SOCIETY FOR MUCOSAL IMMUNOLOGY

Principles of Mucosal Immunology Course

SCIENTIFIC PROGRAM

2025 VIRTUAL COURSE

US CENTRAL DAYLIGHT TIME (CDT)

COURSE CO-CHAIRS

ALESSANDRA FILARDY, PHD
FEDERAL UNIVERSITY OF RIO DE JANEIRO

STEPHANIE GANAL-VONARBURG, PHD
UNIVERSITY OF BERN

SANGWON KIM, PHD
THOMAS JEFFERSON UNIVERSITY

Principles of Mucosal Immunology Course

DAY 1 - MONDAY, JUNE 30 - BASICS OF MUCOSAL IMMUNOLOGY

14:00 – Overview of mucosal barriers

RODNEY NEWBERRY, MD, WASHINGTON UNIVERSITY ST. LOUIS

14:30 – Myeloid cells of the gastrointestinal tract

BRIAN KELSALL, MD, NIAID

15:00 – Break

15:15 – ILCs

MARCO COLONNA, MD, WASHINGTON UNIVERSITY ST. LOUIS

15:45 – The mucosal B cell response

CARLA NOWOSAD, PHD, NYU LANGONE GROSSMAN SCHOOL OF MEDICINE

16:15 – Break

16:30 – Dendritic cells as arbiters of intestinal barrier immunity

DAN LITTMAN, MD, PHD, NYU

17:00 – Immune system programming by gut bacteria and food antigens at steady state and in disease

DAN LITTMAN, MD, PHD, NYU

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DAY 2 - TUESDAY, JULY 1
SPECIALIZED MUCOSAL IMMUNITY - BEYOND THE INTESTINE

14:00 – The mucosal immune system of the airways and the lungs

CLARE LLOYD, PHD, IMPERIAL COLLEGE LONDON

14:30 – Axis of gut and brain

ANNE-KATRIN PRÖBSTEL, MD, UNIVERSITY OF BASEL

15:00 – Break

15:15 – Immunity in the skin barrier

CAROLINE SOKOL, MD, PHD, MASSACHUSETTS GENERAL HOSPITAL

15:45 – Environmental influences on the mucosal immune system

ERIKA VON MUTIUS, MD, MSC, HELMHOLTZ MUNICH

16:15 – Break

16:30 – Oral tolerance: Past and present insights

ANA CAETANO, MD, PHD, UNIVERSIDADE FEDERAL DE MINAS GERAIS

17:00 – Bacterial foodborne infections

BRIAN SHERIDAN, PHD, STONY BROOK UNIVERSITY

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DAY 3 - WEDNESDAY, JULY 2
TOWARDS NEW HORIZONS IN MUCOSAL IMMUNITY

14:00 – From maps to mechanisms: How spatial technologies are redefining mucosal immunology

GUSTAVO ANDRÉS MONASTERIO OCARES, DMD, PHD, KAROLINSKA INSTITUTET

14:30 – Effects of intergenerational transmission of small intestinal bacteria cultured from stunted Bangladeshi children with enteropathy

KALI PRUSS, PHD, WASHINGTON UNIVERSITY ST. LOUIS

15:00 – Understanding the neonatal gut immune system: Foundations for developing effective oral vaccines

NATALIA TOROW, PHD, HELMHOLTZ CENTRE FOR INFECTION RESEARCH

15:30 – Break

16:00 – Publishing - a perspective from an academic Editor-in-Chief

BEN MARSLAND, PHD, MONASH UNIVERSITY

16:30 – Career opportunities in the pharmaceutical R&D ecosystem

FRANCISCO LEON, MD, PHD, TOLERANCE BIO

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ABSTRACT SUPPLEMENT

BACTERIAL FOODBORNE INFECTIONS

Brian Sheriden, PhD
Renaissance School of Medicine Stony Brook University

We will discuss the use of diverse foodborne pathogens to interrogate immune function and what we have learned about host immunity with better models of human disease.

