

Signals+

THE INTERNATIONAL CYTOKINE & INTERFERON SOCIETY NEWSLETTER

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JUNE 2023 | VOLUME 11 | NO. 1



A NOTE FROM THE ICIS PRESIDENT Christopher Hunter

With only 4.5 months till our [Annual Meeting in Athens](#) this would be a great time to encourage Early-Bird registrations (June 28th deadline) and Late Breaking abstract submissions (deadline August 31st) and we remain dedicated to providing support for our trainees. The organizers [invited speakers](#) program has come along nicely – but abstracts remain an important source of the speakers chosen and they will be included in the program in the coming days. It is also our awards season – and this year we had an exceptional slate of candidates for our Senior & Mid-Career awards ([Judy Lieberman](#), [Daniel Cua](#), [Dusan Bogunovic](#), [Jacob Yount](#), [Daniela Novick](#) and [Brendan Jenkins](#)), while we have had a record number of nominees for the junior awards (to be announced soon). Important opportunity to acknowledge those who took the time to nominate these candidates and the work of our awards committee in assessing these amazing cytokine biologists.

A long-term goal of the society was to strengthen opportunities for our members to organize scientific sessions that revolve around cytokine biology. Recently concluded ICIS sponsored session at AAI was a success, “[Understanding and Modulating Cytokine Activity through Structural Knowledge](#)”. Coming up later this month, [Cytokines in Barrier Immunity FOCIS](#)” Session Chairs: Shruti Naik [@DrShrutiNaik](#) and Brian Kim [@itchdoctor](#), and then “[Novel Immuno-Biology at Single cell resolution](#)”, at the end of November at IUIS in Cape Town, chair: Luke O’Neill [@laoneill111](#), confirmed speakers so far: Gordon A. Awandare West African Center for Cell Biology of Infectious Pathogens & Kondwani Jambo, Malawi-Liverpool-Wellcome Trust Clinical Research Programme, and the BSI Belfast in December.

As our members look forward to 2024 consider the options for getting support for lone day local meetings or sessions associated with other immunological societies.

Several committee events ongoing – work on DEI, career session with an emphasis on industry perspectives and ongoing discussions about how to better serve our member interests with the journals [Cytokine](#) and the [Journal of Interferon and Cytokine Research](#).

For the full articles, please visit Signals+ digital magazine at: <https://signals.cytokinesociety.org/>



For our annual scientific meeting in Athens, visit <https://athens.cytokinesociety.org>

For ICIS awards go to: <https://cytokinesociety.org/awards/>



Upcoming elections – look out for the ballots and be ready to help select your society leadership!

Endowments advance the mission of the International Cytokine & Interferon Society – I’d like to take this opportunity to acknowledge two endowed gifts that have been generously donated to the ICIS as follows:

Annual memorial lecture honoring Professor Jürg Tschopp: thanks to a generous anonymous donation and matching ICIS funds and endowment has been set up to fund an annual memorial lecture honoring Professor Jürg Tschopp whose discoveries in the area of inflammasomes and cell death advanced fundamental understanding of innate and adaptive immunity bringing new therapies to patients suffering from debilitating inflammatory diseases.

Each year, beginning last year at the Hawaii meeting, the Jürg Tschopp Memorial Lecture will be a highlight of the Cytokines Annual Meetings where Dr. Tschopp’s ability to take fundamental discoveries at the bench into the clinic fits perfectly with the mission of the Society annual meeting which is the world’s most important conference on basic, translational and clinical research related to cytokine biology.

The ICIS-BioLegend William E. Paul Award for Excellence in Cytokine Research has been funded by a generous donation from [BioLegend](#) which will keep the award, which they initially funded in 2016, going indefinitely. [BioLegend](#) has chosen to dedicate this award to [William E. Paul, M.D.](#), who died on September 18, 2015 at age 79. Dr. Paul’s extraordinary contributions to the field of cytokine research are best summarized by this paper published in the [Journal of Immunology](#) on December 15, 2015. The [ICIS-BioLegend William E. Paul Award](#) is bestowed upon a leading biomedical research scientist who has made outstanding contributions to cytokine research, either in a basic or applied field as demonstrated by publications, oral presentations and consistent scientific advancements in cytokine biology throughout their career, through the generosity of BioLegend.

I hope to see many of you in Athens this October!

<https://twitter.com/KingOfPathogens>

Future Meetings

Cytokines 2023
October 15-18, 2023
Athens, Greece

Cytokines 2024 Joint Meeting
with KAI
October 20-23, 2024
Seoul, Korea

Cytokines 2025
Seattle, WA
2-5 November 2025
The Westin, Seattle, USA

Newsletter Editors:

Howard Young, Marta Catalfamo,
Saurabh Chattopadhyay, Zhian Chen,
Daniella Schwartz & Di Yu

Managing Director:

Joan Oefner

ICIS
International Cytokine &
Interferon Society

SOCIETY NEWS:

2022 ICIS Annual Business Meeting



Scan QR Code to read more online or click [here](#)



Curt Horvath modeling an ICIS Hoodie!

At each Annual Scientific Meeting there shall be an Annual Business Meeting of the Membership of the Society, presided over by the President. Five percent of the Members shall constitute a quorum.

Wishing you all a very Happy, Healthy and Successful New Year! Inviting all ICIS members and others who may be interested in the Society, to view the Cytokines 2022 Member's Annual Business Meeting.

