GILMER Orian
Werner-von-Siemens Str. 65
97076, Würzburg, Germany
Phone: +33 6 07 08 83 35
Mail: orian.gilmer@gmail.com

Date of birth: 15 / 05 / 1995
Nationality: French
Driving licence B

RESEARCH ASSOCIATE

Main research interests

RNA Biology | RNA structure-function relationship | RNA protein interactions

Molecular virology | Host-pathogens interactions

Education

Oct 2018 – Nov 2022 **University of Strasbourg, France | PhD in Molecular Biology**
IBMC – UPR 9002 – Team "RNA packaging and viral assembly"
Title: "Structural study of the 5' terminal region of HIV-1 genomic RNA and rearrangements induced by $Pr55^{Gag}$ and its maturation products"
Supervisor: Dr Valérie Vivet-Boudou

Jan 2018 – Jul 2018 **University of Strasbourg, France | Master in Molecular and Cellular Biology**
IBMC – UPR 9002 – Team "RNA packaging and viral assembly"
Titre: "Structural study of the 5' *Leader* of HIV-1 genomic RNA"
Supervisor: Dr Valérie Vivet-Boudou

Technical skills

- Good laboratory practices
- Cloning
- Chemical probing of RNA molecule
- RNA work
- Sequencing library preparation
- Operating C-Trap Optical Tweezers

Soft skills

- Ability to work independently
- Communication and teaching
- Project management
- Adaptability
- Problem solving
- Patience

Languages

French (Native speaker) | English (Fluent) | German (Beginner)

Work experience

Sep 2023 – Sep 2024 **Postdoctoral researcher**, HIRI-HZI, Würzburg, Germany
- **Group leader**: Prof Dr Neva Caliskan
- **Project**: Investigation of translational recoding mechanisms in viral RNAs

Oct 2018 – Nov 2022 **PhD researcher**, IBMC, Strasbourg, France
- **Group leaders**: Dr Roland Marquet & Dr Jean-Christophe Paillart
- **PhD Supervisor**: Dr Valérie Vivet-Boudou
- **Project**: Structural study of the 5' terminal region of HIV-1 genomic RNA and rearrangement induced by $Pr55^{Gag}$ and its maturation products

Jan 2018 – Jun 2018 **Master thesis**, IBMC, Strasbourg, France
- **Group leaders**: Dr Roland Marquet & Dr Jean-Christophe Paillart
- **Supervisor**: Dr Valérie Vivet-Boudou
- **Project**: Structural study of the 5' *Leader* of HIV-1 genomic RNA

Jan 2017 – Mar 2017 **Master internship**, IBMC, Strasbourg, France
- **Group leaders**: Dr Roland Marquet & Dr Jean-Christophe Paillart
- **Project**: Cloning of APOBEC3 proteins family coding sequences

May 2016 – Jun 2016 **Bachelor internship**, IBMC, Strasbourg, France
- **Group leaders**: Dr Eric Ennifar
- **Project**: Mechanical study of the 70S ribosome assembly

Jan 2015 – Mar 2015 **Technical internship**, Institut of Viral and Liver Disease, Strasbourg, France
- **Group leaders**: Dr Catherine Schuster
- **Project**: Study of the protein partners of HCV IRES

May 2014 – Jul 2014 **Technical internship**, IPCB, Strasbourg, France
- **Group leaders**: Dr Ivan Tarasov & Dr Nina Entelis
- **Project**: Evaluation of a CRISPR-Cas9 approach applied to mitochondrial genome manipulation

Degrees and Diplomas

2022 **PhD** in **Molecular Biology** at the University of Strasbourg, France

2018 **Master's degree** in **"Molecular and Cellular Biology"** at the University of Strasbourg, France
With honors "Mention Bien"

2016 **Bachelor's degree** in **"Molecular and Cellular Biology"** at the University of Strasbourg, France
With honors "Mention Assez Bien"

2015 **Technical degree** in **"Biotechnologies"** at the Lycée Jean Rostand of Strasbourg, France
With honors "Mention Bien"

2013 **French *Baccalaureat*** in **Sciences** at the Lycée Louis Pasteur of Strasbourg, France
With honors "Mention Assez Bien"

Peer-reviewed publications

Published:

1. Smart, A.*, **Gilmer**, **O**.*, & Caliskan, N. (2024). Translation Inhibition Mediated by Interferon-Stimulated Genes during Viral Infections. Viruses, 16(7), 1097. https://doi.org/10.3390/v16071097

2. **Gilmer**, **O**.*, Mailler, E.*, Paillart, J. C., Mouhand, A., Tisné, C., Mak, J., Smyth, R. P., Marquet, R. & Vivet-Boudou, V. (2022). Structural maturation of the HIV-1 RNA 5' untranslated region by Pr55Gag and its maturation products. RNA Biology, 19(1), 191–205. https://doi.org/10.1080/15476286.2021.2021677

3. **Gilmer**, **O**.*, Quignon, E.*, Jousset, A. -C.*, Paillart, J. -C., Marquet, R., & Vivet-Boudou, V. (2021). Chemical and Enzymatic Probing of Viral RNAs: From Infancy to Maturity and Beyond. Viruses, 13(10), 1894. https://doi.org/10.3390/v13101894

4. Libre, C., Seissler, T., Guerrero, S., Batisse, J., Verriez, C., Stupfler, B., **Gilmer**, **O**., Cabrera-Rodriguez, R., Weber, M. M., Valenzuela-Fernandez, A., Cimarelli, A., Etienne, L., Marquet, R.,