CAREER OPPORTUNITIES IN THE PHARMACEUTICAL R&D ECOSYSTEM

Francisco Leon, MD, PhD
Tolerance Bio

Francisco Leon is a mucosal immunologist with over 25 years of experience in clinical/hospital and academic/University/NIH settings as well as Industry (start-up, mid-size, Big Pharmas). He will share insights into the myriad opportunities to develop a career in the diverse pharma R&D ecosystem.

DENDRITIC CELLS AS ARBITERS OF INTESTINAL BARRIER IMMUNITY

Dan Littman, MD, PhD
NYU

Exposure of the gastrointestinal tract to foreign antigens in food and commensal microbes risks the induction of adaptive immune responses that can mediate inflammatory bowel diseases or allergic conditions. Such potentially pathological responses are held in check by the induction of peripheral regulatory T cells (pTreg). By analyzing T cell responses to intestinal antigens in a series of mouse genetic models, we identified a unique dendritic cell (DC) subset dedicated to programming naive T cells to differentiate into pTreg cells. Defects in development or function of these antigen presenting cells, named tolDC, can result in the expansion of microbiota-specific colitis-driving Th17 cells or food antigen-specific effector T cells that mediate allergic responses. Our results indicate that each of the effector T cell subsets is, in turn, programmed by a unique dedicated antigen presenting cell. Together with results from other groups, our findings suggest that network interactions of functionally distinct T cells and antigen presenting cells dictate which type of luminal antigen-specific response prevails in any region of the intestine and, likely, at other mucosal sites as well. A better understanding of the mechanisms underlying such processes may facilitate novel therapeutic modalities for inflammatory and allergic diseases.

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ABSTRACT SUPPLEMENT

EFFECTS OF INTERGENERATIONAL TRANSMISSION OF SMALL INTESTINAL BACTERIA CULTURED FROM STUNTED BANGLADESHI CHILDREN WITH ENTEROPATHY

Kali Pruss, PhD
Washington University St. Louis

Environmental enteric dysfunction (EED), a small intestinal disorder found at a high prevalence in stunted children, is associated with gut mucosal barrier disruption and decreased absorptive capacity. To test the hypothesis that intergenerational transmission of a perturbed small intestinal microbiota contributes to undernutrition by inducing EED, we characterized two consortia of bacterial strains cultured from duodenal aspirates from stunted Bangladeshi children with EED – one of which induced local and systemic inflammation in female gnotobiotic mice. Offspring of dams colonized with the inflammatory consortium exhibited impaired prenatal and postnatal growth, as well as immunologic changes phenocopying features of EED in children. Dam-to-pup transmission of the inflammatory consortium also produced, in recently-weaned offspring, alterations in (i) inter-cellular signaling pathways related to intestinal epithelial cell renewal, barrier integrity and immune function plus (ii) glial- and endothelial-neuronal signaling pathways that regulate neural growth, angiogenesis and inflammation in the cerebral cortex. Cohousing of recently weaned mice harboring the inflammatory or non-inflammatory consortia and subsequent screening of candidate disease-promoting bacterial isolates identified Campylobacter concisus, an organism typically found in the oral microbiota, as a contributor to enteropathy. The C. concisus strain induced, in a host nitric oxide synthase (NOS)-dependent manner, pro-inflammatory cytokine signaling. Moreover, host-derived nutrients generated by NOS augmented C. concisus growth. This preclinical model sets the stage for identification of small intestinal microbiota-targeted therapeutics for (intergenerational) undernutrition.

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ABSTRACT SUPPLEMENT

ENVIRONMENTAL INFLUENCES ON THE MUCOSAL IMMUNE SYSTEM

Erika von Mutius, MD, MSc
Helmholtz Munich

The farm studies have shown convincing evidence that children growing up in these environments are strongly protected from asthma and allergies. The diversity of microbial exposures has been shown to be a protective factor in these environments. This may suggest that a certain mix of microbes within the 'exposure soup' may be relevant. Recent data analyses by multiomics approaches from the GABRIEL farm studies support this notion. In parallel we have pursued a complimentary approach by collecting dust from cow sheds. We then extracted these dusts in aqueous solutions and administered intranasally to mice. We found that these extracts not only strongly prevent the development of experimental allergic asthma, but that these also have therapeutic effects. Moreover these extract strengthen the epithelial barrier function.

