Miruna Elena Rosu

Please fill in the information below electronically, as directed.
Delete any unused rows / parts of the application or add more space if required.
All sections are mandatory unless indicated otherwise and must be complete.

ECDC Fellowship Application Form

VACANCY TITLE	ECDC Fellowship: EUPHEM	
Where did you see this position advertised?	Other	If 'other' please specify here: Graduated fellows

PERSONAL INFORMATION

Family name(s):	Rosu
First name(s):	Miruna Elena
Date of birth:	06/01/1993
Gender:	Female
Nationality/ies:	Romanian

CONTACT INFORMATION

Current address including city, country and postal code:	
Mobile phone (incl. country code):	
Alternative phone (optional):	
Email address:	

EDUCATION (starting with most recent) – add/delete rows as required

From (DD/MM/YY)	To (DD/MM/YY)	Title and subject of qualification awarded	Name and address of education establishment
04/09/2017	Present	PhD Candidate, Molecular Virology	Erasmus Medical Center Dr. Molewaterplein 40, 3015 GD, Rotterdam, the Netherlands
01/09/2015	15/08/2017	MSc Infection and Immunity	Erasmus Medical Center Dr. Molewaterplein 40, 3015 GD, Rotterdam, the Netherlands
01/09/2011	15/07/2015	BSc Genetics	Universitat Autònoma de Barcelona Vall Moronta, 08193 Bellaterra, Barcelona, Spain

CERTIFIED TRAINING (optional – add/delete rows as required)

From (DD/MM/YY)	To (DD/MM/YY)	Title of Qualification Awarded	Name and address of training establishment
17/03/2022	17/03/2022	Research Integrity	Erasmus Medical Center Dr. Molewaterplein 40, 3015 GD, Rotterdam, the Netherlands
04/08/2019	09/08/2019	Bioinformatics Workshop on Virus Evolution and Molecular Epidemiology (VEME)	The University of Hong Kong 21 Sassoon Rd, Pok Fu Lam, Hong Kong
17/12/2018	21/12/2018	Programming with R	Erasmus Medical Center Dr. Molewaterplein 40, 3015 GD, Rotterdam, the Netherlands
27/11/2018	27/11/2018	Photoshop and Illustrator workshop	Erasmus Medical Center Dr. Molewaterplein 40, 3015 GD, Rotterdam, the Netherlands
10/07/2016	22/07/2016	13th HKU-Pasteur Virology Course, "Bats and Viruses"	The University of Hong Kong 21 Sassoon Rd, Pok Fu Lam, Hong Kong
04/04/2016	22/04/2016	Animal laboratory experimentation	Erasmus Medical Center Dr. Molewaterplein 40, 3015 GD, Rotterdam, the Netherlands

WORK EXPERIENCE (starting with current or most recent employer)

From (DD/MM/YY)	To (DD/MM/YY)	Position Held / Job title
04/09/2017	Present	PhD Candidate, Molecular Virology
Name and address of employer: Erasmus Medical Center, Dr. Molewaterplein 40, 3015 GD, Rotterdam, the Netherlands		
Full-time or part-time: Full-time		Percentage of time worked (i.e. 100% / 50%): 100%

Description of main tasks / duties / responsibilities:

- Dissertation entitled "Immune escape of respiratory viruses and implications for vaccine design"
- Promotor Prof. Ron Fouchier
- Expected graduation date: March, 2023
- Designed and conducted scientific experiments using a large array of techniques including: serological assays, in vitro phenotyping assays, molecular cloning, nanopore sequencing
- Worked with virus isolates and genetically-modified organisms under BSL-1/2 and 3(+) containment levels
- Developed and evaluated influenza vaccine candidates in pre-clinical studies
- Analysed antigenic evolution of influenza A, influenza B and SARS-CoV-2 viruses using antigenic cartography
- Carried out maximum likelihood and Bayesian phylogenetic analyses using tools such as PhyML and BEAST
- Performed data analysis and visualization using R
- Coordinated research projects from beginning to end independently
- Prepared scientific manuscripts for publication in peer reviewed journals
- Presented findings at top international conferences yearly
- Mentored, supervised and evaluated MSc students
- Engaged with collaborators from Cambridge and Harvard Universities
- Wrote monthly progress reports for funding agencies such as NIH and BARDA

From (DD/MM/YY)	To (DD/MM/YY)	Position Held / Job title
1/10/2021	30/05/2022	Coordinator, Sustainable Research Symposium (SureSymp)
Name and address of employer: Green Labs Netherlands, Utrecht, the Netherlands		
Full-time or part-time: Part-time		Percentage of time worked (i.e. 100% / 50%): 50%