In order to incentivize participation (hopefully our last "virtual" annual members business meeting), ICIS members who correctly answers the 3 questions below will be put in a drawing to win an ICIS hoodie. There will be four winners representing the following geographical areas: Australia, Asia, Europe, South America, North America and Africa!

1. What company generously provided an endowment for the Bill Paul award, allowing the ICIS to provide this in perpetuity?
2. In 2023 at what other meetings will ICIS satellite sessions be held?
3. How many cytokines are listed on the white board behind Chris Hunter during this presentation?

Please use the form below to leave comments about the society and to submit your answers for the contest. We hope to see you in Athens this October!

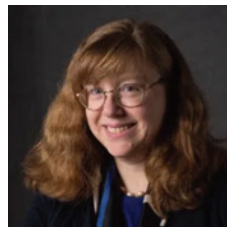
[Member's Comment Form & Contest Submissions](#)

Best regards,

ICIS Council



President (2021 – 2023)
[Christopher Hunter, BSc, PhD](#)
Department of Pathobiology
Mindy Halikman Heyer
President's Distinguished Chair
School of Veterinary Medicine
University of Pennsylvania
[@KingOfPathogens](#)



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[Sarah Gaffen, PhD](#)
Gerald P. Rodnan Professor,
Division of Rheumatology &
Clinical Immunology
Director, Pittsburgh Autoimmunity
Center of Excellence in
Rheumatology (PACER)
University of Pittsburgh.
Department of Immunology
[@slg1717](#)



Secretary (Jan 2021 – Jan 2023)
[Kate L. Jeffrey, PhD](#)
Assistant Professor of Medicine
Harvard Medical School
John Lawrence MGH Research
Scholar 2020-2025
Associate member, Broad
Institute of MIT and Harvard
Faculty member, Harvard
Immunology
Faculty member, Harvard Virology
Massachusetts General Hospital
Boston
[@KateJeffrey1](#)



Treasurer (Jan 2019-Jan 2022 re-elected Jan 2022 – Jan 2024)
[Dusan Bogunovic, PhD](#)
Associate Professor of
Microbiology, Pediatrics,
The Mindich Child Health
and Development Institute
and Precision Immunology
Institute at Icahn School of
Medicine at Mount Sinai
[@123456789Dusan](#)



Secretary (Jan 2023 – Jan 2025)
Susan Carpenter, PhD

Associate Professor of Molecular, Cell and Developmental Biology, University of California Santa Cruz, Santa Cruz, USA
<https://sites.google.com/a/ucsc.edu/carpenter-lab/?pli=1>
[@labcarpenter](#)



Past-President (2021-2023)
Katherine A. Fitzgerald, PhD, MRIA

Worcester Foundation Chair in Biomedical Sciences
Professor and Vice Chair, Department of Medicine, UMASS Medical School
Director, Program in Innate Immunity
[@FitzgeraldKate](#)



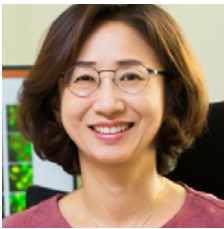
Council (Jan 2022 – Jan 2025)
Judith E. Allen, FRSE, FRSB, FMedSci

Lydia Becker Institute of Immunology and Inflammation
Faculty of Biology Medicine and Health
University of Manchester, Manchester, United Kingdom
webpages: <http://www.manchester.ac.uk/research/judi.allen>
[@ProfJudiAllen](#)



Council (Jan 2021 – Jan 2024)
Curt M. Horvath, PhD

Professor of Molecular Biosciences
Northwestern University
Department of Molecular Biosciences
Evanston, USA
[@jakstatman](#)



Council (Jan 2022 – Jan 2025)
You-Me Kim, PhD

Associate Professor
Graduate School of Medical Science and Engineering
Korea Advanced Institute of Science and Technology (KAIST)



Council (Jan 2021 – Jan 2024)
Thirumala-Devi Kanneganti, PhD

Vice Chair, Immunology Department
Rose Marie Thomas Endowed Chair
St. Jude Children's Research Hospital



Council (Cytokines 2023 Chair)
Evangelos Andreakos, PhD

BIOMEDICAL RESEARCH FOUNDATION ACADEMY OF ATHENS
Investigator – Professor Level,
Director of the Center for Clinical, Experimental Surgery & Translational Research



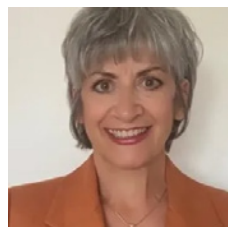
(Jan 2022 – Jan 2024)
Ruby Dawson, PhD

Postdoctoral Researcher
Cancer and Immune Signalling Laboratory
Centre for Innate Immunity and Infectious Diseases
Hudson Institute of Medical Research
Clayton, VIC, Australia



(Jan 2021 – Jan 2025)
Justina Kulikauskaite

fourth year PhD
Francis Crick Institute and
University College London, UK



Ex-Officio

Joan Oefner, Managing Director
International Cytokine & Interferon Society (since December, 2016)

ANNOUNCING:

The 2022 Election Results

Two former ICIS Young Investigator Award Winners take on leadership roles at the International Cytokine & Interferon Society – Announcing the 2022 Election Results

Secretary - 2 Years



Susan Carpenter, Ph.D.

