

Current position

- Full Professor and Vice Dean for Research and Innovation
Department of Biochemistry, Faculty of Biology and Medicine, University of Lausanne
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Education

- 1980-1983: Doctor of Philosophy
Prof. H. Diggelmann, Swiss Institute for Experimental Cancer Research
- 1978: Diploma in Biology, Fribourg University, Switzerland

Employment History and Institutional Responsibilities

- 2015-Present : Vice Dean for Research and Innovation, Faculty of Biology and Medicine, UNIL
- 2009-Present : Full Professor, Faculty of Biology and Medicine, UNIL
- 2006-2016 : Director of the Department of Biochemistry, UNIL
- 2003-2006 : Co-Director of the Department of Biochemistry, UNIL
- 1999-2009 : Associate Professor, UNIL
- 1994–1999 : Associate Professor (50%), Independent research position (50%)
(Foundation Prof. Dr. Max Cloëtta), Department of Biochemistry, UNIL
- 1994: Privat Doцент, UNIL
- 1988-1994: Assistant Professor, Department of Biochemistry, UNIL
- 1986-1987: Postdoctoral Fellow, Department of Biochemistry, UNIL
- 1984-1985 : Research Associate, Molecular Biology Institute, UCLA, Los Angeles, USA
- 1983-1984: Post doctoral Fellow (*Swiss National Science Foundation Fellowship*)
Molecular Biology Institute, UCLA, Los Angeles, USA

Approved research projects (last 5 years)

- Previous grants from 1992-2014 include 22 grants as principal investigator amounting to over 8.7million CHF
- 01.08.2020-31.07.2021: Principal Investigator Swiss National Science Foundation grant No. 310030_192710 (CHF 253'504). Title : « Impact of viral infections on metastatic leishmaniasis »
- 01.04.2017-31.07.2020 : Principal Investigator Swiss National Science Foundation grant No. 310030_173180 (CHF 868'269). Title : « Impact of viral infections on metastatic leishmaniasis »
- 2016-2019 : Principal Investigator Swiss National Science Foundation grant No. IZRJZ3_164176/1(CHF 250'000) International cooperation with Rio de Janeiro Title: "Host cellular responses and early innate immunity to Leishmania infection".
- 2014-2017 : Principal Investigator grant FNS, grant No 310030_135616 (CHF 600'000.-). Title: "Impact of *Leishmania* dsRNA virus on mucocutaneous leishmaniasis".
- 2014-2017 : Principal Investigator Grant COST Action CM1307: "Antiparasitic chemotherapy: targeting endoparasites to fight neglected parasitic diseases". (CHF 180'00). Title: " A high-throughput approach to in vitro anti-leishmanial drug screening—rapidly short-listing biologically effective drugs for in vivo trials".

Supervision of Junior Researchers

- Thesis in progress: Dimtry Kopelyanskiy (2016-present), Baijayanti Jha (2015-present) and Tiia Snaka (2018-present)
- Current Post-doctoral researchers: Amel Bekkar, Stephanie Claudinot, Nathalie Isorce, Filipa Pinheiro Teixeira
- Former Post-doctoral researchers: Carol Beghdadi-Rais, Sabina Belli, Slavica Masina, Catherine Ronet, Annette Ives
- Completed PhD thesis (last 5 years)
 - 2021: B. Jha - Inflammation amplified by a viral endosymbiont revealed extensive lymphatic connections facilitating metastatic dissemination of intracellular and free *Leishmania* parasites
 - 2020: M. Rojo Reverte - Interaction of *Leishmania* with the host macrophage induces the antioxidant and anti-inflammatory responses favoring parasite survival
 - 2017: M. Rossi - Viral coinfection-induced type-1 IFN exacerbate the outcome of *Leishmania* *guyanensis* infection promoting metastasis and relapse
 - 2016: R. O. Eren - Signaling pathways in the immune response to *Leishmania* parasites
 - 2016: P. Castiglioni - The immune response in mucocutaneous leishmaniasis
 - 2016: R. Martin - The immune response in mucocutaneous leishmaniasis
 - 2014: M.-A. Hartley - Immune response to *L. guyanensis* infection
 - 2014: K. Kohl - Polyphosphate synthase as a potential drug target
 - Between 1992-2014 a further 9 PhD thesis were completed under my direct supervision

Teaching activities

- Regular teaching at the UNIL to bachelor and master level students since 1998 in the fields of molecular biology, biochemistry and parasitology

