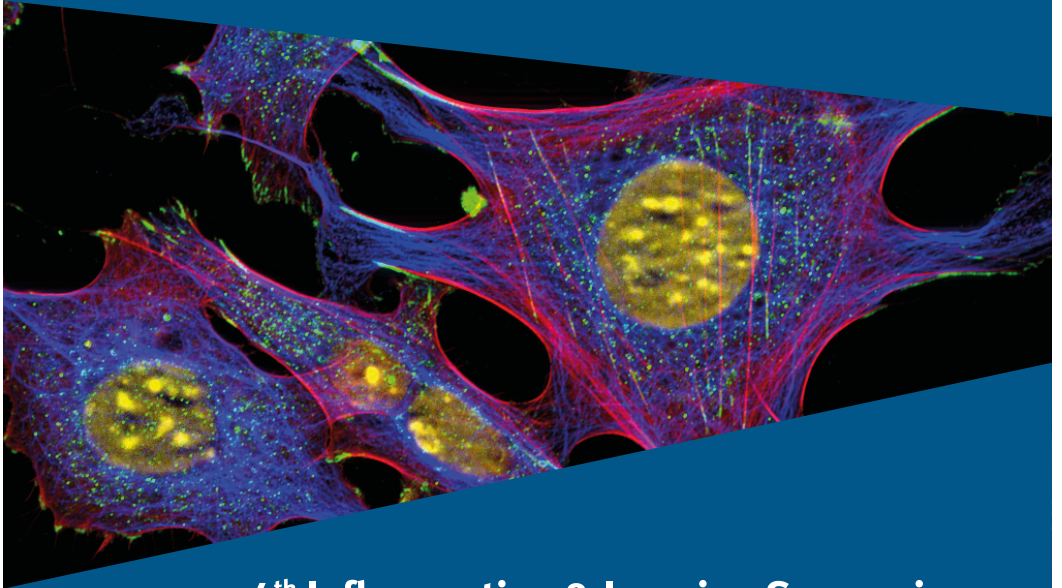




Universität
Münster



4th Inflammation & Imaging Symposium

and Final Symposium of the CRC 1009 Breaking Barriers

Münster, Germany | Multiscale Imaging Centre

09–11 September 2024



InFl^{ame}



TRACI
Translational Centre
for Inflammation



living.knowledge

Programme

Image: Activated mouse embryonic fibroblasts – actin fibers (red), microtubules (blue), and paxillin adhesion points (green) were visualised by fluorescence microscopy. Marc Wolf / Roth Lab, Institute of Immunology, Münster

Monday 09 September 2024

CRC 1009 Breaking Barriers: 12 years of inflammation research at the University of Münster *Chair: Kerstin Steinbrink, Dietmar Vestweber*

14:00-16:00

Opening words

Frank Ulrich Müller, *Dean of the Faculty of Medicine, Münster, Germany*
Johannes Roth, *Spokesperson for CRC 1009, Münster, Germany*

From bench to bedside: A novel host-targeted anti-infective strategy against COVID-19 and other acute respiratory viral diseases

Stephan Ludwig, *Münster, Germany*

Mechanisms of leukocyte penetration of the endothelial basement membrane

Lydia Sorokin, *Münster, Germany*

The complex biology of S100-alarmins

Johannes Roth, *Münster, Germany*

Coffee break

Keynote and poster session *Chair: Johannes Roth*

16:45-17:30

Keynote lecture

The integrin transmembrane domains

Reinhard Fässler, *Martinsried, Germany*

17:30-18:00

Poster pitches: A lively overview about the multifaceted research projects from junior scientists in Münster!

18:00-19:00

Poster walk: Grab a pretzel and something to drink and enjoy the scientific exchange!

Sundowner

19:00-21:00

Multiskalige Bildung trifft Kunst

Cordula Hesselbarth stellt ihre multimediale Wandinstallation „Auf | Lösung“ vor.

