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Education

Habilitation (PD); University of Zurich

Successfully defended; conferral of *Venia Legendi* pending (Faculty of Medicine)

Advisor: Prof. Dr. med. Jan Fehr

Dissertation: Tick-borne Encephalitis Vaccination Coverage, Vaccine Uptake, and Vaccine Effectiveness in Switzerland

Doctor of Philosophy (PhD); Columbia University (2017)

Advisor: Prof. Dr. Donna Farber

Dissertation: Generation of T cell Responses and Immunological Memory Following Influenza Infection and Vaccination in Early Life and Adulthood

Master of Public Health (MPH); University of California, Berkeley (2011)

Concentration: Infectious Diseases and Vaccinology

Bachelor of Science (BS); Washington State University (2009)

Concentration: Genetics, Cell Biology, and Biotechnology

Professional Experience

Group Leader; University of Zurich (2023-Present)

Immunity and Vaccines Research Group

https://www.ebpi.uzh.ch/en/research/public_global_health_department/group_immunity_vaccines.html

Epidemiology, Biostatistics and Prevention Institute; Department Head: Prof. Dr. med. Jan Fehr

Postdoctoral Researcher; University of Zurich (2017-2023)

Institute for Experimental Immunology; Advisor: Prof. Dr. Christian Münz

Epidemiology, Biostatistics and Prevention Institute; Advisor: Prof. Dr. med. Jan Fehr

Doctoral Student; Columbia University (2013-2017)

Department of Microbiology and Immunology; Advisor: Prof. Dr. Donna Farber

Research Associate; University of California, Berkeley (2011-2012)

Department of Public Health; Advisor: Prof. Dr. Daniel Portnoy

Research Associate; Bristol-Myers Squibb (2007-2009)

Platform Development Department; Supervisor: Dr. Heidi Leblanc

Research Focus

Laboratory-trained immunologist and epidemiologist focused on vaccine-preventable diseases. Combining clinical studies and population-based analyses to understand protection, disease burden, and vaccination uptake. Current active research studies include:

Clinical studies

Immunity in Persons Fully Vaccinated Against Measles, Mumps and Rubella and Responses to Booster Vaccination (MIPS): Phase IV pre-post interventional study evaluating circulating and mucosal immune responses to MMR booster vaccination in adults

Epidemiological studies

Tick-borne encephalitis (TBE): Estimation of disease burden and severity by combining surveillance and serological data to quantify subclinical infections and assess the impact of vaccination

Adult vaccination in Switzerland: Analysis of coverage patterns and predictors of undervaccination across the life course

Human papillomavirus (HPV): Development of the Swiss Platform for HPV Evaluation and Response (SPHERE), integrating vaccination coverage, disease burden, screening, and healthcare utilization data to support elimination efforts

TBE vaccination: Analysis of knowledge, attitudes, and decision-making among parents and pediatricians

Clinical Experience and Training

Clinical Research and Study Implementation

Interventional and observational clinical studies in infectious diseases and vaccination, including patient-facing study activities and clinical follow-up (2020-Present). Studies include:

Immunity in Persons Fully Vaccinated Against Measles, Mumps and Rubella and Responses to Booster Vaccination (MIPS): Phase IV randomized interventional study evaluating circulating and mucosal immune responses in adults; study co-lead (2023-Present)

Pycnogenol® in People With Post-COVID-19 Condition (PYCNOVID): Phase III randomized, placebo-controlled trial evaluating effects on patient-reported outcomes, functional capacity, and biomarkers; support in study design and implementation (2023-2024)

Zurich SARS-CoV-2 Cohort (ZSAC) and Zurich SARS-CoV-2 Vaccine Cohort (ZVAC): longitudinal population-based cohort studies assessing immune responses, reinfection risk, and post-COVID outcomes with repeated clinical follow-up; support in study design and implementation (2020-2023)

Clinical Laboratory and Biosafety

Established the current clinical diagnostic laboratory at the UZH Epidemiology, Biostatistics and Prevention Institute, which supports the processing of human samples for clinical research studies; served as the Biosafety Officer from 2020-2024.