Membership/Editorial boards

- 2014 - Present Academic Editor Microbial Cell:
- 2011-2014- Academic Editor PLoS One:

Membership scientific societies

- 2017-present: Scientific Advisory Board member, VALIDATE network-Vaccine development for complex intracellular neglected pathogens
- 2017-present: Member, French Parasitology network ParaFrap
- 2011-present: General Secretary, Institute of Rheumatology Research, Switzerland
- 2014-2018: Member, COST Action CM1307. Targeted Chemotherapy Towards Diseases Caused by Endoparasites

Organisation of conferences (last 5 years)

- October 2017: Principle Organizer, COST meeting Action CM1307, Lausanne
- April 2016: Principle Organizer, Jürg Tschopp Memorial Symposium, Montreux
- January 2016: Principle Organizer, 33rd Swiss Trypanosomatid Meeting, Leysin
- January 2015: Principle Organizer, 32nd Swiss Trypanosomatid Meeting, Leysin
- January 2014: Principle Organizer, 31st Swiss Trypanosomatid Meeting, Leysin

Prizes, Honors

- 1994-1999: Independent Research Position, Foundation Prof. Dr. Max Cloëtta

Oral contributions to international conferences (last 5 years)

- April 2019 :“Emergences et Persistances” meeting, University Hospital, Montpellier, France
- October 2018: ICGEB workshop “Drug screening in *Leishmania* infected macrophages”, and “Host parasite interactions and viral co-infections” Trieste, Italy
- September 2018: EMBO workshop “ Molecular advances and parasite strategies in host infection, Invited keynote lecture, Les Embiez, France
- May 2017: World Leishmania VI meeting, Invited speaker, Toledo, Spain
- May 2016: Pasteur Insitute “Trypanosomatid parasites: from the field to the lab” Keynote speaker, Paris, France
- December 2015: Paris Les "Lundis de l'IPSIT "Leishmania, virus and chemotherapy : which gets the last word?"
- November 2015: COST action meeting, CM1307 Belgrade
- March 2015: 4th Conference on Protein Kinase of Parasitic Protozoa (Joint meeting with COST action CM1307), Invited speaker, Haifa, Israel
- March 2014: NIH/NIAID Twinbrook Seminar Series, Invited speaker, Rockville, USA
- September 2013: European Society of Virology, Invited speaker, Lyon, France
- June 2013: American Society of Parasitology (Annual Meeting) and Quebec Molecular Parasitology, Keynote speaker, Quebec, Canada

Peer reviewed publications in international scientific journals (last 5 years)

- A comprehensive publication list can be found on: orcid.org/0000-0003-0136-7245
1. Snäkä T, **Fasel, N.** Behind the Scenes: Nod-Like Receptor X1 Controls Inflammation and Metabolism. *Frontiers in Cellular and Infection Microbiology*. 2020 Dec. Vol 10. **doi: 10.3389/fcimb.2020.609812**
 2. Barrow P, Dujardin J.C, **Fasel N**, et al., Lalle M. Viruses of protozoan parasites and viral therapy : Is the time now right? *Virology Journal*. 2020 Sept. Vol 17(1):142. **doi: 10.1186/s12985-020-01410-1**
 3. Isorce N, **Fasel N.** Viral Double-Stranded RNA Detection by DNase I and Nuclease S1 digestions in *Leishmania* parasites. *Bio-protocol*. 2020 May. Vol 10(9). **doi: 10.21769/BioProtoc.3598**
 4. Minina EA.....**Fasel N** et al., Bozhkov PV. Classification and Nomenclature of Metacaspases and Paracaspases: No more confusion with caspases. *Molecular Cell*. 2020 March 77(5): 927-929. **doi: https://doi.org/10.1016/j.molcel.2019.12.020**
 5. Rath CT, Schnellrath LC, Damaso CR, de Arruda LB, Vasconcelos PFDC, Gomes C, Laurenti MD, Calegari Silva TC, Vivarini AC, **Fasel N**, Pereira RMS, Lopes UG. Amazonian Phlebovirus (Bunyaviridae) potentiates the infection of *Leishmania* (*Leishmania*) *amazonensis*: Role of the PKR/IFN1/IL-10 axis. *PLoS Negl Trop Dis*. 2019 Jun 19;13(6):e0007500. **doi: 10.1371/journal.pntd.0007500.**
 6. Ronet C, Passelli K, Charmoy M, Scarpellino L, Myburgh E, Hauyon La Torre Y, Turco S, Mottram JC, **Fasel N**, Luther SA, Beverley SM, Launois P, Tacchini-Cottier F. TLR2 Signaling in Skin Nonhematopoietic Cells Induces Early Neutrophil Recruitment in Response to *Leishmania* major Infection. *J Invest Dermatol*. 2019 Jun;139(6):1318-1328. **doi: 10.1016/j.jid.2018.12.012.**
 7. Calegari-Silva TC, Vivarini AC, Pereira RMS, Dias-Teixeira KL, Rath CT, Pacheco ASS, Silva GBL, Pinto CAS, Dos Santos JV, Saliba AM, Corbett CEP, de Castro Gomes CM, **Fasel N**, Lopes UG. *Leishmania amazonensis* downregulates macrophage iNOS expression via Histone Deacetylase 1 (HDAC1): a novel parasite evasion mechanism. *Eur J Immunol*. 2018 Jul;48(7):1188-1198. **doi: 10.1002/eji.201747257.**