Associate Professor of Molecular, Cell and Developmental Biology,
University of California Santa Cruz,
Santa Cruz, USA

<https://sites.google.com/a/ucsc.edu/carpenter-lab/?pli=1>

[@labcarpenter](#)



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Nominating Committee - 3 Years



Shruti Naik, PhD

Assistant Professor, Department of Pathology
Assistant Professor, Department of Medicine
Assistant Professor, Ronald O. Perelman
Department of Dermatology

<https://med.nyu.edu/faculty/shruti-naik@DrShrutiNaik>



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2023 AWARDS

ICIS
International Cytokine &
Interferon Society



Congratulations!
Judy Lieberman

2023 ICIS-Pfizer Award
for Excellence in Cytokine &
Interferon Research Winner

(formerly the Seymour & Vivian Milstein Award from 1988 – 2020)



Judy Lieberman has been chosen for the 2023 ICIS-Pfizer Award for Excellence in Cytokine & Interferon Research (formerly the Seymour & Vivian Milstein Award from 1988 – 2020)



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ICIS
International Cytokine &
Interferon Society



Congratulations!
Daniel Cua

2023 ICIS-BioLegend
William E. Paul Award Winner



Daniel Cua is recognized as the 2023 ICIS-BioLegend William E. Paul Award winner for his profound & sustained impact on the field of cytokine biology



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2023 AWARDS

ICIS
International Cytokine &
Interferon Society

Luminex®

**Congratulations!
Dusan Bogunovic**

2023 ICIS-LUMINEX John R. Kettman Award
for Excellence in Cytokine & Interferon Research



Dusan Bogunovic
Awarded the 2023
ICIS-Luminex John R.
Kettman Award for
Excellence in Cytokine
& Interferon Research



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ICIS
International Cytokine &
Interferon Society

**Congratulations!
Jacob S. Yount**

2023 ICIS Mentorship Award Winner



Jacob S. Yount is the
2023 ICIS Mentorship
Award Winner



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2023 AWARDS

ICIS
International Cytokine &
Interferon Society

Congratulations!
Daniela Novick

2023 ICIS Honorary Lifetime Membership
Award Winner



Daniela Novick has been chosen to receive the 2023 ICIS Honorary Lifetime Membership Award



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ICIS
International Cytokine &
Interferon Society

Congratulations!
Brendan Jenkins

2023 ICIS Distinguished
Service Award Winner



Brendan Jenkins has been selected as the recipient of the ICIS 2023 Distinguished Service Award



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NEW ICIS MEMBERS

New Member Mini-Bios:

See new members [here](#) or scan QR code below:



MEMBERS IN THE NEWS:



Read more online [here](#)
or scan QR code below:



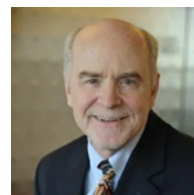
**Judith Allen elected as Fellow
of the Royal Society**



Read more online [here](#)
or scan QR code below:



**ICIS Member Jonathan Kipnis elected
into the National Academy of Medicine**



Read more online [here](#)
or scan QR code below:



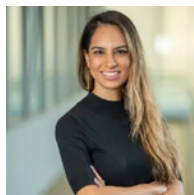
**Scientific Director of Intramural
Research, Dr. John O'Shea, Elected to
the U.S. National Academy of Sciences**



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**Brendan Jenkins to join the University
of Adelaide South Australian
Immunogenomics Cancer Institute
(SAiGENCI) as Program Leader in Tumour
Inflammation and Immunotherapy**



Read more online [here](#)
or scan QR code below:



**Kellie Ann Jurado has be named one of
the 20 Packard Fellows for 2022!**



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or scan QR code below:



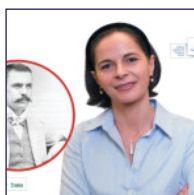
**Brian Kim was awarded the Sol and Clara
Kest Professor of Dermatology Endowed
Professorship from Mount Sinai**



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**Yasmine Belkaid received the 2023
AAI Excellence in Mentoring Award**



Read more online [here](#)
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**Yasmine Belkaid awarded the prestigious
2022 Charles Donovan Microbiome Prize**



Read more online [here](#)
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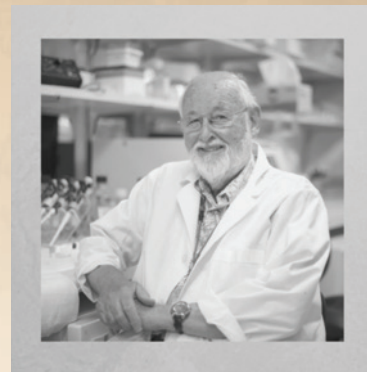


**Federica Sallusto, Cytokines 2023
organizing committee member, Elected to
the U.S. National Academy of Sciences**

In Memoriam

Joost J. Oppenheim, M.D. 1934–2022

To read online, click [here](#) or scan QR code:



The CCR community is profoundly saddened by the recent passing of Joost “Joe” Oppenheim, M.D., Senior Investigator and Head of the Cellular Immunology Section in the [Cancer Innovation Laboratory](#). He died on May 14, 2022, at the age of 87. Joost was engaged in cellular immunology research at the NIH for five decades and was instrumental in the discovery of cytokines, chemokines, and alarmins, which are substances produced by immune cells that enable them to communicate and act as “first responders” to injury or infection.

A pioneer in the field of immune cell regulation and response, Joost was one of the first to recognize the importance of intercellular cytokine signals in the regulation of immune defenses against infections and tumors. His early research focused on interleukin 1 (IL-1), and he proved the compound’s capacity to protect animals from death caused by radiation and chemotherapeutic agents. His findings led to clinical evaluation of IL-1 for human cancer treatments.

