsu, S., Osakada, M., Loosli, F., Quiring, R., Carl, M., Grabher, C., Winkler, S., Del Bene, F., Wittbrodt, J., Abe, K., Takahama, Y.,

- Takahashi, K., Katada, T., Nishina, H., Kondoh, H. and Furutani-Seiki, M. (2004). Mutations affecting somite formation in the Medaka (*Oryzias latipes*). **Mech. Dev.** 121, 659-671.
35. Kitagawa, D., Watanabe, T., Saito, K., Asaka, S., Sasado, T., Morinaga, C., Suwa, H., Niwa, K., Yasuoka, A., Deguchi, T., Yoda, H., Hirose, Y., Henrich, T., Iwanami, N., Kunimatsu, S., Osakada, M., Winkler, C., Elmasri, H., Wittbrodt, J., Loosli, F., Quiring, R., Carl, M., Grabher, C., Winkler, S., Del Bene, F., Momoi, A., Katada, T., Nishina, H., Kondoh, H. and Furutani-Seiki, M. (2004). Genetic dissection of the formation of the forebrain in Medaka, *Oryzias latipes*. **Mech. Dev.** 121, 673-685.
36. Loosli, F., Del Bene, F., Quiring, R., Rembold, M., Martinez-Morales, J.-R., Carl, M., Grabher, C., Iquel, C., Krone, A., Wittbrodt, B., Winkler, S., Sasado, T., Morinaga, C., Suwa, H., Niwa, K., Henrich, T., Deguchi, T., Hirose, Y., Iwanami, N., Kunimatsu, S., Osakada, M., Watanabe, T., Yasuoka, A., Yoda, H., Winkler, C., Elmasri, H., Kondoh, H., Furutani-Seiki, M. and Wittbrodt, J. (2004). Mutations affecting retina development in Medaka. **Mech. Dev.** 121, 703-714.
37. Watanabe, T., Asaka, S., Kitagawa, D., Saito, K., Kurashige, R., Sasado, T., Morinaga, C., Suwa, H., Niwa, K., Henrich, T., Hirose, Y., Yasuoka, A., Yoda, H., Deguchi, T., Iwanami, N., Kunimatsu, S., Osakada, M., Loosli, F., Quiring, R., Carl, M., Grabher, C., Winkler, S., Del Bene, F., Wittbrodt, J., Abe, K., Takahama, Y., Takahashi, K., Katada, T., Nishina, H., Kondoh, H. and Furutani-Seiki, M. (2004). Mutations affecting liver development and function in Medaka, *Oryzias latipes*, screened by multiple criteria. **Mech. Dev.** 121, 791-802.
38. Carl, M., Loosli, F. and Wittbrodt, J. (2002). Six3 inactivation reveals its essential role for the formation and patterning of the vertebrate eye. **Development** 129, 4057- 4063.
39. Poggi, L., Carl, M., Vignali, R., Barsacchi, G. and Wittbrodt, J. (2002). Expression of a medaka (*Oryzias latipes*) Bar homologue in the differentiating central nervous system and retina. **Mech. Dev.** 114, 193-196.
40. Loosli, F., Winkler, S., Burgdorf, C., Wurmbach, E., Ansorge, W., Henrich, T., Grabher, C., Arendt, D., Carl, M., Krone, A., Grzebisz, E. and Wittbrodt, J. (2001). Medaka eyeless is the key factor linking retinal determination and eye growth. **Development** 128, 4035-4044.
41. Loosli, F., Koester, R.W., Carl, M., Kühnlein, R., Henrich, H., Mücke, M., Krone, A. and Wittbrodt, J. (2000). A genetic screen for mutations affecting embryonic development in medaka fish (*Oryzias latipes*). **Mech. Dev.** 97, 133-139.
42. Carl, M. and Wittbrodt, J. (1999). Graded interference with FGF-signalling reveals its dorso-ventral asymmetry at the mid-hindbrain boundary. **Development** 126, 5659- 5667.
43. Ristoratore, F., Carl, M., Deschet, K., Richard-Parpaillon, L., Boujard, D., Wittbrodt, J., Chourrout, D., Bourrat, F. and Joly, J.-S. (1999). The midbrain-hindbrain boundary genetic cascade is activated ectopically in the diencephalon in response to the widespread expression of one of its components, the medaka gene *OI-eng2*. **Development** 126, 3769-3779.
44. Loosli, F., Koester, R.W., Carl, M., Krone, A. and Wittbrodt, J. (1998). Six3, a medaka homologue of the *Drosophila* homeobox gene *sine oculis* is expressed in the anterior embryonic shield and the developing eye. **Mech. Dev.** 74, 159-164.