Tuesday 10 September 2024

Imaging hypoxia *Chair: Friedemann Kiefer*

09:00-09:30

Development and characterization of 2D and 3D *in vitro* models in the context of mechanical microenvironment and hypoxia

Antonina Lavrentieva, *Hanover, Germany*

09:30-10:00

Illuminating cell functions with chemogenetics

Arnaud Gautier, *Paris, France*

10:00-10:30

Imaging of oxygenation in multicellular spheroids: old model, new complexity?

Ruslan Dmitriev, *Gent, Belgium*

10:30

Coffee break

Short talks by postdoctoral researchers *Chair: Florencia Sánchez*

11:00-12:30

A hypoxia sensor mouse model that allows visualization of *in vivo* hypoxia at cellular resolution

Raghu Erapanedi, *European Institute for Molecular Imaging, University of Münster*

The role of the scavenger receptor MARCO in the organ-specific regulation of efferocytosis
Irene Aranda Pardos, *Institute of Immunology, University of Münster*

Specific secretion of alarmins S100A8/A9 via Gasdermin-D pores exacerbates autoinflammation in Familial Mediterranean fever

Judith Austermann, *Institute of Immunology, University of Münster*

Investigating differences in antiviral properties, ISG-induction and signaling dynamics exhibited by IFN- α subtypes

Sriram Kumar, *Institute of Virology, University of Münster*

ADAPT-3D: A practical and accelerated preparation of transparent tissues enables 3D wide-field imaging of tissue macroenvironments in research and clinical settings

Daniel Lee, *Washington University School of Medicine in St. Louis, US*

Hepatic neutrophil extracellular traps limit dissemination of gut-derived products

Osei-Sarpong Collins, *Institute for Experimental Pathology, University of Münster*

Generation of albumin nanocapsules and nanocrystals for efficient intracellular drug release

Jaana Westmeier, *Department of Dermatology, Münster University Hospital*

Lunch

Poster session *Chair: Philipp Backhaus*

13:30-14:00 **Poster pitches:** A lively overview about the multifaceted research projects from junior scientists in Münster!

14:00-15:00 **Poster walk:** Grab something to drink and learn about the most recent research projects from junior scientists in Münster!

Coffee break

In focus: mononuclear phagocytes *Chair: Noelia Alonso Gonzalez*

15:30-16:00 **Control of tonic cytokine signalling by monocytes**

Elodie Segura, *Paris, France*

16:00-16:30 **Molecular and spatial control of macrophages in cancer**

Renato Ostuni, *Milan, Italy*

Wednesday 11 September 2024

Short talks by doctoral researchers *Chair: Linda Brunotte*

09:00-10:30 **Targeting of S100A8/S100A9 induced HoxB8-Flt3L-MDSCs (myeloid derived suppressor cells) in collagen-induced arthritis**

Jan Bobrowski, *Institute of Immunology, University of Münster*

Specific PET-Imaging of bacterial infections utilizing maltotriose-based radiotracers

Lea Göbel, *European Institute for Molecular Imaging, University of Münster*

The MEK inhibitor Zapnometinib disturbs cell division of *Streptococcus pneumoniae*

Jasmin Jacob, *Institute of Molecular Virology, University of Münster*

Metabolic priming of monocytes during endotoxin tolerance

Ricarda Jürgens, *Institute of Immunology, University of Münster*

Model-based GlucoCEST MRI

Chris Lippe, *Translational Research Imaging Center, Münster University Hospital*

S100A8/A9 heterotetramers exhibit regulatory effects on neutrophil functions via CD69

Lisa Krafft, *Institute of Immunology, University of Münster*

Silent translocation of an autoimmune gut pathobiont across the epithelial barrier

Ulrike Löschberger, *Institute of Musculoskeletal Medicine, Münster University Hospital*

Motion simulation of radio-labeled cells for validation of cell tracking algorithms in PET

Nils Marquardt, *European Institute for Molecular Imaging, University of Münster*

***In vivo* whole-brain single-cell tracking using time-lapse MRI: Boosting the velocity detection limit with compressed sensing and bSSFP imaging**

Enrica Wilken, *Translational Research Imaging Center, Münster University Hospital*