Joost’s research group generated landmark discoveries and the birth of the chemokine field. They purified, characterized and patented IL-8 and monocyte chemotactic protein-1 (MCP-1) and demonstrated that chemokines play key roles in AIDS, inflammation, immune responses and development. The lab’s numerous discoveries prompted some to nickname him the “Father of Cytokines,” and his later work focused on utilizing alarmins as vaccine ingredients for use against infectious agents and tumors.

Joost was born in 1934 in the town of Venlo, Netherlands, near the German border. He and his brother survived the Holocaust as Jewish children hidden by a Catholic Dutch family, the Heuvelmans. Joost’s family moved to the United States soon after World War II. A talented student, he attended the Bronx High School of Science and then Columbia University. He obtained his M.D. degree from the Columbia College of Physicians and Surgeons, New York, in 1960, and then interned at King County Hospital in Seattle.

He joined the NIH’s postgraduate program in 1962 and trained as a clinical associate at the NCI. Following that, he was an honorary research fellow in immunology at the University of Birmingham, England. In 1966, he returned to the NIH and started his lab at the National Institute of Dental Research. He served as the Medical Director of the United States Public Health Service from 1975 to 1983, then moved to the NCI in 1983 and served as the Chief of the Laboratory of Immunoregulation until 2015.

Over the course of his career, Joost accumulated numerous accolades, including the Technology Transfer Award from NCI (2001–2005), the NCI Outstanding Mentor Award (2004), the International Cytokine Society Honorary Lifetime Award (2004), the Metaphor Scientist Award from Regensburg, Germany (2006), the Trisociety Award from ICS, IFN and JLB Society (2009), the Harold Stewart Award from the Jackson Foundation of USUHS (2010) and a Certificate of Appreciation from the China Academy of Chinese Medical Sciences Cancer Institute (2013). He was editor-in-chief of the *Journal of Leukocyte Biology*, served on the editorial board of several prominent international scientific journals and was a member of numerous societies, including the American Academy of Microbiology, American Association of Immunologists, American Society for Clinical Investigations, International Cytokine Society, Society of Leukocyte Biology, and the Association of American Physicians. Most recently, in 2022, he was elected as a distinguished fellow of the American Association of Immunologists.

Joost was a titan in his research and academic accomplishments, and he was an inspiration both to his mentees and colleagues. “His publications do not convey that a secret of his success as a researcher often seemed to flow as much from intuition as from serendipity,” said his longtime colleague and friend Scott K. Durum, Ph.D. “Nor do they convey the self-deprecatory wit that sparkled through his lectures from the most prestigious podiums.”

In lieu of flowers, the family suggests a donation to Joost’s preferred charities: [Hebrew Immigrant Aid Society](#), [Montgomery Hospice, Inc. \(Casey House\)](#), and [Weizmann Institute](#). Please share stories and memories about Joost here on this [remembrance Facebook page](#).

Taken from May 15th, 2022 post: <https://ccr.cancer.gov/news/article/in-memoriam-joost-j-oppenheim-md-1934-2022>

Annual Meeting



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Cytokines 2023: 11th Annual Meeting of the International Cytokine & Interferon Society – This is the premier international meeting on ‘Cytokines’ that takes place worldwide and is regularly attended by 750 – 1,000 participants. The 11th edition comes at a time where cytokine biology, cytokine biomarkers and cytokine therapeutics are revolutionizing modern medicine, providing novel treatments for a wide variety of diseases ranging from lethal inflammatory, autoimmune and allergic diseases to viral infections and cancer. This year’s theme is “Cytokines and interferons in the precision medicine era”, focusing on the latest developments on cytokine biology in relation to immune regulation, host damage and disease, and the latest progress on cytokines/cytokine inhibitors as novel therapeutics in the clinic. The Cytokines Annual Meeting is an international platform for the world’s leading experts discussing cutting-edge updates on cytokine signaling and function and translation into cytokine-based therapeutics and immune-modifying biologics. The meeting bridges the gap between the scientists performing basic research and those working to harness this knowledge to develop strategies for interventions— and how all of these translate into emerging therapies.

Future Meetings

Cytokines 2024: 12th Annual Meeting of the International Cytokine & Interferon Society
20-23 October 2024

Seoul, Korea

Jointly sponsored by the Korean Association of Immunologists (KAI)

Program Chair: You-Me Kim, Korea Advanced Institute of Science and Technology (KAIST), Seoul, Korea

Co-Chair: Sang-il Lee, Department of Internal Medicine, Gyeongsang National University School of Medicine and Gyeongsang National University Hospital, Jinju, Korea

Cytokines 2025: 13th Annual Meeting of the International Cytokine & Interferon Society
Seattle, WA

2-5 November 2025

The Westin, Seattle, USA Seattle, USA

Co-Chairs: Michael Gale, Jr. & Ram Savan,
University of Washington, Seattle, USA

OTHER MEETINGS:

Cytokines in Barrier Immunity – ICIS Member Symposia at FOCIS 2023



Boston, MA, USA
June 20-23, 2023
Annual Meeting

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13:30 – 15:00 EST on Tuesday, June 20, 2023

Session Title: **CYTOKINES IN BARRIER IMMUNITY**

Session Chairs: **Shruti Naik, Ph.D. and Brian Kim M.D. Ph.D.**

Session Description:

Cytokine and cytokine-modulating therapies have demonstrated tremendous efficacy against cancers and in inflammatory diseases. These disorders are particularly prevalent at epithelial barrier sites such as the skin, gut, and lung. Our symposium showcases exciting advances on how cytokines maintain health and provoke disease in barrier tissues by bringing together leaders from different disease areas including inflammatory bowel disease, psoriasis, atopic diseases, neurological diseases and cancers. We highlight how cytokines dynamically control immune cell development and function. In addition, our featured speakers are pioneering efforts to understand the mechanisms by which cytokines facilitate dialogue between immune and non-immune cells and the profound consequences for disease predilection and pathology. Such interdisciplinary discussions will shed light on next-generation therapies to modulate both cytokines and their cellular targets.