8. Kid Kohl, Haroun Zangger, Matteo Rossi, Nathalie Isorce, Lon-Fye Lye, Katherine L. Owens, Stephen M. Beverley, Andreas Mayer and **Nicolas Fasel**. Importance of Polyphosphate in the *Leishmania* life cycle. *Microbial Cell*. 2018 Jun 22;5(8):371-384. doi: [10.15698/mic2018.08.642](https://doi.org/10.15698/mic2018.08.642).
9. Rossi M, **Fasel N**. The criminal association of *Leishmania* parasites and viruses. *Curr Opin Microbiol*.(2018). Dec;46:65-72. doi: [10.1016/j.mib.2018.07.005](https://doi.org/10.1016/j.mib.2018.07.005).
10. Chennupati V, Veiga DF, Maslowski KM, Andina N, Tardivel A, Yu EC, Stilinovic M, Simillion C, Duchosal MA, Quadroni M, Roberts I, Sankaran VG, MacDonald HR, **Fasel N**, Angelillo-Scherrer A, Schneider P, Hoang T, Allam R. Ribonuclease inhibitor 1 regulates erythropoiesis by controlling GATA1 translation. *J Clin Invest*. 2018 Apr 2;128(4):1597-1614. doi: [10.1172/JCI94956](https://doi.org/10.1172/JCI94956)
11. Mary-Anne Hartley, Remzi O. Eren, Matteo Rossi, Florence Prevel, Patrik Castiglioni, Nathalie Isorce, Chantal Desponds, Lon-Fye Lye, Stephen M. Beverley, Stefan K. Drexler, **Nicolas Fasel**. *Leishmania guyanensis* parasites block the activation of the inflammasome by inhibiting maturation of IL-1. *Microbial Cell*. 2018 Jan 14;5(3):137-149. doi: [10.15698/mic2018.03.619](https://doi.org/10.15698/mic2018.03.619).
12. Carmona-Gutierrez D, Bauer MA, Zimmermann A, Aguilera A, Austriaco N, Ayscough K, Balzan R, Bar-Nun S, Barrientos A, Belenky P, Blondel M, Braun RJ, Breitenbach M, Burhans WC, Büttner S, Cavalieri D, Chang M, Cooper KF, Côte-Real M, Costa V, Cullin C, Dawes I, Dengjel J, Dickman MB, Eisenberg T, Fahrenkrog B, **Fasel N**, et al., *Microb Cell*. 2018 Jan 1;5(1):4-31. doi: [10.15698/mic2018.01.607](https://doi.org/10.15698/mic2018.01.607)
13. Eren R.O., Kopelyanskiy D., Moreau D., Chapalay J.B., Chambon M., Turcatti G., Lye L.F., Beverley S.M., **Fasel N**. Development of a semi-automated image-based high-throughput drug screening system. *Frontiers in bioscience*. 2018 Jan 1;10:242-253. [PMCID:PMc5735416](https://pubmed.ncbi.nlm.nih.gov/305735416/)
14. Rossi M, **Fasel N**. How to master the host immune system? *Leishmania* parasites have the solutions! *Int Immunol*. 2018 Mar 10;30(3):103-111. doi: [10.1093/intimm/dxx075](https://doi.org/10.1093/intimm/dxx075)
15. Grybchuk D, Akopyants NS, Kostygov AY, Konovalovas A, Lye LF, Dobson DE, Zangger H, **Fasel N**, Butenko A, Frolov AO, Votýpka J, d'Avila-Levy CM, Kulich P, Moravcová J, Plevka P, Rogozin IB, Serva S, Lukeš J, Beverley SM, Yurchenko V. Viral discovery and diversity in trypanosomatid protozoa with a focus on relatives of the human parasite *Leishmania*. *Proc Natl Acad Sci U S A*. 2018 Jan 16;115(3):E506-E515. doi: [10.1073/pnas.1717806115](https://doi.org/10.1073/pnas.1717806115).
