

Signals+

THE INTERNATIONAL CYTOKINE & INTERFERON SOCIETY NEWSLETTER

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APRIL 2022 | VOLUME 10 | NO. 1



A NOTE FROM THE ICIS PRESIDENT

Christopher Hunter

Dear Colleagues,

As my official term as ICIS President started in October of 2021 I'd like to offer a special thank you to Sarah Gaffen (President-Elect), and Joan Oefner and Elizabeth Gray, who manage the affairs of the society for the support they have already shown.

Thank you also to the ICIS Council, and all of the dedicated individuals who serve on our committees for their ongoing service. Thank you to Simon Jones and his co-organizers for taking on the challenge of our first "hybrid" meeting, and for organizing a wonderful program for the 2021 meeting in Cardiff. Of course, the inspirational leadership and patience shown by outgoing President Kate Fitzgerald over the last two years has provided a template for the society and helped to set our priorities. The society relies on our members for many purposes and the team that organizes the Signals+ Newsletter (Howard Young, Marta Catalfamo, Di Yu, Zhian Chen and Supreet Agarwal) are also appreciated and we would welcome new members who want to contribute to the newsletter.

Of course, since the annual meeting in October we have dealt with the rise and fall of Omicron only to have our world view upended in February of 2022 with the Russian invasion of Ukraine. Everyone in our scientific community is concerned about the war in Ukraine and we cast our minds to the obvious disruption that the scientific community and the civilian population of Ukraine are currently enduring. The society leadership endorses the joint statement of the National Academies of the G7 States on Russia's Attack on Ukraine (https://www.leopoldina.org/fileadmin/redaktion/Publikationen/G7-Statements/S7_Statement_on_Ukraine.pdf)

For the society, we have three main events on the horizon. The first is the upcoming deadlines to nominate colleagues for the society awards. These are one way to acknowledge the advances in our field and we take pride in trying in identifying the most appropriate candidates deserving of recognition.

continued on pg 2

Future Meetings

Cytokines 2023 Hybrid Meeting
October 15.-18, 2023
Athens, Greece

Cytokines 2022 Hybrid Joint Meeting with ILC4
September 20-23, 2022
Waikoloa, Hawaii, USA

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

Newsletter Editors:

Howard Young
Marta Catalfamo
Di Yu / Zhian Chen
Supreet Agarwal

Managing Director:

Joan Oefner



International Cytokine & Interferon Society



A NOTE FROM THE ICIS PRESIDENT

Christopher Hunter

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This is in large part dependent on the willingness of our members to nominate their colleagues. Regardless of career stage, is there someone whose work you have admired or you think deserves recognition? Maybe this is the year to show that appreciation and to take the opportunity to highlight their scientific, mentoring or service contributions. The effort involved is not trivial, but there are many positives that come from this process. We are grateful for the continued support of [Pfizer](#) for their sponsorship of the [ICIS-Pfizer Award for Excellence in Cytokine & Interferon Research](#) (formerly the Seymour & Vivian Milstein Award), [Regeneron](#) for their continued sponsorship of the [Regeneron New Investigator Awards for Excellence in Cytokine & Interferon Research](#) (formerly the Milstein Young Investigator Awards), to [BioLegend](#) for their sponsorship of the [ICIS-BioLegend William E. Paul Award for Excellence in Cytokine Research](#), the [Luminex Corporation](#) for sponsoring the [ICIS-Luminex John R. Kettman Award for Excellence in Interferon & Cytokine Research](#) for a Mid-career researcher. We also acknowledge [Pfizer](#) for their support of the [ICIS-Pfizer Junior Investigator Awards for Most Promising Research Presentations at the Cytokines Annual Meeting](#).

Thank you to the Fleischmann Family for sponsoring the [Christina Fleischmann Award to Young Women Investigators](#), [PBL Assay Science](#) for sponsoring the [Sidney & Joan Pestka Graduate and Post-Graduate Awards](#), friends and colleagues of the late Amanda Proudfoot for sponsoring the [Amanda Proudfoot Tribute Award for a Chemokine trainee](#).

A new initiative from the society is that we intend to provide support for related joint meetings and satellite scientific meetings in conjunction with the Society's Annual Meeting. We are fortunate over the years that we have had scientific partners at our annual meeting and this year the Innate Lymphoid Cell (ILC) community joins us in Hawaii with their own biennial program as well as several joint scientific sessions. Likewise, the Interferon Lambda community is organizing a satellite meeting for the two half days following the Annual Meeting. As we've done in the past, the ICIS is sponsoring Guest Sessions at related Immunology Society meetings. The ICIS Guest Session at AAI's Immunology 2022 will show case the recipients of our 2021 Regeneron New Investigator Awards "Rising Stars of Cytokine Biology, Co-Chairs: Sarah L. Gaffen, University of Pittsburgh School of Medicine, USA & Rebecca Coll, Queen's University, Belfast, Northern Ireland, UK, while a session chaired by Dusan Bogunovic (Icahn School of Medicine at Mount Sinai) and Kate Jeffrey (Moderna) at FOCIS will highlight "Human Cytokine Deficiencies and Cytokinopathies". We now intend to provide additional support to our members interested in organizing satellite sessions or workshops associated with other Immunological societies. More details will follow, but if you are interested in this concept, please feel free to contact me directly.

Finally, our annual scientific meeting will be in Hawaii (www.hawaii.cytokinesociety.org). The organizing committee chaired by James Turkson (Cedars Sinai Medical Center), have done a terrific job in assembling a diverse scientific program with cutting edge research and be an opportunity for meaningful discussions and exchanges among international colleagues in the field. One of the lessons we have learned over the last two years is that the ability to include a virtual platform provides new opportunities for many of our colleagues, students, and young investigators to hear the latest advances in cytokine science as well as to present their work. This will now be an integral part of these meetings going forward and we hope will allow the ICIS access to more scientists interested in cytokine biology.

Christopher Hunter

**2021
REGENERON NEW
INVESTIGATOR AWARDS
FOR EXCELLENCE IN
CYTOKINE &
INTERFERON
RESEARCH**

(formerly the Milstein Young Investigator Awards)

Every year four-five awards are granted to individuals who have made notable contributions to either basic or clinical research. This award is provided by a generous gift from Regeneron for all ICIS members who will attend the upcoming annual conference and who have received a Ph.D or M.D. within the previous 10 years which may be extended by 1 year due to parental leave (per child).



REBECCA C. COLL, Ph.D.

Lecturer in Immunobiology and Group Leader
Wellcome-Wolfson Institute for Experimental Medicine
Queen's University Belfast, UK

Rebecca received her PhD in Immunology in 2013 from Trinity College Dublin and moved to the Institute for Molecular Bioscience at the University of Queensland in 2014 to continue her work on innate immunity and novel anti-inflammatory molecules. Rebecca joined The Wellcome-Wolfson Institute for Experimental Medicine at Queen's University Belfast as a Lecturer in Immunobiology and principal investigator in 2019. Rebecca's research is focused on inflammasomes – protein complexes at the heart of inflammation and disease – and how these complexes can be targeted therapeutically to prevent damaging inflammation. Rebecca led the biological characterisation of MCC950, a small molecule inhibitor of the NLRP3 inflammasome and an exciting prospect as a new therapy for treating patients with NLRP3-mediated diseases. In 2016 Rebecca was awarded the Research Australia Discovery Award for her work on NLRP3 inhibitors.

Oral Presentation at [Cytokines 2021 Hybrid Meeting](#): **HARNESSING THE POWER OF NLRP3 – PHARMACOLOGICAL STRATEGIES FOR INHIBITION AND ACTIVATION OF THE INFLAMMASOME**

Twitter: [@Rebecca_Coll](#)

2021
REGENERON NEW
INVESTIGATOR AWARDS
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(formerly the Milstein Young Investigator Awards)



KEKE CELESTE FAIRFAX, Ph.D.

Assistant Professor and Director of Diversity, Equity, and Inclusion
Department of Pathology Division of Microbiology and Immunology
University of Utah, Salt Lake City, USA

Keke Fairfax received her PhD from Yale in Microbial Pathogenesis in 2009. Her dissertation work focused on identifying novel fatty acid binding proteins in the human hookworm *Ancylostoma ceylanicum*. She completed her post-doctoral training in *Schistosoma mansoni* immuno-parasitology with Edward Pearce and Gwendalyn Randolph in 2014. Dr. Fairfax began her independent laboratory at Purdue University in 2014 and moved to the University of Utah in 2018. The Fairfax laboratory at the University of Utah broadly focuses on using the helminth parasite *Schistosoma mansoni* as a tool to understand both, the relative contributions of schistosome antigen vs IL-4 in inducing host immuno-modulation, and the complex interplay between lymphoid and stromal cells necessary to develop an optimal T and B cell memory response. Under this umbrella we currently have three main projects: 1) Understanding the immunological implications of maternal schistosomiasis; 2) Dissecting the role of IL-4 in shaping the cellular environment of peripheral lymph nodes during homeostasis and antigenic challenge; 3) Delineating the mechanistic role of antigen driven immunological re-programing in helminth-induced protection from metabolic diseases.

Oral Presentation at [Cytokines 2021 Hybrid Meeting](#): **TIL-4 SIGNALING REGULATES THE FATE OF B CELL DIFFERENTIATION VIA GERMINAL CENTER POSITIONING**

Twitter: [@LabFairfax](#)

<https://medicine.utah.edu/pathology/research/labs/keke-fairfax/>

**2021
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FIACHRA HUMPHRIES, Ph.D.

Instructor in medicine
University of Massachusetts Medical School
Worcester, United States

Fiachra Humphries received his PhD in Ireland at Maynooth University in the laboratory of Prof. Paul Moynagh. Fiachra then joined the laboratory of Prof. Katherine Fitzgerald for his post-doctoral training at UMass medical school (UMMS) where he worked on studying how inflammasome and DNA sensing pathways are regulated by post-translational modifications (PTMs). Fiachra joined the UMMS division of infectious disease and immunology faculty in 2021 as an instructor. The focus of his research is now on understanding how PTMs regulate innate immunity and how they can be exploited therapeutically.

Oral Presentation at [Cytokines 2021 Hybrid Meeting](#): **A NOVEL DIAMIDOBENZIMIDAZOLE STING AGONIST PROTECTS AGAINST SARS-COV2 INFECTION**

Twitter: [@fighumphl](#)

**2021
REGENERON NEW
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(formerly the Milstein Young Investigator Awards)



SHRUTI NAIK, Ph.D.

Assistant Professor

**Department of Pathology, Department of Medicine, Ronald O. Perleman Department of Dermatology, Member, Perlmutter Cancer Center
NYU School of Medicine, New York, USA**

Shruti Naik is an Assistant Professor at New York University School of Medicine. She received her Ph.D. in Immunology from the University of Pennsylvania-National Institutes of Health Graduate Partnership Program. There she discovered that normal bacteria living on our skin, known as the commensal microbiota, educate the immune system and help protect us from harmful pathogens. As a Damon Runyon Fellow at the Rockefeller University, Naik found that epithelial stem cells can harbor a memory of inflammation which boosts their regenerative abilities and established a new paradigm in inflammatory memory. The Naik lab studies the cytokine mediated crosstalk between immune cells, epithelial stem cells, and microbes with a focus on 3 major areas of research: *Tissue regeneration and cancer, host-microbe interactions, and early in life immunity*. Naik is a strong advocate for increasing diversity in science and promoting the advancement of underrepresented and marginalized groups. She has been recognized for her research and advocacy through numerous awards including the Regeneron Award for Creative Innovation, the L'Oréal For Women in Science Award, the Damon Runyon Dale F. Frey Award for Breakthrough Scientist, the Blavatnik Award for Young Scientists, the International Takeda Innovators in Science Award, Pew-Stewart Scholar, NIH Directors Innovator Award DP2 and Packard Fellow.

Oral Presentation at [Cytokines 2021 Hybrid Meeting](#): **INTERLEUKIN-17 GOVERNS HYPOXIC ADAPTATION OF INJURED EPITHELIUM**

Twitter: [@DrShrutiNaik](#)

2021
REGENERON NEW
INVESTIGATOR AWARDS
FOR EXCELLENCE IN
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RESEARCH

(formerly the Milstein Young Investigator Awards)



JAKOB VON MOLTKE, Ph.D.

Assistant Professor
University of Washington
Department of Immunology
Seattle, USA

Dr. von Moltke is an Assistant Professor in the Immunology Department at the University of Washington Medical School in Seattle. Dr. von Moltke graduated with a Bachelor's degree in Genetics, Cell and Developmental Biology from Dartmouth College and a Masters of Arts in Biotechnology from Columbia University. For his Ph.D., he studied sensing of bacteria by inflammasomes with Dr. Russell Vance at the University of California, Berkeley. Dr. von Moltke completed his postdoctoral training with Dr. Richard Locksley at the University of California, San Francisco, where he investigated early type 2 immune responses and discovered a role for epithelial tuft cells in initiation of intestinal helminth infection. The Moltke Lab continues to study immune responses to parasitic worms and allergens, with a current focus on the immune sensing and effector functions of tuft cells. Dr. von Moltke was selected as a Searle Scholar and recipient of a Burroughs Wellcome Award for Investigators in Pathogenesis of Infectious Disease.

Oral Presentation at [Cytokines 2021 Hybrid Meeting](#): **TUFT CELL EFFECTOR MOLECULES REGULATING ANTI-HELMINTH IMMUNITY**

Twitter: [@jakob_moltke](#)



2021
CHRISTINA
FLEISCHMANN AWARD
TO YOUNG WOMEN
INVESTIGATORS

This award is made possible through the generosity of the Fleischmann Family and is dedicated to the memory of ISICR member and outstanding interferon research scientist Christina Fleischmann for all ICIS members who will attend the upcoming annual conference and who have received a Ph.D or M.D. within the previous 10 years which may be extended by 1 year due to parental leave (per child).

As of 2022 the amount of this award will be raised to \$5,000!



DR. CHRISTINA FLEISCHMANN (1945-1996)

This award was established in early 1998, with the first award presented to [Xiaoxia Li, Ph.D.](#), who's now the Paul L. Fox, Ph.D., Endowed Chair in Molecular Medicine at the Lerner Research Institute, Cleveland, USA, at the joint ISICR/ICS meeting in Jerusalem. She went on to win the [Milstein Award in 2013](#).

