

## › Cells in Motion Newsletter 2024

*Dear Colleagues,*

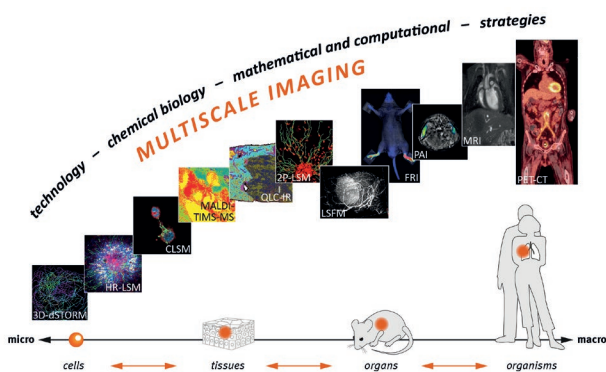
*It's been a year full of large and small projects to promote interfaculty collaborative research and interdisciplinary careers in cell dynamics and imaging. As every year, our annual newsletter highlights several CiM network activities and sends you all some [‘Science on the Christmas tree’](#).*

*Merry Christmas and all the very best for 2025!  
The [Cells in Motion \(CiM\) Executive Board](#)  
and [Science Management & Communication Team](#)*



### Interfaculty research in motion

In 2024, the CiM community played a major role in the successful reapplication of the [Collaborative Research Centre 1450 ‘inSight’](#) (spokespersons: Michael Schäfers and Friedemann Kiefer). The project will receive approximately 13 million euros from the German Research Foundation for a second four-year funding period (2025–2028). The CRC inSight team develops specific multiscale imaging approaches that permit organ-specific inflammatory processes in the body to be examined using various imaging technologies and integrative analyses. This involves clinician scientists, biologists, biochemists, chemists, physicists, mathematicians and computer scientists who work closely together, linking biomedical and methodological questions. The funding covers approximately 40 positions for junior researchers in a joint training programme in the CRC’s Integrated Research Training Group.



*Left: CRC inSight’s multiscale imaging approach. The researchers develop new methods of bridging the spatial and temporal dimensions of various imaging technologies to give a multidimensional view of inflammation. Graphic: CRC inSight. Right: The CRC inSight team. At this meeting at the Multiscale Imaging Centre in May 2024, the scientists prepared for the review of their joint research proposal. Picture: Erk Wibberg*



Looking back at twelve years of inflammation research in the Collaborative Research Centre ‘Breaking Barriers’. **Left:** Introductory speech by CRC spokesperson, Johannes Roth. **Right:** Congratulatory speech by the Dean of the Faculty of Medicine, Frank Ulrich Müller. Pictures: Michael Ibrahim

The annual [Inflammation & Imaging Symposium](#), organised by the CiM team together with several research networks, provided the optimal framework to celebrate the successful completion of the [CRC 1009 ‘Breaking Barriers’](#) (spokesperson: Johannes Roth), after twelve years of funding. This collaborative project focused on investigating inflammatory mechanisms at cellular barriers of complex organisms. We are keeping our fingers crossed for the [CRC 1348 ‘Dynamic Cellular Interfaces’](#) (spokesperson: Stefan Luschmig), which is currently working on its proposal for a third funding period. This consortium investigates molecular mechanisms that enable communication between cells and their cohesion, thus, regulating cell differentiation as well as the development and function of different tissues.

## Promoting young talent and interdisciplinary connections

In October, we celebrated the 15<sup>th</sup> anniversary of the [CiM-IMPRS Graduate Program](#). The festivity was part of the international scientific conference that the programme’s doctoral students organise yearly in Münster. Past and present members and friends of CiM-IMPRS presented personal experiences with the network and gave vivid insights into the programme. This year’s conference also included an alumni day that brought current students and 30 past graduates together. We were proud to see our alumni providing inspiring insights into their diverse careers in academia and beyond. Currently, 116 young researchers from the fields of biology, chemistry, mathematics and computer science and physics from 27 nations are completing their PhDs in the CiM-IMPRS Graduate Program and are undergoing joint scientific training in a highly interdisciplinary environment, addressing research questions on various molecular and cellular processes, with a focus on biomedical imaging. The programme is jointly run by CiM and the Max Planck Institute for Molecular Biomedicine.



