Zaiga Nora-Krūkle



Immunology, host-pathogen research and translational medicine

Co-supervisor | Institute of Microbiology and Virology

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Current position	Director and Leading Researcher
Organisational unit	Institute of Microbiology and Virology
KEY-RSU role	Co-supervisor
Thematic area	MVI-1 Chlamydia-Induced Telomere Damage and Repair Mechanisms; MVI-2 miRNA-miRNA Regulatory Networks in Immune Regulation and Viral Pathogenesis; MVI-3 Systemic Immune Responses and the Tumour Microenvironment in Predicting Immunotherapy Outcomes; MVI-4 Overcoming Immune Checkpoint Inhibitor Resistance through Innate Immune Activation

Host institute The Institute of Microbiology and Virology (MVI) is an RSU scientific institute working across medical microbiology, virology, molecular biology, clinical immunology, immunogenetics, autoimmune diseases and biotechnology. View institute profile

Supervisor Overview

Zaiga Nora-Krūkle, Dr. med., is Director and Leading Researcher at the Institute of Microbiology and Virology, Rīga Stradiņš University. As KEY-RSU co-supervisor for all four MVI postdoctoral researchers, she will provide cross-cutting methodological guidance, support research-design refinement and help postdoctoral researchers integrate into the wider MVI research environment.

Research Expertise

Her expertise spans immunology and immune-mediated disease, host–pathogen interactions, virology, molecular and cellular biomedical research, translational medicine and biomarker discovery. Her research has particularly addressed persistent and post-viral conditions, including ME/CFS, herpesvirus biology and immune dysregulation, using clinical cohorts, molecular biomarkers and integrative biomedical data. Within KEY-RSU, this breadth complements the main supervisors' specialist expertise across host–pathogen research and tumour immunology. Her methodological perspective includes molecular and cellular approaches, immune profiling, biomarker-oriented research, multi-omics integration and the connection of experimental findings with clinical and translational questions.

Research Opportunities

Her co-supervisory role spans all four MVI themes, allowing postdoctoral researchers to draw on cross-cutting expertise where it strengthens their independently designed project. She is particularly interested in research

that links cellular and molecular mechanisms to complex disease phenotypes, including infection-associated and immune-mediated conditions. Emerging directions include immune dysregulation, biomarker discovery, precision medicine, integration of experimental and clinical datasets, single-cell and multi-omics approaches, and AI-assisted analysis of biomedical data. Depending on project fit and feasibility, postdoctoral researchers may combine experimental, computational and translational approaches while developing questions that remain clearly owned by the postdoctoral researcher.

Research Environment and Collaboration

As MVI Director, Nora-Krūkle connects postdoctoral researchers to an institute-wide environment spanning infection biology, immunology, cancer research, molecular and cellular biology, bioinformatics and translational medicine. Postdoctoral researchers can engage with shared infrastructure, clinical and biobank-linked resources and interdisciplinary expertise, subject to applicable access, ethics and data-governance requirements. Her international links include EATRIS-ERIC, where she serves as Latvia's National Coordinator, the ongoing ENCOURAGE-ME European partnership project, and collaborations developed through ME/CFS and virology networks, including the former EUROMENE COST Action. These connections can support training, international collaboration, research visits, joint publications and proposal development. Postdoctoral researchers are also encouraged to participate in MVI seminars, journal clubs, project discussions and wider RSU scientific activities, building networks beyond their immediate host group.

Supervision, Mentoring and Career Development

Her supervision approach combines structured support with progressive autonomy. At the start of the fellowship, she works with postdoctoral researchers to clarify objectives, milestones, methodological choices and publication goals. Regular one-to-one discussions, manuscript feedback and grant-development exercises are used to review progress and test scientific reasoning, while postdoctoral researchers are expected to take increasing ownership of hypotheses, collaborations and strategic decisions. She has supervised and co-supervised doctoral researchers in virology, immunology, molecular biology, host–pathogen interactions, biomarker discovery and chronic viral disease, including work carried out in interdisciplinary and international settings.

