

Franck Dumetz, PhD

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WORK

- 04/23 – present **Research Associate**
Department of Immunology and Microbiology, Institute for Genome Sciences, University of Maryland, Baltimore, USA
- 01/21 – 03/23 **Senior Post-doctoral fellow**
Serre lab, Institute of Genome Sciences, University of Maryland, Baltimore, USA
- 05/20 - 07/20 **Volunteer at the University of Cambridge/GSK/AstraZeneca Covid19 diagnostic center**
- 08/18 – 12/20 **Post-doctoral research associate**, Merrick’s lab, Pathology Department, University of Cambridge, Cambridge, UK
- 10/12 -01/18 **Pre-doctoral researcher**, Molecular Parasitology Unit, Biomedical Sciences department, ITM, Antwerp

EDUCATION

- 2012 – 2018 **Ph.D in Biomedical Sciences**, “Role of gene dosage in the acquisition of antimony resistance in *L. donovani*: experimental evidence”
University of Antwerp/Institute of Tropical Medicine, Antwerp, Belgium
- 2010 - 2012 **M.Sc in Molecular and Cellular Biology, specialty Medical Parasitology and Mycology** “Methodology for the study of *Leishmania major* interaction between MAP kinase 7 and Metacaspase”
Université Pierre et Marie Curie (Paris VI)/Institut Pasteur, Paris, France
- 2007 - 2010 **B.Sc Biology, specialty Biotechnology**
Université Libre des Sciences et Technologies, Lille, France

BIBLIOGRAPHY

Total count on the 06/06/2023: 15 publications; citations: 650; h-index: 10; i10-index: 11

For full citation information see <https://scholar.google.com/citations?user=XtCabmwAAAAJ&hl=en>

Dumetz F*, Enright AJ*, Zhao J, Kwok CK, Merrick CJ. The *in vivo* RNA structure of the malaria parasite *Plasmodium falciparum*, a protozoan with an A/T-rich transcriptome. **PLoS ONE**, 17(9): e0270863, doi: [10.1371/journal.pone.0270863](https://doi.org/10.1371/journal.pone.0270863)

Wijnant G-J, **Dumetz F**, Dirx L, Bulté D, Cuypers B, Van Bocxlaer K and Hendrickx S. Tackling drug resistance and other causes of treatment failure in leishmaniasis. **Frontiers in Tropical Diseases/ Insight in Antimicrobial Resistance**, 12 May 2022, 3. doi: [10.3389/fitd.2022.837460](https://doi.org/10.3389/fitd.2022.837460)

Dumetz F*, Chow EY-C*, Harris LM, Umar MI, Jensen A, Chung B, Chan TF, Merrick CJ and Kwok CK. G-quadruplex RNA motifs influence gene expression in the malaria parasite *Plasmodium falciparum*. **Nucleic Acids Research**, 2021; 49(21), 12486-12501. doi: [10.1093/nar/gkab1095](https://doi.org/10.1093/nar/gkab1095)

Cuypers B*, **Dumetz F***, Meysman F, Laukens K, De Muylder G, Dujardin JC, Domagalska MA. The absence of C-5 DNA methylation in *Leishmania donovani* allows DNA enrichment from complex samples. **Microorganisms**, 2020; 8(8),1252. doi: [10.3390/microorganisms8081252](https://doi.org/10.3390/microorganisms8081252)

Dumetz F and Merrick CJ. Parasitic protozoa: Unusual roles for G-quadruplexes in early-diverging eukaryotes. **Molecules** 2019; 24 (7), 1339. doi: [10.3390/molecules24071339](https://doi.org/10.3390/molecules24071339)

Bussotti G, Evi Gouzou E, Côrtes Boité M, Kherachi I, Harrat Z, Eddaikra N, Mottram J, C, Antoniou M, Christodoulou V, Bali A , Guerfali F,Z , Laouini D, Mukhtar M, **Dumetz F**, Dujardin JC, Smirlis D, Lechat P, Pescher P, El Hamouchi A, Lemrani M, Chicharro C, Llanes-Acevedo IP, Botana L, Cruz I, Moreno J, Jeddi F, Aoun K, Bouratbine A, Cupolillo E, and Späth G, F. *Leishmania* genome dynamics during environmental

adaptation reveals strain-specific differences in gene copy number variation, karyotype instability, and telomeric amplification. **mBio**, 2018; 9 (6), 1–18. doi: [10.1128/mBio.01399-18](https://doi.org/10.1128/mBio.01399-18)