FROM MAPS TO MECHANISMS: HOW SPATIAL TECHNOLOGIES ARE REDEFINING MUCOSAL IMMUNOLOGY

Gustavo Andrés Monasterio Ocares, DMD, PhD
Karolinska Institutet

Advances in novel technologies such as spatial transcriptomics and proteomics are transforming our understanding of tissue microenvironments, enabling unprecedented insight into the complexity and heterogeneity of mucosal immune niches. In this presentation, I will share how we have applied a suite of cutting-edge tools to perform unbiased analyses of the gastrointestinal mucosal barriers, generating essential resources that not only validate existing hypotheses but also empower the discovery of new ones. As a compelling illustration of these technologies' potential, I will present how an exploratory approach led us to identify and characterize a previously unknown organ, highlighting the profound impact of integrating high-resolution spatial and molecular profiling in mucosal immunology.

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ABSTRACT SUPPLEMENT

IMMUNE SYSTEM PROGRAMMING BY GUT BACTERIA AND FOOD ANTIGENS AT STEADY STATE AND IN DISEASE

Dan Littman, MD, PhD
NYU

The intestinal immune system must balance tolerance towards hundreds of diverse microbial species and food antigens with the ability to respond to potential pathogens and promote tissue repair. At homeostasis, this is achieved in large part through the induction of regulatory T cells (peripheral or pTregs) that restrain inflammatory responses mediated by Th1, Th2, and Th17 cells. Commensal bacterium Helicobacter hepaticus normally induces the differentiation of pTregs and follicular helper (Tfh) cells in the mouse large intestine, but can induce pathogenic Th17 cells when the Tregs are compromised, resulting in intestinal inflammation. Similarly, dietary antigens induce pTreg cells largely in the small intestine, and defects in Treg cell differentiation result in susceptibility to pathogenic T cell-mediated allergic responses. We identified an evolutionarily conserved novel antigen presenting cell (APC) with features of dendritic cells (DCs) that has dedicated pTreg-inducing function. This and other findings indicate that naive CD4+ T cells in gut-draining mesenteric lymph nodes are guided along different differentiation paths by distinct APCs, each of which is dedicated to a defined functional outcome. A better understanding of the regulatory network of APCs and T cells promises to provide new therapeutic strategies for autoimmune and allergic diseases as well as cancer immunotherapy.

IMMUNITY IN THE SKIN BARRIER

Caroline Sokol, MD, PhD
Massachusetts General Hospital

The skin is not only a physical barrier but a dynamic immune organ that orchestrates protection against environmental threats. In this lecture, I will review the fundamental components of the skin immune system, highlighting the roles of resident immune cells, barrier integrity, and microbial interactions in maintaining homeostasis and defense. I will also explore how neuroimmune circuits, including the crosstalk between sensory neurons and immune cells, shape skin immunity, particularly in the context of type 2 immune responses and allergic inflammation. Together, these insights reveal how the skin integrates sensory and immune inputs to balance protection and tolerance at the body's frontline interface.

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ABSTRACT SUPPLEMENT

THE MUCOSAL B CELL RESPONSE

Carla Nowosad, PhD
NYU Langone Grossman School of Medicine

Mucosal B cell responses play a crucial role in maintaining microbial homeostasis and protecting against pathogens at mucosal surfaces. Central to these responses are germinal centers (GCs), specialized microenvironments within mucosa-associated lymphoid tissues where B cells undergo clonal expansion, somatic hypermutation, and affinity maturation. These processes drive the generation of high-affinity antibody-producing cells, particularly IgA-secreting plasma cells. Secretory IgA (sIgA) is the predominant antibody isotype at mucosal sites and is essential for neutralizing pathogens, shaping the microbiota, and limiting excessive inflammatory responses. Understanding the dynamics of mucosal GCs and IgA production offers critical insights into the dynamic balance between homeostasis of the microbiome and protection against pathogens.