The Christina Fleischmann Young Investigator Award was established by Bob Fleischman in memory of Christina, an active participant in our society for many years until her recent untimely death. It is Bob's hope that the establishment of this award will lead others to consider donating awards to the Society.

**2021
CHRISTINA
FLEISCHMANN AWARD
TO YOUNG WOMEN
INVESTIGATORS**



SNEHLATA KUMARI, Ph.D.

Group Leader

Head of Inflammation and Immunity Laboratory

The University of Queensland

The University of Queensland Diamantina Institute

Translational Research Institute (TRI), Australia

Dr Snehlata Kumari is a group leader/senior research fellow at the University of Queensland Diamantina Institute in Brisbane, Australia.

Her laboratory research focuses on identifying and understanding the immuno-modulatory signaling mechanisms controlling inflammatory skin diseases and skin cancer. She received her PhD and postdoctoral training from the University of Cologne in Germany where she made fundamental discoveries in identifying essential roles of NF- κ B, TNF, interleukin-24 and cell death signaling pathways in regulating inflammatory skin diseases. These findings advanced the knowledge in the field of skin immunity and opened new avenues for novel potential targets in skin inflammation. Her scientific contributions received recognition from the global scientific communities including the German National Academy of Sciences- Leopoldina, International Investigative Dermatology and European Society for Dermatological Research.

Oral Presentation at [Cytokines 2021 Hybrid Meeting](#): **Z-DNA-BINDING PROTEIN-1 REGULATES NECROPTOSIS-MEDIATED SKIN INFLAMMATION**

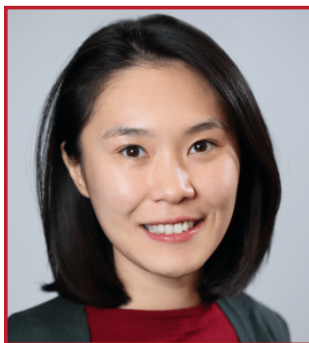
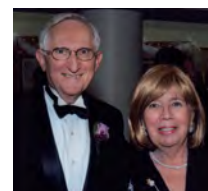
Twitter: [@Sne_K](#)

LinkedIn: <https://www.linkedin.com/in/snehlatakumari/>

UQ Webpage: <https://researchers.uq.edu.au/researcher/25389>

2021 SIDNEY AND JOAN PESTKA POST- GRADUATE AWARD WINNER

This Award is generously sponsored by PBL Assay Science, targeted to post-doctoral fellows who have begun to make an impact in interferon and cytokine research.



AI ING LIM, Ph.D.

Postdoctoral Research Fellow

**Metaorganism Immunity Section, Laboratory of Host Immunity and Microbiome
National Institute of Allergy and Infectious Diseases
National Institutes of Health, Bethesda, MD, USA**

I view science as an adventure into the unknown. How a single cell divides and differentiates into specialized tissues and organs, constituting a whole organism, is a seminal scientific question that has always fascinated me. Specifically, I have always been intrigued by how a single hematopoietic stem cell can produce diverse immune cells with distinct functions that coordinate to optimally respond to the multitude of infectious and environmental challenges encountered by the host. Despite growing up in Malaysia, where scientific careers were rare for women, I have been determined to pursue my passion to become a scientist and uncover the hidden mysteries of developmental immunology. With the support of several scholarships, I moved to Hong Kong for my bachelor's and master's degrees at The University of Hong Kong. Subsequently, as a European Union Marie Curie Fellow, I joined Prof. James Di Santo at Pasteur Institute (France) for my PhD. There, we identified innate lymphocyte precursor from blood of healthy individuals. This precursor can give rise to diverse mature innate lymphocytes within tissues, depending on micro-environmental signals. We defined a cytokines milieu that supports human ILC-poiesis. This finding was pivotal because it challenged the prevailing dogma stating that the fetal liver and adult bone marrow were the sources of this unique precursor. It also sparked my interest in tissue immunity, where I am eager to understand, mechanistically, how immune cells integrate with tissue development, and how tissue micro-environments and resident microbiota reciprocally wire immune function. A critical boost to my scientific career was being recognized as an International Rising Talents by the L'Oreal-UNESCO and the best European Immunology Thesis (Aceria Doctoral Prize) by European Federation of Immunological Societies. These awards together with Human Frontier Science Program fellowship empowered me to join the laboratory of Dr. Yasmine Belkaid at National Institutes of Health (NIH) for my postdoctoral training. The central question that I attempt to address is how do maternal environmental exposures impact on offspring tissue immunity and predisposition to diseases. We recently discovered that a maternally restricted infection can have permanent and tissue-specific impacts on offspring intestinal immunity. This impact was dominantly mediated by a single cytokine, IL-6 acting on epithelial stem cells during fetal development. While this phenomenon can be co-opted by the fetus to develop optimal immune fitness, altered offspring immunity imposed by maternal infection comes at the cost of enhanced susceptibility to mucosal inflammation.

Oral Presentation at [Cytokines 2021 Hybrid Meeting](#): **MATERNAL IL-6 PROMOTES PRE-BIRTH TISSUE-SPECIFIC IMMUNE EDUCATION**

Twitter: [@AiingLim](#) Lab Twitter: [@BelkaidLab](#)

2021 SIDNEY AND JOAN PESTKA GRADUATE AWARD WINNER

This Award is generously sponsored by PBL Assay Science, targeted to graduate students who have begun to make an impact in interferon and cytokine research.



BRIGETTE DUCKWORTH

Ph.D. Candidate

**Walter and Eliza Hall Institute of Medical Research
Parkville Australia**

Brigette is a third year PhD student in the lab of Dr Joanna Groom at the Walter and Eliza Hall Institute of Medical Research (WEHI), Australia. Her research employs cutting-edge light-sheet microscopy to reveal the spatial determinants of T cell fate decisions within lymph nodes. Her recent work has demonstrated that T cell fate is imprinted in distinct lymph node niches following viral infection, directed by the chemokine receptor CXCR3. Specifically, CXCR3 directs effector differentiation in the lymph node periphery, while in the absence of CXCR3, T cells remain confined to the lymph node centre and alternatively differentiate into stem-like memory precursors (Duckworth et al. Nature Immunology 2021). These findings have important implications for understanding the establishment and maintenance of immune memory. Brigette completed a Bachelor of Biomedicine Degree with Honours at the University of Melbourne, Australia in 2016. During her undergraduate degree, she undertook a research placement at WEHI under the supervision of Professor Gabrielle Belz and Dr Lisa Mielke, studying the transcriptional regulation of T cell differentiation. Brigette continued her Honours-level research with Professor Belz, studying the clonal regulation of memory T cell fate. She worked as a research assistant for two years before commencing her PhD studies in 2019. Brigette's work has been recognized by the David McFarlane PhD Award (2020) and a Rotary Club of Melbourne Victorian Young Achievers Award (2018).

Oral Presentation at [Cytokines 2021 Hybrid Meeting](#): **EFFECTOR AND STEM-LIKE MEMORY CELL FATES ARE IMPRINTED IN DISTINCT LYMPH NODE NICHES DIRECTED BY CXCR3 LIGANDS**

Twitter: [@BrigDoesScience](#)



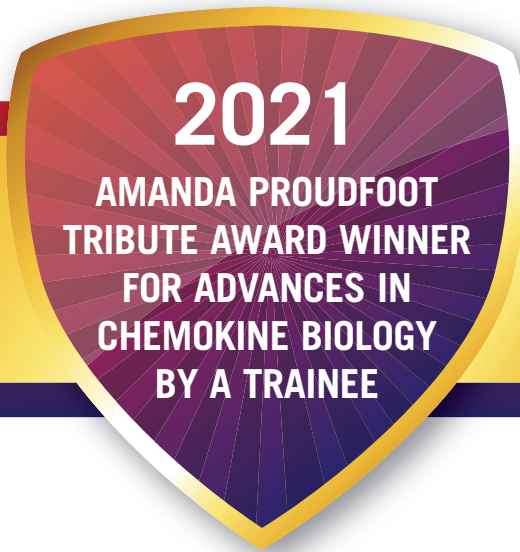
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Amanda E.I. Proudfoot
(1949-2019)

This ICIS trainee award is dedicated to the memory of [Amanda Proudfoot](#) (1949-2019), who is internationally recognized for her important contributions to the field of chemokine biology. Funding for this award is provided by friends and colleagues of the late Amanda Proudfoot.



DOUGLAS PHILIP DYER, Ph.D.

Sir Henry Dale Fellow

Wellcome Centre for Cell-Matrix Research, University of Manchester, UK

Dr. Dyer undertook his Ph.D. research investigating how an anti-inflammatory protein functions by disrupting the interactions between chemokines and their extracellular matrix glycosaminoglycan binding partners. Supervised by Prof. Anthony Day, Dr. Caroline Milner and Dr Amanda Proudfoot. Dr. Dyer then went on to focus on the biological importance of chemokine: GAG interactions in leukocyte migration during his postdoc in the lab of Prof. Tracy Handel. During this time, he and his colleagues demonstrated that chemokines have strikingly different interactions with GAGs according to their oligomerisation potential. A collaboration with Dr. Ralf Richter's group then described how chemokines can re-structure these GAG chains, proposing a new mechanism underlying chemokine function. During his second postdoc, with Prof. Gerry Graham, Dr. Dyer focused on the biological role of the chemokine receptors CXCR2, CCR1, CCR2, CCR3 and CCR5 and was part of the team that demonstrated their specificity of function during leukocyte recruitment. Dr. Dyer is now a Wellcome Trust and Royal Society funded Sir Henry Dale fellow leading a group at the University of Manchester exploring the collaboration and biological importance of chemokines and the glycocalyx.

Oral Presentation at [Cytokines 2021 Hybrid Meeting](#): **EXTRACELLULAR MATRIX COMPONENTS DIRECTLY FACILITATE CHEMOKINE (CXCL4/PF4) MEDIATED LEUKOCYTE RECRUITMENT, INDEPENDENT OF CHEMOKINE RECEPTORS**

Twitter: [@tripleDougdyer](#)

**2021
PFIZER
JUNIOR INVESTIGATOR
AWARD WINNERS
for Most Promising
Research Presentations
at the Cytokines
Annual Meeting**



Up to four (4) trainees with the highest scoring abstracts as per the scientific review committee, will be awarded \$1,250 each. These awards are generously sponsored by Pfizer.



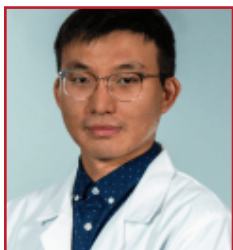
JUSTINA KULIKAUSKAITE

**4th year Ph.D. (ICIS Council Member for Inclusion & Training as of January, 2022)
Francis Crick Institute and University College
London, UK**

Justina Kulikauskaite is a fourth year PhD student in the Immunoregulation lab of Dr. Andreas Wack at the Francis Crick Institute and University College London. Her graduate research focuses on alveolar macrophages in the lung, their functions at the steady state and during and after infection. Specifically, she is interested in a new population of monocyte-derived alveolar macrophages found at the complete resolution of influenza infection (day 28). Compared to their tissue-resident counterparts of embryonic origin, these monocyte-derived macrophages exhibit a more immunoreactive phenotype upon bacterial stimulus, evident by their distinct chromatin landscape, upregulated genes enriched in the immune response pathways, and elevated production of various cytokines. Justina and her co-authors study factors contributing to the enhanced immunoreactivity of monocyte-derived alveolar macrophages (observed at 1 month post flu), as well as how the lung environment shapes alveolar macrophages into a hyporeactive state (found at 2 and 4 months post flu), affecting lung immune status and the outcome of subsequent infections. Before moving to the Francis Crick Institute in London, Justina was awarded Japanese government MEXT scholarship for her bachelor's and master's studies at Kanazawa University, where she worked on transcriptional regulation of circadian genes.

Best iPoster Presentation at [Cytokines 2021 Hybrid Meeting](#): **Elevated Cytokine Signalling in Monocyte-Derived Alveolar Macrophages After Influenza Challenge** / Justina Kulikauskaite (Francis Crick Institute, UK)

2021
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GUANQUN 'LEO' LIU, Ph.D.

Cleveland Clinic Florida Research and Innovation Center
Port St. Lucie, USA

Dr. Guanqun 'Leo' Liu is a postdoctoral fellow in the laboratory of Prof. Michaela Gack at the Cleveland Clinic Florida Research and Innovation Center. He was trained as a molecular virologist with extensive research experience in innate immune sensing of viral infections and type I interferon-mediated antiviral immunity. During his Ph.D. training at the University of Saskatchewan in Canada, he identified and characterized a series of viral RNA ligands produced from influenza A virus infection that are key to the activation of the innate immune RNA sensor, retinoic acid-inducible gene I (RIG-I). He also identified nuclear-resident RIG-I that senses nuclear-replicating viruses and induces antiviral cytokine responses, which provides the first evidence of a non-self RNA sensing paradigm in the nucleus, a previously unrecognized subcellular milieu for RIG-I-like receptor (RLR) sensing. Leo's postdoctoral training with Dr. Gack has extended his research scope to the regulation of antiviral innate immunity with an emphasis on the post-translational control of RLR activation. He recently identified ISGylation as an essential post-translational modification responsible for the activation of the RNA sensor melanoma differentiation-associated protein 5 (MDA5), and unraveled how SARS coronaviruses, by antagonizing this mechanism, evade the MDA5-mediated antiviral cytokine response. As an enthusiastic and highly motivated researcher driven by scientific unknowns, his long-term research goal is to develop a comprehensive understanding of the mechanistic relationships between cellular compartmentalization and the regulation of innate immune sensing and cytokine responses during viral infections and in autoimmune diseases. Leo's work has been recognized in the 2018 Young Innovators series by the University of Saskatchewan Research Profile and Impact office in partnership with the Saskatoon StarPhoenix.

Oral Presentation in Symposium 03 at [Cytokines 2021 Hybrid Meeting](#): **ISG15-dependent Activation of the RNA Sensor MDA5 and its Antagonism by SARS-CoV-2** / Guanqun Liu (Cleveland Clinic, United States)

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SWARNA BEESETTI, Ph.D.

