



The Resolution of Inflammation in Health and Disease

March 24–28, 2018 | Royal Dublin Society | Dublin | Ireland

Scientific Organizers:

Catherine Godson, University College Dublin, Ireland

Ira Tabas, Columbia University, USA

Mauro Perretti, Queen Mary University of London, UK

Inflammation and its resolution are critical to effective host defense and tissue homeostasis. There is a steady increase in the recognition that the effective resolution of inflammation is dynamically regulated through cellular responses to endogenously generated mediators. Ineffective resolution of inflammatory responses likely contributes to the pathogenesis of numerous prevalent conditions including atherosclerosis, arthritis and diabetes. Unresolved chronic inflammation may lead to fibrosis and eventual organ failure. Whereas anti-inflammatory therapeutic approaches are conventional, a growing consensus based on experimental data suggests that an alternative approach may be to mimic agonism of resolution. The aim of this meeting is to enhance our understanding of the molecular mechanisms which underpin the effective resolution of inflammation and how these may fail in aging and disease. Specifically, it seeks to: 1) Encourage dialog between those working in areas where the potential of mimicry of resolution of inflammation might play an under-appreciated role; 2) Consolidate data from diverse mediators that promote resolution; and 3) Contribute to the education and training of graduate students, fellows and faculty. These discussions will provide a multi-disciplinary community with insight into physiologic processes underpinning resolution, and potential mimicry of such processes for therapeutic gain in pathological conditions.

Session Topics:

- Fundamentals of Inflammation Biology – Cells, Mediators and Mechanisms in the Resolution of Inflammation I & II
- Workshop 1: Resolvomics: Potential and Pitfalls
- Diseases of Dysregulated Resolution and Repair
- Workshop 2: Experimental Models of Resolution
- Diabesity and the Resolution of Inflammation
- Regulation of Defense, Resolution and Repair
- Infection
- Resolution and Repair or Fibrosis?
- Workshop 3: Nano Technologies and Targeting Receptors to Resolve Inflammation
- Therapeutic Innovation in Resolution

Scholarship Application & Discounted Abstract Deadline: November 29, 2017

Abstract Deadline: December 21, 2017

Discounted Registration Deadline: January 18, 2018



Note: Scholarships are for graduate students and postdoctoral fellows and are awarded based on the abstract submitted. Submitting an abstract is an excellent opportunity to gain exposure for your work. Abstracts submitted by the abstract deadline will also be considered for short talks on the program. Travel Awards are for researchers in Asia.
Upper image of inflammation in cells courtesy of National Institutes of Health image gallery

Meeting Hashtag: #KSinflam
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on Molecular and Cellular Biology

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SATURDAY, MARCH 24

Arrival and Registration

SUNDAY, MARCH 25

Welcome and Keynote Address

***Catherine Godson**, University College Dublin, Ireland

***Alberto Mantovani**, Humanitas University, Italy

Charles N. Serhan, Brigham and Women's Hospital, USA
Pro-Resolving Lipid Mediators & Mechanisms in the Resolution of Inflammation

Fundamentals of Inflammation Biology – Cells, Mediators and Mechanisms in the Resolution of Inflammation I

***Catherine Godson**, University College Dublin, Ireland

***Alberto Mantovani**, Humanitas University, Italy

Derek W. Gilroy, University College London, UK
Susceptibility to Infection or Autoimmunity – It All Depends on How Inflammation Resolves

Ioannis Kourtzelis, University of Dresden, Germany
Short Talk: The Endogenous Homeostatic Factor Del-1 Contributes to Resolution of Inflammation

Daniele Piomelli, University of California, Irvine, USA
NAAA-Regulated Lipid Amide Signaling as a Point of Control in Inflammation

Charles A. Parkos, University of Michigan, USA
Short Talk: Epithelial Expression of CD47 Plays a Crucial Role in Intestinal Mucosal Wound Healing

Sarah R. Walmsley, University of Edinburgh, Queen's Medical Research Institute, UK
Differential Regulation of Leukocyte Function by the HIF/Hydroxylase Pathway

Poster Session 1

Workshop 1: Resolvomics: Potential and Pitfalls

***Derek W. Gilroy**, University College London, UK

***Bruce D. Levy**, Brigham and Women's Hospital, USA

Amiram Ariel, University of Haifa, Israel
IFN β is a Novel Effector Cytokine in Resolving Inflammation

Fiona C. McGillicuddy, Conway Institute, University College Dublin, Ireland
Metabolic High Density Lipoprotein Particles in Human Obesity – A Novel Tool for the Measurement of Metabolic Inflammation?

Koen Schepers, Leiden University Medical Center, Netherlands
Mapping the Essential Roles of Amino Acid and Lipid Metabolism in Mesenchymal Stromal Cell-Mediated Immunomodulation

Daniel Irimia, Massachusetts General Hospital, USA
How to Cool a Chain-Reaction: LXA4 Controls Neutrophil Swarming

Astrid S. Kahnt, Goethe University, Germany
SPM Biosynthesis in Human Leukocytes – Who's Involved?