ORAL TOLERANCE: PAST AND PRESENT INSIGHTS

Ana Caetano, MD, PhD
Universidade Federal de Minas Gerais

Oral tolerance is a physiological phenomenon described more than a century ago as a suppression of a specific immune response to the antigens that gain access to the body via the oral route. It is a robust and long lasting in which the generation of mucosally induced regulatory T cells (iTregs) play an essential role. Although, we know that sustained tolerance in normally induce by dietary and microbiota antigens with local and systemic consequences, many issues are still on debate about oral tolerance including the role of different subsets of antigen presenting cells and of regulatory T cells induced in the gut mucosa. In addition, several studies have shown that feeding target antigens can be used to prevent and control chronic inflammatory diseases both in animal models and in human clinical conditions. However, in view of new findings on sites, kinetics and mechanisms of tolerance induction, there are still unclear issues to reveal before its use for therapeutic application in human disease.

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ABSTRACT SUPPLEMENT

OVERVIEW OF MUCOSAL BARRIERS

Rodney Newberry, MD
Washington University St. Louis

Barriers separate the host from the external environment containing microbes, microbial products, toxins, and innocuous substances. These barrier surfaces are essential for life not only by shielding the host from harmful substances, but also by maintaining the composition of the internal milieu and contributing to multiple aspects of host physiology. To perform these roles, barrier surfaces have varying degrees of 'permeability' and consequently the immune system at barrier surfaces has evolved to sense and appropriately respond to environmental stimuli to maintain homeostasis at these surfaces. Here we will discuss commonalities and differences between barrier surfaces and the strategies used by the immune system to maintain homeostasis at these barriers throughout the body.

PUBLISHING – A PERSPECTIVE FROM AN ACADEMIC EDITOR-IN-CHIEF

Benjamin Marsland, PhD
Monash University

This talk provides an overview of the scientific publishing landscape, offering insights from the perspectives of authors, reviewers, and editors. It will explore key considerations for submitting and reviewing articles, the role and responsibilities of an editor, and pathways to becoming one. Attendees will gain practical knowledge and strategic advice to effectively navigate and contribute to academic publishing.

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ABSTRACT SUPPLEMENT

UNDERSTANDING THE NEONATAL GUT IMMUNE SYSTEM: FOUNDATIONS FOR DEVELOPING EFFECTIVE ORAL VACCINES

Natalia Torow, PhD
Helmholtz Centre for Infection Research, Braunschweig, Germany

The neonatal period is marked by unique immunological challenges and opportunities, particularly within gut-associated lymphoid tissues (GALT). At birth, the neonatal mucosal immune system must quickly adapt to the sudden exposure to commensal microbiota while simultaneously maintaining readiness against pathogenic threats. This distinctive environment necessitates specialized immune responses distinct from those observed in adults. Childhood morbidity and mortality due to infectious disease remains a major burden in low and middle income countries. Oral vaccination represents an attractive immunization strategy, especially for neonates and infants, owing to its dual ability to elicit both mucosal and systemic immunity. However, despite this critical advantage, oral vaccines significantly lag behind their parenteral counterparts in both development and deployment. All currently approved pediatric oral vaccines utilize traditional live-attenuated or inactivated pathogen formulations, highlighting an urgent need for innovation. Effective neonatal oral vaccines require a detailed understanding of neonatal mucosal immune physiology, particularly the distinctive interactions within the GALT, such as M cell-mediated antigen uptake, DC-T cell crosstalk, and regulatory mechanisms ensuring tolerance to benign antigens. By unraveling these specialized pathways, we can develop precisely tailored vaccine interventions, leveraging novel adjuvants and delivery systems designed explicitly for the neonatal host. This talk will guide junior researchers through the crucial concepts underlying neonatal mucosal immunology, emphasizing the necessity of this knowledge for developing next-generation oral vaccines. Understanding these unique immune mechanisms is not only academically intriguing but also practically imperative for reducing global pediatric morbidity and mortality.