REVIEWS OF INTEREST



For recent Reviews of Interest, please click [here](#) or scan the QR Code



For COVID-19 Special Collection, please click [here](#) or scan the QR Code



SPECIAL ARTICLE OF INTEREST:

What's new in translational immunology

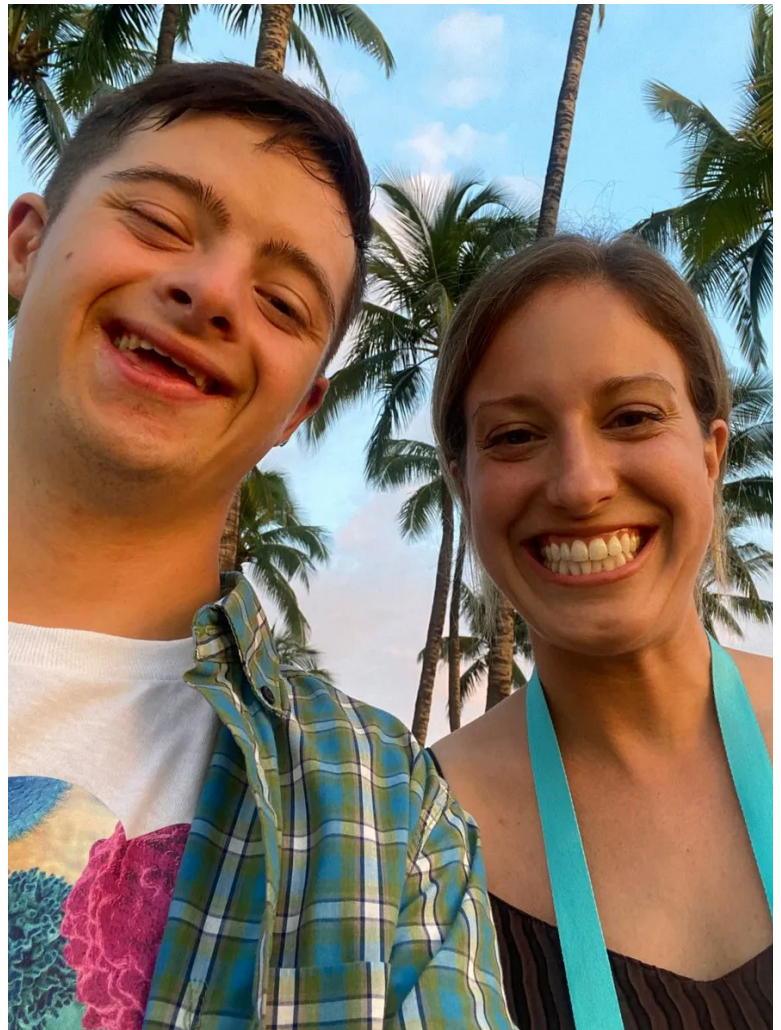


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Daniella M Schwartz, MD (she/her/hers), University of Pittsburgh Medical Center, Pittsburgh, USA

The last several years have seen a virtual explosion of novel inborn errors of immunity (IEI), with 56 novel diseases discovered between 2020-2022¹. It should therefore come as no surprise that the spectrum of genetic immune dysregulation has continued to expand dramatically over the last year. While it is impossible to review all the major advances in the field, several recent publications will be of particular interest to cytokine biologists.

Down syndrome (DS), or trisomy 21, is the most common chromosomal condition worldwide, affecting about 1 in 1,000 births. Commonly recognized manifestations include dysmorphic features, cardiovascular abnormalities, and hematologic disorders. DS is also strongly associated with immune dysregulation, but the underlying mechanisms have been unclear. Malle *et al.* demonstrate that DS affects Type I interferon (IFN-I) signaling due to increased expression of the IFN-I receptor subunits IFNAR1 and IFNAR2, which are on chromosome 21². Increased IFNAR1/2 expression initially causes hypersensitivity to IFN-I but then triggers a negative feedback loop that leads to IFN-I hyporesponsiveness. Ultimately, these oscillations protect subjects with DS from viral infection but also increase infection-driven morbidity. IFN-1 activation is also associated with systemic autoimmunity, and a second publication by the same group demonstrates that DS is characterized by global cytokine dysregulation, with increased levels of 22 distinct cytokines in one third of DS patients³. Chronic IL-6 signaling promotes T cell activation, which in turn activates B cells and plasmablasts, leading to autoantibody production. Importantly, IFN-I signaling and IL-6 signaling can be blocked individually with monoclonal antibodies or more broadly with JAK inhibitors, suggesting that the immune defects of DS can be targeted with FDA/EMA-approved therapies.



Wolfi Oefner (who happens to have Down Syndrome) with Cytokines 2022 Abstract presenter Katherine A. Waugh, author of "Interferon receptor gene dosage determines diverse hallmarks of Down syndrome" at Cytokines 2022 in Hawaii. Wolfi is the 22 year old son of ICIS Managing Director, Joan Oefner.