Post-Doctoral Research Associate)

Douglas R Green Lab, Department of Immunology

St Jude Children's Research Hospital

Memphis, USA

I am a Post-Doctoral Research Associate at Laboratory of Douglas R Green, Department of Immunology, St Jude children's research Hospital, USA. I received my Ph.D. in Molecular Oncology from Indian Institute of Technology Madras. The focus of my PhD work was directed towards understanding the role of Pak1 in premalignant skin lesions and cancers and applying that information to identify and test potential therapeutic approaches. Discovered that activated p21-activated kinase-1 (Pak1) protects keratinocytes in UV-B induced premalignant skin lesions. Identified the functional and clinical significance of Pak1 in sun-induced premalignant skin lesions and non-melanoma skin cancer. Discovered the role of Pak1 in promoting gemcitabine resistance via signaling crosstalk, thus providing evidence for the use of Pak1-specific inhibitor adjuvants with existing chemotherapy modality for the pancreatic cancer PDAC. As a Post-Doctoral Fellow at St Jude Children's Research Hospital, I discovered that the inhibition of NLRP3 inflammasome activation protects against hematopoietic suppression in FANCC-deficient mice, providing evidence for NLRP3 inflammasome as a potential therapeutic target for the treatment of Fanconi Anemia. Evaluated the use of anti-IL-1beta therapy in FANCC-deficient mice. These findings provide fundamental new insights into the pathogenesis of FA, introduce FA as a new model for the study of selective autophagy in human disease, and may enable the identification of novel therapies for FA patients and, more broadly, for cancer and infectious and autoinflammatory diseases. I have received "**Best Young Investigator Abstract Award**" at FARF (Fanconi Anemia Research Funding) Symposium 2021.

Best iPoster Presentation at [Cytokines 2021 Hybrid Meeting](#): **FANCC in control of LPS induced septic shock and bone marrow failure** **Presenter:** Beesetti Swarna Latha (United States)

2021
PFIZER
JUNIOR INVESTIGATOR
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LUCY SJAASTAD

Ph.D. Candidate
University of Minnesota
St Paul, Minnesota, United States

Lucy Sjaastad is a 4th year graduate student in Dr. Michael Farrar's lab at the University of Minnesota. There she studies regulatory T-cell (Treg) development and functions during infection. Recently, Lucy and her collaborators identified a unique population of Tregs that express a strong interferon-stimulated gene (ISG) signature. These Tregs are present in mice at steady state and expand in the lungs and draining lymph nodes during infection with influenza A virus. Interestingly, ISG-Tregs emerge earlier during infection and express a distinct T-cell receptor repertoire by comparison to other lung infiltrating Tregs. The function of these cells is unknown. Using a novel mouse model that enables inducible depletion of ISG-Tregs, Lucy and her colleagues aim to dissect the function of these Tregs during influenza infection.

Best iPoster Presentation at [Cytokines 2021 Hybrid Meeting](#):
ISG-Tregs in Viral Infection

2022 ICIS Awards

Full bios for each of the 2022 ICIS Senior & Mid-Career Award winners will be in the September, 2022 Signals+ Newsletter and all winners will receive their awards in-person at Cytokines 2022 Hybrid Joint Meeting with ILC4 in Hawaii on 20 September, 2022 at the Opening Awards Session.



The ICIS-Pfizer Award for Excellence in Interferon and Cytokine Research

Sponsored by a generous grant from [Pfizer](#)

(formerly the Seymour & Vivian Milstein Award)

The Pfizer Award for Excellence in Interferon and Cytokine Research (formerly the Seymour & Vivian Milstein Award from 1988 – 2020), represents the pinnacle of scientific achievement in interferon and cytokine research since 1988, two years after interferon was first approved for the treatment of hairy cell leukemia. Since that time, it has been widely recognized that interferons and the larger class of cytokines play critical roles in the development and progression of many major diseases including **cancer**, **viral diseases** such as **hepatitis** and **influenza**, and **autoimmune disorders** like **multiple sclerosis** and **lupus**. This award is bestowed upon a leading biomedical research scientist who has made outstanding contributions to interferon and cytokine research, either in a basic or applied field. Many laureates have made seminal advancements that have enabled the successful treatment of disease or have the potential to lead to significant health benefits. For more information about this award, click [here](#).

2022
**ICIS-PFIZER AWARD
FOR EXCELLENCE IN
CYTOKINE &
INTERFERON
RESEARCH**

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



AKIHIKO YOSHIMURA, Ph.D. • University School of Medicine, Tokyo, Japan

Professor Yoshimura has been chosen as the 2022 ICIS-Pfizer Award for Excellence in Cytokine & Interferon Research, the society's most prestigious award, in recognition of his outstanding discoveries in the field of cytokine biology that have transformed human medicine. Professor Yoshimura's ground breaking discoveries have played an important role in inflammation, allergy, autoimmune diseases, and tumor immunity, improving our understanding of the pathogenesis of inflammatory diseases.

2022 ICIS Awards



ICIS – BioLegend William E. Paul Award for Excellence in Cytokine Research

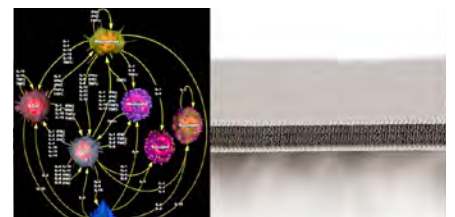
Sponsored by a generous grant from [BioLegend](#)



William E. Paul, MD,
(1936–2015)

The ICIS-BioLegend William E. Paul Award for Excellence in Cytokine Research is dedicated 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. This award was established in 2016 and is given to an investigator that has made significant contributions to cytokine and interferon research throughout their career through the generosity of **BioLegend**. The award consists of \$5,000 including travel expenses and registration to attend and present at the Annual Cytokines Meeting, and a crystal block with the 3 D structure of IL-4, the cytokine most associated with Dr. Paul's research. The ICIS-BioLegend William E. Paul Award represents the pinnacle of scientific achievement in cytokine research. The 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. The awardee is selected by the ICIS Awards Committee based on nominations received from the international scientific community. The selection is based on strength and consistency throughout their career of cytokine research publications in peer reviewed journals, contributions to cytokine biology through the publication of reviews and book chapters, long term evidence of presenting their work on cytokine biology to the international community in oral presentations and leadership in the field as demonstrated by organization of cytokine biology meetings and chairing of sessions focused on cytokine biology at national/international meetings.

An Emerging Field of Cytokine Pharmacology, K.C. Garcia, 2021 ICIS-BioLegend William E. Paul Award – On-demand access to the presentation from Cytokines 2021click [here](#).



**2022
ICIS-BIOLEGEND
WILLIAM E. PAUL
AWARD**



DAVID ARTIS, Ph.D.

**Weill Cornell Medical College,
New York City, USA**

WANJUN CHEN, M.D.

**National Institute of Dental and Craniofacial
Research, National Institutes of Health,
Bethesda, USA**

David Artis and Wanjun Chen are jointly recognized for the 2022 ICIS-BioLegend William E. Paul Award for their combined contributions to unraveling the exciting and important biology of cytokines. David Artis' work has pushed the boundaries of conventional approaches to immune defenses, and elucidated the important role of cytokines in host defenses at the barrier surfaces of the gut, skin, and lungs. Wanjun Chen's work has significantly advanced our understanding of pathogenesis and has led to the development of immunotherapies for autoimmunity, cancer, and infectious diseases.

2022 ICIS Awards



Luminex[®]
complexity simplified.

ICIS-Luminex John R. Kettman Award for Excellence in Interferon & Cytokine Research Mid-career

This award generously supported by Luminex Corporation recognizes a **mid-career investigator** who has made outstanding contributions to the field of interferon or cytokine biology. The awardee will receive a \$5,000 cash prize that covers meeting registration, and where applicable travel support to the ICIS annual meeting for presentation of his or her research in an award lecture. The award is named after Dr. John R (Jack) Kettman, an immunologist who was instrumental in the development of Luminex's technologies and the [Luminex Corporation](#). A nominee must be an ICIS member in good standing* who is within 15 years from their terminal degree (Ph.D., M.D., or equivalent) but may be extended by 1 year due to parental leave (per child). A nominee must be an independent research scientist (PI); postdoctoral fellows are not eligible.



LYDIA LYNCH, Ph.D. • **Brigham and Women's Hospital/ Harvard Medical School, Boston, USA**

The 2022 ICIS-Luminex John R. Kettman Award for Excellence in Cytokine & Interferon Research Mid-career recognizes Lydia Lynch's outstanding contributions to the field of cytokine biology, innate lymphoid cells, and established leadership in the field of immunometabolism.

A banner for the 2022 ICIS Awards. It features a red background with a sunburst pattern on the left side. A large, stylized number '2' is in the center, with the top half in red and the bottom half in yellow. The text '2022 ICIS Awards' is written in white, bold, sans-serif font over the sunburst.

2022 ICIS Awards

ICIS Honorary Life Membership Award

Each year an ICIS member may be awarded Honorary Life Membership as a tribute to his/her contributions to the field. Nominees should be individuals who have made substantive contributions to the cytokine/chemokine/ interferon field over much of their careers, either in basic, clinical or applied research. Honorary members are esteemed members of the Society and provide us with a historical perspective and valued research tradition.

Award: ICIS Crystal. The Honorary Life Member is exempted from Society dues for his/her lifetime and is accorded all rights and privileges of an active member. Travel costs (flights and hotel) are reimbursed up to \$1500 to attend the annual Meeting. Meeting registration is waived for the year of the award. Awardee to have the option to give a brief (~5min) acceptance speech at the Awards Ceremony.

**2022
ICIS HONORARY
LIFETIME
MEMBERSHIP
AWARD**



LUKE A. J. O'NEILL, Ph.D. • Trinity College Dublin, Dublin, Ireland

Luke O'Neill is honored with the 2022 ICIS Honorary Lifetime Membership Award in recognition of his exemplary service to the ICIS as a scientific participant, prize winner and organizer at many of our meetings, as well as his public service. Luke has also been a tremendous public advocate for immunology over the course of the COVID-19 pandemic and most recently has been helping to raise support and get needed supplies to Ukraine.

A banner for the 2022 ICIS Awards. It features a red background with a sunburst pattern on the left side. The text "2022 ICIS Awards" is written in white, bold, sans-serif font. To the right of the text is a large, stylized, golden-yellow letter 'K' with a 3D effect and a shadow.

2022 ICIS Awards

ICIS Distinguished Service Award

The ICIS will on occasion bestow this honor on an ICIS member who has made an extraordinary contribution to the Society. The individual will have devoted significant time and energy over a period of years to elevating the goals of the Society in furthering research on interferon, cytokines and chemokines.

Award: ICIS Crystal. Travel costs (flights and hotel) are reimbursed up to \$1500. Meeting registration is waived for the year of the award. Awardee to have the option to give a brief (~5min) acceptance speech at the Awards Ceremony.

2022
**ICIS DISTINGUISHED
SERVICE AWARD**

ICIS
International Cytokine &
Interferon Society

Congratulations!
Curt Horvath

2022 ICIS Distinguished
Service Award Winner



CURT M. HORVATH, Ph.D. • Northwestern University, Evanston, USA

Curt M. Horvath is honored with the 2022 ICIS-Distinguished Service Award in recognition of his reputation in the community as both an outstanding cytokine scientist and a remarkably dedicated member of the ICIS. Dr. Horvath has long served on the ICIS council (2014 until present) from his first term being instrumental in facilitating the unification of the ICS and ISICR, helping to find common ground among challenging territorial disputes between the two societies. In his current Council term he initiated discussion on inclusion of young investigators in the ICIS leadership and advocated for creation of new council seats to include our newest members in ICIS leadership, based on inclusion and training which is already making an impact on the Cytokines annual meeting program organization and diversity goals. He is known for mentoring interactions with diverse groups of junior faculty, postdocs, and graduate students, participating in Networking Workshops for Young Investigators, and is a regular and enthusiastic participant in spontaneous ICIS jam sessions.

2022 ICIS Awards

NEW ICIS Mentorship Award



The newly established ICIS Mentorship Award recognizes ICIS members who have made significant and sustained contributions to the career development of trainees and to the profession through outstanding mentoring.

This award is based on the training experiences and success of the nominee's mentees, not the mentor's personal career achievements. For the purpose of this award, mentoring is defined as the process of guiding, supporting, and promoting the training and career development of others. A minimum of three mentees will write a supporting letter on how this person has impacted their development, career and lives, to be submitted together by one of the mentees (an ICIS member). Please nominate your mentors now as this award is actively recruiting candidates for consideration. The key roles of a mentor include, but are not limited to, providing:

- Intellectual growth and development
- Career development
- Professional guidance
- Advocacy
- Positive role modeling
- Both the nominee and the corresponding nominator must be ICIS members (not a member, [apply today](#))
- Nominees may include academic, government or industry members
- Nominees should have a sustained record of mentoring over time
- Self-nominations and posthumous nominations will not be accepted.
- Candidates that were nominated in the preceding year but did not win the award are automatically reconsidered as eligible in the ensuing year.
- The nomination must be made by a Regular, Industry or Student/Postdoc Member of the Society and include a minimum of two additional letters of nomination. The winner of this award will be announced at the annual meeting. Awardee will receive an ICIS Crystal and travel costs to attend the Society's Annual Meeting up to \$1500, and complimentary meeting registration for the year of the award. Mentees are invited to present the Award to their Mentor at the Annual Awards Ceremony.

Eligibility Criteria:

- To be eligible, the person needs a minimum of three mentees who are willing to write a supporting letter (one page, single spaced) on how this person has impacted their development, career and lives.

The Awardee will receive an ICIS Crystal and travel costs to attend the Society's Annual Meeting up to \$1500, and complimentary meeting registration for the year of the award. Mentees are invited to present the Award to their Mentor at the Annual Awards Ceremony.



**2022
ICIS MENTORSHIP
AWARD**



ICIS
International Cytokine &
Interferon Society

Congratulations!
Ludmila
Prokunina-Olsson

2022 ICIS Mentorship Award Winner



LUDMILA PROKUNINA-OLSSON, Ph.D.