Fundamentals of Inflammation Biology – Cells, Mediators and Mechanisms in the Resolution of Inflammation II

***Mauro Perretti**, Queen Mary University of London, UK

***Lina Hsiu Kim Lim**, National University of Singapore, Singapore

Alberto Mantovani, Humanitas University, Italy
Macrophage Plasticity and Tuning of Innate Immunity and Inflammation

Marc Peters-Golden, University of Michigan, USA
Vesicular SOCS as a Vector of Macrophage to Epithelial Cell Crosstalk at the Respiratory Surface

Douglas Brubaker, Massachusetts Institute of Technology, USA
Short Talk: Systems Biology Approaches To Precision Medicine in Inflammatory Bowel Disease

Carla V. Rothlin, Yale University, USA
TAM Receptor Signaling in Resolution of Inflammation

MONDAY, MARCH 26

Keynote Address

***Ira Tabas**, Columbia University, USA

***Sarah R. Walmsley**, University of Edinburgh, Queen's Medical Research Institute, UK

Christopher K. Glass, University of California, San Diego, USA
Nature and Nurture of Tissue-Resident Macrophages

Diseases of Dysregulated Resolution and Repair

***Ira Tabas**, Columbia University, USA

***Sarah R. Walmsley**, University of Edinburgh, Queen's Medical Research Institute, UK

Lina Hsiu Kim Lim, National University of Singapore, Singapore
Annexins in Breast Cancer: Regulation of Inflammation and Metastasis

Joan Claria, University of Barcelona, Spain
Short Talk: Specialized Pro-Resolving Mediators (SPM) and Resolution of Inflammation in Obese Adipose Tissue and Liver

Bruce Cronstein, New York University, USA
What Goes Around Comes Around. Adenosine, A Retaliatory Metabolite, Dampens Inflammation and Promotes Wound Healing

Edward A. Fisher, New York University School of Medicine, USA
Short Talk: Inflammatory Monocytes Drive the Resolution of Atherosclerosis in a Plaque Regression Mouse Model by Becoming M2 Macrophages with Distinct Molecular Features

Gabrielle Fredman, Albany Medical Center, USA
Dysregulation of Resolution Pathways in Chronic Inflammatory Disease

Workshop 2: Experimental Models of Resolution

***Matthew Spite**, Harvard Medical School and Brigham and Women's Hospital, USA

***Gabrielle Fredman**, Albany Medical Center, USA

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Audrey Bernut, University of Sheffield, UK

Balancing the Immune Response in Cystic Fibrosis: Using Zebrafish Models of Inflammation to Uncover New Therapeutic Approaches

Steven Bozinovski, RMIT University, Australia

Aspirin-Triggered Resolvin D1 Reduces Pneumococcal Lung Burden in a Viral and Bacterial Co-Infection Model

Annie Curtis, Royal College of Surgeons- Ireland, Ireland

Loss of the Molecular Clock in Myeloid Cells Exacerbates T Cell-Mediated CNS Autoimmune Disease

Stephanie A. Legere, Dalhousie University, Canada

A Potential Role for Human Mast Cells in the Resolution of Cardiac Inflammation

Viktoria Lyngstadaas, Harvard Medical School, USA

The Pro-Resolving Mediator Annexin A1 Regulates MUC5AC Secretion in Cultured Goblet Cells, Suggesting a New Use in Inflammatory Conjunctival Diseases

Diabetes and the Resolution of Inflammation

***Joan Claria**, University of Barcelona, Spain

***Eoin P. Brennan**, Conway Institute, Ireland

Gökhan S. Hotamisligil, Harvard School of Public Health, USA

Journal of Lipid Research Lectureship: Metaflammation, Organelle Function and Metabolic Homeostasis

Yun Sok Lee, University of California, San Diego, USA

Tissue Hypoxia in Metaflammation and Type 2 Diabetes

Brian Sansbury, Harvard Medical School, USA

Short Talk: Resolvin D1 Promotes Revascularization during Limb Ischemia via its Receptor, ALX/FPR2

Catherine Godson, University College Dublin, Ireland

Lipoxins: Resolving Inflammation, Suppressing Diabetic Complications

Poster Session 2

TUESDAY, MARCH 27

Keynote Address

***Edward A. Fisher**, New York University School of Medicine, USA

***Charles A. Parkos**, University of Michigan, USA

Lalita Ramakrishnan, University of Cambridge, UK

Host Genotype Dictates Inflammation, Resolution and Repair

Regulation of Defense, Resolution and Repair

***Edward A. Fisher**, New York University School of Medicine, USA

***Charles A. Parkos**, University of Michigan, USA

Ira Tabas, Columbia University, USA

The Interplay Between Efferocytosis and Inflammation Resolution

Michelle Amantéa Sugimoto, Universidade Federal de Minas Gerais, Brazil and Queen Mary University of London, UK