Cuypers B, Berg M, Imamura H, **Dumetz F**, de Muylder G, Domagalska MA, Rijal S, Bhattarai N, Maes I, Cotton J, Meysman P, Laukens K and Jean-Claude Dujardin J-C Integrated genomic and metabolomic profiling of ISC1, an emerging *L. donovani* population in the Indian sub-continent. **Infection, Genetics and Evolution**, 2018; 62: 170-178. doi: [10.1016/j.meegid.2018.04.021](https://doi.org/10.1016/j.meegid.2018.04.021)

Dumetz F, Cuypers B, Imamura H, Zander D, D'Haenens E, Maes I, Domagalska MA, Clos J, Dujardin J-C and De Muylder G. Molecular pre-adaptation to antimony resistance in *Leishmania donovani* of the Indian sub-continent. **mSphere**, 2017; 3(2): e00548-17. doi: [10.1128/mSphere.00548-17](https://doi.org/10.1128/mSphere.00548-17)

Vanaerschot M, **Dumetz F**, Jara M, Dujardin J-C, Ponte-Sucre A. Chapter 17: The concept of fitness in *Leishmania* In: **Drug Resistance in Leishmania Parasites – 2nd edition**. Editor: Ponte-Sucre A, Publisher: Springer. 2018 ISBN: 978-3-319-74185-7 <https://link.springer.com/book/10.1007/978-3-319-74186-4>

Prieto-Barja P, Pescher P, Bussotti G, **Dumetz F**, Imamura H, Kedra D, Domagalska MA, Chaumeau V, Himmelbauer H, Pages M, Sterkers Y, Dujardin JC, Notredame C and Spaeth GF. Asexual maintenance of genetic diversity in the protozoan pathogen *Leishmania donovani*. **Nature Ecology & Evolution**, 2017; 1(12):1961-1969. doi: [10.1038/s41559-017-0361-x](https://doi.org/10.1038/s41559-017-0361-x)

Cuypers B, Domagalska MA, Meysman P, de Muylder G, Vanaerschot M, Imamura H, **Dumetz F**, Verdonck TW, Myler PJ, Ramasamy G, Laukens K, and Dujardin J-C. Multiplexed Spliced-Leader Sequencing: A high-throughput, selective method for RNA-seq in *Trypanosomatids*. **Scientific Reports**, 2017; 7: 3725. doi: [10.1038/s41598-017-03987-0](https://doi.org/10.1038/s41598-017-03987-0)

Dumetz F, Imamura H, Sanders M, Seblova V, Myskova J, Pescher P, Cuypers B, De Muylder G, Späth GF, Bussotti G, Vermeesch JR, Berriman M, Cotton JA, Volf P, Dujardin JC, Domagalska MA. Modulation of aneuploidy in *Leishmania donovani* during adaptation to different *in vitro* and *in vivo* environments and its impact on gene expression. **MBio**, 2017; 8(3): e00599-17. doi: [10.1128/mBio.00599-17](https://doi.org/10.1128/mBio.00599-17)

Kauffmann F, **Dumetz F**, Hendrickx S, Muraille E, Dujardin J-C, Maes L, Magez S and De Trez C. *In vivo* characterization of two additional *Leishmania donovani* strains using the murine and hamster model. **Parasite Immunology**, 2016; 38(5):290-302. doi: [10.1111/pim.12316](https://doi.org/10.1111/pim.12316)