Division of Cancer Epidemiology and Genetics, National Cancer Institute, Bethesda, USA

Ludmila (Mila) Prokunina-Olsson has been chosen for the 2022 ICIS Mentorship Award in recognition of her significant contributions to the field of immunity and cancer genetics through not only her own seminal discoveries and scientific accomplishments but also through the next generation of scientists she has nurtured, taught and guided. Dr. Prokunina-Olsson's admiration for diversity and ability to recognize potential, particularly in minority scientists, and then develop a trajectory for their success, have played an important role in establishing the careers of her fellows who then go on to become mentors themselves.

2022 VILCEK AWARDS

VILCEK FOUNDATION PRIZEWINNERS IN BIOMEDICAL SCIENCE: VILCEK FOUNDATION HONORS OUTSTANDING IMMIGRANTS IN BIOMEDICAL SCIENCE

2022 Vilcek Prize in Biomedical Science



VISHVA M. DIXIT

Vice President of Early Discovery Research and Physiological Chemistry, Genentech, a member of the Roche Group

Born in Kenya

Vishva M. Dixit receives the Vilcek Prize in Biomedical Science for his groundbreaking discoveries on the mechanism of apoptosis – a biochemical process of programmed cell death implicated in both normal human development and disease – and for his research into the cellular and molecular processes that drive inflammatory signaling.



February 22, 2022

Vishva M. Dixit: A scientist who swings for the fences Vilcek Prizewinner Vishva M. Dixit's career has been fueled by his passion for discovery, and his ambition to make a lasting impact on medicine.

[Read More](#)

2022 Vilcek Prize for Excellence in Biotechnology



KATALIN KARIKÓ

Adjunct Professor of Neurosurgery, University of Pennsylvania; Senior Vice President, BioNTech SE

Born in Hungary

Katalin Karikó receives the Vilcek Prize for Excellence in Biotechnology for her pioneering research leadership into the development of mRNA therapeutics, which led to the development of mRNA vaccines for COVID-19.



June 8, 2021

Vilcek Foundation awards \$100,000 prize to Dr. Katalin Karikó, immigrant scientist who pioneered mRNA vaccine technology. Dr. Katalin Karikó receives the 2022 Vilcek Prize for Excellence in Biotechnology.

[Read More](#)

2022 VILCEK AWARDS *CONTINUED*

2022 Vilcek Prizes for Creative Promise in Biomedical Science



MARKITA DEL CARPIO LANDRY

Assistant Professor, University of California, Berkeley; Investigator, Chan Zuckerberg Initiative; Investigator, Innovative Genomics Institute

Born in Canada

Markita del Carpio Landry receives the Vilcek Prize for Creative Promise in Biomedical Science for the development of probes to visualize neurochemical communication in the brain, and for breakthroughs in gene-editing technologies with applications for agriculture and the development of biologic drugs.

Photo courtesy of Markita del Carpio Landry/Marge D'Wylde

10 FUNNY SCIENCE SONGS YOU NEED TO HEAR



Since the launch of YouTube in 2005, the popularity of musical comedy has gone through the roof and we just can't resist a funny song - especially the ones that are science-themed! The internet is packed with hilarious parodies, topical tunes and satirical numbers, but we've picked out ten of our favourite science-themed songs to put a smile on your face!

From professional performers to uni students, from postdoc problems to the life of Charles Darwin, [these are the ten songs](#) that make us chuckle the most...

WELCOME

NEW ICIS MEMBERS

We welcome these new members to the ICIS and we look forward to their attendance at the annual meeting and involvement in the society. The ICIS Membership Committee and Council especially thanks the Sponsoring Members and Research Advisors noted below. As of April 1, 2022, there are **970 ICIS Members**; 527 Academic/Government (including 90 Lifetime Members and 48 Honorary Members); 16 Emeritus Members; 13 Industry Members and 456 Student/Postdoc Members. All ICIS members have access to the online membership directory and can search out colleagues in their country, city, or by name.

Mohammad Arifuzzaman

Weill Cornell Medicine
United States

Research Advisor: David Artis

Francine Baker

National Cancer Institute
United States

Research Advisor & Sponsoring Member: Ludmila Prokunina-Olsson

Anandita Basu

The Ohio State University-Wexner
Medical Center
United States

Research Advisor: Inflammation and viral immunology

Semir Beyaz

Cold Spring Harbor Laboratory
United States

Sponsoring Member: Shruti Naik

Nollaig Bourke

Trinity College Dublin
Ireland

Sponsoring Member: Paul Hertzog

Rachel A Brown

The Ohio State University
United States

**Research Advisor: Eugene Oltz
Sponsoring Member: Adriana Forero**

Mélanie Bruchard

INSERM U1231
France

Research Advisor: François Ghiringhelli

Kyle Burrows

University of Toronto
Canada

Research Advisor: Arthur Mortha

Louis Chai

Singapore

Hongbo Chi

St. Jude Children's Research
Hospital
United States

Sponsoring Member: Joan Oefner

Sarah Crome

University Health Network and
University of Toronto
Canada

Sophie Curio

University of Queensland
Australia

Research Advisor: Gabrielle Belz

Pritesh Desai

WASHINGTON UNIVERSITY IN ST.
LOUIS
United States

Research Advisor: Michael S. Diamond

Michel Enamorado

NIAID/NIH
United States

Research Advisor: Yasmine Belkaid

Ilgin Ergin

CSHL
United States

Research Advisor: Semir Beyaz

Shouya Feng

JCSMR, ANU
Australia

Research Advisor: Si Ming Man

Ryan Gaudet

United States

Sponsoring Member: John MacMicking

Sheldon Goldberg

Swedish Cancer Institute
United States

Rachel A. Gottschalk

University of Pittsburgh
United States

Sponsoring Member: Sarah Gaffen

Elizabeth Gray

King's College London
United Kingdom

Research Advisor: Leonie Taams

James P. Grayczyk

University of Pennsylvania
United States

Research Advisor & Sponsoring Member: Igor Brodsky

Rama K. Gurrain

NHLBI/NIH
United States

Research Advisor: Warren J. Leonard

Anne Louise Hansen

Aarhus University - Department of
Biomedicine
Denmark

Research Advisor & Sponsoring Member: Christian Holm

Daniela Carolina Hernandez Torres

German Rheumatism Center
Germany

Research Advisor: Chiara Romagnani

Sponsoring Member: Christina Stehle

Michelle Ho

United States

Research Advisor & Sponsoring Member: Ludmila Prokunina-Olsson

Mehmet Hursitoglu

Basaksehir Cam and Sakura Sehir
Hospital
Turkey

Wai Ki Ip

Queen Mary Hospital
Hong Kong

Yung Jin Jeon

Korea, Republic of

Research Advisor: Hyun Jik Kim

Susan Kaech

Salk Institute for Biological Studies
United States

Sponsoring Member: Christopher Hunter

Jonathan C. Kagan

Boston Children's Hospital
United States

Torbjörn Karlsson

Department of Medical Science
Sweden

NEW ICIS MEMBERS *Continued*

Piotr Konieczny

New York University Langone
Health
United States

**Research Advisor & Sponsoring
Member: Shruti Naik**

Sriram Kumar

Institute of Virology, University of
Münster
Germany

Research Advisor: Linda Brunotte

Juan Pedro Lapuente

Hospital Universitario de
Fuenlabrada
Spain

Michal Levy

Hebrew University Kaempfer lab
Israel

**Research Advisor: Raymond
Kaempfer**

Chaoran Li

Emory University
United States

Hong-Erh Liang

UCSF
United States

**Sponsoring Member: Richard
Locksley**

Zhenlong Liu

McGill University
Canada

Research Advisor: Rongtuan Lin

Alberto Domingo Lopez-Munoz

NIAID-NIH
United States

Research Advisor: Jonathan Yewdell

Christopher Marquez

Mayo Clinic
United States

Johannes Mayer

Philipps Universität Marburg
Germany
Research Advisor: Prof. Michael
Hertl

**Sponsoring Member: Prof. Franca
Ronchese**

Fahar Merchant

Medicenna Therapeutics
Canada

Shrutika Mintri

University of Massachusetts
medical School
United States

Research Advisor: Kate Fitzgerald

Fei Mo

United States

**Research Advisor & Sponsoring
Member: Warren J. Leonard**

Nils Christian Müller

German Rheumatism Research
Center DRFZ
Germany

**Research Advisor: Chiara
Romagnani**

Masanori Murayama

Kansai Medical University
Japan

Pascal Naef

University of California, Irvine
United States

Research Advisor: Kai Kessenbrock

Anthony Orvedahl

Washington University in St. Louis
School of Medicine
United States

Timothy O'Sullivan

UCLA
United States

Abigail Pajulas

United States

Research Advisor: Mark Kaplan

Jan Pencik

Salk Institute for Biological Studies
United States

Research Advisor: Reuben Shaw

Isabella Rauch

OHSU
United States

Sponsoring Member: Elia Tait Wojno

Re Sa

CSU
United States

Nevil J Singh

University of Maryland School of
Medicine
United States

Jonathan Sockolovsky

Genentech
United States

Sponsoring Member: Juan Mendoza

Christina Stehle

German Rheumatism Research
Centre and Charité Berlin
Germany

**Research Advisor: Chiara
Romagnani**

Taha Tavaci

Ataturk University
Turkey

Research Advisor: Zekai Halici

Grace Turyasingura

United States
Research Advisor: Chandy John

Sponsoring Member: Abigail Pajulas

Jolien Maria Roger Van der Meer

Sanquin
Netherlands

**Research Advisor: Marieke von
Lindern**

Carola Vinuesa

The Francis Crick Institute
United Kingdom

Sponsoring Member: Di Yu

Claire Walshe

Mestag Therapeutics
United Kingdom

Zhongde Wang

United States

Alice West

Australia

**Research Advisor & Sponsoring
Member: Brendan Jenkins**

Hongxu Xian

UCSD
United States

Research Advisor: Michael Karin

Marina Yakou

Olivia Newton-John Cancer
Research Institute
Australia

**Research Advisor: Matthias Ernst
and Dr. Lisa Mielke**

Hiroshi Yano

Weill Cornell Medicine
United States

Research Advisor: David Artis

Nabiha Yusuf

Univ. of Alabama at Birmingham
United States

New Member MINIBIOs



Dr. Fahar Merchant

President & CEO
Medicenna Therapeutics
Toronto, Canada
www.medicenna.com

Dr. Fahar Merchant is a biotech veteran with 30 years of experience as a serial entrepreneur and co-founder, President and CEO of Medicenna Therapeutics Inc. Previously, he was President and CEO of Protox Therapeutics Inc. where he transitioned a pre-clinical start-up to a Phase 3 ready uro-oncology company in six years (2005 to 2011). Fahar was CTO and Director of KS Biomedix until its acquisition by Xenova (NASDAQ and LSE) in 2003. In 2000, by strategic in-licensing, he co-founded Avicenna Medica Inc., a clinical stage oncology company, then sold it a year later to KS Biomedix (LSE) for \$90 million. In 1992, he co-founded IntelliGene Expressions Inc., a biologics cGMP compliant CDMO, and built it to one of the fastest-growing companies in Canada, ensuring profitability during his tenure as CEO. He has raised over \$150 million from public and private sources to fund the development of targeted therapies for oncology and closed corporate transactions valued at over \$250 million. Dr. Merchant holds a BSc in Biochemistry and Pharmacology from Aston University, MSc in Biotechnology from Birmingham University, and a Ph.D. in Biochemical Engineering from Western University.



Takashi Nishina, Ph.D.

Toho University
Department of Biochemistry
Ota-ku, Tokyo, Japan
Twitter: [@nishina_takashi](https://twitter.com/nishina_takashi)

Takashi Nishina is an Assistant Professor in the laboratory of Prof. Hiroyasu Nakano at Toho University School of Medicine, Japan. He completed his Ph.D. at the University of Tokyo, Japan, under the supervision of Prof. Junichiro Inoue. During his Ph.D. study, he studied how the constitutive activation of NF-kappaB occurs in pancreatic cancer cell lines. His postdoctoral study at Juntendo University, Japan, showed that Interleukin (IL)-11 is induced by reactive oxygen species and promotes tissue repair in the liver. Then Dr. Nishina was appointed at Toho University as an Assistant professor. His group generated IL-11 deficient mice and IL-11 reporter mice. He used these mice to characterize cancer-associated fibroblasts in colorectal cancer models and inflammatory fibroblasts in a colitis model. The findings from the mouse studies were also observed in human colorectal cancers. His research interests include the molecular mechanisms of IL-11 mediated tissue homeostasis and cancer development in mice and humans.



Juan Pedro Lapuente, Ph.D.

Hospital Universitario de Fuenlabrada
LivingCells Lab
Fuenlabrada, Madrid, Spain

Dr. Juan Pedro Lapuente is a Medical Doctor from Zaragoza University, with several master's degrees in cell and molecular biology and advanced therapies. He completed his PhD in cell and molecular biology at UCAM University in 2020. He is now developing various lines of research based on the development of new biological drugs and advanced cell therapy by establishing a crosstalk between various cells of the immune system with primary cells from different tissues and stromal cells, at the Molecular and cellular biology laboratory of Livingcells at the University Hospital of Fuenlabrada (Madrid, Spain), where he holds the position of Research and Development Director. He currently holds the position of Scientific Director of the Peaches Biotech Group, a pharmaceutical-biotechnology company, where he has developed the PCT patent for the PRS line of biological drugs based on the establishment of cross-talk between macrophages and primary cells of different tissues and stromal cells, with the purpose of achieving immunomodulatory anti-inflammatory and anti-fibrotic effects in different diseases, injuries and tissues. In addition to developing two new biological drugs for the treatment of pancreatic cancer (PCT shared with Harvard University) and for solid cancers in different tissues (PCT shared with the University of Zaragoza). www.peaches.es

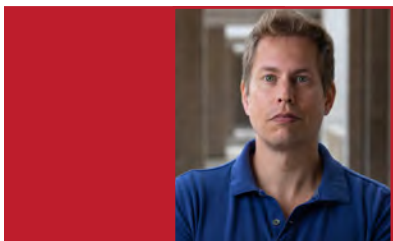
New Member MINIBIOs *Continued*



Jonathan C. Kagan, Ph.D.