Coffee break

Imaging inflammation and immunooncology *Chair: Jan Rossaint*

11:00-11:30	Imaging innate immune cells during pyelonephritis Selina Jorch, <i>Bonn, Germany</i>
11:30-12:00	Imaging and understanding neutrophil function in cancer Sven Brandau, <i>Essen, Germany</i>
12:00-12:30	Multiscale immunoimaging for understanding systemic immune response in metastatic cancer (and inflammation) Bettina Weigelin, <i>Tübingen, Germany</i>
12:30-13:00	Poster Awards Farewell

Posters

NO	Presenter	Poster title	Floor
1	Wida Amini	Glutamine modulates neutrophil recruitment and effector functions during sterile inflammation	GF
2	Shambhavi Dwivedi	Organotypic characterization of peritoneal lymphatic vasculature	GF
3	Nathalie Becker	Immune evasive mechanisms of an autoimmunogenic gut pathobiont	GF
4	Stefanie Bobe	Light sheet fluorescence microscopy for the volumetric imaging of human FFPE specimens	GF
5	Carina Brune	Impaired gut lymphocyte homing facilitates gut pathobiont translocation and systemic autoimmunity	GF
7	Felix Dewies Jann-Louis Hau	Development of novel radiotracers for molecular imaging of inflammatory processes targeting alarmin S100A9	GF
8	Merieme Farjia	Neutrophils promote remote organ damage after local ischemia	GF

NO	Presenter	Poster title	Floor
9	Nadine Bauer	Hijacking cerebral blood vessels: therapy-induced transcriptomic reprogramming of glioma cells	1 st F
10	Helen Fuhrmann	The role of bacterial RNA in translocated gut pathobiont-immune cell interactions	GF
11	Eva Gricar	Neutrophil-macrophage crosstalk in homeostasis and inflammation	1 st F
12	Janna Grimm	S100A8/A9 regulation by interferon regulatory factor 8 in inflammatory models	1 st F
13	Laura Hagemann	Towards a diagnostic tool for cirrhotic liver diseases facilitated by the 3D characterization of the ductular reaction	1 st F
15	Shahid Hussain	Utilizing dynamic [18F] FDG-PET/MRI for renal plasma flow (RPF) and glomerular filtration rate (GFR) measurement in mice	1 st F
16	Till Jordan	IRF8-dependent regulation of CD163 expression in different immune cell populations	1 st F
17	Christopher Georg Margraf	Characterization of bacterial egress strategies of intracellular <i>Yersinia pseudotuberculosis</i> from epithelial tissue in a transwell-membrane system	1 st F
18	Maria Micheva	All-optical sensing of the oxygen concentration in quasi – 3D cell culture scaffold	1 st F
19	Yevheniia Minchuk	Role of NKT cells in supporting Kupffer cells during <i>Staphylococcus aureus sepsis</i>	1 st F
20	Nicole Oberberg Franziska Rodner	Visualization of Influenza A vRNP export complexes	1 st F
22	Sandra Bachg	S100A8 and S100a9 exhibit dichotomous functions during initiation and effector phases of CNS autoimmunity	1 st F
23	Felix Ritter	Functional analysis of normal- and low density neutrophils after cardiopulmonary bypass surgery	1 st F
24	Stefanie Robeck	The innate immune memory of neutrophils has a predominantly protective phenotype	1 st F
25	Selina Rudnik	Tracking and characterization of ER-Hoxb8 neutrophils in murine models of acute inflammation	1 st F
26	Maria Florencia Sánchez	Targeting plexin signaling and its role in immune modulation	1 st F
27	Jonas Schoening	Clickable benzylguanines for labeling of Hoxb8-derived macrophages via SNAP-tag and bioorthogonal chemistry	1 st F
28	Michelle Wert	Investigating the new antibacterial drug Zapnometinib in combination with antibiotics	1 st F
29	Jonas Wolf	S100A8/A9 as a novel regulator of SYK tyrosine kinase in NLRP3 inflammasome activation	1 st F
30	Felix Alexander Wagner	Directional differences in the titin-based contribution to myocardial passive stiffness	1 st F
31	Hennes Rave	MIA: A tool for interactive visual analysis of spectral imaging data	1 st F
32	Marina Oguama	Integrin activation by two independently regulated calcium mediated pathways is required for neutrophil recruitment	1 st F