Gabriel Forn-Cuní

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1. SUMMARY

I am a researcher dedicated to **understanding macrophage plasticity and metabolic reprogramming in disease pathogenesis**, with the goal of rationally designing novel immune-targeting therapies. My approach integrates immunology, cell biology, pharmacology, and (single-cell) transcriptomic technologies with zebrafish models that I validated for translational potential in close collaboration with hospitals and the pharmaceutical industry. I have 8 years of international postdoctoral experience in The Netherlands and I have authored 38 peer-reviewed publications (12 as first author, 2 as corresponding author) with over 1900 citations and an h-index of 24.

I believe that due to their dynamic nature, macrophage metabolic identity can only be understood in its intact tissue context. This is why I deliberately built expertise on both sides of the interactions I study. For example, after focusing my PhD on the inflammatory host response, I deepened my understanding of pathogen biology before integrating both perspectives to study host-pathogen interaction dynamics. I secured competitive funding to mechanistically dissect how pathogens exploit macrophage metabolism to establish disease (MSCA Cofund, 2-year fellowship + 20.000€), and then to exploit this knowledge as a junior PI to engineer a novel intracellular drug delivery platform (NWO-XS; 50.000€), which ranked second in a call with an acceptance rate below 9. Following this principle that **the mechanistic understanding of macrophage metabolic interactions generates direct therapeutic opportunities**, I am currently leading a work package of an NWO-XL project led by the NKI (Akkari) in collaboration with the LIC (Kros). By using (patient-derived) orthotopic zebrafish xenografts, we aim to unravel how lipid metabolic interactions between recurrent glioblastoma and macrophages shape the outcome of this disease.

A core focus of my research has been **improving the clinical relevance and translation of zebrafish models**. In consequence, in addition to the mechanistic understanding of macrophage interactions, I have been involved several parts of the drug discovery pipeline, granting me a holistic view of this field. This interdisciplinarity allows me to effectively **collaborate with researchers from complementary disciplines while keeping translatability a priority**, including partnerships with world-class oncologists and immunologists (Akkari, Kruithof-de Julio), medicinal chemists (Kros, Bonnet), physicists (Verbeek), and pharmacologists (Hasselt, van Wijk), alongside clinical institutions (Amsterdam UMC, Leiden University MC) and the pharmaceutical industry (Janssen Pharmaceuticals –now Johnson & Johnson Innovative Medicine–, Roche). This interdisciplinarity is reflected in my publication record: my first and corresponding authorships are in Q1, D1 journals across disciplines (*Autophagy*, *Angiogenesis*), and my complementary expertise has ensured high-impact collaborations (*Cell*, *ACS Nano*, *ACS Central Science, Journal of Controlled Release*).

I have participated in **transfer of knowledge at all levels.** I have **co-organized and presented at international conferences and workshops**; participated in internal seminars; and **created open access tools** adopted by the research community. Together with Prof. Alexander Kros, **I am copromotor of the PhD thesis of Yun Zhang**, whom I co-supervise at the intersection of macrophage biology and medicinal chemistry to develop novel liposomal formulations for the targeted delivery of therapeutic cargo across the blood-brain barrier and to specific macrophage populations**. I have also supervised several BSc and MSc student thesis**, including *cum laude* and national prize-winning internships. At the formative level, I have always been interested in **academic teaching**: I **coordinated and lectured** a 6-ECTS course as part of MSc in Biology at Leiden University, which received outstanding evaluations; and participated as a teacher in other BSc and MSc level courses. Finally, I also engaged in **public science dissemination** through participation in open lab activities, press releases in wide-audience newspaper outlets, and through my blog.

2. EDUCATION

Nov 2011 Dec 2015 PhD: Methodology and Applications of Molecular Biology. University of Vigo.
Dissertation: The zebrafish as inflammation model (*cum laude*).
By combining phylogenetic, transcriptomic, in situ hybridization, and fluorescent cell readouts from transgenic animals, I validated the zebrafish as a robust model for studying human inflammatory processes and their interaction with host metabolism.