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FACULTY BIOS

ANA CAETANO FARIA, MD, PHD
UNIVERSIDADE FEDERAL DE MINAS GERAIS

Ana M.C. Faria holds a degree in Medicine from the Federal University of Minas Gerais (1984) and a PhD in Immunology from the University of São Paulo (1994). She was a post-doctoral fellow at Dr. Howard Weiner's lab at Brigham and Women's Hospital, Harvard Medical School, Boston, USA (1998-1999 and 2003). Ana Faria was a Visiting Researcher at the Universitá di Bologna, Italy, in 2011, at Rockefeller University, NY, USA, in 2016 and at the Institute of Molecular Medicine (IMM) of the University of Lisbon, Portugal, in 2022. She was a member of the board of Advisory Committees of Fundação de Amparo à Pesquisa de Minas Gerais, FAPEMIG (2011-2013), and Conselho Nacional de Desenvolvimento da Ciência, CNPq (2012-2015), Brazil, and has been coordinator of the Sub-committee of Mucosal Immunology Nomenclature of the IUIS since 2019. She was President of the Brazilian Society of Immunology (SBI) 2022-2023. She is a Full Professor of Immunology at UFMG where she already mentored 30 PhD students and 31 Master Students, and a member of the Brazilian Academy of Sciences (ABC) since 2024. She was Director of the Department of Science and Technology (DECIT) of the Ministry of Health (2023-2024). She has experience in the area of Immunology, working mainly on the following topics: Mucosal Immunology, Immunobiology of Nutrition, Oral Tolerance, Immunobiology of Aging. Her published articles can be found at http://lattes.cnpq.br/2268635568464108 or https://orcid.org/0000-0002-0604-8510.

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FACULTY BIOS

MARCO COLONNA, MD
WASHINGTON UNIVERSITY SCHOOL OF MEDICINE

Dr. Marco Colonna was born in Parma, Italy, received his medical degree and specialization in internal medicine at Parma University (Parma, Italy) and completed his postdoctoral training at Harvard Medical School (Cambridge, Massachusetts, USA). He became a scientific member of the Basel Institute for Immunology (Basel, Switzerland). Since 2001 he has been a Professor of Pathology & Immunology at Washington University School of Medicine in St. Louis, MO, USA. Since 2019 Dr. Colonna is a member of the National Academy of Science. Dr. Colonna's research focuses on immunoreceptors. In this field his accomplishments encompass identification and characterization of the Killer cell Ig-like receptors and HLA-C polymorphisms as their inhibitory ligands, as well as the discovery of the LILR and TREM inhibitory and activating receptor families. Through analysis of the cellular distribution of these receptors, he identified plasmacytoid dendritic cells as source of IFN-□/□ in anti-viral responses and innate lymphoid cells that produce IL-22 in mucosae. His current areas of research include: 1) Innate lymphoid cells in mucosal immunity. 2) Plasmacytoid dendritic cells in host defense and autoimmunity.3) TREM2 and innate immunoreceptors in Alzheimer's disease and cancer.

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FACULTY BIOS

BRIAN KELSALL, MD
LABORATORY OF MOLECULAR IMMUNOLOGY NIAID, NIH

Dr. Kelsall received his B.A. in human biology from Stanford University in 1982. In 1986, he earned his M.D. degree from Case Western Reserve University School of Medicine. He completed his internship and residency training in internal medicine at The New York Hospital-Cornell Medical Center from 1986 to 1989 and his clinical and research fellowship in infectious diseases at the University of Virginia Medical Center from 1989 to 1992. In 1992, Dr. Kelsall came to the National Institutes of Health, where he completed a post-doctoral fellowship in mucosal immunology with Warren Strober in 1996, and became a Senior Investigator in 2003. His research focuses on the regulation of immune responses in the intestine, in particular the role that unique intestinal dendritic cell and macrophage populations play in the induction of immunity to intestinal viral pathogens and mucosal vaccines and in the pathogenesis of inflammatory bowel disease. Dr. Kelsall was also the co-founding Editor-in-Chief of Mucosal Immunology until 2021, and a member of the SMI Board of Councilors for 18 years.