Imamura H, Downing T, Van den Broeck F, Sanders MJ, Rijal S, Sundar S, Mannaert A, Vanaerschot M, Berg M, De Muylder G, **Dumetz F**, Cuypers B, Maes I, Domagalska M, Decuypere S, Rai K, Uranw S, Raj Bhattarai N, Khanal B, Kumar Prajapati V, Sharma S, Stark O, Schönian G, De Koning HP, Settimo L, Vanhollebeke B, Syamal Roy, Ostyn B, Boelaert M, Maes L, Berriman M, Dujardin J-C and Cotton JA. Evolutionary genomics of epidemic visceral leishmaniasis in the Indian subcontinent. **eLife**, 2016; 5: e12613. doi: [10.7554/eLife.12613](https://doi.org/10.7554/eLife.12613)

Vanaerschot M, **Dumetz F**, Roy S, Ponte-Sucre A, Arevalo J, Dujardin J-C. Treatment failure in leishmaniasis: drug-resistance or another (epi-) phenotype? **Expert Review of Anti-Infective Therapy**, 2014; 12(8):937-946. doi: [10.1586/14787210.2014.916614](https://doi.org/10.1586/14787210.2014.916614)

FUNDING AND AWARDS

Cambridge university award Professional Services Recognition Scheme 2020 in the Cross University category

Award given to all the volunteers who got involved in the Cambridge university, AstraZeneca, GSK Covid-19 testing centre

Year Laureate of the Natural Science of the Belgian Royal Academy for Over Sea Science (2018)

Prize awarded after deliberation of the jury of academy for the most significant submitted PhD thesis of the year in the field of microbial drug resistance.

Zoetis Travel Award (May 2017)

Competitive travel award to go to WorldLeish6 in Toledo, Spain, in May 2017

Research Fellowship (2014 and 2015)

Funding Body: Les Amis de l'Institut Pasteur de Bruxelles

Short term fellowship (1 month – January 2015)

Funding Bodies: European Molecular Biology Organization - EMBO (id: ASTF 616-2014) and FWO (Flemish Research Foundation)

CONFERENCES

- Son O, Cuzin L, Dumetz F. **Poster:** “KYSS – Know Your Status© : application “idéale” de notification anonyme de partenaires en cas d’IST ?” (November 2022), 23e Congrès National de la Société Française de Lutte contre le Sida
- Dumetz F, Serafim TD, Bogale HN, Iniguez E, Kamhawi S, Serre D. **Poster:** “Single Cell transcriptional characterisation of *L. major* retroleptomonad promastigotes” (August 2022) WorldLeish7
- Dumetz F, Chow E, Harris LM, Umar MI, Chung B, Chan TF, Kwok CK, Merrick CJ. **Oral communication:** “RNA guanine-quadruplexes: do they play a role in post transcriptional regulation in *P. falciparum*?” (May 2020) BioMalPar XVI (EMBL), Virtual.
- Dumetz F, Cuypers B, Imamura H, Domagalska MA, De Muylder G, Dujardin JC. **Oral communication:** “Main populations of *L. donovani* in the Indian sub-continent differ in their pre-adaptation to antimony resistance.” (December 2017) Vth Trypanosomatid Parasites meeting, Institut Pasteur, Paris, France.
- Dumetz F, Cuypers B, Imamura H, Domagalska MA, D’Haenens E, Maes I, Rijal S, Sundar S, Roy S, Dujardin JC, De Muylder G. **Oral communication:** “Pre-adaptation to antimonials is general in *Leishmania donovani* in the Indian subcontinent.” (May 2017). Sixth World Conference on Leishmaniasis, Toledo, Spain.
- Dumetz F, Imamura H, Sanders M, Seblova-Hrobarikova V, Myskova J, Sadlova J, Pescher P, Vanaerschot M, Cuypers B, De Muylder G, Bussotti G, Späth GF, Vermeesch J, Cotton JA, Volf P, Dujardin JC, Domagalska MA. **Oral communication:** “Aneuploidy variation during the life cycle of *Leishmania donovani*.” (May 2017). Annual meeting of the Belgian Society of Parasitology and Protistology, Brussels, Belgium.
- Dumetz F, Imamura H, Cuypers B, Domagalska M, Rijal S, Dujardin JC, De Muylder G. **Oral communication:** “*L. donovani* from the Indian Subcontinent is pre-adapted for a rapid development of antimonial resistance driven by aneuploidy.” (October 2016) Second International ParaFrap Conference, Ile des Embiez, France.
- Dumetz F, Imamura H, Seblova-Hrobarikova V, Myskova J, Pescher P, Cuypers B, Vanaerschot M, De Muylder G, Mannaert A, Vermeesch J, Spaeth GF, Volf P, Dujardin JC, Domagalska MA. **Oral communication:** “Genome and transcriptome dynamics during the life cycle of *Leishmania*.” (May 2015) IVth Trypanosomatid Parasites meeting, Institut Pasteur, Paris, France