Sept 2011 June 2012 MSc: Methodology and Applications of Molecular Biology. University of Vigo.

Sept 2009 June 2011 BSc: Biochemistry. University Rovira i Virgili.

Sept 2007 June 2011 BSc: Biotechnology. University Rovira i Virgili.

3. PROFESSIONAL ACADEMIC POSITIONS

Jan 2023 Dec 2026 Postdoctoral researcher, Institute of Biology, Leiden University, The Netherlands.
Postdoctoral researcher at the Snaar-Jagalska Lab. I developed zebrafish larvae avatars of glioblastoma to study how the metabolic interaction between tumour cells and macrophages shape the outcome of the disease, and how we can rationally design new avenues for treatment of incurable recurrent glioblastoma.

Oct 2020 Ongoing Project Leader, Institute of Biology, Leiden University, The Netherlands.
Project Leader of the NWO XS project "Targeted Biomolecule Production for Therapeutic Use", in which I designed a bioengineered platform to produce biomolecules in a spatiotemporally restricted target using *Aspergillus* conidia.

Mar 2020 Nov 2021 Postdoctoral researcher, Institute of Biology, Leiden University, The Netherlands.
Postdoctoral researcher at the Spaink lab in the EU IMI project RespiriNTM in collaboration with the Leiden Academic Centre for Drug Research and Janssen Pharmaceuticals. Improving the translational potential of zebrafish research by establishing the translation of pharmacological dynamics (PK/PD) of antimycobacterials *in vivo*.

Nov 2017 Nov 2019 MSCA Postdoctoral Fellow, Institute of Biology, Leiden University, The Netherlands.
Postdoctoral fellow for the Marie Skłodowska-Curie COFUND action "LEaDing Fellows" at the Meijer lab. Studying the mechanisms of autophagic defence against Invasive Aspergillosis using the zebrafish model.

Mar 2016 July 2017 Postdoctoral researcher, Microbiology Department, University of Barcelona, Spain.
Postdoctoral researcher at the J. Tomás and S. Merino lab. Studying the role and virulence mechanisms of *Aeromonas* LPS biosynthesis and flagellar glycosylation through microscopy, microbiology, and bioinformatics.

Nov 2011 Nov 2014 Research assistant, Immunology and Genomics Group, IIM – CSIC, Spain.

Jan 2012 June 2012 MSc Research Intern, Immunology and Genomics Group, IIM – CSIC, Spain.

Jan 2010 July 2010 BSc Research Intern, Dept of Biochemistry and Biotechnology, University Rovira i Virgili, Spain.

4. PEER-REVIEWED PUBLICATIONS

I have co-authored 38 peer-reviewed publications. This list can also be found in my ORCID and Google Scholar profiles. The number of citations is based on Google Scholar as of 01/05/2026:

1. Zeng Y, Zhao G, Wu S, Hu B, **Forn-Cuní G**, Knol R, El Ghalbzouri A, Snaar-Jagalska E, Kros A. (2026) CD44-targeted lipid nanoparticles for enhanced CRISPR/Cas9 delivery in cancer gene editing. *J Control Release*. Jan 4;391:114598
2. Zhao G, Zeng Y, Cheng W, Karkampouna S, Papadopoulou P, Hu B, Zang S, Wezenberg E, **Forn-Cuní G**, Lopes-Bastos B, Julio MK, Kros A, Snaar-Jagalska BE. (2025) Peptide-Modified Lipid Nanoparticles Boost the Antitumor Efficacy of RNA Therapeutics. *ACS Nano*. 2025 Apr 15;19(14):13685-13704. Citations: 25
3. Zhang L, Zhao G, Dalrymple T, Husiev Y, Bronkhorst H, **Forn-Cuní G** et al. (2024) Cyclic Ruthenium-Peptide Prodrugs Penetrate the Blood–Brain Barrier and Attack Glioblastoma upon Light Activation in Orthotopic Zebrafish Tumor Models. *ACS Cent Sci*. 2024 Dec 9;10(12):2294-2311. Citations: 15
4. Kloosterman DJ, Erbani J, Boon M, Farber M, Handgraaf SM, Ando-Kuri M, ... **Forn-Cuní G**, ... et al. (2024) Macrophage-mediated myelin recycling fuels brain cancer malignancy. *Cell* 2024 Sep 19;187(19):5336-5356.e30. Citations: 187
5. Antunes SS, **Forn-Cuní G**, Romeiro NC, Spaink HP, Verbeek FJ, Muzitano MF. (2024). Embryonic and larval zebrafish models for the discovery of new bioactive compounds against tuberculosis. *Drug Discov Today* 2024 Nov;29(11):104163 Citations: 10
6. Yin J*, **Forn-Cuní G***, Mahalakshmi Surendran A, Lopes-Bastos BM, Pouliopoulou N, Jager MJ, et al. (2024) Lactate secreted by glycolytic conjunctival melanoma cells attracts and polarizes macrophages to drive angiogenesis in zebrafish xenografts. *Angiogenesis*. Angiogenesis. 2024 Nov;27(4):703-717. *** Shared-first author.** Citations: 14
7. Zhao G, **Forn-Cuní G**, Scheers M, Lindenbergh PP, Yin J, van Loosen Q, et al. (2024) Simultaneous targeting of AMPK and mTOR is a novel therapeutic strategy against prostate cancer. *Cancer Lett*. 2024 Apr 10:587:216657. Citations: 22
8. Yin J, Zhao G, Kalirai H, Coupland SE, Jochemsen AG, **Forn-Cuní G,** et al. (2023) Zebrafish Patient-Derived Xenograft Model as a Preclinical Platform for Uveal Melanoma Drug Discovery. *Pharmaceuticals* (*Basel*). 2023 Apr 15;16(4):598. Citations: 21
9. Hu W, Liu L, **Forn-Cuní G**, Ding Y, Alia A, Spaink HP (2023) Transcriptomic and Metabolomic Studies Reveal That Toll-like Receptor 2 Has a Role in Glucose-Related Metabolism in Unchallenged Zebrafish Larvae (*Danio rerio*). *Biology* (*Basel*). 2023 Feb 16;12(2):323. Citations: 4
10. Hu W, Koch BEV, Lamers GEM, **Forn-Cuní G**, Spaink HP (2023) Specificity of the innate immune responses to different classes of non-tuberculous mycobacteria. *Front Immunol*. 2023 Jan 18;13:1075473. Citations: 13
11. Boland R, Heemskerk M, **Forn-Cuní G**, Korbee CJ, Walburg WV, Esselink JJ, et al. (2022) Repurposing Tamoxifen as Potential Host-Directed Therapeutic for Tuberculosis. *mBio* Feb 28;14(1):e0302422. Citations: 37
12. **Forn-Cuní G***, Welvaarts L, Stel FM, van den Hondel CJ, Arentshorst M, Ram AFJ, Meijer AH (2022) Stimulating the autophagic-lysosomal axis enhances host defense against fungal infection in a zebrafish model of Invasive Aspergillosis. *Autophagy* 2022 Jul 1:1-14. *** First and co-corresponding author**. Citations: 14
13. Gazzi T, Brennecke B, Atz K, Korn C, Sykes D, **Forn-Cuní G**, et al. (2022) Detection of Cannabinoid Receptor Type 2 in Native Cells and Zebrafish with a Highly Potent, Cell-Permeable Fluorescent Probe. *Chem. Sci.* 13; 5539-5545. Citations: 34