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FACULTY BIOS

FRANCISCO LEON, MD, PHD, AGAF
TOLERANCE BIO

An immunologist by training, my career is highlighted by several successful entrepreneurial pursuits, including Provention Bio, which I co-founded and served as Chief Scientific Officer (acquired by Sanofi in 2023) and Celimmune, which I co-founded and served as CEO and Chief Medical Officer (acquired by Amgen in 2017).

My scientific and corporate mission is the development of interventions to restore immune balance, intercepting or preventing immune-mediated diseases.

Experienced in the main areas of immunology: Immunodeficiencies, allergy, infectious diseases, immuno-oncology, transplantation and, in particular, autoimmunity and vaccines. I have led R&D projects and teams in diverse settings from start-ups to Big Pharma and am fluent in all phases of drug development and commercialization. I have expertise in the design and execution of strategies and trials for rapid and cost-effective de-risking of experimental medicines and solutions ("rapid go/no-go").

I have authored or co-authored over 100 peer-reviewed articles, book chapters and patents. And I have led or participated in the development of several approved products: Provention's teplizumab/TZIELD®, AZ's benralizumab/FASENRA®; BMS's abatacept/ORENCIA®, belatacept/NULOJIX®; and Janssen's ustekinumab/STELARA® and guselkumab/TREMFYA®.

Overall, I am passionate about translational research, innovation and disruptive ideas which may help people in need.

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FACULTY BIOS

DAN LITTMAN, MD, PHD
NEW YORK UNIVERSITY SCHOOL OF MEDICINE AND HOWARD HUGHES MEDICAL INSTITUTE

Our laboratory investigates 1) the molecular events underlying T-lymphocyte differentiation and activation and 2) how the human immunodeficiency virus (HIV) enters target cells and causes systemic depletion of helper T cells. In both areas, we study the functions of T-cell surface molecules and their interactions with intracellular signal transducing components.

During development, CD4 and CD8 glycoproteins are co-expressed on immature thymocytes (double-positive cells), which are then selected according to their ability to interact productively with host major histocompatibility complex (MHC) molecules expressed on thymic epithelium. Cells with T-cell receptors specific for MHC class I shut off CD4 and commit to becoming cytotoxic cells, while cells with T-cell receptors for MHC class II shut off CD8 and become helper cells. We use gene targeting and transgenic technology in mice to study how the double-positive cells commit to either of the two major T-lymphocyte lineages.

In our studies with immunodeficiency viruses, we seek to understand how the interaction of viral envelope glycoproteins with CD4 and various chemokine receptors on the target cells results in membrane fusion and viral entry. We are also developing mouse model systems to determine how HIV infection causes loss of CD4+ helper T cells. In related studies, the functions of chemokine receptors in development and in inflammatory responses are being investigated.

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FACULTY BIOS

BEN MARSLAND, PHD
EDITOR-IN-CHIEF, MUCOSAL IMMUNOLOGY

Ben Marsland completed his PhD in Immunology at Otago University and the Malaghan Institute of Medical Research, Wellington, New Zealand. He then spent 14 years in Switzerland, first at the ETH Zürich and then as a Cloetta Medical Research Fellow at the University Hospital of Lausanne (CHUV). During that period, he co-founded two companies, received the ETH Latsis Prize, the Leenaards Prize and the ERS COPD Research Award while transitioning through to a tenured Professorship. Since 2018, Ben is a veski innovation fellow, NHMRC Senior Research Fellow and Professor in the Department of Immunology and Pathology. He maintains a visiting professorship at the University of Lausanne/ CHUV and is the Editor-in-Chief of Mucosal Immunology. As a co-leader of the GIN Discovery Program and Mucosal Immunology Research Group, Ben's research interests revolve around the microbiome, metabolites and neuroimmune interactions in barrier tissues and how they influence asthma, fibrosis and lung transplantation.