Doctoral students, their mentors and invited guests celebrating the 15<sup>th</sup> anniversary of the CiM-IMPRS Graduate Program.

Picture: Florian Kochinke



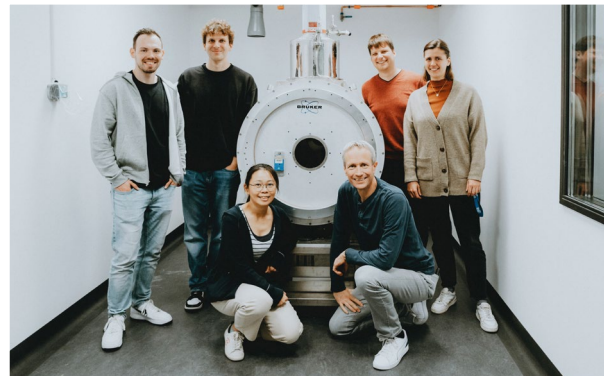
*Doctoral researcher, Hennes Rave (computer sciences), sends Christmas greetings from Tokyo! During his CiM-supported research stay, he is expanding his knowledge in interactive image segmentation, feature extraction, and user-interface design. Private picture.*

This year, junior scientists from 22 CiM labs benefited from our career programmes. Our Research and Careers Committee awarded four [CiM Train Gain Fellowships](#) to postdoctoral and doctoral researchers. They will use the funding to train in new technologies and to expand their international networks during longer research stays in labs outside Münster. We also granted 22 [CiM Travel Awards](#) for participation in scientific conferences in Germany, Europe and overseas. Two new [CiM Pilot Projects](#) were awarded in April, 2024, and Nadine Bauer (biology) and Tim Schäfer (chemistry) whose project was funded in 2023, reported about their personal experiences: “During our project we gained insight into the different ways of thinking in our scientific disciplines which enabled us to tackle various hurdles efficiently. We could thus develop innovative solutions and implement an idea that may seem unconventional at first glance.” In their project, the two young scientists developed

platinum-doped nucleic acids to be used as luminescent cellular oxygen sensors. Many of the CiM-funded junior scientists shared their experiences and results in the [CiM Brown-Bag Lunch](#). The next deadline for CiM Pilot Projects applications is February 28<sup>th</sup>, 2025. We look forward to your applications!

## Brand-new imaging equipment and tailored training opportunities

A new powerful 9.4 Tesla magnetic resonance imaging (MRI) scanner for imaging mice and rats has just commenced operation at the Multiscale Imaging Centre (MIC). Thanks to the latest transmission and reception technologies the scanner can achieve resolutions of just tens of micrometres. Physicist, Cornelius Faber, and his research team will use the scanner to develop innovative non-invasive imaging techniques and apply them to research questions about neurological disorders, cancer, inflammation and infection. As part of the [Münster Imaging Network – Preclinical Imaging](#) the scanner will be employed in research projects, together with cooperation partners at the MIC, the University of Münster and beyond.



*Members of the Experimental Magnetic Resonance group led by Cornelius Faber (front right) and the new MRI scanner. Picture: Michael Kuhlmann*

Just before Christmas, a new confocal laser scanning microscope (Leica Stellaris Falcon) will be installed in MIC. This state-of-the-art instrument, for which funding was acquired by cell biologist, Stefan Luschnig, with support by the team from the [Münster Imaging Network – Microscopy](#), expands our imaging spectrum, permitting detection of far-red signals and fast fluorescence lifetime measurements (FLIM). In 2024, the microscopy experts coordinating the Münster Imaging Network also expanded their training portfolio. Their seminar series, ‘Image to Insight: Mastering Image Analysis Software Tools’, offers compact hands-on courses to PhD students and interested scientists in the latest analysis software and advancements in image analysis tailored to specific research questions. Last but not least, the Münster Imaging Network welcomed a new colleague, Ami Trevedi, who works as a cloud architect for the Germany-wide NFDI4BioImage consortium and is based at the Center for Information Technology (CIT) at our university. Ami Trevedi focuses on the optimal provision of cloud resources for microscopy image data management and analysis and provides, for example, department-specific working environments on virtual servers (JupyterHub) in our university cloud.