What's new in translational immunology



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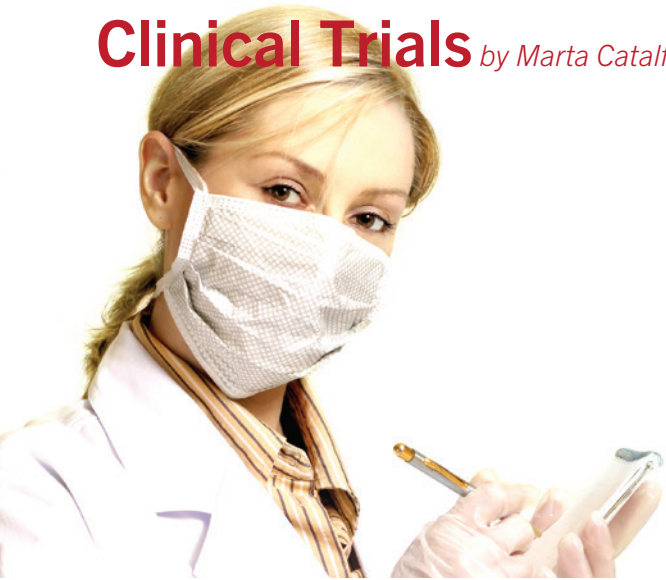
The JAK-STAT pathway is of broad interest to cytokine biologists due to its critical role in Type I/II cytokine signaling, which is illustrated by the efficacy of JAK inhibitors for immune-mediated diseases, and by the immunologic consequences of human *JAK* and *STAT* mutations⁴. Complete autosomal recessive *TYK2* deficiency, first described in 2006, increases susceptibility to viral and mycobacterial disease, whereas a more common partial deficiency underlies primary tuberculosis susceptibility. A new study by Ogishi et. al. investigates 19 patients with rare (<1% frequency) or very rare (<0.01% frequency) *TYK2* mutations⁵. All variants cause impaired IL-23-dependent production of IFN- γ , which increases susceptibility to mycobacterial disease. A subset of mutations also reduces responsiveness to IFN- λ , IL-10, and IL-12, causing susceptibility to viral infection. In a related study, Philippot et. al. find that autosomal recessive loss-of-function *IL23R* mutations cause mycobacterial disease susceptibility due to impaired IL-23-driven IFN- γ production⁶. IL-23 also induces IL-17A/IL-17F, and some affected subjects also suffer from chronic mucocutaneous candidiasis due to reduced IL-17A in mucosal-associated invariant T cells. However – as with *TYK2*-deficient patients – mycobacterial susceptibility is the more conserved phenotype in the *IL23R*-deficient cohort, because IFN- γ production is impaired in multiple lymphocyte subsets whereas IL-17A/IL-17F production is only affected in one subset. Together, these studies identify IL-23/TYK2/IFN- γ signaling as critical to host defense against mycobacterial diseases.

Downstream of interferon induction and JAK-STAT signaling, interferon regulatory factors (IRFs) are critical modulators of IFN signaling. Mutations in *IRF3*, *IRF7*, and *IRF9* all increase susceptibility to viral disease. A 2022 study by Campbell et. al. has expanded the phenotypic characterization of *IRF7* deficiency by investigating 7 patients with novel loss-of-function mutations⁷. This reveals a spectrum of viral susceptibility that is quite narrow relative to other IFN- λ defects, affecting only the respiratory tract. This may be because IFN- λ signaling, while impaired, is not abolished in *IRF7*-deficiency. Deficiency of *IRF1*, is induced by both IFN- λ and IFN- γ , causes susceptibility to both viral and mycobacterial infection in mice. Rosain et. al. demonstrate that human *IRF1* hypomorphic mutations cause a severe form of mycobacterial disease susceptibility, with life-threatening infections due to weakly virulent pathogens⁸. Unexpectedly, despite complete deficiency of *IRF1*, patients are not susceptible to viral infection, suggesting that *IRF1* is largely redundant for IFN- λ dependent antiviral immunity in humans. In contrast to these loss-of-function mutations, the *IRF4* international consortium has reported a multimorphic *IRF4* mutation causing autosomal dominant combined immunodeficiency⁹. Patients present with agammaglobulinemia, opportunistic infections, reduced B cell

maturation, and reduced Th17/Tfh differentiation. *IRF4* is a transcription factor, and the mutant variant alters the protein's DNA binding specificity. This causes a simultaneous loss of some functions, gain of other functions, and acquisition of some new transcriptional targets – a multimorphic combination that disrupts lymphocyte development and function. Together, these studies highlight the importance of IRFs to IFN-mediated host defense, as well as describing a novel potential mechanism of disease caused by a single gene mutation.

- 1 Tangye, S. G. *et al.* Human Inborn Errors of Immunity: 2022 Update on the Classification from the International Union of Immunological Societies Expert Committee. *J Clin Immunol* **42**, 1473-1507, [doi:10.1007/s10875-022-01289-3](https://doi.org/10.1007/s10875-022-01289-3) (2022).
- 2 Malle, L. *et al.* Excessive negative regulation of type I interferon disrupts viral control in individuals with Down syndrome. *Immunity* **55**, 2074-2084 e2075, [doi:10.1016/j.immuni.2022.09.007](https://doi.org/10.1016/j.immuni.2022.09.007) (2022).
- 3 Malle, L. *et al.* Autoimmunity in Down's syndrome via cytokines, CD4 T cells and CD11c(+) B cells. *Nature* **615**, 305-314, [doi:10.1038/s41586-023-05736-y](https://doi.org/10.1038/s41586-023-05736-y) (2023).
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Clinical Trials *by Marta Catalfamo*



