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We proudly present the PhD students of the TRR241

My name is Katharina Kurz, I obtained a B.Sc. in Biology from the Goethe-University in Frankfurt and a M.Sc. in Technical Biology from the Technical University in Darmstadt. Currently I am a PhD-student in the lab of Dr. Andrey Kruglov at the Deutsches-Rheuma Forschungszentrum in Berlin. My project (A04) focuses on the Microbiota – TLR4 – TNFα axis in control of epithelial tissue functions in IBD. Intestinal epithelial cell (IEC) homeostasis during IBD can be facilitated by increased expression of cytokines, such as tumor necrosis factor-α (TNF-α), however the mechanisms of the immune system-mediated tissue repair in IBD remain elusive. Thus in the first part of my PhD we aim to dissect the significance of TNFa for IEC layer restoration during IBD. Besides my work in the lab I am part of the national managing board of the student's initiative "Biotechnologische Studenteninitiative e.V" and responsible for network, IT and our offices in the north of Germany. Being one of the student's representatives of the TRR241 I am currently organizing our digital PhD retreat in June.

My name is Alexis Haller and I am an MD student in the group of Prof. Dr. Andreas Diefenbach in the Institute of Microbiology, Infectious Diseases and Immunology at Charité University Medicine Berlin. After working in the lab since June, I started my doctorate in the context of IBD in October 2019 studying mechanisms and effects of photobiomodulation (low-level infrared-light irradiation) on proliferation and wound healing in the intestinal epithelium.

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TRR241 during the pandemic

The Sars-CoV2 (corona) pandemic has created an unprecedented situation, which affects all of us personally and of course the research we are doing in the TRR241.

At the Medical Center of the FAU, research has been continuing, although under difficult conditions. Of course, measures have been taken like everywhere else to secure the health and well-being of employees: All staff must follow strict procedures for frequent and thorough cleaning and disinfecting. Changes in labs and offices were implemented to promote and enable social distancing. We have drawn down the number of people working in the lab and suspended lab and department seminars. All staff have to wear masks during work and scientific staff has even helped to create masks. Fortunately, we have not had any known case of Sars-CoV2 infection in our teams.

At the Charité and the DRFZ in Berlin, wet lab research has been almost completely stopped. We expect a stepwise research hopefully within the next two weeks (further information will be provided by the Senat of Berlin within this week). Lab seminars have been performed via Microsoft Teams. As in Erlangen, we have not had any known case of Sars-CoV2 infection in our teams.

The pandemic will additionally affect some of our TRR241 activities. Needless to say that the iRTG retreat in June cannot take place as planned. We are currently looking into alternatives and will keep you updated. Regarding our annual TRR241 retreat in October, we haven't decided yet and will continue to observe the situation.

We know this is an uncertain time, but we are confident that research conditions at our departments will be back to normal soon**. Thank you for contributing to the success of TRR241.**

Take care,

Christoph and Britta

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New TRR 241 First and Senior Author Publications

Markus Neurath (**C04**) published the review **Targeting Immune Cell Writing in Ulcerative Colitis** in the journal **Immunity**.

Claudia Günther (**A02**) published with the support of **Markus Neurath** (**C04**), **Stefan Wirtz** (**A03**) and **Michael Stürzl** (**A06**) the article **Modulation of the extrinsic cell death signaling pathway by viral Flip induces acute-death mediated liver failure** in the journal **Cell Death & Disease**.

Clemens Neufert (**A08**) published with the support of **Raja Atreya** (**C02/C03**) and **Markus Neurath** (**C04**) the review **Rationale for IL-36 receptor antibodies in ulcerative colitis** in the journal **Expert Opinion on Biological Therapy**.

Sebastian Zundler (**Associated**) published with support of **Markus Neurath** (**C04**) the review **Anti-trafficking agents in the treatment of inflammatory bowel disease** in the journal **Current Opinion in Gastroenterology**.

Markus Neurath (**C04**) published the article **Resolution of Inflammation: from basic concepts to clinical application** in the journal **Seminars in Immunopathology**.

Martin Herrmann (**B04**) and **Moritz Leppkes** (**C04**) published the review **Updates on NET formation in health and disease** in the journal **Seminars in Arthritis and Rheumatism**.

Claudia Günther (**A02**) published with the support of **Markus Neurath** (**C04**), **Stefan Wirtz** (**A03**), **Carl Weidinger** (**B01**) **and Christoph Becker** (**A03**) the article **Environmental Microbial Factors Determine the Pattern of Inflammatory Lesions in a Murine Model of Crohn´s Disease-Like Inflammtion** in the journal **Inflammatory Bowel Diseases**.