PERSONAL INFORMATION Simone Bridi

WORK EXPERIENCE

- 19/11/2019 – present PTA Università degli Studi di Trento
CIBIO Lab Management Team
- 24/05/2015 – 18/11/2019 Pre-doctoral fellow
Armenise-Harvard laboratory of axonal neurobiology of Dr Marie-Laure Baudet. Centre for Integrative Biology (CiBIO) at the University of Trento. Trento, Italy.
Research project: "microRNAs: roles in brain wiring".
- 24/11/2014 – 23/05/2015 "Collaborazione coordinata e continuativa" at Armenise-Harvard Laboratory of Axonal Neurobiology - Centre for Integrative Biology (CiBIO) at the University of Trento. Trento, Italy.
Research project: "Studio dei meccanismi molecolari nello sviluppo di *Xenopus laevis*"
- 01/10/2012 – 31/07/2013 Internship in the Laboratory of Neural Development and Regeneration of Dr.ssa Simona Casarosa. Centre for Integrative Biology(CiBIO) at the University of Trento. Trento, Italy
- 09/07/2012 – 09/09/12 "Contratto di lavoro autonomo occasionale" at the University of Trento with the task:
"Cura e mantenimento dei sistemi di stabulazione di Pesci ed Anfibi del CiBIO: *Danio rerio* e *Xenopus laevis*"

TEACHING EXPERIENCE

- Nov 2020 **Practical Laboratory**
I run the practical laboratory part of the "Biologia degli organismi " course led by Dr. Poggi Bachelor in Cellular and Molecular Biotechnology (University of Trento, Italy) for the year 2020-2021.
- 13-17 and 20-24 November 2017 I run the practical laboratory part of the "Macromolecular imaging" course led by Dr. Baudet. Master's in Cellular and Molecular Biotechnology (University of Trento, Italy) for the year 2017-2018.
- 11-17 June 2016 **EMBO Practical Course on Regulatory small and long ncRNAs: "Durat et lucet"**
During the EMBO Practical Course on Regulatory small and long ncRNAs: "Durat et lucet" organized at Centre for Integrative Biology (CiBIO) at the University of Trento, I helped in the organization/preparation of the instrumentation and reagents needed for the wet-lab part of the course, being one of the reference person between the scientist who led the course and the "Didactic Lab Staff".

EDUCATION AND TRAINING

- 27/05/2019 – 06/06/2019 FELASA Course - University of Heraklion - Greece:
Care and Use of Laboratory Animals: mice, rats and zebrafish
- 2014
Esame di Stato per l'abilitazione all'esercizio della professione di Biologo
- 16 ottobre 2013
Master's degree in Cellular and Molecular Biology
University of Bologna, Italy.
Thesis project: "Ruolo della proteina secreta Noggin durante il differenziamento retinico nell'Anfibio *Xenopus laevis*".
Supervisor: Professor Antonio Contestabile – Dr.ssa Simona Casarosa.
Score: 110/110 e lode
- 13 luglio 2011
Bachelor's degree in Scienze e Tecnologie Biomolecolari
University of Trento - Facoltà di Scienze Matematiche, Fisiche e Naturali
Thesis project: "Caratterizzazione dell'espressione del fattore secreto Noggin durante il differenziamento retinico".
Supervisor: Dr.ssa Simona Casarosa.
Score: 110/110 e lode