Interleukin-1 Blockade in Acute Myocardial Infarction to Prevent Heart Failure (Virginia-ART4)

Principal Investigators: Benjamin Van Tassell, PharmD. Virginia Commonwealth University. Richmond, Virginia, United States, 23298

Contact: Benjamin Van Tassell, PharmD. Phone: 804-828-4583

ClinicalTrials.gov Identifier: NCT05177822

Safety and Efficacy of Interferon-Gamma 1b in Patients With Candidemia

Principal Investigators: John R. Perfect, MD. Duke University. Durham, North Carolina, United States, 27708

Contact: John R. Perfect, MD. Phone: (919) 684-4016

ClinicalTrials.gov Identifier: NCT04979052

Human Recombinant Interferon Gamma in the Treatment of Ventilator-acquired Pneumonia in ICU Patients (IGNORANT)

Principal Investigators: Anne-Claire LUKASZEWICZ, Pr. Hospices Civils de Lyon. Service civilo-militaire d'Anesthésie-Réanimation et Médecine Périopératoire. Lyon, France, 69003.

Contact: Camille BOUCHENY. Phone: 4 26 73 27 39 ext +33

ClinicalTrials.gov Identifier: NCT05843786

Treatment of COVID-19 by Nebulization of Inteferon Beta 1b Efficiency and Safety Study (COV-NI)

Principal Investigators: Jean-Philippe Lanoix, MD. Centre Hospitalier Universitaire, Amiens. Amiens, France, 80480

Contact: Aurélien Mary, MD. Phone: (33)22087140

ClinicalTrials.gov Identifier: NCT04469491

Pembrolizumab and Recombinant Interleukin-12 in Treating Patients With Solid Tumors

Principal Investigators: Diwakar Davar, MD. University of Pittsburgh Cancer Institute (UPCI). Pittsburgh, Pennsylvania, United States, 15232

Contact: Diwakar Davar, MD. Phone: 412-647-8073

ClinicalTrials.gov Identifier: NCT03030378

Recombinant Interleukin-7 (CYT107) to Treat Patients With Refractory Nontuberculous Mycobacterial Lung Disease (IMPULSE-7)

Principal Investigators: Andrej SPEC, MD. Washington University School of Medicine. Saint Louis, Missouri, United States, 63110

Contact: Andrej SPEC, MD. Phone: 314.747.1725

ClinicalTrials.gov Identifier: NCT04154826

Study of SRF388 in Patients With Advanced Solid Tumors

Principal Investigators: Arpita Desai, MD. UCSF Medical Center – Helen Diller Family Comprehensive Cancer Center. San Francisco, California, United States, 94143

Contact: Ria Conti, Phone: 415-514-2259

ClinicalTrials.gov Identifier: NCT04374877

Interleukin-15 Armored Glypican 3-specific Chimeric Antigen Receptor Expressed in Autologous T Cells for Hepatocellular Carcinoma

Principal Investigators: Tannaz Armaghany, MD. Baylor College of Medicine. Houston Methodist Hospital. Houston, Texas, United States, 77030.

Contact: Tannaz Armaghany. Phone: 713-798-3750

ClinicalTrials.gov Identifier: NCT05103631

Recombinant Interleukin-15 in Combination With Checkpoint Inhibitors Nivolumab and Ipilimumab in People With Refractory Cancers

Principal Investigators: Naoko Takebe, M.D. National Institutes of Health Clinical Center. Bethesda, Maryland, United States, 20892

Contact: Ashley B Bruns. Phone: (240) 858-3162

ClinicalTrials.gov Identifier: NCT03388632

Interferon Lambda for Immediate Antiviral Therapy at Diagnosis in COVID-19 (ILIAD)

Principal Investigators: Jordan Feld, MD. University Health Network. Toronto, Ontario, Canada, M5G 2C4

Contact: Bethany Barber. Phone: 416-340-4800 ext 6569

ClinicalTrials.gov Identifier: NCT04354259

A Study of Guselkumab and Interleukin-17 (IL-17) Inhibitor Therapies in Participants With Psoriatic Arthritis in Routine Clinical Practice (PsABIOnd)

Principal Investigators:

Contact: Phone:

ClinicalTrials.gov Identifier: NCT05049798

Ph1 Trial Test Safety of IL-21 NK Cells for Induction of R/R AML

Principal Investigators: Sumithira Vasu, MBBS. Ohio State University Comprehensive Cancer Center. Columbus, Ohio, United States, 43210

Contact: Sumithira Vasu, MBBS. Phone: 614-293-8197

ClinicalTrials.gov Identifier: NCT04220684

WWW

Websites of Interest



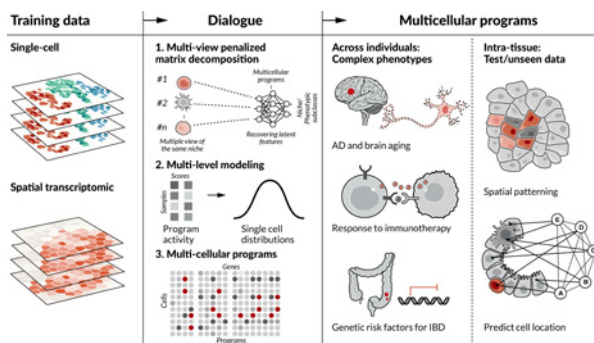
If your synapses are firing properly, this may be a valuable tool to help analyze your data

Nature Biotechnology. 2022 Oct; 40(10):1467-1477

<https://doi.org/10.1038/s41587-022-01288-0> PMID: 35513526

Welcome to the DIALOGUE!