Description of main tasks / duties / responsibilities:

- Organized hybrid European symposium with over 400 participants
- Wrote successful NWO (Netherlands Organization for Scientific Research) grant application totalling € 10.000
- Developed promotion strategy for European institutions
- Conceptualized symposium program and maintained communication with speakers
- Conceptualized and moderated panel discussion on "The future of sustainable conferencing"

From (DD/MM/YY)	To (DD/MM/YY)	Position Held / Job title
01/02/2021	Present	Founding member, Biomedical Green Team
Name and address of employer: Erasmus Medical Center, Dr. Molewaterplein 40, 3015 GD, Rotterdam, the Netherlands		
Full-time or part-time**:** Part-Time		Percentage of time worked (i.e. 100% / 50%): 50%
Description of main tasks / duties / responsibilities: • Collaborated with policy department for policy issuance and changes • Initiated institute-wide sustainable policies such as plastic recycling • Acted as a liaison between laboratories and recycling company • Organized institutional awareness campaigns • Communicated achievements in national meetings • Acted as institute administrator for implementation of LEAF – sustainable laboratory framework –		

From (DD/MM/YY)	To (DD/MM/YY)	Position Held / Job title
02/01/2017	11/08/2017	Research Intern in Prof. Martin Schwemmle's group
Name and address of employer: Universitätsklinikum Freiburg, Hugstetter Str. 55, 79106 Freiburg im Breisgau, Germany		
Full-time or part-time**:** Full-time		Percentage of time worked (i.e. 100% / 50%): 100%
Description of main tasks / duties / responsibilities: • Designed and conducted research on genome assembly and packaging of influenza viruses using virus culture techniques, immunofluorescence analysis, qPCR and confocal microscopy, among others • Optimized single-molecule fluorescent in situ hybridization (smFISH) to visualize virus genome in infected cells • Worked with virus isolates and genetically-modified organisms under BSL-1 and 2 containment levels • Analyzed experimental data and interpreted results to write summaries of findings • Prepared PowerPoint slide shows and presented in group and departmental meetings • Assisted with writing research manuscript		

From (DD/MM/YY)	To (DD/MM/YY)	Position Held / Job title
04/01/2016	15/12/2016	Research Intern in Prof. Ron Fouchier's group
Name and address of employer: Erasmus Medical Center, Dr. Molewaterplein 40, 3015 GD, Rotterdam, the Netherlands		
Full-time or part-time**:** Full-time		Percentage of time worked (i.e. 100% / 50%): 100%

Description of main tasks / duties / responsibilities:

- Designed and conducted research on the molecular determinants for airborne transmission of influenza virus using mammalian cell culture, virus culture, bacterial culture, molecular cloning, phenotyping assays, microscopy, blotting, PCR, Sanger sequencing, among others
- Worked with virus isolates and genetically-modified organisms under BSL-1 and 2 containment levels
- Prepared PowerPoint slide shows and presented in group and departmental meetings
- Assisted with writing research manuscript

LANGUAGE SKILLS

Mother tongue(s):	Romanian

OTHER LANGUAGE(S) - add/delete rows as required:

Choose the right level for each skill:

* Levels: A1/2 = Basic user, B1/2 = Independent user, C1/2 = Proficient user – according to the CEFR

	Understanding		Speaking		Writing
	Listening	Reading	Interaction	Production	
English	C2	C2	C2	C2	C2
Spanish	C2	C2	C2	C2	C2
Catalan	C2	C2	C2	C2	C2
French	A2	B1	A2	A2	A2

For a detailed description of the CEFR levels please use the following link: Common European Framework of Reference for Languages

SKILLS IN SOFTWARE - relevant for epidemiology, biostatics and microbiology (Stata, R, GIS, BioNumerics, MEGA, etc.)

R	Intermediate user
SPSS	Basic user
Python	Basic user
GraphPad	Advanced user
PhyML	Intermediate user
BEAST (Bayesian analysis)	Intermediate user
MEGA	Intermediate user
MAFFT	Advanced user
FigTree	Advanced user
Racmacs (Antigenic cartography)	Advanced user

LIST OF PUBLICATIONS & ADDITIONAL INFORMATION

List of publications

1: **Rosu ME**, Lexmond P, Bestebroer TM, Hauser BM, Smith DJ, Herfst S, Fouchier RAM. Substitutions near the HA receptor binding site explain the origin and major antigenic change of the B/Victoria and B/Yamagata lineages. Proc Natl Acad Sci U S A. 2022 Oct 18; 119(42):e2211616119. doi: 10.1073/pnas.2211616119. Epub 2022 Oct 10. PMID: 36215486.