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FACULTY BIOS

GUSTAVO MONASTERIO OCARES, ASSISTANT PROFESSOR (JULY 2025), D.M.D., PH.D.
KAROLINSKA INSTITUTE, DEPARTMENT OF MEDICINE, SOLNA.

My research focuses on unraveling the physiological circuits connecting different compartments of the gastrointestinal tract and exocrine glands in health and disease. I am particularly curious about how diverse components of the gastrointestinal system interact, especially how salivary glands act as exocrine/endocrine rheostats and immune hubs, adapting the entire gastrointestinal circuitry to dynamic perturbations. My overall goal is to contribute to a more integrated understanding of disorders that affect multiple regions of the gastrointestinal system and beyond.

My current work investigates how intestinal diseases influence oral homeostasis, combining insights from oral immunology with advanced spatial biology technologies such as spatial transcriptomics and proteomics.

My work has been supported by several Swedish grants, including those from the Lars Hierta Memorial Foundation, the Loo and Hans Osterman Foundation, and the Swedish Cancer Society (Cancerfonden) Postdoctoral Fellowship, as well as European grants from the Osteology Foundation and the European Crohn's and Colitis Organization (ECCO) Research Grant 2024. I have also received international recognition, including the 2023 IADR Osteology Foundation New Investigator Award in Oral Tissue Regeneration.

I was recently awarded a Vetenskapsrådet (Swedish Research Council) Starting Grant, which will enable me to establish my independent research group at the Department of Medicine, Solna, Karolinska Institute. My lab will focus on understanding how the gastrointestinal system adapts to dynamic challenges, intending to bridge fundamental biology and translational research.

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FACULTY BIOS

ERIKA VON MUTIUS, MD, MSC
INSTITUTE OF ASTHMA AND ALLERGY PREVENTION, HELMHOLTZ ZENTRUM MÜNCHEN, GERMAN RESEARCH CENTER FOR ENVIRONMENTAL HEALTH, NEUHERBERG, GERMANY | GERMAN CENTRE FOR LUNG RESEARCH

Professor von Mutius is a passionate pediatrician and scientist. After her clinical training she spent a year as a research fellow at the Respiratory Science Center of the University of Arizona with Professor Fernando Martinez. She then attended the Clinical Effectiveness Program of Harvard School of Public Health and earned the Master of Science degree in Epidemiology. Erika von Mutius headed the Department of Asthma and Allergy at the Dr. von Hauner Children's Hospital Munich from 1993 until September 2023. Since 2017, she has been heading the Institute of Asthma and Allergy Prevention at Helmholtz Munich and was appointed Department Head of the Environmental Health Center at Helmholtz Munich in 2021. Her most prestigious awards include an honorary doctorate from the University of Helsinki in 2010, the DFG Gottfried Wilhelm Leibniz Prize in 2013 and the Balzan Prize in 2019. In 2010 and 2022, she was awarded an ERC Advanced Grant funded by the European Union. She was a Member of the Editorial Board of the New England Journal of Medicine from 2006-2018.