As MVI Director and co-supervisor, Zaiga Nora-Krūkle will complement the main supervisor rather than duplicate that role, providing institute-level methodological perspective, access to wider expertise and support for integration across MVI. The aim is to help postdoctoral researchers develop an identifiable scientific profile, independent collaborations and a credible pathway towards research leadership. She will provide continuity between the postdoctoral researchers, their main supervisors and the institute. She will help monitor progress across the four MVI projects, support the main supervisors in addressing cross-cutting supervisory or organisational needs, and mentor the postdoctoral researchers in navigating the institute's research and administrative environment. She will oversee and support the implementation of each postdoctoral researcher's Career Development Plan in collaboration with the postdoctoral researcher and main supervisor. This will include monitoring progress towards the agreed research, training, mobility and career-development objectives and providing a regular point of contact for discussing emerging needs, deviations from the plan and appropriate adjustments or additions as the project and career goals evolve.

Career Development Support

Career development support includes project design and management, publication planning, grant and fellowship development, international networking and opportunities to build research leadership. Through MVI and European research infrastructures, postdoctoral researchers can gain experience in collaborative research, proposal development, research mobility and interaction with clinical, infrastructure and international partners. Nora-Krūkle also brings institutional research-leadership experience, offering insight into building research capacity, coordinating multidisciplinary activities and developing new scientific directions. Postdoctoral researchers will be encouraged to strengthen responsible data-management and Open Science practice through RSU support structures, including the Dataverse environment, while progressively developing their own funding strategy and professional network.

Who May Particularly Thrive in This Environment

This environment may particularly suit postdoctoral researchers who are scientifically ambitious, proactive and interested in connecting experimental, computational or translational approaches. A strong fit would be someone

willing to collaborate across disciplines, engage with clinicians, bioinformaticians and international partners, and learn methods beyond their existing expertise. Postdoctoral researchers should be ready to take ownership of an original project while using co-supervision strategically to broaden its methodological and translational reach and to develop an independent scientific profile.

Selected Contributions

Biomarkers in the diagnostic algorithm of myalgic encephalomyelitis/chronic fatigue syndrome

Gravelsina S et al., including Nora-Krukle Z. Frontiers in Immunology 13:928945 (2022). DOI 10.3389/fimmu.2022.928945. Contribution: Co-author with research-supervision and study-coordination contributions, including input to the biomarker research strategy. KEY-RSU relevance: Demonstrates experience in translational immunology, biomarker discovery and research linking clinical cohorts with laboratory analysis.

Circulating miRNAs Expression in Myalgic Encephalomyelitis/Chronic Fatigue Syndrome

Soffritti I et al., including Nora-Krukle Z. International Journal of Molecular Sciences 24(13), 10582 (2023). DOI 10.3390/ijms241310582. Contribution: Co-author contributing to molecular biomarker research and international collaboration. KEY-RSU relevance: Relevant to KEY-RSU work involving RNA biology, molecular medicine, biomarker discovery and integration of molecular data.

Exploring the joint potential of inflammation, immunity, and receptor-based biomarkers for evaluating ME/CFS progression

Berkis U et al., including Nora-Krukle Z. Frontiers in Immunology 14:1294758 (2023). DOI 10.3389/fimmu.2023.1294758. Contribution: Co-author contributing to study development, translational interpretation and integration of immunological and clinical datasets. KEY-RSU relevance: Illustrates experience with complex biomarker panels, interdisciplinary analysis and data-driven approaches to immune-mediated disease.

EATRIS Latvia and EATRIS-CONNECT

European Infrastructure for Translational Medicine (EATRIS-ERIC); EATRIS-CONNECT Horizon Europe project, 2024–2027. Contribution: National Coordinator for EATRIS Latvia and partner coordinator for RSU in EATRIS-CONNECT. KEY-RSU relevance: Provides KEY-RSU postdoctoral researchers with a pathway to European translational-medicine expertise, training, research infrastructures, international networking and collaboration beyond the immediate host group.

Supervisory Availability

Zaiga Nora-Krūkle expects to remain available for co-supervision throughout the anticipated five-year KEY-RSU employment period. She will work alongside the relevant main supervisor and wider MVI expertise, providing methodological guidance, research-design support, institute-level integration and career-development mentoring according to the needs of each selected project.