16. Dias-Teixeira K.L., Calegari-Silva T.C., Medina J.M., Vivarini Á.C., Cavalcanti Á., Teteo N., Santana AKM, Real F., Gomes C.M., Pereira RMS, **Fasel N**., Silva J.S., Aktas B.H., Lopes U.G. Emerging Role for the PERK/eIF2 α /ATF4 in Human Cutaneous Leishmaniasis. *Sci Rep*. 2017 Dec 6;7(1):17074. doi: [10.1038/s41598-017-17252-x](https://doi.org/10.1038/s41598-017-17252-x).
17. Klomp maker S.H., Kohl K., **Fasel N**., Mayer A. Magnesium uptake by connecting fluid-phase endocytosis to an intracellular inorganic cation filter. *Nat Commun*. 2017 Dec 1;8(1):1879. doi: [10.1038/s41467-017-01930-5](https://doi.org/10.1038/s41467-017-01930-5).
18. Vivarini ÁC, Calegari-Silva TC, Saliba AM, Boaventura VS, França-Costa J, Khouri R, Dierckx T, Dias-Teixeira KL, **Fasel N**, Barral AMP, Borges VM, Van Weyenbergh J, Lopes UG. *Front Immunol*. 2017 Sep 15;8:1127. doi: [10.3389/fimmu.2017.01127](https://doi.org/10.3389/fimmu.2017.01127).
19. Rossi M, Castiglioni P, Hartley MA, Eren RO, Prével F, Desponds C, Utzschneider DT, Zehn D, Cusi MG, Kuhlmann FM, Beverley SM, Ronet C, **Fasel N**. Type I interferons induced by endogenous or exogenous viral infections promote metastasis and relapse of leishmaniasis. *Proc Natl Acad Sci U S A*. 2017 May 9;114(19):4987-4992. doi: [10.1073/pnas.1621447114](https://doi.org/10.1073/pnas.1621447114)
20. Castiglioni P, Hartley MA, Rossi M, Prevel F, Desponds C, Utzschneider DT, Eren RO, Zangger H, Brunner L, Collin N, Zehn D, Kuhlmann FM, Beverley SM, **Fasel N**, Ronet C. Exacerbated Leishmaniasis Caused by a Viral Endosymbiont can be Prevented by Immunization with Its Viral Capsid. *PLoS Negl Trop Dis*. 2017 Jan 18;11(1):e0005240. doi: [10.1371/journal.pntd.0005240](https://doi.org/10.1371/journal.pntd.0005240).
21. Kuhlmann FM, Robinson JI, Bluemling GR, Ronet C, **Fasel N**, Beverley SM. Antiviral screening identifies adenosine analogs targeting the endogenous dsRNA *Leishmania* RNA virus 1 (LRV1) pathogenicity factor. *Proc Natl Acad Sci U S A*. 2017 Jan 31;114(5):E811-E819. doi: [10.1073/pnas.1619114114](https://doi.org/10.1073/pnas.1619114114).
22. Brettmann EA, Shaik JS, Zangger H, Lye LF, Kuhlmann FM, Akopyants NS, Oschwald DM, Owens KL, Hickerson SM, Ronet C, **Fasel N**, Beverley SM. Tilting the balance between RNA interference and replication eradicates *Leishmania* RNA virus 1 and mitigates the inflammatory response. *Proc Natl Acad Sci U S A*. 2016 Oct 25;113(43):11998-12005. DOI:[10.1073/pnas.1615085113](https://doi.org/10.1073/pnas.1615085113)