14. Groenewoud A*, **Forn-Cuní G***, Engels FB, Snaar-Jagalska BE. (2022) XePhIR: the zebrafish xenograft phenotype interactive repository. *Database (Oxford)* 2022 Apr 28; 2022:baac028. *** Shared-first author**. Citations: 5
15. Ding Y, Haks MC, **Forn-Cuní G**, He J, Nowik N, Harms AC, et al. (2021) Metabolomic and transcriptomic profiling of adult mice and larval zebrafish leptin mutants reveal a common pattern of changes in metabolites and signaling pathways. *Cell Biosci*. 2021 Jul 7;11(1):126. Citations: 11
16. Keizer EM, Valdes ID, **Forn-Cuní G**, Klijna E, Meijer AH, Hillmand F, et al. (2021) Variation of virulence of five Aspergillus fumigatus isolates in four different infection models. PLoS One. Jul 9;16(7):e0252948. Citations: 23
17. Saxena S, Spaink HP, **Forn-Cuní G**. (2021) Drug Resistance in Nontuberculous Mycobacteria: Mechanisms and Models. *Biology* 10(2), 96. *** Last and corresponding author**. Citations: 163
18. **Forn-Cuní G**, Fulton KM, Smith JC, Twine SM, Mendoza-Barberà E, Tomás JM and Merino S. (2021) Polar Flagella Glycosylation in Aeromonas: Genomic Characterization and Involvement of a Specific Glycosyltransferase (Fgi-1) in Heterogeneous Flagella Glycosylation. *Front*. *Microbiol*. 11:595697. Citations: 11
19. Van Leeuwe TM, Arentshorst M, **Forn-Cuní G**, Geoffrion N, Tsang A, et al. (2020) Deletion of the Aspergillus niger Pro-Protein Processing Protease Gene kexB Results in a pH-Dependent Morphological Transition during Submerged Cultivations and Increases Cell Wall Chitin Content. *Microorganisms* 8: 1918. Citations: 9
20. van Leeuwe TM, Wattjes J, Niehues A, **Forn-Cuní G**, Geoffrion N, Mélida H, et al. (2020) A seven-membered cell wall related transglycosylase gene family in *Aspergillus niger* is relevant for cell wall integrity in cell wall mutants with reduced α-glucan or galactomannan. *The Cell Surface*. Dec 6:100039. Citations: 25
21. Zhang R, Varela M, **Forn-Cuní G,** Torraca V, van der Vaart M, Meijer AH. (2020) Deficiency in the autophagy modulator Dram1 exacerbates pyroptotic cell death of Mycobacteria-infected macrophages. *Cell Death Dis*. *Apr* 24;11(4):277. Citations: 58
22. **Forn-Cuní G,** Meijer AH, Varela M. (2019) Zebrafish in Inflammasome Research. *Cells* 2019, *8*(8), 901. Citations: 48
23. Novoa B, Pereiro P, Lopez-Muñoz A, Varela M, **Forn-Cuní G**, Anchelin M, et al. (2019) Rag1 immunodeficiency-induced early aging and senescence in zebrafish are dependent on chronic inflammation and oxidative stress. *Aging Cell*, Jul 26:e13020. Citations: 49
24. Zhang R, Varela M, **Forn-Cuní G**, Wies Vallentgoed, van der Vaart M, Meijer AH. (2019) The selective autophagy receptors Optineurin and p62 are both required for innate host defense against mycobacterial infection. *PLoS Pathog*. 15(2):e1007329. Citations: 85
25. Moreira R, Balseiro P, **Forn-Cuní G**, Milan M, Bargelloni L, Novoa B, et al. (2018) Bivalve immune transcriptomics reveal pathogen sequences underneath and a powerful differential immune response of the Mediterranean mussel (Mytilus galloprovincialis). *Mar Biol* 165:61. Citations: 28
26. Pereiro P, **Forn-Cuní G**, Dios S, Coll J, Figueras A, Novoa B. (2017) Interferon-independent antiviral activity of 25-hydroxycholesterol in a teleost fish. *Antiviral Res* 145:146–159. Citations: 40
27. **Forn-Cuní G,** Merino S, Tomás JM. (2017) Comparative genomics of the *Aeromonadaceae* LPS core oligosaccharide biosynthetic regions. *IJMS*. Feb 28;18(3):E519. Citations: 5
28. **Forn-Cuní G,** Varela M, Pereiro P, Novoa B, Figueras A. (2017) Conserved gene regulation during acute inflammation between zebrafish and mammals. *Sci. Rep.* 7; 14905. Citations: 127
29. Pereiro P, **Forn-Cuní G**, Figueras A, Novoa B. (2016) Pathogen-dependent role of turbot (*Scophthalmus maximus*) interferon-gamma. *Fish Shellfish Immunol*. 59:25-35. Citations: 33
30. Figueras A, Robledo D, Corvelo A, Hermida M, Pereiro P, Rubiolo JA, ... **Forn-Cuní G**, ... et al. (2016) Whole genome sequencing of turbot (*Scophthalmus maximus*; pleuronectiformes): a fish adapted to demersal life. *DNA Res*. 2016 Mar 6. Citations: 197