Marian R. Neutra, PhD Professor of Pediatrics
Harvard Medical School
Director of Basic Research and Shwachman Chair in Gastroenterology
Boston Children's Hospital

Jon Kagan is a world leader in defining the molecular and cellular pathways by which the innate immune system recognizes microbes and infection. He has worked at the interface of host-microbe interactions for over 20 years, first as a trainee at Yale, and since 2007 at Harvard, where he runs a research lab based in Boston Children's Hospital. He is the Marian R. Neutra, PhD Professor of Pediatrics at Harvard Medical School and the director of Basic Research and Shwachman Chair in Gastroenterology at Boston Children's Hospital. His lab's primary research interest is to understand the signaling pathways of innate immune systems in organisms ranging from humans to mice to fruit flies and corals. He has made significant discoveries in this area, most notably in the inflammatory pathways stimulated by Toll-like Receptors (TLR), RIG-I like Receptors (RLR) and inflammasomes. He discovered that TLR4, the LPS receptor, must be endocytosed in order to promote inflammatory responses, and identified bacteria that modify their LPS to prevent TLR4 endocytosis and signaling. More broadly, his integrative analyses of innate signaling pathways have led to a comprehensive map of the subcellular sites of innate immune signaling. This map serves as the foundation of our understanding of the earliest stages of host-microbe interactions. Kagan's work has been recognized with awards from the American Association of Immunologists, the Burroughs Wellcome Fund and the International Endotoxin and Innate Immunity Society. He was a National Finalist for the Blavatnik Laureate in Life Sciences and a semi-finalist in the 2014 HHMI Investigator competition. Dr. Kagan is an elected Fellow of the American Academy of Microbiology.



Jan Pencik

Postdoctoral Fellow
Salk Institute for Biological Studies
La Jolla, United States

2015 ICIS-Sidney & Joan Pestka Graduate Award Winner

Jan Pencik is a NOMIS Center Postdoctoral Fellow at the Salk Institute for Biological Studies (La Jolla, US). Pencik is originally from Brno, Czech Republic. He obtained his master's degree in biochemistry from the Palacky University (Olomouc, Czech Republic) before being accepted as a doctoral student in the Molecular Signal Transduction Program at the Medical University of Vienna (Austria). There, he joined the Ludwig Boltzmann Institute for Cancer Research, where he completed his PhD dissertation research on the development of novel prostate cancer models. His dissertation study has led to the seminal discovery of IL-6/STAT3 signaling as a major pathway that regulates senescence and tumor growth in prostate cancer. As a NOMIS Fellow, Pencik is focusing on non-small cell lung cancer, the most common type of lung cancer. He is investigating a gene called STK11 (also known as LKB1) that is mutated or deleted in more than a third of patients. Recent work has shown that STK11 alterations are primarily responsible for loss of response to immunotherapy, which is a pivotal form of cancer therapy that is aimed at stimulating a person's natural anti-tumor immunity. Importantly, Pencik's work will serve to identify some of the most critical proteins linked to LKB1 that regulate a loss of therapeutic efficacy, providing valuable insights for designing optimal therapeutic strategies tailored toward hard-to-treat non-small cell lung tumors.

MEMBERS IN THE NEWS



Congratulations to ICIS Immediate Past-President, Katherine A. Fitzgerald, PhD, University of Massachusetts Medical School, 2022 AAI-Thermo Fisher Meritorious Career Award for exceptional research contributions in the field of immunology.



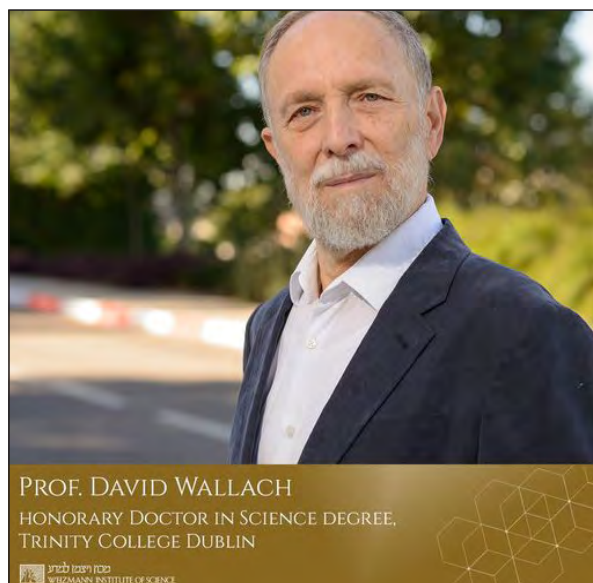
ICIS President-Elected, Sarah Gaffen, PhD, elected fellow of the American Association for the Advancement of Science



Congratulations to Cytokines 2022 Invited speaker, Ruslan Medzhitov, Ph.D., HHMI, Yale University School of Medicine, 2022 AAI Excellence in Mentoring Award in recognition of exemplary career contributions to a future generation of scientists.



Congratulations to ICIS member, and Cytokines 2022 Organizing Committee member Dr. Yasmine Belkaid, a 2021 co-recipient of the Robert Koch Award, which recognizes scientific researchers for outstanding & internationally recognized achievements. Yasmine Belkaid: The role of microbiota in host immunity - Watch on YouTube [here](#).



Tuesday, 6 December 2021

Leadership changes

As the year draws to a close it is time to acknowledge some significant changes here at Hudson Institute.

In a sign of the strength of our leadership team, a Centre Head will be passing the baton, but continuing their excellent research with us.



After more than two decades at the helm of the Centre for Innate Immunity and Infectious Diseases Professor Paul Hertzog will relinquish the role that has seen the centre double in size and be recognised internationally for its work in innate immunity, infection and inflammation.

Prof Hertzog will continue his research group and remain as Hudson's Deputy Director, working to realise the vision for a National Centre for Inflammation Research.

Prof Brendan Jenkins will take over as the Head of CiiiD from the start of 2022.

Brendan established his own research group at Hudson in 2006 and has continued to be at the forefront of research examining the roles of cytokines and pattern recognition receptors in human disease, namely cancer of the stomach and chronic inflammation.

He is renowned internationally, having held numerous fellowships and received many national and international awards, so will make an ideal Head of CiiiD.





IMMUNOLOGY2022™

May 6–10, 2022 Portland, OR

WWW.IMMUNOLOGY2022.ORG



Sarah L. Gaffen
(Co-Chair)



Rebecca Coll
(Co-Chair)

International Cytokine & Interferon Society Session – Rising Stars of Cytokine Biology, AAI Guest Symposium AAI 2022

Co-Chairs: Sarah L. Gaffen, University of Pittsburgh School of Medicine, USA & Rebecca Coll, Queen's University, Belfast, Northern Ireland, UK

SUNDAY, MAY 8, 2022 3:45 PM – 5:45 PM ROOM B110–112

Speakers:

Rebecca Coll
Queen's University Belfast,
Northern Ireland, United
Kingdom (2021 Regeneron
New Investigator Award
Winner)

“Harnessing the power of
NLRP3 – pharmacological
strategies for inhibition
and activation of the
inflammasome”

Shruti Naik
NYU Langone, NY, USA
(2021 Regeneron New
Investigator Award Winner)

“Immune-epithelial crosstalk
in tissue repair”

Fiachra Humphries
UMass Worcester, MA,
USA (2021 Regeneron New
Investigator Award Winner)

“Therapeutic modulation of
STING”

Jakob von Moltke
U Washington, Seattle,
USA (2021 Regeneron New
Investigator Award Winner)

“Small Intestinal Tuft Cells:
Sentinels and Effectors of
type 2 immunity”

ICIS Standards Committee:

Cytokine and growth factor standards and reference reagents available from the National Institute for Biological Standards and Control

A wide range of WHO International Biological Standards and reference materials are available for the calibration of assays of therapeutic substances and immunoassays and bioassays used in basic research. These materials are available from Standards Processing Division, National Institute for Biological Standards and Control (NIBSC), Blanche Lane, South Mimms, Potters Bar, Herts EN6 3QG, UK. The NIBSC does not charge for these materials, however there is a handling charge to cover the costs of administration, storage, and dispatch, current unit price £132.00 (4/3/22). A comprehensive catalogue of reference materials is available, click on the links below, or can be accessed online via the NIBSC website (www.nibsc.org/products).

Please visit the website for updated information: <https://cytokinesociety.org/standards/>

[Human Cytokines](#)

[Human Growth Factors](#)

[Mouse Cytokines](#)

[Cytokine antagonists](#)



Dusan Bogunovic
(Chair)



Kate Jeffrey
(Chair)

FOCIS 2022 Member Society Symposium Human Cytokine Deficiencies and Cytokinopathies Presented by The International Cytokine & Interferon Society

Symposium Chairs: Dusan Bogunovic, – Icahn School of Medicine at Mount Sinai and Kate Jeffrey, Moderna/Harvard University

The International Cytokine & Interferon Society (ICIS) Member Society Symposium at FOCIS 2022 will feature the newest research devoted to human cytokine deficiencies and cytokinopathies alike, both of which impact human health, provide insight into fundamental biological principles, and offer targets for therapy of rare and common diseases.

Tuesday, June 21, 2022, 1:00pm – 5:00pm PT

- 1:00 Carrie Lucas ,PhD – Yale University (Cytokine dysregulation in autoinflammatory disease from ELF4 deficiency)
- 1:30 Josh Milner, MD – Columbia University – (Atopy in immune regulation disorders)
- 2:00 Neil Romberg MD – University of Pennsylvania – (Congenital agammaglobulinemia: New diseases)
- 2:30 Megan O'Brien, MD – Regeneron (Human monoclonal antibody clinical trials in immune and infectious diseases)
- 3:00 Coffee Break
- 3:30 Kate Jeffrey, PhD – Moderna/Harvard University (Loss of epigenetic reader SP140 as a driver of Crohn's disease)
- 4:00 Elena Hsieh, MD – University of Colorado (Human IL2RB mutations: from clinical enigma to molecular target)
- 4:30 Dusan Bogunovic, PhD – Icahn School of Medicine at Mount Sinai – (Broad Spectrum Antivirals via Inborn Errors of Immunity)

2021 ICIS Member's Annual Business Meeting:

Please be sure to view the meeting presentation and send Council your comments and suggestions. Visit the website [here](#) which includes our video. Or watch the video now in [this link](#).

Thanks to outgoing President,
Katherine Fitzgerald



GLOBAL IMMUNOTALKS 2022

Organizers: Burkhard Becher, Kate Fitzgerald, Florent Ginhoux, Matteo Iannaccone, Susan Kaech and Laura Mackay

Wednesdays 9 AM PST; 12 noon EST; 5 pm GMT* ZOOM: <https://ucsd.zoom.us/j/91053505061>

Jony Kipnis
January 19

Bruno Silva-Santos
January 26

Adrian Liston
February 2

Francisco Quintana
February 9

Thomas Korn
February 16

Luke O'Neill
February 23

Annette Oxenius
March 2

Sarah Gaffen
March 9

Ashley St. John
March 16

Joseph Sun
March 23

Kazuyo Moro
March 30

Ansu Satpathy
April 6



Donna Farber
April 13

Tim Laemmermann
April 20

Yanick Crow
April 27

Ramnik Xavier
May 4

Lydia Lynch
May 11

Steve Jameson
May 18

Ken Murphy
May 25

Joanna Groom**
June 1

Andrea Ablasser
June 8

Michelle Linterman
June 15

Veit Hornung
June 22

Kristin Hogquist
June 29

*GMT will change to 4 PM after 3/13/22. ** This talk will go live at 4 PM Australian Central Time (ACT) and will be available again at the regular time Q&A via Twitter with #globalimmuno (contingent on speaker availability). Recorded talks will be uploaded to the YouTube channel "Global Immunotalks". Schedule updates will be at: https://labs.biology.ucsd.edu/zuniga/global_immunotalks.htm

Cytokines 2022

International Cytokine & Interferon Society ICIS

10th Annual Meeting
of the International
Cytokine & Interferon
Society

Joint with 4th
International Conference
on Innate Lymphoid
Cells

ILC4
2022 4th International Conference
on Innate Lymphoid Cells

20 - 23 September 2022

Hilton Waikoloa Village - Big Island, Hawaii, USA | HYBRID MEETING

Cytokines 2022 Hybrid: 10th Annual Meeting of the International Cytokine & Interferon Society (ICIS) to be held jointly with the 4th International Conference on Innate Lymphoid Cells (ILC4), September 20-23, 2022, at the Hilton Waikoloa Village, Big Island, Hawaii, USA, with synchronous Virtual Meeting Platform including live streamed and on-demand access.

Abstract Submission Deadline: 1 May 2022

There are many opportunities for oral presentation, lighting talks and for abstracts not picked for presentation, the posters will be highly attended by top scientists and trainees from all over the world. ICIS Student/Postdoc members submitting abstracts will be able to apply for Milstein Travel Awards, so we encourage you to submit your best work for the meeting. For those trainees submitting abstracts to the ILC 4 program, funding for travel grants will be sponsored by Sandler Asthma Basic Research Center (SABRE Center). Founded in 1999, the SABRE Center is nucleated by basic scientists supported by advanced technology cores and linked with the greater scientific community through Center Grants and Program Projects focused around asthma research. The SABRE Center aligned in 2014 with the Airway Clinical Research Center (ACRC) at UCSF to facilitate increased focus on and integration with asthma patient studies. Our mission remains to be a progressive, nimble, transformative scientific group that pioneers basic discovery in asthma research, a platform made possible by the generous support of the Sandler Foundation.