23. Eren RO, Reverte M, Rossi M, Hartley MA, Castiglioni P, Prevel F, Martin R, Desponds C, Lye LF, Drexler SK, Reith W, Beverley SM, Ronet C, **Fasel N**. Mammalian Innate Immune Response to a Leishmania-Resident RNA Virus Increases Macrophage Survival to Promote Parasite Persistence. *Cell Host Microbe*. 2016 Sep 14;20(3):318-328. doi: **10.1016/j.chom.2016.08.001**.
24. Hartley MA, Bourreau E, Rossi M, Castiglioni P, Eren RO, Prevel F, Couppié P, Hickerson SM, Launois P, Beverley SM, Ronet C, **Fasel N**. Leishmanivirus-Dependent Metastatic Leishmaniasis Is Prevented by Blocking IL-17A. *PLoS Pathog*. 2016 Sep 22;12(9):e1005852. doi: **10.1371/journal.ppat.1005852**.
25. Dias-Teixeira KL, Pereira RM, Silva JS, **Fasel N**, Aktas BH, Lopes UG. Unveiling the Role of the Integrated Endoplasmic Reticulum Stress Response in Leishmania Infection - Future Perspectives. *Front Immunol*. 2016 Jul 22;7:283. doi: **10.3389/fimmu.2016.00283**.
26. Genes CM, de Lucio H, González VM, Sánchez-Murcia PA, Rico E, Gago F, **Fasel N**, Jiménez-Ruiz A. A functional BH3 domain in an aquaporin from Leishmania infantum. *Cell Death Discov*. 2016 Jul 4;2:16043. doi: **10.1038/cddiscovery**.
27. Martin R, Desponds C, Eren RO, Quadroni M, Thome M, **Fasel N**. 26. Caspase-mediated cleavage of raptor participates in the inactivation of mTORC1 during cell death. *Cell Death Discov*. 2016 Apr 18;2:16024. doi: **10.1038/cddiscovery**.
28. Parmentier L, Cusini A, Müller N, Zangger H, Hartley MA, Desponds C, Castiglioni P, Dubach P, Ronet C, Beverley SM, **Fasel N**. Severe Cutaneous Leishmaniasis in a Human Immunodeficiency Virus Patient Coinfected with Leishmania braziliensis and Its Endosymbiotic Virus. *Am J Trop Med Hyg*. 2016 Apr;94(4):840-843. doi: **10.4269/ajtmh.15-0803**
29. Bourreau E, Ginouves M, Prévot G, Hartley MA, Gangneux JP, Robert-Gangneux F, Dufour J, Sainte-Marie D, Bertolotti A, Pratlong F, Martin R, Schütz F, Couppié P, **Fasel N**, Ronet C. Presence of Leishmania RNA Virus 1 in Leishmania guyanensis Increases the Risk of First-Line Treatment Failure and Symptomatic Relapse. *J Infect Dis*. 2016 Jan 1;213(1):105-11. doi: **10.1093/infdis/jiv355**.
30. M. Casanova, I.J. Gonzalez, C. Sprissler, H. Zalila, M. Dacher, L. Basmaciyan, G.F : Späth, N. Azas and **N. Fasel**. Implication of different domains of the Leishmania major metacaspase in cell death and autophagy. *Cell Death Dis*. 2015 Oct 22;6:e1933. doi: **10.1038/cddis.2015.288**.
31. Zangger H, Hailu A, Desponds C, Lye LF, Akopyants NS, Dobson DE, Ronet C, Ghalib H, Beverley SM, **Fasel N**. Leishmania aethiopica field isolates bearing an endosymbiotic dsRNA virus induce pro-inflammatory cytokine response. *PLoS Negl Trop Dis*. 2014 Apr 24;8(4):e2836. doi: **10.1371/journal.pntd.0002836**
32. A. Ives, S. Masina, F. Prével, M. Revaz-Breton, M.A. Hartley, P. Castiglioni, P. Launois, **N. Fasel** and C. Ronet. MyD88 and TLR9 dependent immune responses mediate resistance to Leishmania guyanensis infections, irrespective of Leishmania RNA virus burden *PLoS One*. 2014 May 6;9(5):e96766. doi: **10.1371/journal.pone.0096766**
33. D. Ashok, S. Schuster, C. Ronet, M. Rosa, M., V. Mack, C. Lavanchy, S. Fuertes Marraco, **N. Fasel**, K. Murphy, F. Tacchini-Cottier, H. Acha-Orbea, H. Cross-Presenting Dendritic Cells are Required to Control Leishmania major Infection". *Eur J Immunol*. 2014 May;44(5):1422-32. doi: **10.1002/eji.201344242**