31. Varela M, **Forn-Cuní G**, Dios S, Figueras A, Novoa B. (2015) Proinflammatory Caspase A Activation and an Antiviral State Are Induced by a Zebrafish Perforin after Possible Cellular and Functional Diversification from a Myeloid Ancestor. *J Innate Immun*. 2015 Jun 18. Citations: 27
32. **Forn-Cuní G**, Varela M, Fernández-Rodríguez CM, Figueras A, Novoa B. (2015) Liver immune responses to inflammatory stimuli in a diet-induced obesity model of zebrafish. *J Endocrinol*. 2015 Feb;224(2):159–70. Citations: 61
33. Romero A, **Forn-Cuní G**, Moreira R, Milan M, Bargelloni L, Figueras A, et al. (2014) An immune-enriched oligo-microarray analysis of gene expression in Manila clam (*Venerupis philippinarum*) haemocytes after a *Perkinsus olseni* challenge. *Fish Shellfish Immunol*. 2014 Dec 30. Citations: 31
34. Varela M, Diaz-Rosales P, Pereiro P, **Forn-Cuní G**, Costa MM, Dios S, et al. (2014) Interferon-Induced Genes of the Expanded IFIT Family Show Conserved Antiviral Activities in Non-Mammalian Species. *PLoS ONE*. 2014 Jun 20;9(6):e100015. Citations: 54
35. **Forn-Cuní G**, Reis ES, Dios S, Posada D, Lambris JD, Figueras A, et al. (2014) The Evolution and Appearance of C3 Duplications in Fish Originate an Exclusive Teleost *c3* Gene Form with Anti-Inflammatory Activity. *PLoS ONE*. 2014 Jun 13;9(6):e99673. Citations: 67
36. Romero A, Costa M, **Forn-Cuní G**, Balseiro P, Chamorro R, Dios S, et al. (2014) Occurrence, seasonality and infectivity of *Vibrio* strains in natural populations of mussels *Mytilus galloprovincialis*. *Dis Aquat Org*. 2014 Feb 19;108(2):149–63. Citations: 91
37. Costa MM, Saraceni PR, **Forn-Cuní G**, Dios S, Romero A, Figueras A, et al. (2013) IL-22 is a key player in the regulation of inflammation in fish and involves innate immune cells and PI3K signaling. *Dev Comp Immunol*. 2013 Dec 1;41(4):746–55. Citations: 53
38. Pereiro P, Balseiro P, Romero A, Dios S, **Forn-Cuní G**, Fuste B, et al. (2012) High-throughput sequence analysis of turbot (*Scophthalmus maximus*) transcriptome using 454-pyrosequencing for the discovery of antiviral immune genes. *PLoS ONE*. 2012;7(5):e35369. Citations: 130

Book chapters and scientific announcements:

1. **Forn-Cuní G**, Tavakkoliamol Z, Tomás JM. (2018) Plesiomonas (Chapter 35). In *Handbook of Foodborne Diseases*. Edited by Dongyou Liu. Taylor and Francis CRC Press.
2. **Forn-Cuní G**, Tomás JM, Merino S. (2016) Genome sequence of *A. hydrophila* AH-1 (Serotype O11). *Genome Announc*. 1;4(5):e00920-16. Citations: 11
3. **Forn-Cuní G**, Tomás JM, Merino S. (2016) Genome sequence of *A. hydrophila* AH-3 (Serotype O34). *Genome Announc*. 1;4(5):e00919-16. Citations: 4

Preprints and manuscripts under review:

1. **Forn-Cuní G***, van Lieshout B, Koch BJ, Villellas C, van Asten S, Lanckacker E, et al. Accelerating drug development in infectious diseases using zebrafish disease models supported by pharmacokinetic-pharmacodynamic modeling as new approach methodology (NAM). *bioRxiv:* 10.64898/2026.05.29.728504 ***First and co-corresponding author**
2. van der vaart M, Baducci-Karp A, **Forn-Cuní G**, Witt PMM, Willemse JJ, Muñoz-Sanchéz S, et al. DRAM1 requires PI(3,5)P2 generation by PIKfyve to deliver vesicles and their cargo to endolysosomes. *bioRxiv*: 10.1101/2020.12.15.422832. Citations: 4

5. TEACHING EXPERIENCE

All my academic positions have always been research-only, but I have actively engaged in teaching:

1. Mechanisms of Disease 2024-2025, MSc in Biology, Leiden University
    - Involvement: Course coordinator.
    - Graduate level (MSc), Conventional lectures and invited speaker seminars
    - 85 students; 6 ECTS (168 hours total), 60 in person.
    - Student rating of the course: 8.4. Evaluation of teacher Gabriel Forn-Cuni: 9.3
2. Mechanisms of Disease 2023-2024, MSc in Biology, Leiden University
    - Involvement: Participant teacher during the whole course.
    - Graduate level (MSc), Conventional lectures and invited speaker seminars
    - 90 students; 6 ECTS, (168 hours total), 60 in person.
    - Student rating of the course: 7.5. Evaluation of teacher Gabriel Forn-Cuni: 8.1
3. Model organisms in cancer drug discovery and development 2024-2025, MSc in Bio-Pharmaceutical Sciences, Leiden University
    - Involvement: Participant teacher – provided 1 specialist lecture.
    - Graduate level (MSc), Invited speaker seminars
    - 40 students; 4 ECTS (112 hours total).
    - Student evaluation of teacher Gabriel Forn-Cuni: 8.3
4. Model organisms in cancer drug discovery and development 2023-2024, MSc in Bio-Pharmaceutical Sciences, Leiden University
    - Involvement: Participant teacher – provided 1 specialist lecture.
    - Graduate level (MSc), Invited speaker seminars
    - 40 students; 4 ECTS (112 hours total).
5. Cell Biology and Cancer 2022-2023, BSc in Biology, Leiden University
    - Involvement: Practical laboratory supervisor.
    - Undergraduate level (BSc), Conventional lectures and practicals
    - 100 students; 3 ECTS (84 hours total).
6. Mecanismos de Patogenicidad Microbiana 2016-2017, MSc in Microbiologia Avanzada, Universitat de Barcelona
    - Involvement: Participant teacher – provided 1 specialist lecture.
    - Graduate level (MSc), Conventional lectures and Invited speaker seminars

I have also supervised visiting scientists, bachelor, master, and junior PhD students, including:

- Yun Zhang. PhD thesis co-promotor together with Prof. Alexander Kros (PhD, Leiden Institute of Chemistry, Leiden University).
  Yun is developing liposomal formulations for the targeted delivery of drugs through the BBB and to specific macrophage populations, which we test in the zebrafish model system that I developed in the collaborative NWO-XL project.
  She is expected to finish her thesis this year 2026.
- Stella Schuenck Antunes, Universidade Federal do Rio de Janeiro (Visiting scientist at Leiden University)
- Lieke Welvaarts, Florence Stel, Saloni Saxena (*cum laude*), Bas Vooijs, Ema Albrechtova (*cum laude, Dr. Saal van Zwanenberg First Research prize* for internship under my supervision), Pernelle Guastavino, Nienke Ijspeert (*cum laude*), Ayse Parisius; Nikolay Dimitrov (*cum laude*), Alena Pieters, Meindert Hurkmans (MSc Biology Leiden University).
- Maxime Jubels and Bo van der Laar (BSc Biology Leiden University).
- Genoveva Arques Verdú (MSc Universitat de Barcelona).

6. GRANTS AND FUNDING

Attacking Glioblastoma Heterogeneity using Macrophage Metabolic Rewiring and Targeted Therapy

- Coordinator: Leila Akkari
- Role: Senior postdoc, package leader for IBL since official retirement of Prof. B. E. Snaar-Jagalska.
- Year: 2022
- Type of grant: ENW NWO-XL (OCENW.XL21.XL21.071)
- Funding: Dutch Research Council (NWO)
- Budget: 423.000€ for the IBL work package, 3.500.000€ in total

Targeted biomolecule production for therapeutic use

- Role: Principal Investigator
- Year: 2020
- Type of grant: ENW NWO-XS (OCENW.XS4.213)
- Funding: Dutch Research Council (NWO)
- Budget: 50.000€

Autophagy stimulation in improving host defence against *Aspergillus* infections

- Role: Personal postdoctoral fellowship
- Year: 2017
- Type of grant: MSCA COFUND "LEaDing Fellows" (H2020-COFUND-2015-FP707404)
- Funding agency: EU, part of the H2020 MSCA Actions
- Budget: 2-year contract + 20.000€

7. SELECTED PRESENTATIONS AT INTERNATIONAL SCIENTIFIC MEETINGS

Personally given talks at international congresses:

1. Oral Presentation: Harnessing lipid-laden macrophages for novel therapies against glioblastoma". International Workshop: Lorentz Center – "Zebrafish against Cancer: towards Clinical Relevance". Leiden, The Netherlands; 3rd – 6th June 2025.
2. Oral Presentation: Harnessing lipid-laden macrophages for novel therapies against glioblastoma. International Congress: Zebrafish Disease Models Society Annual Conference 17. Lisbon, Portugal; 8th – 10th October 2024.
3. Oral Presentation: Stimulating the autophagic-lysosomal axis enhances host defense against Invasive Aspergillosis. International Meeting: Zebrafish Infection & Immunity UK. Sheffield, 9th September 2022.
4. Oral Presentation: Stimulating the autophagic-lysosomal axis enhances host defense against Invasive Aspergillosis. International Congress: Zebrafish Disease Models Annual Conference 15. Sheffield, UK, 5th – 8th September 2022.

Invited seminars and presentations:

1. Oral Presentation: "Harnessing lipid-laden macrophages for novel therapies against glioblastoma". IBL Symposium. Leiden University, The Netherlands; 10th April 2025.
2. Oral Presentation: Enhancing antifungal innate immunity against *A. fumigatus* by stimulating the host autophagy machinery. Erasmus MC, The Netherlands; April 2018.
3. Oral Presentation: Should we trust the zebrafish as a model for human inflammatory diseases? "In the Spotlight" Biology Seminars. Leiden University, The Netherlands. March 2018.
4. Oral Presentation: Role of the polar flagellum and its glycosylation in gastroenteric *Aeromonas hydrophila* AH-3 strain virulence and immune stimulation. Leiden University, The Netherlands. July 2016

Other participations at meetings

1. Poster: Real-time in vivo visualization of autophagic defence against Invasive Aspergillosis. International Congress: 3rd Nordic Autophagy Conference. Utrecht, The Netherlands, 22nd – 24th May 2019.
2. Poster: Effect of obesity in the transcriptomic liver response to an inflammatory stimulus using a zebrafish (Danio rerio) diet-induced obesity model. National Congress: XXXIX Congreso de la Asociación Española para el estudio del Hígado. Madrid, Spain. 19th – 21st February 2014.
3. Poster: Complement C3 isoforms show differential pro-inflammatory potential in zebrafish. International Congress: 8th European Zebrafish Meeting. Barcelona, Spain. 9th – 13th July 2013.