Short Talk: Plasminogen and the Plasminogen Receptor, Plg-RKT, Regulate Efferocytosis and Macrophage Reprogramming

Muredach P. Reilly, Columbia University, USA

Genomic Discoveries in Metainflammation

Matt DeBerge, Northwestern University, USA

Short Talk: Divergence of TAM Receptor Tyrosine Kinase Control of Inflammation Resolution and Repair after Heart Attack

Maksim Plikus, University of California, Irvine, USA

Reactivating Embryonic-Like Regeneration Programs in Adult Skin Wounds

Workshop 3: Nano Technologies and Targeting Receptors to Resolve Inflammation

***Nan Chiang**, Harvard Medical School, USA

Louise M. Topping, Queen Mary University of London, UK
Targeting Neutrophil Microvesicles to Damaged Cartilage Using Antibodies to Post-Translationally Modified Collagen II

Eva Koziolova, Institute of Macromolecular Chemistry, Czech Republic

Polymer-Based Drug Delivery Systems for Targeted Therapy of Inflammatory Diseases – Their in vivo Biodistribution in Mice with Acute Arthritis

Simon Rauber, Friedrich-Alexander University Erlangen-Nürnberg, Germany

IL-9-Producing Type 2 Innate Lymphoid Cells – Key Players that Orchestrate Resolution of Chronic Inflammation in Arthritis

Miguel Quiros, University of Michigan, USA

Specialized Pro-Resolving Lipid Mediator Resolvin E1 Promotes Intestinal Mucosal Wound Repair

Takehiko Yokomizo, Juntendo University School of Medicine, Japan
12-Hydroxyheptadecatrienoic Acid Accelerates Epithelial Wound Healing through Leukotriene B4 Receptor 2, BLT2

Infection

***Nathalie Vergnolle**, INSERM UMR-1220, France

***Charles N. Serhan**, Brigham and Women's Hospital, USA

Bruce D. Levy, Brigham and Women's Hospital, USA

Specialized Pro-Resolving Mediators: Endogenous Regulators of Infection

Asma Nusrat, University of Michigan, USA

Intestinal Mucosal Barrier Repair Is Orchestrated by Pro-Repair Mediators Released by Epithelial and Immune Cells at Sites of Injury

Aoife Keogh, Royal College of Surgeons in Ireland, Ireland

Short Talk: MSC-Monocyte Interactions in Sepsis

Mauro Martins Teixeira, Universidade Federal de Minas Gerais, Brazil

The Impact of Resolution Pathways in Acute Infections – Annexin-a1 and Dengue

Prabir Ray, University of Pittsburgh, USA

Short Talk: The Mito-DAMP Cardiolipin Suppresses Resolution of Bacterial Pneumonia

Poster Session 3

WEDNESDAY, MARCH 28

Resolution and Repair or Fibrosis?

***Lalita Ramakrishnan**, University of Cambridge, UK

***Lucy V. Norling**, Queen Mary University of London, UK

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Nathalie Vergnolle, INSERM UMR-1220, France

Proteolytic Balance in Mucosal Inflammation and Repair

Robert F. Schwabe, Columbia University, USA

Liver Cancer: A Wound That Does Not Heal

Takayoshi Suganami, Nagoya University, Japan

Short Talk: CD11c+ Resident Macrophages Drive Hepatocyte Death-Triggered Liver Fibrosis in Nonalcoholic Steatohepatitis

Jörg H.W. Distler, University of Erlangen-Nuremberg, Germany

Targeting Persistent Fibroblast Activation in Fibrotic Diseases

Preethi Vijayaraj, University of California, Los Angeles, USA

Short Talk: Modeling Progressive Fibrosis with Pluripotent Stem Cells Identifies an Anti-Fibrotic Small Molecule

Jesmond Dalli, Queen Mary University of London, UK

Immunoresolvents Promote Tissue Repair and Regeneration

Therapeutic Innovation in Resolution

***Daniele Piomelli**, University of California, Irvine, USA

***Bruce Cronstein**, New York University, USA

Arthur Christopoulos, Monash University, Australia

Harnessing GPCR Allosterity and Bias for Novel Drug Targeting

Mauro Perretti, Queen Mary University of London, UK

From Resolution of Inflammation to Resolution Pharmacology: Therapeutic Innovation in Inflammation

Monica de Gaetano, University College Dublin, Ireland

Short Talk: Investigation of the Bioactions of Novel Synthetic Lipoxin Mimetics

Makoto Arita, Keio University, Japan

Genetics and Lipidomics of Omega-3 Polyunsaturated Fatty Acid Biology

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

THURSDAY, MARCH 29

Departure