Clinical and Regulatory Training

Good Clinical Practice (GCP-E6(R2)), TRREE program (2023): research ethics, ethics review, informed consent, participant protection

Clinical Skills Training (Sprechstundenassistentz), Juventus Schule für Medizin (2023): phlebotomy, injections, basic clinical assessments

Laboratory Animal Science (LTK Module 1), UZH Laboratory Animal Services Center (2018): handling, procedures, anesthesia, welfare

Funded Projects

Development of the Swiss Platform for HPV Evaluation and Response (SPHERE); 2025-2027; Co-PI

A Cross-Sectional and Open Pre-Post Interventional Study Evaluating Circulating and Mucosal Humoral and Cell-Mediated Immunity Following Measles, Mumps and Rubella Vaccination in Adults; 2023-2025; Co-PI

Understanding Knowledge and Perceptions of Tick-borne Encephalitis Vaccination among Parents and Pediatricians in Canton Zurich to Inform a National Vaccination Campaign; 2024-2025; PI

A Nationwide Cross-Sectional Study on HPV Vaccination in Adults in Switzerland: An Analysis of Age, Sex, and Regional Differences in Vaccine Coverage and Factors Affecting Vaccine Uptake; 2023-2025; Co-PI

Scoping Review of the Nature and Durability of Humoral and Cell-Mediated Immune Responses to Tick-borne Encephalitis Infection and Vaccination throughout Life; 2022-2024; Co-PI

A Combined Cross-Sectional Analysis and Case-Control Study Evaluating Tick-borne Encephalitis Vaccination Coverage, Uptake, and Vaccine Effectiveness in Children 0-17 in Switzerland; 2022; Co-PI

Persistence of Tick-borne Encephalitis Virus Neutralizing Antibodies in Swiss Adults Following Vaccination with Prolonged Booster Intervals; 2021-2022; PI

Persistence of Tick-borne Encephalitis Virus Neutralizing Antibodies in Swiss Adults Following Vaccination with Prolonged Booster Intervals; 2021-2022; PI

Persistence of Tick-borne Encephalitis Virus Neutralizing Antibodies in Swiss Adults Following Vaccination with Prolonged Booster Intervals; 2021-2022; Award recipient

Persistence of Tick-borne Encephalitis Virus Neutralizing Antibodies in Swiss Adults Following Vaccination with Prolonged Booster Intervals; 2021-2022; Award recipient

Pneumococcal Vaccination Coverage in Adults in Switzerland: An Analysis of Age and Regional Differences in Vaccine Coverage and Risk Factors for Pneumococcal Infection; 2020-2021; Co-PI

Acquisition of funding for a Flow Cytometer for Clinical and Translational Immunology Research; 2020; Award recipient

Literature and Mandatory Disease Reporting Data Analysis for the Burden of Tick-borne Encephalitis and Influenza-like Illness in Switzerland; 2019-2021; Co-PI

Further Awards/Fellowships

University of Zurich; GROW Program; 2025-2026

University of Zurich; Travel Grants; 2024, 2025

Columbia University; T32 Departmental Fellowship; 2014-2016

University of California, Berkeley; Academic Scholarship; 2010-2011

St. Jude Children's Hospital; National Graduate Student Symposium Award; 2017

Volkswagen Foundation; Young Investigator Award; 2016

American Association of Immunologists; Trainee Abstract Award; 2016 (2 separate awards)

Advisory/Service

Working Groups

National Reference Center for Tick-borne Diseases (CNRT), Advisory Group Member (since 2024)

COST Action PRAGMATICK (CA21170), Working Group Member (since 2024)

Ad hoc Reviewer

Journals: PLoS Pathogens; European Journal of Immunology; Frontiers in Public Health; Frontiers in Immunology; European Journal of Clinical Microbiology & Infectious Diseases; Ticks & Tick-borne Diseases; Eurosurveillance; Vaccine; BMJ Open; BMJ Public Health

Patents

Co-inventor on fully human monoclonal antibody patents (anti-LAG-3, anti-CD22, anti-BMP). The anti-LAG-3 patent formed the basis for relatlimab, now used in Opdualag for the treatment of advanced melanoma; Phase II/II Trial: <https://www.nejm.org/doi/full/10.1056/NEJMoa2109970>

Thudium KB, Korman AJ, LeBlanc HN, Yamanaka M, Selby M, Zens KD. **Human Antibodies That Bind Lymphocyte Activation Gene-3 (LAG-3) and Uses Thereof**. Publication Date: 02.18.2010. Publication Number: WO/2010/019570.

King DJ, Witte A, LeBlanc HN, Theolis R, Masood A, Yamanaka M, Zens KD, Dwiggins SR, Sproul TJ, Rao-Naik C, Passmore D, Toy K, Tanamachi DM. **Human Antibodies That Bind CD22 and Uses Thereof**. Publication Date: 06.12.2008. Publication Number: WO/2008/070569.