8. TECHNOLOGY TRANSFER

Participation in projects in collaboration with industry

1. Progress novel assets (one FIH start) for non-tubercular mycobacteria that may act synergistically with bedaquiline and cytochrome bc drugs.
    - Role: Researcher. In this project, I collaborated with Janssen Pharmaceutica and the LUMC to develop PK/PD of antimycobacterial drugs in healthy and infected zebrafish larvae.
    - Coordinator: Meindert H. Lamers – Academisch Ziekenhuis Leiden (LUMC).
    - CODE: RespiriNTM.
    - Funding: European Union. Budget: 16 million €.
    - Duration: 05/2019 – 04/2027.

Creation of open access tools and databases for the research community

1. Build and maintenance of XePhIR: The (Zebrafish) Xenograft Phenotype Interactive Repository, an online database for describing how human cancer behaves when engrafted in zebrafish embryos: https://xephir.org/
2. Build and maintenance of Raincloud-shiny: Raincloud-shiny is a Shiny-powered web GUI interface to create RainCloudPlots: https://gabrifc.shinyapps.io/raincloudplots/

9. OTHER MERITS

Organization of international scientific meetings

- Lorentz Workshop: “Zebrafish against Cancer: towards Translational Relevance”. Leiden, The Netherlands. June 2025.
- First International Conference of Fish and Shellfish Immunology, Vigo, Spain. June 2013.

Participation in PhD defence committee panels

1. Wanbin Hu, PhD (Leiden University)
2. Zoha Tavakkoliamol, PhD (Universitat de Barcelona)

Participation in grant application evaluations

I have reviewed grant applications for the Dutch Research Council (NWO), including projects for the XS and M calls.

Participation in editorial boards

1. Previously: Guest editor Biology (*Basel*)
2. Previously: Guest editor Frontiers in Innate Immunology

Honors and awards

1. Conference travel award, Zebrafish Disease Models Annual Conference 15. Sheffield, UK, 5th-8th September 2022.
2. Cover for the Journal of Endocrinology Volume 224: Issue 2.

Selected scientific communication and outreach

1. Maintenance of the blog bitsandgen.es, in which I share information and code snippets regarding bioinformatics and evolutionary analysis on the zebrafish model.
2. Volunteer at open lab days, e.g., Leiden Science Family Day
3. February 2017: "Demuestran que el pez cebra es un modelo idóneo para estudiar la inflamación en humanos". Published in local press, including El Faro de Vigo, Correo Gallego, and El Progreso.
4. March 2016: "El CSIC avanza desde Galicia en la utilidad del pez cebra como modelo de investigación con los resultados de dos tesis doctorales". Published in at least 12 print and online newspapers, including El Faro de Vigo, La Voz de Galicia, La Vanguardia, el Periodico, and ABC.es.
5. February 2015: "El hígado graso responde peor ante una infección bacteriana que uno sano". Published in several online media outlets, including CSIC.es and El Faro de Vigo.

Selected specialised training

1. Introduction to Laboratory Animal Science (Article 9 animal license). Leiden University Medical Centrum, The Netherlands, 2023.
2. Animal Experimentation Course – Function C. Organized by "Animalaria Formación y Gestión, SL", 2016.

Other merits

Chair of the Biospirits, the staff association for all employees of Institute of Biology Leiden.
Primary contact and responsible for the Animal Experimentation Licenses of the lab (ref. AVD10600202216495)