 MICROSCOPY EXPERTISE

- Microscopy**
- Widefield fluorescence microscopy.
 - Bright-field, phase contrast and differential interference contrast microscopy.
 - Stereo and dissection microscopy.
- Live-imaging**
- Live – *Xenopus* cultured axons and Time-lapse microscopy.
- Xenopus laevis:*
- Whole animal imaging ("exposed-brain" preparation to study optic projection during brain development).
 - Particle tracking in living primary neurons in cultures.
- Fixed sample-imaging**
- Immunohistochemistry on cryosections for co-localization studies of two or more proteins within a tissue sample and multicolour image acquisition with fluorescence microscopes.
 - Visualization of axon projections on brain "open-book preparation".
 - Dil dye microinjection into fixed embryos' eye for optic tract labelling.
- Specialised imaging techniques**
- Immunohistochemistry (IHC) on tissue sections.
 - Direct and indirect immunofluorescent (IF) staining on fixed cells.
 - Cryostat frozen sectioning.
- Imaging data analysis**
- Software: ImageJ/FIJI, Leica Application Suite X (LAS X), Adobe Illustrator.

 TECHNICAL SKILLS

- Molecular Biology**
- DNA and RNA isolation from tissues and cells.
 - PCR, RT-PCR.
 - RNA in vitro transcription.
 - Vector design: primer design, enzymatic digestions, ligations, cloning.
 - Agarose gel electrophoresis.

- Animal Manipulation**
- Xenopus laevis*:
- live-animal imaging.
 - injection of 2-8 cell embryos.
 - *in vivo* electroporation of embryos' brains and eyes.
 - fine microdissection of developing eye buds and brains.
 - tissue cultures.
 - embryos fixation and embedding for frozen cryostat sectioning.
 - care and staging of embryos.
- Danio rerio (zebrafish)*:
- live-animal imaging.
 - fin-clipping and genotyping.
 - injection of one -2 cell embryos.
 - fine microdissection of developing eye buds and brains.
 - embryos fixation and embedding for frozen cryostat sectioning.
 - care and staging of embryos.
- Mus musculus*:
- care and breeding of the colony.
 - genotyping.
 - animal handling and injection.
 - fine microdissection.
 - embryos fixation and embedding for frozen cryostat sectioning.

PERSONAL SKILLS

Mother tongue Italian

Other language

English

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Very good	Very good	Fluent	Fluent	Very good

Communication skills Very good interpersonal and communication skills gained through my daily interaction with European and extra-European lab mates.

ADDITIONAL INFORMATION

Publications

- Corradi E, Dalla Costa I, Gavoci A, Iyer A, Rocuzzo M, Otto T, Oliani E, Bridi S, Strohbuecker S, Santos G, Valdeabri D, Serini G, Abreu-Goodger C, Baudet ML.
 "Axonal precursor miRNAs hitchhike on endosomes and locally regulate the development of neural circuits". *The EMBO Journal* e102513 (2020). IF: 11.2
- Bellon A, Iyer A, Bridi S, Lee FC, Ovando-Vázquez C, Corradi E, Longhi S, Rocuzzo M, Strohbuecker S, Naik S, Sarkies P, Miska E, Abreu-Goodger C, Holt CE, Baudet ML.
 "miR-182 Regulates Slit2-Mediated Axon Guidance by Modulating the Local Translation of a Specific mRNA". *Cell Reports* 2017 Jan 31;18(5):1171-1186. IF: 7.87
- Messina A, Bridi S, Bozza A, Bozzi Y, Baudet ML, Casarosa S.
 "Noggin 1 overexpression in retinal progenitors affects bipolar cell generation". *Int J Dev Biol.* 2016;80(4-6):151-7. IF: 1.75

Dichiarazioni Le dichiarazioni rese all'interno di questo curriculum, ai sensi e per gli effetti degli artt. 46 e 47 del DPR 445/2000, sono state redatte nella consapevolezza delle conseguenze derivanti da dichiarazioni mendaci ai sensi dell'art. 76 del DPR 445/2000.

Luogo e data Trento, 7 febbraio 2022