## Community life at the Multiscale Imaging Centre



[“It’s the people around me that make my research special” – a portrait of Florencia Sánchez](#)

Picture: Johannes Wulf

Since 2023, the [Multiscale Imaging Centre \(MIC\)](#) has become a vibrant meeting point for the cell dynamics and imaging community across the university campus. The MIC building hosts symposia, seminars and workshops organised by research networks, career programmes and other groups in our scientific field and beyond. The doctoral students of the CiM-IMPRS Graduate Program meet weekly in MIC for progress reports and monthly for a coffee and networking session. The groups in the MIC have established a monthly meetup to keep each other informed about their research. The building is not only home to numerous established groups from our research focus area, but is also highly attractive for newly recruited scientists. Cell biologist, Florencia Sánchez, is setting up her Emmy-Noether Group on ‘Transmembrane Signalling’ in the MIC. Furthermore, the building houses the group of nuclear medicine specialist, Philipp Backhaus, who was recently appointed as a translational tenure-track professor for ‘Imaging Host Responses’. This professorship is part of the Translational Centre for Inflammation (TRACI) at the Faculty of Medicine, a new infrastructure to promote research excellence in defined areas of clinical significance. TRACI is organised by researchers from the inflammation and imaging field and evaluated in a multistage, competitive process to establish an infrastructural basis interconnecting research and treatment in the field of inflammatory diseases. Both new MIC PIs are already active in different third-party funded collaborative research networks and will certainly strengthen the CiM research focus in the future.

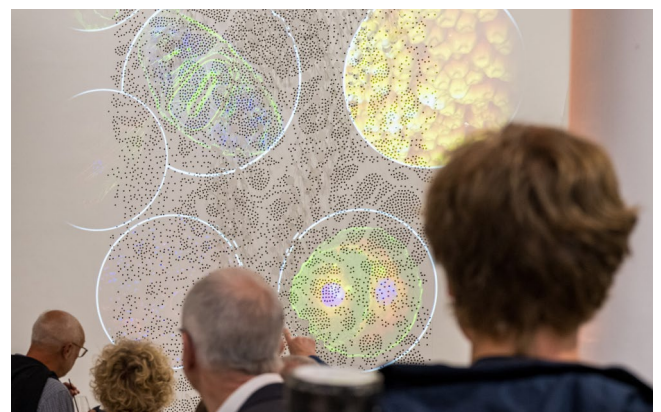


[Juggling research and hospital work – a reportage about a working day with Philipp Backhaus](#)

Picture: Erk Wibberg

## Multiscale imaging meets art

As part of this year’s Inflammation & Imaging Symposium the twelve-metre-high multimedia artwork that adorns the foyer of the Multiscale Imaging Centre was inaugurated. This installation, entitled ‘Re | Solution’, visually resolves the human organism into its building blocks using different sized dots as abstract symbols for cells, molecules or atoms. Employing light and shadow, distance and proximity, and at times using moving light projections, the work by artist and Professor of Science Illustration, Cordula Hesselbarth, presents a figurative view of ‘imaging cells in motion’. A gallery of scientific images from the research carried out by the working groups at the MIC is currently also being installed. These images together with ‘Re | Solution’, will form a permanent exhibition that will be opened to the public in the new year. [Information concerning all exhibits is already available on our website!](#)



Inauguration of the ‘Re | Solution’ artwork at the Multiscale Imaging Centre. Picture: Michael Ibrahim