DIALOGUE is a dimensionality reduction method that uses cross-cell-type associations to identify multicellular programs (MCPs) and map the cell transcriptome as a function of its environment. Given single-cell data, it combines penalized matrix decomposition with multilevel modeling to identify generalizable MCPs and examines their association with specific phenotypes of interest.



Quick start

To install DIALOGUE you can either use `devtools::install_github(repo = "https://github.com/livnatje/DIALOGUE")` or just download its R package and use `devtools::install("DIALOGUE")`

The **input** consists of single-cell transcriptomes of different cell types, usually together with a more compact representation (e.g., PCs). The **output** will be multicellular programs (MCPs) of co-regulated genes across the different cell types, their expression across the cells, and association with specific phenotype(s) of interest. Each MCP consists of multiple cell-type-specific gene subsets.

For specific cell-cell “interactions” you can run the pairwise version, using the data of two cell types of interest as input. DIALOGUE can also identify MCPs that span multiple cell types (see Jerby-Arnon & Regev Nature Biotechnology 2022).

See the [tutorial](#) for more details.

Requirements

R (tested in R version 3.4.0).

R libraries: lme4, lmerTest, PMA, plyr, matrixStats, psych, stringi, RColorBrewer, unkn, reshape2, ggplot2, grid, beanplot, parallel

Citation

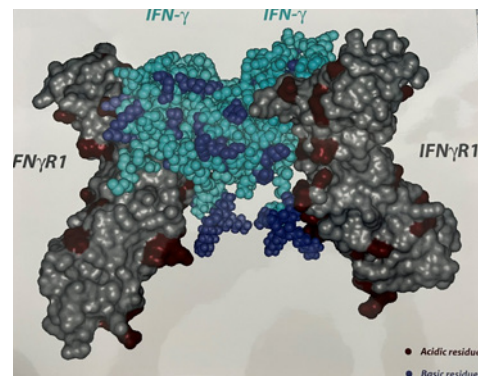
[Jerby-Arnon & Regev. DIALOGUE maps multicellular programs in tissue from single-cell or spatial transcriptomics data. Nature Biotechnology 2022.](#)

Seminar

Want to hear more about DIALOGUE and other approaches to study multicellular biology? Check out our seminar at [BCH Digital Science TV](#)

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Websites of Interest



Version: 2.12.6

<https://phenome.jax.org/>

About the Mouse Phenome Database

The Mouse Phenome Database (MPD, RRID:SCR_003212) enables the integration of genomic and phenomic data by providing access to primary experimental data, well-documented data collection protocols and analysis tools. Data are contributed by investigators from around the world and represent a broad scope of behavioral, morphological and physiological disease-related characteristics in naive mice and those exposed to drugs, environmental agents or other treatments.

Data in MPD include per mouse and per strain data from genetic reference populations for which data are cumulative over time and across laboratories. Strain types include inbred, recombinant inbred, Collaborative Cross, chromosome substitution, mutants, and others. In addition, there are data from heterogeneous mice in mapping populations including Diversity Outbred and other inbred mouse strain crosses in the QTL Archive.

MPD provides a venue for compliance with data sharing policies and facilitates data reuse and data integration to provide a means of analyzing trait relations, discovering the biological basis of complex traits, and assessing replicability and reproducibility across experimental conditions and protocols.

MPD is a grant-funded research resource headquartered at The Jackson Laboratory.



The STRING database

<https://string-db.org/>

Protein-protein association networks and functional enrichment analyses for any sequenced genome of interest

Welcome to STRING

Protein-Protein Interaction Networks

Functional Enrichment Analysis

- ORGANISMS: 14094
- PROTEINS: 67.6 mio
- INTERACTIONS: >20 bln



<https://www.proteomexchange.org/>

Mission

The ProteomeXchange Consortium was established to provide globally coordinated standard data submission and dissemination pipelines involving the main proteomics repositories, and to encourage open data policies in the field. Please review our Data Submission Guidelines, Guidelines for Reprocessed datasets and PX Membership Agreement.

See also the original Nature Biotechnology publication and the 2017 and 2020 update papers.



The Antibody Registry: ten years of registering antibodies

<https://antibodyregistry.org/>

The Antibody Registry gives researchers a way to universally identify antibodies used in their research.

If the antibody that you are using does not appear via search, please add your antibody by using the catalog number and the url of the vendor.

After submitting an antibody, a permanent identifier will be assigned.



The Temporal Expression during Development Database

<https://tedd.obg.cuhk.edu.hk/frontend/dist/index.html#/>

The Temporal Expression during Development Database (TEDD) is an ongoing effort to build a comprehensive public resource to study tissue and temporally specific gene expression and regulation (accessible chromatin) during multiple developmental periods. Data were curated from publicly accessible datasets generated by molecular assays (bulk-sample RNA-seq, scRNA-seq and scATAC-seq) in samples originated from 79 non-diseased tissue sites across nearly 4,000 individuals. Data matrix with metadata from each dataset is available from TEDD to download for academic study purpose. The TEDD Portal provides open access for academic researchers to analyze and visualize temporal gene expression, regulation and network among different tissues and different sample collection timepoints.



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Athens / Greece**

**15 - 18 October
2023**

**Early-Bird Registration Deadline:
28 June 2023**

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