TEACHING ACTIVITIES AND STUDENT SUPERVISIONS

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|-------------|--|
| Nov 2022 | Teaching “Introduction to parasitology”, School of Dentistry, University of Maryland, Baltimore, Baltimore, USA |
| April 2022 | Hosting a day long eukaryotic pathogens teaching seminar (fungi and <i>Leishmania</i>), and teaching a half day on malaria, Institute for Continuous Education, Cambridge university, Cambridge, UK |
| April 2021 | Tutoring and Q&A session on <i>Leishmania</i> and group activity on the “Social and Economic impact of Leishmaniasis”, Institute for Continuous Education, Cambridge university, Cambridge, UK |
| 02/21 | Invited Lecture: “Leishmania: a general overview”, Erasmus Medical Centre, Rotterdam, NL |
| 2019 - 2021 | Practical designer and demonstrator, Department of Pathology, University of Cambridge |
| 2020 | Practical assistant for students with disabilities |
| 03/18 | Invited lecture: “Fundamental of <i>Leishmania</i> biology and pathology” (in English and in French), Post Graduate Certificate in Tropical Medicine and International Health, ITM, Belgium |

- 10/17 Invited lecture: "Leishmania, from the field to the lab", University of Ohio, Athens, Ohio, USA
05/16 Invited Lecture: "Genome and transcriptome dynamics during the life cycle of Leishmania.
Faculty of Biology, Pontifica Universidad Catolica del Ecuador, Quito, Ecuador.
Jan – Matilda Svensson, MSc thesis: *Argininosuccinate Synthase role in antimony
June 2015 resistance in Leishmania donovani*
Oct 2013 - Natania Peelman, MSc thesis: *Functional Analysis of the MRPA episome in
June 2014 Leishmania donovani*

PROFESSIONAL SOCIETY MEMBERSHIP

- 2021 – present General Member, American Society of Tropical Medicine and Hygiene and American
Committee of Molecular, Cellular and Immunoparasitology
2021 - present General Member, RNA Society
2019 - present General Member, British Society for Parasitology
2016 - present General Member, Belgium Society for Parasitology and Protistology

SERVICE TO THE COMMUNITY/PROFESSIONAL DEVELOPMENT

- 2022 - present Mentor for the Linked Mentoring program of [GSA link](#), a non-profit organisation providing
support to LGBTQ+ youth
2022 - present Member of the Membership committee of ASTMH
2020 - present Member of [Pathogens](#) Reviewer Board
2013 - present Reviewer for scientific journals (March 2022: 23 reviews)
2021 - 2022 Discussion facilitator in the Responsible Conduct of Research training (University of
Maryland School of Medicine)
2021 - 2022 STAR-PREP statement review committee (University of Maryland, Baltimore)
2019 - 2020 Post Doc representative in the Tripos Education Committee and at the Public engagement
and outreach committee
2019 - 2020 Board member of the Post Doc committee of the Pathology department
2018 - 2019 Rising Stars public engagement training
2016 - 2017 PhD Representative at the Scientific Advisory Committee of the Institute of Tropical
Medicine of Antwerp (ITM)
2015 - 2017 Member of the Gay Pride Organisation Committee of the STI free-clinic of Antwerp
2015 - 2016 PhD representative at the ITM Education Council
2012 - 2018 Organiser of the departmental weekly social event: Beer Time
2013 - 2017 PhD representative at the ITM Biomedical Sciences department board