Zimmerman D, Selby M, Srinivasan M, Bell A, Singh S, Theolis R, LeBlanc HN, Emory KD. **Antibodies to Bone Morphogenic Proteins and Receptors Therefore and Methods for Their Use**. Publication Date: 03.03.2008. Publication Number: WO/2008/030611.

Conference/Invited Talks

Kongress pädiatrie schweiz; Lausanne, CH (2026)

Knowledge, Attitudes, and Behaviors Driving Pediatric TBE Vaccination Decisions in Switzerland

International Symposium on Tick-Borne Pathogens and Disease (ITPD); Vienna, AT (2026)

Knowledge, Attitudes, and Behaviors Driving Pediatric TBE Vaccination Decisions in Switzerland

European Society of Clinical Microbiology and Infectious Diseases (ESCMID); Vienna, AT (2025)

Rapid Protection Strategies for Tick-borne Encephalitis Vaccination in Travelers; Recording:

<https://www.emjreviews.com/microbiology-infectious-diseases/video/preview-page-emj-bav-mic-006-25-1/>

European Society for Clinical Virology (ESCV); Frankfurt, DE (2024)

Tick-borne Encephalitis Vaccination Coverage, Vaccine Effectiveness, and Disease Severity in Children in Switzerland 2005-2022

European Society of Clinical Microbiology and Infectious Diseases (ESCMID); Barcelona, ES (2024)

Tick-borne Encephalitis Vaccination Coverage, Vaccine Effectiveness, and Disease Severity in Children in Switzerland 2005-2022

Ernst Hadorn Foundation Symposium; Zurich, CH (2024)

T cell Responses and Age-Associated Differences in Immunity to Tick-borne Encephalitis Vaccination

International Symposium on Tick-Borne Pathogens and Disease (ITPD); Vienna, AT (2023)

Tick-borne Encephalitis Vaccination Coverage, Vaccine Effectiveness, and Disease Severity in Children in Switzerland 2005-2022

Public Health Zurich Seminar Series; Zurich, CH (2023)

Tick-borne Encephalitis: Disease, Vaccination, and Vaccine Effectiveness in Switzerland

European Congress of Clinical Microbiology and Infectious Diseases; Copenhagen, NL (2023)

What, Where, and Who: The Changing Epidemiology of Tick-Borne Disease

International Scientific Working Group on Tick-borne Encephalitis (ISW-TBE); Vienna, AT (2022)

Tick-borne Encephalitis Vaccination and Vaccine Effectiveness in Switzerland

International Scientific Working Group on Tick-borne Encephalitis (ISW-TBE); Digital (2020)

Tick-borne Encephalitis Epidemiology, Disease and Vaccination in Switzerland

Eidgenössische Kommission für Impffragen (EKIF); Bern, CH (2020)

Tick-borne Encephalitis Epidemiology, Disease and Vaccination in Switzerland

San Raffaele Scientific Institute, Iannacone Laboratory; Milan, IT (2018)

Localization of Memory T cell Subsets during Epstein Barr Virus Infection

St. Jude National Graduate Student Symposium; Memphis, TN (2017)

Lung-Resident T cell Memory in Infants Following Influenza Infection and Vaccination

Herrenhausen Conference: The Window of Opportunity, Early Priming for Life; Hannover, DE (2016)

Lung-Resident T cell Memory in Infants Following Influenza Infection and Vaccination

American Association of Immunologists (AAI); Seattle, WA (2016)

Vaccine-Generated Lung Tissue-Resident Memory T cells Provide Heterosubtypic Protection to Influenza

American Association of Immunologists (AAI); Seattle, WA (2016)

Reduced Lung-Resident T cell Memory in Infants Following Influenza Infection

Teaching

Teaching

Teaching across the UZH Medical Faculty (MeF) and Faculty of Mathematics and Natural Sciences (MNF) (2019-2025; total lecture hours: 65)

Immunology Block Course (BIO 430); MNF (since 2019)

From Bench to Bedside - Examples from Immunology and Beyond (BME 333); MNF (since 2024)

Infektionskrankheiten als Public & Global Health Herausforderungen im 21.Jh. (Mantelstudium Elective); MeF (since 2024)

Didactic Training (ETH/UZH (Didactica))

Teaching in the English-speaking classroom (2026); Research-Based Teaching and Learning (2024); Assessing Group Work (2024); Introduction to Course Design (2024); Teaching in German: Lehren in der Fremdsprache (2023)