Day/Time	Cytokine Ohana: Bridging Physiological Systems/Plenary & Joint Sessions	Cytokine Ohana: Bridging Physiological Systems/Parallel Session	ILC4 Program: ILCs in tissue homeostasis and disease
TUESDAY 20 SEPTEMBER	DAY 1		
14:45 - 16:00	Korean Association of Immunologists KAI Sponsored Session: Cytokines and tissue resident lymphocytes		 The Korean Association of Immunologists
16:00 - 16:15	Coffee Break		
16:15-18:00	Cytokines Opening Session & Awards Presentations, Awards Lectures <u>ICIS-Pfizer Award</u> (formerly Milstein Award) Akihiko Yoshimura, PhD , Keio University School of Medicine, Tokyo, Japan <i>“SOCS, SPRED, and NR4a; Negative regulators of cytokine signaling and transcription in immune tolerance”</i> <u>ICIS BioLegend Award 1</u> : WanJun Chen, MD , National Institute of Dental and Craniofacial Research, NIH, Bethesda, USA <i>“TGF-β regulation of immune responses”</i> <u>ICIS Luminex Mid-Career Award</u> Lydia Lynch, PhD , Brigham and Women’s Hospital/ Harvard Medical School, Boston, USA		ILC4 Opening Session & Awards, Controversies and Opportunities in ILCs - Panel Interactive Discussion - Shigeo Koyasu, Kazuyo Moro, Hergen Spits, Lewis Lanier, Gabrielle Belz, Eric Vivier (Moderators Molofsky & Locksley)
18:00-18:30	Exhibitor Breaking News (1-3 15-minute sessions & Coffee Break), Virtual & Live-streamed onsite		
18:30-19:15	Joint Keynote: Yasmine Belkaid		
19:15-21:00	Joint Welcome Reception, Poster Preview and Exhibits		
21:10-22:10	Industry Symposium / Webinar	Industry Symposium / Webinar	Industry Symposium / Webinar
WEDNESDAY 21 SEPTEMBER	DAY 2		
7:15 – 8:15	Industry Sponsored Breakfast Symposium		

8:30-10:30	Plenary 1 - Philip I. Marcus Symposium: Interferons and antiviral immunity Keynote: Carolina Lopez Philip I. Marcus Memorial Lecture: Jean-Laurent Casanova Speaker 1: Elina Zuniga Abstract 1: Abstract 2: Abstract 3:		ILC4 Session 2 - ILC Development & Differentiation Andrew McKenzie James DiSanto Abstract 1: Abstract 2: Abstract 3: Abstract 4:
10:30-11:00	Exhibitor Breaking News (4-6 15-minute sessions & Coffee Break), Virtual & Live-streamed onsite		
11:00-12:30	Symposium 1 Cytokine induction Speaker 1: Akinori Takaoka Speaker 2: Dario Zamboni Abstract 1: Abstract 2: Abstract 3:	Symposium 2 Cytokine signaling Speaker 1: Chris Garcia Speaker 2: James Turkson Abstract 1: Abstract 2: Abstract 3:	ILC4 Session 3 - ILC Homeostasis, Turnover, & Lifespan Georg Gasteiger Abstract 1: Abstract 2: Abstract 3: Abstract 4:
12:40-13:40	Industry Symposium (sponsored lunch session)	Industry Symposium (sponsored lunch session)	Lunch Break
13:50-15:20	Symposium 3 Cytokines and metabolism/macrophages Speaker 1: Tiffany Horng Speaker 2: Ana Domingos Abstract 1: Abstract 2: Abstract 3:	Symposium 4 Cytokines and dendritic cells Speaker 1: Julie Magarian Blander Speaker 2: Juliana Idoyaga Abstract 1: Abstract 2: Abstract 3:	ILC4 Session 4 - ILC1 & NKs Chiari Romagnani Andreas Diefenbach Abstract 1: Abstract 2: Abstract 3:
15:30-16:00	Lightning Talks	Lightning Talks	ILC4 Lightning Talks
16:00-17:30	Poster Discussions (1.5 hours, in-person only posters split up by topic and in 3 rooms) Exhibition Hall (virtual online hours)		
17:30-19:00	Symposium 5 Cytokines and T cells Speaker 1: Susan Kaech Speaker 2: Bali Pulendran Abstract 1: Abstract 2: Abstract 3:	Symposium 6 Cytokines and B cells Speaker 1: Carola Vinuesa Speaker 2: Hai Qi Abstract 1: Abstract 2: Abstract 3:	ILC4 Session 5 - ILC2s Richard Lockley Elia Tait Wojno Abstract 1: Abstract 2: Abstract 3:

19:10 – 20:10	Publication Happy Hour—How to Get Published - in-person event for Young Investigators, Students & Postdoc as well as Publisher, Editors, Editorial Board members		
THURSDAY 22 SEPTEMBER	DAY 3		
7:15 – 8:15	Virtual & In-Person Young Investigator Careers in Academia		
8:30-10:30	Plenary 2 Joint Session Cytokines and ILCs (more host-microbe context) Keynote & 2022 BioLegend Award Winner: David Artis Speaker 1: Kazuyo Moro Speaker 2: Ari Molofsky Abstract 1: Abstract 2: Abstract 3:		
10:30-11:00	Exhibitor Breaking News Break (7-9 15-minute sessions & Coffee Break), Virtual & Live-streamed onsite		
11:00-12:30	Symposium 7 Cytokines and microbiome Speaker 1: Manuela Rafatellu Speaker 2: You-me Kim Abstract 1: Abstract 2: Abstract 3:	Symposium 8 Cytokines and general host defense Speaker 1: Moshe Arditi Speaker 2: Mihai G. Netea Abstract 1: Abstract 2: Abstract 3:	Session 6 - ILC3 & LTICs Greg Sonnenberg Gerard Eberl Abstract 1: Abstract 2: Abstract 3:
12:40-13:40	Industry Symposium (sponsored lunch session)	Industry Symposium (sponsored lunch session)	Lunch Break
13:50-15:20	Symposium 9 Cytokines and anti-bacterial defense Speaker : Feng Shao Speaker 2: Sunny Shin Abstract 1: Abstract 2: Abstract 3:	Symposium 10 Cytokines and anti-viral defense Speaker 1: Adolfo Garcia Sastre Speaker 2: Meghan Baldrige Abstract 1: Abstract 2: Abstract 3:	ILC4 Session 7 - Metabolism and ILCs Lydia Lynch Abstract 1: Abstract 2: Abstract 3:
15:30-16:00	Lightning Talks	Lightning Talks	ILC4 Lightning Talks
16:00-17:30	Poster Discussions (1.5 hours, in-person only posters split up by topic and in 3 rooms) Exhibition Hall (virtual online hours)		

17:30-19:00	Symposium 11 Cytokines and host physiology/homeostasis Speaker 1: Shruti Naik Speaker 2: Andrea Ablasser Abstract 1: Abstract 2: Abstract 3:	Symposium 12 Cytokines and Cardiovascular system Speaker 1: Ekaterina Koltsova Speaker 2: TBD Abstract 1: Abstract 2: Abstract 3:	ILC4 8 - ILCs in Cancer & Pathology Gabrielle Belz Abstract 1 Abstract 2 Abstract 3
19:10-20:10	Young Investigator Corporate Careers Happy Hour - in-person event for Young Investigators, Students & Postdocs as well as Invited Industry Representatives		
FRIDAY 23 SEPTEMBER	DAY 4		
8:30-10:30	Plenary 3 Joint Session Cytokines and ILCs (Neuro/homeostasis context) Keynote: Marco Colonna Speaker 1: Anna Victoria Molofsky Speaker 2: Henrique Veiga Fernandes Abstract 1: Abstract 2: Abstract 3:		
10:30-11:00	Exhibitor Breaking News Break (10-12 15-minute sessions & Coffee), Virtual and Live-streamed onsite		
11:00-12:30	Symposium 13 Cytokines and Neuro Speaker 1: Daniel Mucida Speaker 2: Gloria Choi Speaker 3: Jonathan Kipnis Speaker 4: Brian Kim Discussion	Symposium 14 Inaugural Jürg Tschopp Memorial Symposium: Cytokines, Inflammation & Autoimmunity Jürg Tschopp Memorial Lecture: Ruslan Medzhitov Speaker 2: Carla Rothlin Speaker 3: Yoshiya Tanaka Speaker 4: Virginia Pascual Discussion	ILC4 Session 9 - Human ILCs Jenny Mjosberg Abstract 1 Abstract 2 Abstract 3
12:40-13:40	Industry Symposium (sponsored lunch session)	Industry Symposium (sponsored lunch session)	Lunch Break
14:00-14:45	Joint Keynote, Bana Jabri, MD, PhD Professor of Medicine, Section of Gastroenterology, University of Chicago - Department of Medicine		
14:45-15:00	Closing Remarks: James Turkson Cytokines 2023 Athens Kick-off!: Evangelos Andreakos		
19:00-22:00	Joint Evening Event out on the Lawn (Paniolo BBQ)		

The Interferon Lambda 2022 will be held as a satellite meeting of the Cytokines 2022, on Saturday 24 and Sunday 25 September 2022 (8:00 – 12:30 each day) at the Hilton Waikoloa Village. The purpose of the meeting is to promote research on IFN- λ s by enhancing interdisciplinary communication and encouraging new collaborations. Presentations will address IFN- λ biology, therapy, genetic association of variants in the IFN- λ region with multiple phenotypes and response to treatment, as well as the role of IFN- λ in infections, inflammation, hepatic fibrosis and cancer. Submitted abstracts will be considered for talks and posters. There will be an additional registration fee for the Interferon Lambda 2022 Satellite Hybrid Meeting. For more details: <https://interferonlambda.cytokinesociety.org>



**Interferon
Lambda
2022**
Satellite Hybrid
Meeting
#IFNL2022

<https://interferonlambda.cytokinesociety.org>
Big Island, Hawaii, USA
September 24-25, 2022

Interferon Lambda 2022 Organizing Committee



Co-Chair: Ludmila Prokunina-Olsson, Ph.D., National Cancer Institute, USA [@prokuninaolsson](#)



Co-Chair: Ivan Zanoni, PhD, Harvard Medical School, Boston Children's Hospital, USA [@Lo_Zanzi](#)



Rune Hartmann, PhD, University of Aarhus, Denmark [@molbiolau](#)



Juan L. Mendoza, PhD, University of Chicago, USA [@DrJuanLMendoza](#)



Thomas R. O'Brien, M.D., M.P.H., National Cancer Institute, USA



Deanna Santer, PhD, University of Manitoba, Canada [@drdeannasanter](#)

In Memoriam

Dr. Thomas Alexander Waldmann

The CCR community is profoundly saddened by the recent passing of Thomas A. Waldmann, M.D., Chief Emeritus of the Lymphoid Malignancies Branch and NIH Distinguished Investigator.

The CCR community is profoundly saddened by the recent passing of Thomas A. Waldmann, M.D., Chief Emeritus of the Lymphoid Malignancies Branch and NIH Distinguished Investigator.

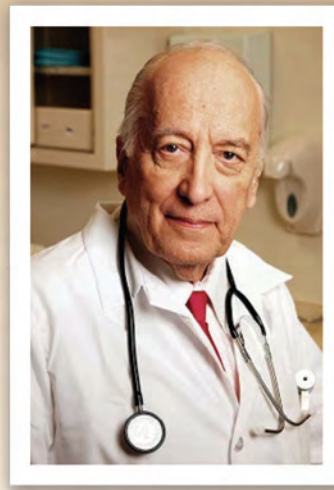
Considered a giant in the field, Tom was a renowned immunologist whose more than 60-year career at the National Cancer Institute led to numerous high-impact discoveries that advanced the fields of organ transplantation, autoimmune disease and cancer. He was a leader in the study of cytokines and their receptors and of monoclonal antibodies, now a dominant form of cancer immunotherapy.

Thomas Alexander Waldmann, MD was born 9/21/1930. His parents Elizabeth Sipos Waldmann, a teacher, and Charles Waldmann, an engineer, were immigrants from Hungary. Being an engineer in the 1930's led to many childhood moves, this may be why once Tom Waldmann MD put down roots in Maryland he stayed for more than 60 years.

Thomas Waldmann graduated from the University of Chicago in 1951. After graduating from Harvard Medical School he went on to train at the Massachusetts General Hospital where he met the love of his life Katharine Spreng who was his supervising resident, his boss, and the only woman on the house staff at the hospital at that time.

In 1954 Dr Waldmann received a \$50 grant from Harvard Medical School along with his best friend Sherman Weissman to do research on erythropoietin in rabbits. This launched his career in scientific research that would continue spanning 8 decades. In 1956 he became a clinical associate at the National Institutes of Health/ National Cancer Institute (NIH/NCI). Here his love for science and his loyalty to the NIH flourished. He became Chief of the Metabolism branch (now the Lymphoid Malignancies branch) of the national cancer institute in 1971. At the NIH Thomas Waldmann was a champion of bench to bedside translational research – emphasizing both the value of basic science and the importance of applying it to the treatment of patients. As such for many years he chaired the Subcommittee of the Central Tenure Committee on Clinical Investigators. He was able to inspire many to tell the important story revealed by scientific research. He always asked the question, “what does your specific discovery tell us about the big picture?”

Thomas Waldmann's research within the field of immunology has led to significant advances in the care of patients. By applying his elucidation of the ways cell interact and communicate through molecules called interleukins, a type of cytokine, including interleukin-2 (IL2) and interleukin 15 (IL 15) he was able to intervene in a meaningful way in patients with T-cell malignancies and multiple sclerosis. Thomas Waldmann's research focused on interleukins their receptors, and use of interleukins and monoclonal antibodies to their receptors in the treatment of cancer and of autoimmune diseases. He studied the IL-2/IL-2 receptor and developed the first anti-cytokine receptor monoclonal antibody (anti-Tac). He introduced the first antibody to a receptor to receive FDA approval, humanized anti-Tac (daclizumab) He showed that daclizumab contributes to reducing renal transplant rejection and is of value in



Credit: US National Institutes of Health

the treatment of multiple sclerosis. He demonstrated that daclizumab provides effective therapy for some patients with a previously invariably fatal leukemia, HTLV-I associated adult T-cell leukemia (ATL). He demonstrated that refractory and relapsed Hodgkin's lymphoma patients could be effectively treated with daclizumab armed with Yttrium-90. Tom Waldmann co-discovered the cytokine interleukin 15 (IL-15). He demonstrated that IL-15 is useful in the treatment of cancer in mice and has completed a clinical trial using IL-15 in therapy of cancer patients.

In the early 1980s he studied immunoglobulin gene rearrangement and cell surface markers. In the 1950s and 1960s, he studied protein metabolism and especially the loss of proteins into the intestines. He described what is now known as Waldmann's disease in 1961 and 57 years later handed the Thomas A. Waldmann Award for Excellence in Human Immunology to his colleague Michael Lenardo who discovered the molecular basis for Waldmann's disease. Tom Waldmann MD published 22 papers at the age of 90, the last year of his life. He never retired. His mantra was focus and finish. His best days were his busiest ones. He felt his scientific work was like a fruit tree that he tended and he wanted to be there to enjoy the fruit of each new branch.