2: Mykytyn AZ, Rissmann M, Kok A, **Rosu ME**, Schipper D, Breugem TI, van den Doel PB, Chandler F, Bestebroer T, de Wit M, van Royen ME, Molenkamp R, Oude Munnink BB, de Vries RD, GeurtsvanKessel C, Smith DJ, Koopmans MPG, Rockx B, Lamers MM, Fouchier R, Haagmans BL. Antigenic cartography of SARS-CoV-2 reveals that Omicron BA.1 and BA.2 are antigenically distinct. Sci Immunol. 2022 Jun 23:eabq4450. doi: 10.1126/sciimmunol.abq4450. Epub ahead of print. PMID: 35737747; PMCID: PMC9273038.

3: **Rosu ME**, Kok A, Bestebroer TM, de Meulder D, Verveer EP, Pronk MR, Dekker LJM, Luider TM, Richard M, van den Brand JMA, Fouchier RAM, Herfst S. Contribution of Neuraminidase to the Efficacy of Seasonal Split Influenza Vaccines in the Ferret Model. J Virol. 2022 Mar 23;96(6):e0195921. doi: 10.1128/jvi.01959-21. Epub 2022 Feb 2. PMID: 35107371; PMCID: PMC8941921.

4:Herfst S, Zhang J, Richard M, McBride R, Lexmond P, Bestebroer TM, Spronken MIJ, de Meulder D, van den Brand JM, **Rosu ME**, Martin SR, Gamblin SJ, Xiong X, Peng W, Bodewes R, van der Vries E, Osterhaus ADME, Paulson JC, Skehel JJ, Fouchier RAM. Hemagglutinin Traits Determine Transmission of Avian A/H10N7 Influenza Virus between Mammals. Cell Host Microbe. 2020 Oct 7;28(4):602-613.e7. doi: 10.1016/j.chom.2020.08.011. PMID: 33031770; PMCID: PMC7556738.

5: Bolte H, **Rosu ME**, Hagelauer E, García-Sastre A, Schwemmle M. Packaging of the Influenza Virus Genome Is Governed by a Plastic Network of RNA- and Nucleoprotein-Mediated Interactions. J Virol. 2019 Feb 5;93(4):e01861-18. doi: 10.1128/JVI.01861-18. PMID: 30463968; PMCID: PMC6363987.

6: Flores-Bello A, Mas-Ponte D, **Rosu ME**, Bosch E, Calafell F, Comas D. Sequence diversity of the Rh blood group system in Basques. Eur J Hum Genet. 2018 Dec;26(12):1859-1866. doi: 10.1038/s41431-018-0232-1. Epub 2018 Aug 8. PMID: 30089826; PMCID: PMC6244411.

7: Herfst S, Mok CKP, van den Brand JMA, van der Vliet S, **Rosu ME**, Spronken MI, Yang Z, de Meulder D, Lexmond P, Bestebroer TM, Peiris JSM, Fouchier RAM, Richard M. Human Clade 2.3.4.4 A/H5N6 Influenza Virus Lacks Mammalian Adaptation Markers and Does Not Transmit via the Airborne Route between Ferrets. mSphere. 2018 Jan 3;3(1):e00405-17. doi: 10.1128/mSphere.00405-17. PMID: 29299528; PMCID: PMC5750386.

8: **Rosu ME**, Westgeest KB, Hauser BM, de Graaf M, Bestebroer TM, Sinartio FS, Lexmond P, Pronk MR, van der Vliet S, Skepner E, Spronken MIJ, van Beek R, Muehlemann B, Eichelberger M, Jones TC, Smith DJ, Herfst S, Fouchier RAM. Mapping the antigenic evolution of influenza virus N2 neuraminidase. In preparation

Selected oral presentations

Tittle: Covid19, influenza and RSV future vaccination
7th European Scientific Working group on Influenza (ESWI) conference | Online | December, 2020

Tittle: Antigenic evolution of influenza viruses
12th Annual NIAID Centers of Excellence for Influenza Research and Surveillance (CEIRS) Network Meeting | Baltimore, USA | June, 2019

Awards

Young Scientist Travel Grant | European Scientific Working group on Influenza (ESWI) | October, 2020

Best Student Award, Virology Course, "Bats and Viruses" | Honk Kong University – Pasteur Research Pole | July, 2017

References

Prof. Ron A.M. Fouchier | Viroscience department, Erasmus Medical Center | r.fouchier@erasmusmc.nl

Prof. Derek Smith | Centre for Pathogen Evolution | University of Cambridge | djs200@cam.ac.uk

Prof. Marion Koopmans | Viroscience department, Erasmus Medical Center | m.koopmans@erasmusmc.nl