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FACULTY BIOS

RODNEY NEWBERRY, MD
WASHINGTON UNIVERSITY IN SAINT LOUIS SCHOOL OF MEDICINE

Dr. Rodney D. Newberry is a Danforth Physician-Scientist Scholar and the Nicholas V. Costrini endowed Professor of Gastroenterology and Inflammatory Bowel Disease in the Department of Medicine and Division of Gastroenterology. Dr. Newberry was born in Niles, Michigan and grew up in south central Illinois in a rural farming community, where he attended Jersey Community High School. During high school he enjoyed sports, math, and science. Dr. Newberry attended Washington University in Saint Louis graduating Magna Cum Laude with a Bachelor of Art majoring in biology and minoring in mathematics in 1987. He subsequently attended Washington University in Saint Louis School of Medicine where he continued to participate in work leading to landmark studies on the process of thymocyte selection and graduated in 1991 with a Medical Doctorate degree. Dr. Newberry received training as an intern and resident in Internal Medicine at the Barnes Hospital Washington University A Internal Medicine Residency program, completing training in 1994. After working on the Attending Inpatient Medicine service at Barnes Hospital for a year, Dr. Newberry completed fellowship training in Gastroenterology in 1999 at Washington University in Saint Louis. During and following his Gastroenterology fellowship, Dr. Newberry performed a post-doctoral fellowship with Dr. Robin Lorenz MD, PhD in mucosal immunology. In 2000 Dr. Newberry formally joined the faculty at Washington University in Saint Louis School of Medicine as an Assistant Professor of Medicine, where he was subsequently promoted to Associate Professor of Medicine and Professor of Medicine in the Department of Medicine Division of Gastroenterology.

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FACULTY BIOS

CARLA NOWOSAD, PHD, ASSISTANT PROFESSOR
NEW YORK UNIVERSITY

Carla is the Principal Investigator of the Mucosal B Cell lab at NYU Langone Grossman School of Medicine, department of Pathology. Carla has long been obsessed with B cells and how they respond to their environment. She loves to build new tools to visualize B cells communicating, responding and evolving.

Carla is a Polish/Italian Brit, who got her PhD in London before moving to the US for her postdoctoral studies. Carla has a deep love for New York City, slowly eating, strolling and dancing her way around town. Carla loves creative and driven people, and strives to build a team of diverse thinkers to help grow the future of science.

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FACULTY BIOS

KALI PRUSS, POSTDOC RESEARCH FELLOW
WASHINGTON UNIVERSITY ST. LOUIS

Investigating the role of the human gut microbiota in pre- and post-natal development.
https://www.ncbi.nlm.nih.gov/myncbi/kali.pruss.2/bibliography/public/

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FACULTY BIOS

BRIAN SHERIDAN, PHD
RENAISSANCE SCHOOL OF MEDICINE, STONY BROOK UNIVERSITY

Dr. Brian Sheridan is an Associate Professor of Microbiology and Immunology at the Renaissance School of Medicine at Stony Brook University. His research focuses on the development and persistence of memory T cells with the aim of informing vaccine strategies to combat infections and tumors. His lab uses diverse foodborne infection with diverse enteric pathogens to study T cell memory in the intestinal tract.
https://renaissance.stonybrookmedicine.edu/mi/program/faculty/sheridan?s=research

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FACULTY BIOS

CAROLINE SOKOL, MD, PHD
MASSACHUSETTS GENERAL HOSPITAL

Dr. Sokol received her B.A. and M.S. degrees in 2001 from the University of Pennsylvania. This was followed by her M.D./Ph.D. in 2009 from Yale University where she studied how the immune system recognized and responded to allergens under the mentorship of Dr. Ruslan Medzhitov. Her research in the field ignited her interest in clinical Allergy & Immunology and Dr. Sokol came to Massachusetts General Hospital to perform her clinical training in Internal Medicine and Allergy & Immunology.

In 2013 Dr. Sokol became a board-certified Allergist & Immunologist and attending physician in Massachusetts General Hospital's Allergy and Clinical Immunology Unit. She has continued to focus on research, studying the role of the innate immune system in recognizing and responding to allergens as a post-doctoral fellow with Dr. Andrew Luster and now in her own independent laboratory. As a physician-scientist, she seeks to understand how and why the immune system responds to allergens with the overall goal of developing new therapies to treat and prevent allergic disease.

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FACULTY BIOS

NATALIA TOROW, PHD
HELMHOLTZ CENTRE FOR INFECTION RESEARCH

After earning her PhD at Hannover Medical School, Natalia Torow established an independent research agenda on neonatal immune development as a postdoctoral researcher and junior group leader at RWTH University Hospital Aachen. Since 2024, she has led the junior research group “Early Life Immunity” at HZI. Her goal is to expand the fundamental understanding of neonatal immune responses and translate this knowledge into innovative vaccination strategies.

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