Thomas Waldmann was a member of, among other honorary societies, the National Academy of Sciences, the National Academy of Medicine, the American Academy of Art of Sciences, and the Hungarian Academy of Sciences. He was a fellow or honorary fellow of, among other societies and academies, the Royal Society of Medical Sciences, the National Academy of Inventors, the American Academy of Allergy and Immunology, the American Association for the Advancement of Sciences. Among other awards, he received the Milken Family Medical Foundation, Distinguished Basic Scientist Award, the Artois-Baillet Latour Health Prize, the 15th Bristol-Myers Squibb Award for Distinguished Achievement in Cancer Research, the Paul Ehrlich Medal, American College of Physicians Award for Distinguished Contributions to Science as Related to Medicine, and the Service to America Paul A. Volcker Career Achievement Medal 2009. In addition to his scientific career Tom Waldmann was an avid photographer, an art and literature enthusiast (he read 100 books during his last year), a nature lover, a punster, a story teller, a lover of music including folk and spirituals (he saw Marion Anderson sing on the steps of the Lincoln Memorial at age 8) an adventurous traveler and a lover of good food. He took his family on many adventures following and sharing these many passions. For Thomas Waldmann family always came first and he was always available, supportive and loving to his family. He was engaged and enthusiastic about the activities and pursuits of each of his family members. He was sensitive to their needs, desires and emotions. He is predeceased by his beloved wife of 62 years, Katharine Waldmann MD and his daughter-in-law Elisabetta, he is survived by his 3 Children Richard and his wife Janet, Robert and Carol and her husband Johnny, and his seven grandchildren whom he cherished: Marina, Kathy, Clarissa, Ember, Jonathan, Orion and Arno.

In Memoriam

Christine A. Biron, Ph.D., DFAAI (AAI '84)

d. 10/16/2021 (age 70)



AAI extends condolences to the family, friends, and colleagues of Christine A. Biron, Ph.D., DFAAI (AAI '84), a devoted and active AAI member of 37 years who died unexpectedly on October 16.

Dr. Biron was the Esther Elizabeth Brintzenhoff Professor of Medical Science at Brown University, where she had also served as director of the Pathobiology Graduate Program and later as chair of the Department of Molecular Microbiology and Immunology.

Biron was elected in 2021 as a Distinguished Fellow of AAI, among the highest honors bestowed by AAI; it recognizes active, long-term members for distinguished careers and outstanding scientific contributions as well as their service to AAI and the immunology community.

*Biron was a past member and chair of the AAI Awards Committee and also served on the Finance, Nominating, and Program Committees. In 2015, she was selected as an AAI Distinguished Lecturer and also participated at multiple AAI annual meetings as a major symposium chair and speaker and abstract programming chair. Additionally, she was a past section editor and associate editor for *The Journal of Immunology* and faculty member for the AAI Advanced Course in Immunology.*

The following remembrance was authored by Biron colleagues Jordan S. Orange, M.D., Ph.D. (AAI '04), professor and chair, Columbia University Medical Center; Marion T. Kasaian, Ph.D. (AAI '90), scientist, Pfizer Research; and Helen C. Su, M.D., Ph.D., senior investigator, NIAID, NIH. AAI gratefully acknowledges the submission.

*This tribute was originally published in the December 2021 issue of the AAI Newsletter. It has been reprinted with permission from *The American Association of Immunologists*.*

On October 16th, we lost a trailblazer in immunology, a strong advocate for women in science and career development, a committed and caring colleague and teacher, and a dear friend, Dr. Christine Anne Biron. There is much to be said about her career and life, but some key themes must be stated right away. Christine was a scientist because she was curious, loved discovery-based research, and took joy in her work. She believed in pursuing the truth with robustness and rigor and taking on questions that mattered even when they seemed impossible to solve. She never retreated from an approach or experiment because it was too difficult or too intensive and often wondered whether those might be the best questions to pursue. Some of the experiments she performed herself were inspiring and have greatly influenced the field. Also, Christine was generous with her time and efforts on behalf of others. She was eager to give feedback on and help improve an idea, giving her very best energies and thoughts and almost always asking key and even transformative questions about hypotheses.

Christine was born and raised in Bellingham, MA, the oldest of five siblings. Her father was the town moderator and her mother a strong matriarch, and they instilled in her the values of industry, integrity, and responsibility. After receiving her undergraduate degree in biochemistry at the University of Massachusetts (UMass) Amherst, she obtained her Ph.D. in microbiology and immunology at the University of North Carolina (UNC) Chapel Hill.

In her Ph.D. work with Joseph Pagano, she examined cytotoxic T lymphocyte (CTL) and natural killer (NK) cell responses against Epstein Barr virus (EBV), exploring the role of interferon in their activation and blastogenesis. She challenged the idea that NK cells were end stage,

incapable of further expansion. In a postdoctoral fellowship with Raymond Welsh in the laboratory of Michael Oldstone at Scripps, and continuing at the UMass Medical School in Worcester, MA, Christine took on the challenging initiative to purify cells after experimental NK cell activities.

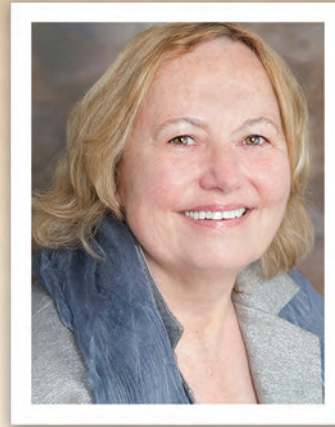
In launching her own independent research program at UMass, Christine went on to show that blast NK cells were induced in response to interferons elicited during viral infection. These pioneering studies confirmed the proliferative capacity of NK cells, while elucidating cytokine regulation of NK cell antiviral and immunopathogenic responses. These interactions were further delineated in a 1999 Annual Review of Immunology treatise entitled "NK cells in antiviral defense: function and regulation by innate cytokines" (<https://pubmed.ncbi.nlm.nih.gov/10358757/>), which has been cited well over 1,500 times.

While mostly focused upon murine experimental immunology, Christine ventured into human immunology through the extensive characterization of an NK cell deficient adolescent patient, who experienced successive waves of severe infections with herpes-group viruses. This landmark study, for which Christine performed most of the NK cell characterization and profiling herself, was published in the *New England Journal of Medicine* in 1989 (<https://pubmed.ncbi.nlm.nih.gov/2543925/>) and has been cited approximately 1,000 times. In an era in which innate mechanisms were considered secondary to the adaptive responses, this report clearly demonstrated the profound importance of NK cells in herpesviral defense in humans. This theme of phenotypic and functional characterization associated with immune deficiency has carried forward to this day and has been validated through the existence of many similar phenotypes and associated Mendelian genotypes.

In Memoriam

Christine A. Biron, Ph.D., DFAAI (AAI '84)

continued



In 1987, Christine moved to Brown University as assistant professor of medical science. She would remain dedicated to building the immunology program at Brown and to investigating cytokine control of anti-viral responses for the rest of her career. One aspect that set Christine apart was her willingness to confront the complexities and intricacies of *in vivo* models. There is a role for reductive research and simplification, but she understood that what happens inside an animal is nuanced, with antiviral responses regulated in both time and space, greatly influencing the ultimate outcome. From the initial observation that lymphocytic choriomeningitis virus (LCMV) is cleared by CD8+ CTL, while murine cytomegalovirus (MCMV) is also controlled by NK cells, Christine identified waves of innate and adaptive cellular responses orchestrated by cytokines. In MCMV infection, dendritic cells (DCs) release an early wave of interleukin-12 (IL-12), activating NK cells to produce interferon (IFN)- γ . In an elegant example of cross-regulation, subsequent plasmacytoid DC (pDC)-induced IFN- α/β feeds back to limit this IL-12 secretion and, along with IL-2, potentiates NK cell expansion. In LCMV infection, however, an early wave of IFN- α/β activates NK expansion, but prevents IL-12 induction, limiting IFN- γ production. Subsequent T cell activation and generation of transforming growth factor (TGF)- β reduces NK proliferation, driving the shift from innate to adaptive immunity. Spatial trafficking of NK cells from bone marrow to secondary compartments underlies these dynamics, localizing the NK cells to receive cellular activation signals and to propagate the response.

The signaling downstream of cytokine regulation, and how this facilitates response to and protection from immunopathology, subsequently emerged as a major focus for Christine. Building on the observation that IL-12/signal transducer and activator of transcription (STAT)4 is critical for NK cell IFN- γ expression, whereas IFN- α/β /STAT1 drives NK cytotoxicity but negatively regulates IFN- γ , Christine investigated the dynamics of STAT expression in infection. Her 2002 landmark publication in *Science* (<https://pubmed.ncbi.nlm.nih.gov/12242445/>) demonstrated that STATs were fundamental in both inducing and regulating the antiviral interferon response. These groundbreaking observations gave rise to many related works and avenues, encapsulated nicely in a 2006 perspective published in *Science* entitled "Type I interferons and the virus-host relationship: a lesson in détente" (<https://pubmed.ncbi.nlm.nih.gov/16690858/>). Her body of work is truly central to immunology's understanding of the coordination of antiviral and innate cytokine regulation and response.

A unifying characteristic of Christine's papers is their rigor and humility. She never overstated her findings and felt that robust works would speak for themselves and stand the test of time. She taught her trainees that the ideal was to be able to make the same point in six different ways and that one could never be careful enough. One colleague, speaking for many, stated that her work was to be noticed and always believed. Naturally, to achieve this ideal required long hours and tenacity, habits which she modeled and imparted to others along with an enthusiasm for experimental discovery.

Christine's infectious love of science inspired students, trainees, and colleagues throughout her career, including 12 postdoctoral fellows, three M.D./Ph.D. students, and six graduate students. She was known at Brown for her lively advanced seminar courses, which also drew undergraduates, many of whom were inspired to pursue scientific careers. For much of her teaching career, she dedicated herself to ensuring that the medical students would thoroughly understand immunology in preparation for their future careers as physicians. Christine had an intense focus on those who worked in her laboratory. She cared about people and invested the energy to get to know them, finding ways to bring science to them in a meaningful way and inspire them to (as she would say) "get hooked by science." That is what happened to so many of us, thanks to her special talents, kindness, brilliance, and attention. Mentoring others was incredibly important to Christine, and she maintained lifelong connections with several of her former trainees. She was especially supportive and encouraging of junior colleagues, including women faculty who were faced with barriers in their career advancement.

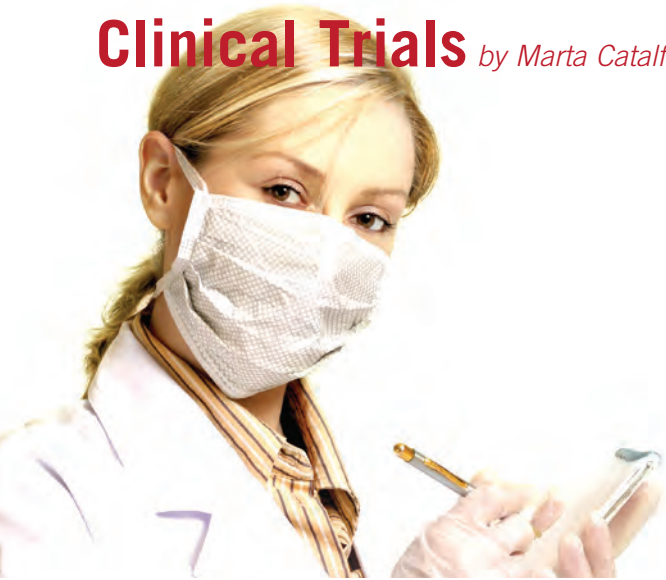
Christine's inquisitive nature and scientific curiosity were apparent even as a graduate student at UNC, when she was teased for being the one who was always first to ask questions at meetings, courses, or lectures. Throughout her career, she continued to be generous with her time and offered perspectives and suggestions that influenced the thinking and direction of her colleagues. She served on various editorial boards, was a member not only of the AAI but also of the American Society for Virology, as well as an elected fellow of both the American Association for the Advancement of Science and the American Academy of Microbiology. Additionally, she had the distinction of serving on the Board of Scientific Counselors for both the National Institute of Allergy and Infectious Diseases and the National Cancer Institute.

Outside of her work, Christine was the quintessential New Englander, who enjoyed spending time with her close-knit family, often at her cottage on Cape Cod, where she would also invite friends and close colleagues. She was an amateur photographer and had a beautiful soprano voice. Her distinctive laughter was emblematic of her enthusiastic personality. She was also an intensely private and courageous person of faith who accomplished much despite having an increasingly debilitating autoimmune disease. To honor her, in 2020 an annual endowed lectureship was established in her name at Brown University. We are grateful to have known her; she will be sorely missed.

The inaugural Dr. Christine Biron Molecular Microbiology and Immunology Lectureship at Brown University was held on October 28, 2021. Donations in Christine's memory may be made at <http://brown.edu/go/Biron>.