Stefan Wirtz (**A03**) published with the support of **Markus Neurath** (**C04**) the article **Group 2 Innate Lymphoid Cells (ILC2) Suppress Beneficial Type 1 Immune Responses During Pulmonary Cryptococcosis** in the journal **Frontiers in Immunology**.

Hyun-Dong Chang (B03) published with the support of **Andrey Kruglov A (A04), Britta Siegmund (B01), Andreas Radbruch (B03)** and **Victoria Goetze** the article **Specific microbiota enhances intestinal IgA levels by inducing TGF-β in T follicular helper cells of Peyer's patches in mice** in the **European Journal of Immunology.**

Carl Weidinger (B01) published with the support of **Anja A. Kühl (INF), Christian Bojarski (C02), Britta Siegmund (B01), Marilena Letizia** and **Cansu Yerinde** the article ***Leptin induces TNFα-dependent inflammation in acquired generalized lipodystrophy and combined Crohn's disease*** in the journal ***Nature Communication.***

Siegmund B* (B01) published with the support of **Michael Schumann (C03), Andrey Kruglov (A04)** and **Anja A. Kühl (INF)** the article **High tumor necrosis factor-a production of stimulated blood cells predicts response to infliximab in inflammatory bowel disease in the journal Clinical Gastroenterology and Hepatology.**

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Progress Report

mIBDome: Sequencing of Erlangen samples done

We have now collected samples in Erlangen from different experimental colitis models and ran RNAseq on these samples. The aim is to provide a tool for everyone to allow comparative assessment of genes of interest across all kinds of models in order to select which model is best to study a given gene. Amongst the models where data is now available are transfer colitis, acute and chronic DSS colitis, Oxazolone colitis, germfree, conventionalized, minimal flora, Bl6, RagKO, The data are currently processed by Miguel and will be made available in the next weeks. Urgent data requests can be sent to Miguel (Miguel.GonzalezAcera@uk-erlangen.de)

Phase I Clinical Trial for the use of expanded autologous Tregs in Ulcerative Colitis approved

Project C04 (Bosch-Voskens/ Neurath) aims at providing a novel Treg cell-based approach for therapy of inflammatory bowel diseases. Following extensive negotiations with regulatory authorities, Project C04 has now received the approval for a phase I dose-escalation clinical trial for adoptive transfer of Treg cells in UC patients. The initial study aims to define the feasibility, safety and efficacy of adoptively transferred *ex-vivo* expanded Treg in patients with ulcerative colitis. Once this trial is completed, another phase II multi-center clinical trial will be performed. Patients will be recruited at the Departments of Gastroenterology in Erlangen and Berlin. The primary goal of this study is to evaluate the clinical efficacy of adoptively transfered Treg cells in patients with ulcerative colitis.

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International Congress 2021

Guest speakers wanted !
The international TRR241 Congress will take place on June 10-11, 2021. External speakers, specialists in the field of IBD, inflammation and epithelial crosstalk, will be invited. We are looking forward to receive your suggestions.

Contact: mailto:juliane.friedrich@uk-erlangen.de

Medical Doctoral Students

In search for ***new medical doctoral students***
In 2020 new medical doctoral students should be enrolled in projects of the TRR241.

If someone is interested in involving a MD in her/his project please contact Dr. Imke Atreya or Ina Schlelein (Erlangen) and Prof. Chiara Romagnani or Erika v. Bühler (Berlin)

Tight Junctions

Susanne Krug was together with Prof. Dr. Michael Fromm editor of a special issue

"**The Tight Junction and Its Proteins: More Than Just a Barrier"** in IJMS, which is open access and has 43 papers:

https://www.mdpi.com/journal/ijms/special_issues/Tight_Junction

Public Engagement

"Wenn der Darm durchdreht"; Colitis und Crohn sind nicht nur schwere chronische Krankheiten. Tausende der Betroffenen leiden nach wie vor an einem Stigma.

Britta Siegmund is quoted in F.A.Z. Woche 09.04.2020 von Dr. Felicitas Witte
Contact:mailto: erika.buehler@charite.de

Methodical Internships 2020

Jakob Wiese visited the lab A03 of Christoph Becker. He received experience on immunohistochemistry on tissue of numerous murine models of intestinal inflammation (DSS-, TNBS-, T-cell transfer colitis, Casp8$^{\Delta IEC}$ mice and models of infectious murine colitis: Citrobacter rodentium and Salmonella typhimurium) with focus on inflammatory infiltration (T-cells, B-cells and monocytes) of myenteric plexus.