& Paillart, J. -C. (2022). A Conserved uORF Regulates APOBEC3G Translation and Is Targeted by HIV-1 Vif Protein to Repress the Antiviral Factor. Biomedicines, 10(1), 13. https://doi.org/10.3390/biomedicines10010013

5. Kibe, A., Buck, S., Gribling-Burrer, A. -S., **Gilmer**, **O**., Bohn, P., Koch, T., Mireisz, C. N. -M., Schlosser, A., Erhard, F., Smyth, R. P. & Caliskan, N. (2025). The translational landscape of HIV-1 infected cells reveals key gene regulatory principles. Nat Struct Mol Biol. https://doi.org/10.1038/s41594-024-01468-3

6. Neuman B. W.*, Smart, A.*, **Gilmer**, **O**.*, Smyth, R. P.*, Vaas, J., Böker, N., Samborskiy, D. V., Bartenschlager, R., Seitz, S., Gorbalenya, A. E., Caliskan, N. & Lauber, C. (2025). Giant RNA genomes: roles of host, translation elongation, genome architecture and proteome in nidoviruses. PNAS. *In press*

In preparation:

7. Gilmer, O., Pekarek, L., Kibe, A. Malik, S., Gribling-Burrer, A.-S., Smyth, R. P. & Caliskan, N.

Conferences, workshops and seminars

May 2024 | Poster presentation | **EMBO Recoding Meeting**, Bantry, Ireland
"Exploring the structural heterogeneity of HIV-1 frameshift element"

November 2023 | Workshop organisation | **Optical Tweezers C-Trap presentation for Biomedecine Students**, Würzburg, Germany

May 2022 | Poster presentation | **StrasRNA Salon**, Strasbourg, France
"Toward the 3D structure of the HIV-1 genomic RNA 5' untranslated region during replication late phase events"

May 2022 | Poster presentation **| International NetRNA meeting "RNA in gene control across kingdoms"**, Bischenberg, France
"Toward the 3D structure of the HIV-1 genomic RNA 5' untranslated region during replication late phase events"

March 2022 | Talk | **2022 Sidaction Scientific Day (Journée Scientifique de Sidaction 2022)**, Paris, France
"Evolution of HIV-1 genomic RNA 5' untranslated region during maturation"

May 2021 | Poster presentation **| Cold Sping Harbor Laboratory – Retroviruses**, online meeting
"Structure of the HIV-1 genomic RNA 5'untranslated region and rearrangement induced by Gag and its maturation products"

April 2021 | Poster presentation | **Virology Scientific Days** (Journées Francophones de Virologie), online meeting
"Structure of HIV-1 genomic RNA and rearrangements induced by Gag"

April 2021 | Poster presentation | **Doctoral School Days**, online meeting
"Structure of the HIV-1 genomic RNA 5'untranslated region and rearrangement induced by Gag and its maturation products"

November 2019 | Poster presentation | **Sidaction workshop: Université des Jeunes Chercheurs** (UJC), Carry-Le-Rouet, France
"HIV-1: towards a 3D model of the genomic RNA"

March 2019 |Poster presentation **| Doctoral School Days**, Strasbourg, France
"The 3D structure of the HIV-1 genomic RNA 5' untranslated region during the selection and packaging events"

Technical skills

Molecular biology

- Good laboratory practices
- Cloning
- In vitro transcription
- DNA, RNA, proteins extraction
- AKTA purification
- PCR, qPCR, RT-qPCR & RACE-PCR
- Sequencing library preparation
- Radioactive labelling
- Optical Tweezers sample preparation and instrument operating

Cellular culture

- Cell lines used: TSFR cells (internship); HEK293T mammalian cells
- Transfection
- Flow-cytometry (Novocyte Quanteon Flow Cytometer)

Structural biology

- SHAPE modification (NMIA, BzCN) – see Merino et al., 2005
- DMS-MaP-seq
- MOHCA-seq - see Cheng et al., 2015

Bioinformatics

- QuSHAPE, RNAStructure and VARNA for analysis and representation of RNA structures
- R language (beginner) for basic statistics and data representation
- Proficient in Microsoft Office, Affinity Designer, Adobe Illustrator, ApE, Benchling
- Python script usage for Optical Tweezers data analysis

Teaching and community involvement

2021 – 2022 | PhD Student representative at the Doctoral School of Life Sciences

2018 – 2021 | **Supervision of Biochemistry praticals** (2nd year Bachelor students) | University of Strasbourg, France (64 hours/year)

Jun 2021 – Jul 2021 | **Tutoring** of a 3rd year Bachelor student | University of Strasbourg, France

Mar 2019 – Jul 2019 | **Tutoring** of a 3rd year Bachelor student | University of Strasbourg, France & University of Saarland, Germany

Additional activities

- Worked as a **beekeeper** (4 months over 3 years)
- Worked as a **sport animator** for children (4 months over 3 years)
- Worked as a **warehouseman** (2 months over 2 years)
- Practiced **gymnastic** at a **national level** (15 years)

References

Dr Valérie Vivet-Boudou
CNRS – UPR 9002 – IBMC
2, Allée Konrad Roentgen, Strasbourg
E-mail: v.vivet@ibmc-cnrs.unistra.fr

Dr Jean-Christophe Paillart
CNRS – UPR 9002 – IBMC
2, Allée Konrad Roentgen, Strasbourg
E-mail: jc.paillart@ibmc-cnrs.unistra.fr

Prof Dr Neva Caliskan
Lehrstuhl Biochemie III – Universität Regensburg
Universitätsstr. 31, Regensburg, 93053
E-mail: neva.caliskan@ur.de