It's all about the money

For Pandemic Reason: Please note that the possibility of transferring funds from 2020 to the calendar year 2021 exists in principle and will be considered accordingly in all justified cases. (DFG letter of 17.03.2020)

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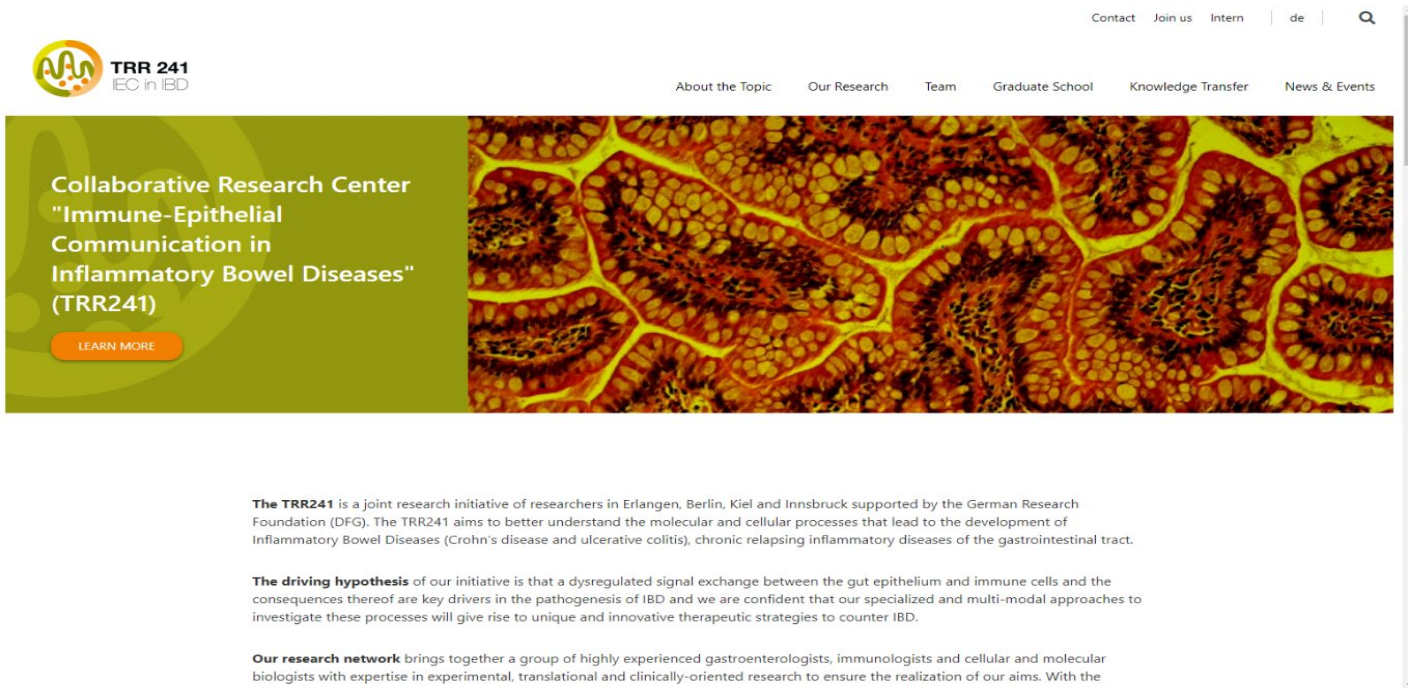
Supporting our youngest TRR241 members (and the TRR241 parents)

In Erlangen the TRR241 provides a parent-child office on the Kussmaul Campus. Therefore, the office is provided with a KidsBox – a mobile playground, where kids can play, paint and learn while their parents work at their computer. By creating this parent-child office the TRR241 supports PIs managing their projects as young parents. The KidsBox has already been tested and approved by a qualified person (see below =). If you want to use this office please contact ina.schlelein@uk-erlangen.de



New Website of TRR241

https://www.transregio241.de/

Please send us a description with pictures of your project.

If you have any other wishes, news or suggestions, feel free to contact:

juliane.friedrich@uk-erlangen.de Ina.schlelein@uk-erlangen.de