* * * * *

See also the obituary published by the family in the Providence Journal: <https://www.providencejournal.com/obituaries/f0060481>



Sarilumab Treatment In Cytokine Storm Caused by Infection With COVID-19 (STRIKESARS)

Principal Investigator: Javier J Zulueta, MD. Clinica Universidad de Navarra, Universidad de Navarra. Pamplona, Navarra, Spain, 31008
Contact: Gabriel Canel, **Phone:** +34948255400
ClinicalTrials.gov Identifier: NCT04661527

Exploratory Regimen of Basiliximab for Treatment of Pulmonary Cytokine Storm in SARS-CoV-2 Hospitalized Adult Patients (FWCSWG-IL-2)

Principal Investigator: Mohanakrishnan Sathyamoorthy MD. TCU and UNTHSC School of Medicine. Texas, USA, 76129.
Contact: Mohanakrishnan Sathyamoorthy MD **Phone:** +1 817423-8585
ClinicalTrials.gov Identifier: NCT05013034

Use of the Interleukin-6 Inhibitor Clazakizumab in Patients With Life-threatening COVID-19 Infection

Principal Investigators: Nada Alachkar, MD. Johns Hopkins Hospital. Baltimore, Maryland, USA, 21287
Contact: Nada Alachkar, MD. **Phone:** +1 4106149225
ClinicalTrials.gov Identifier: NCT04363502

A Trial Using ANAKINRA, TOCILIZUMAB Alone or in Association With RUXOLITINIB in Severe Stage 2b and 3 of COVID19-associated Disease (INFLAMMACOV)

Principal Investigators: Gilles Kaplanski, MD. Assistance Publique Hôpitaux de Marseille. Marseille, France, 13005
Contact: Gilles Kaplanski, MD, Email: gilles.kaplanski@ap-hm.fr
ClinicalTrials.gov Identifier: NCT04424056

Survival TRIal Using CytoKines in COVID-19 (STRUCK Trial) (STRUCK)

Principal Investigators: Livia A Bonifacio, PhD. Faculdade de Medicina de Ribeirão Preto – USP. Ribeirão Preto, SP, Brazil.
Contact: **Phone:**
ClinicalTrials.gov Identifier: NCT04724629

Pegylated Interferon Lambda for Treatment of COVID-19 Infection

Principal Investigators: Ohad Etion, MD. Soroka University Medical Center. Be'er Sheva, Israel.
Contact: Ohad Etion, MD. **Phone:** +97286243330
ClinicalTrials.gov Identifier: NCT04534673

Human Intravenous Interferon Beta-1a Safety and Preliminary Efficacy in Hospitalized Subjects With CoronavirUS (HIBISCUS)

Principal Investigators: Adit Ginde, MD MPH. University of Colorado Anschutz Medical Campus. Aurora, Colorado, USA, 80045
Contact: Jarna Hannukainen, PhD. **Phone:** +358 02 469 5151
ClinicalTrials.gov Identifier: NCT04860518

Nivolumab, Fluorouracil, and Interferon Alpha 2B for the Treatment of Unresectable Fibrolamellar Cancer

Principal Investigators: Sunyoung Lee, MD. M D Anderson Cancer Center. Houston, Texas, USA, 77030
Contact: **Phone:**
ClinicalTrials.gov Identifier: NCT04380545

Genetically Modified T-Cells Followed by Aldesleukin in Treating Patients With Stage III-IV Melanoma

Principal Investigators: Rodabe N. Amaria, MD. M D Anderson Cancer Center. Houston, Texas, United States, 77030
Contact: Rodabe N. Amaria, MD. **Phone:** +1 713-792-2921
ClinicalTrials.gov Identifier: NCT01955460

Safety, Tolerability, and Efficacy of IL-15 Superagonist (N-803) With and Without Combination Broadly Neutralizing Antibodies to Induce HIV-1 Control During Analytic Treatment Interruption

Principal Investigators: Timothy Wilkin, MD, MPH. Weill Medical College of Cornell University. New York, New York, United States, 10065
Contact: Rebecca Fry, M.S.N., FNP, **Phone:** +1 212-746-4166
ClinicalTrials.gov Identifier: NCT04340596

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

Investigators: Janssen Pharmaceutica N.V., Belgium Clinical Trial. B-2440 Geel Belgium
Contact: Janssen Pharmaceutica N.V. **Phone:** 844-434-4210
ClinicalTrials.gov Identifier: NCT05049798

Study to Evaluate the Role of Siltuximab in Treatment of Cytokine Release Syndrome (CRS) and Immune Effector Cell Associated Neurotoxicity (ICANS) Related to CAR-T Cell Therapy

Principal Investigators: Mayur S Narkhede, M.D. University of Alabama at Birmingham. Birmingham, Alabama, USA, 35294
Contact: Mayur Narkhede **Phone:** +1 205-934-2248
ClinicalTrials.gov Identifier: NCT04975555

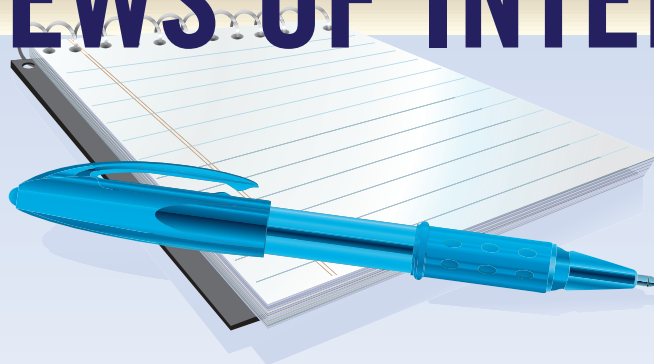
Safety and Early Signs of Efficacy of IL12-L19L19. (DODEKA)

Principal Investigators: Walter Fiedler, MD. Universitaetsklinik Hamburg-Eppendorf. Hamburg, Germany.
Contact: Barbara Ziffels, PhD. **Phone:** +39 057717816
ClinicalTrials.gov Identifier: NCT04471987

Effects of Interleukin (IL)- 4R-alpha Inhibition on Respiratory Microbiome and Immunologic Correlates in Severe Asthma

Principal Investigators: Yvonne Huang, MD. University of Michigan. Ann Arbor, Michigan, USA, 48109.
Contact: Michael Hadden. **Phone:** +1 734-232-1387
ClinicalTrials.gov Identifier: NCT05036733

REVIEWS OF INTEREST



*Contributed by
Zhian Chen and
Di Yu*

PMID: 34671122

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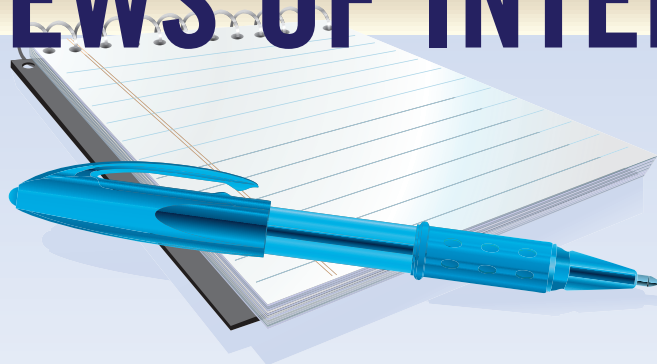
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REVIEWS OF INTEREST



*Contributed by
Zhian Chen and
Di Yu*

Continued

PMID: 34611329

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REVIEWS OF INTEREST



*Contributed by
Zhian Chen and
Di Yu*

Continued

COVID-19 special collection

PMID: 34912108

[The state of complement in COVID-19.](#)

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[Inflammasome activation at the crux of severe COVID-19.](#)

Vora SM, Lieberman J, Wu H.

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Contributions from Supreet Agarwal

LipidSuite: interactive web server for lipidomics differential and enrichment analysis

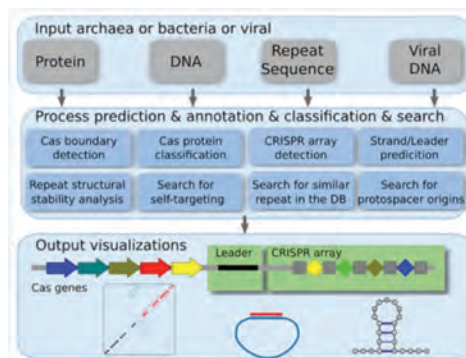
Advances in mass spectrometry enabled high throughput profiling of lipids but differential analysis and biological interpretation of lipidomics datasets remains challenging. To overcome this barrier, we present LipidSuite, an end-to-end differential lipidomics data analysis server. LipidSuite offers a step-by-step workflow for preprocessing, exploration, differential analysis and enrichment analysis of untargeted and targeted lipidomics. This free, user-friendly webserver facilitate differential lipidomics data analysis and re-analysis, and fully harness biological interpretation from lipidomics datasets. LipidSuite is freely available at <http://suite.lipidr.org>.



CRISPRloci: comprehensive and accurate annotation of CRISPR-Cas systems

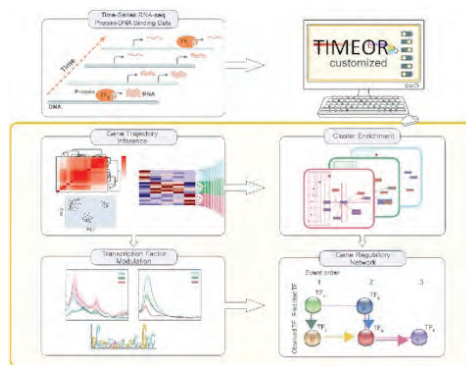
CRISPR-Cas systems are adaptive immune systems in prokaryotes, providing resistance against invading viruses and plasmids. The identification of CRISPR loci is currently a non-standardized, ambiguous process, requiring the manual combination of multiple tools, where existing tools detect only parts of the CRISPR-systems, and lack quality control, annotation and assessment capabilities of the detected CRISPR loci. Our CRISPRloci server provides the first resource for the prediction and assessment of all possible CRISPR loci. The server integrates a series of advanced Machine Learning tools within a seamless web interface featuring: (i) prediction of all CRISPR arrays in the correct orientation; (ii) definition of CRISPR leaders for each locus; and (iii) annotation of cas genes and their unambiguous classification. As a result, CRISPRloci is able to accurately determine the CRISPR array and associated information, such as: the Cas subtypes; cassette boundaries; accuracy of the repeat structure, orientation and leader sequence; virus-host interactions; self-targeting; as well as the annotation of cas genes, all of which have been missing from existing tools. In summary, CRISPRloci constitutes a full suite for CRISPR-Cas system

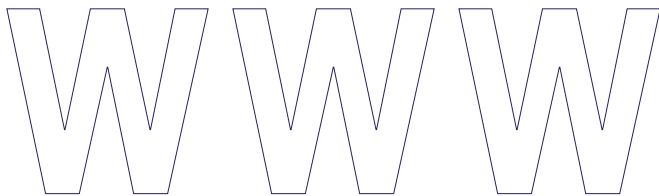
characterization that offers annotation quality previously available only after manual inspection. The webserver can be accessed via the following link: <https://rna.informatik.uni-freiburg.de/CRISPRloci/>. The standalone version can be downloaded from the following GitHub repository: <https://github.com/BackofenLab/CRISPRloci>.



TIMEOR: a web-based tool to uncover temporal regulatory mechanisms from multi-omics data

Uncovering how transcription factors regulate their targets at DNA, RNA and protein levels over time is critical to define gene regulatory networks (GRNs) and assign mechanisms in normal and diseased states. RNA-seq is a standard method measuring gene regulation using an established set of analysis stages. However, none of the currently available pipeline methods for interpreting ordered genomic data (in time or space) use time-series models to assign cause and effect relationships within GRNs, are adaptive to diverse experimental designs, or enable user interpretation through a web-based platform. Furthermore, methods integrating ordered RNA-seq data with protein-DNA binding data to distinguish direct from indirect interactions are urgently needed. TIMEOR (Trajectory Inference and Mechanism Exploration with Omics data in R), the first web-based and adaptive time-series multi-omics pipeline method infers the relationship between gene regulatory events across time. TIMEOR addresses the critical need for methods to determine causal regulatory mechanism networks by leveraging time-series RNA-seq, motif analysis, protein-DNA binding data, and protein-protein interaction networks. TIMEOR's user-catered approach helps non-coders generate new hypotheses and validate known mechanisms. We used TIMEOR to identify a novel link between insulin stimulation and the circadian rhythm cycle. TIMEOR is available at <https://github.com/ashleymaeconard/TIMEOR.git> and <http://timeor.brown.edu>.

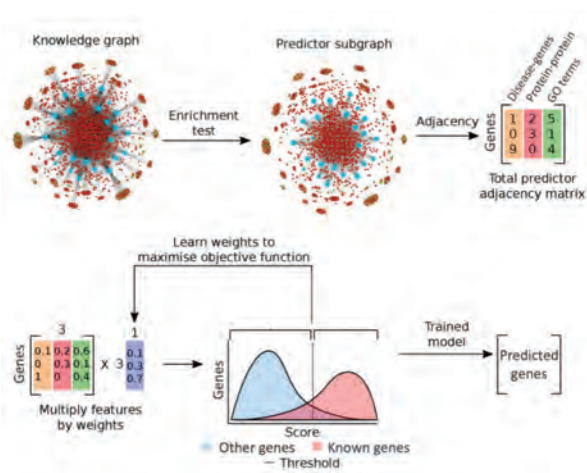




Continued

DGLinker: flexible knowledge-graph prediction of disease-gene associations

DGLinker is a tool for the prediction of novel human Disease-Gene associations given a set of genes that are known to be associated with the target human phenotype(s). In brief, utilizing a set of databases of biological and phenotypic information, the tool generates a knowledge graph. An enrichment test is then used to identify predictive features of the genes known to be associated with the target phenotype(s). The total adjacency of every gene with all predictors of each type (the columns of the matrix) is calculated from the graph. The adjacency matrix is then scaled and weighted to produce a final score for every gene. Predictions are made by applying a threshold to this similarity score, with all genes above the threshold predicted as candidate genes. The optimum weighting and score threshold are learned from the known set of associated genes.



Mechnetor: a web server for exploring protein mechanism and the functional context of genetic variants

Mechnetor lets you quickly explore and visualize integrated protein mechanism data, enabling a better understanding of the functional context of genetic variants. You can enter lists of interacting proteins and/or lists of genetic variants or post-translational modifications. As a result you will get a finer resolution interaction network that enhances mechanistic interpretations of biological processes and variants of interest.

Panel A: Input Fields

- Proteins:** UniProtKB ID, UniProtKB AC, Gene Symbol
- Mutations/Modifications:** CBFA2T3/D105G, CBFA2T3/N495D, CBFA2T3/K495P, TCF3/N554K, TCF3/N55D
- Species:** Homo sapiens, Mus musculus, Drosophila melanogaster, Arabidopsis thaliana, Caenorhabditis elegans, Danio rerio, Xenopus tropicalis, Saccharomyces cerevisiae, SARS-CoV-2

Panel B: Protein Data Summary

- Protein data: 317,197 proteins, 18,259 domains, 1,210 motif classes, 104,882 post-translational modifications, 431,502 sequence features
- Interactions: ~1.5 mill protein-protein, 16,179 domain-domain, 2,701 domain-motif, 3D structure-based

Panel C: Network Visualization

Network showing interactions between proteins: CBFA2T3, PRKAR2A, HDAC2, HIF1A, SIN3A, TCF3, ID3.

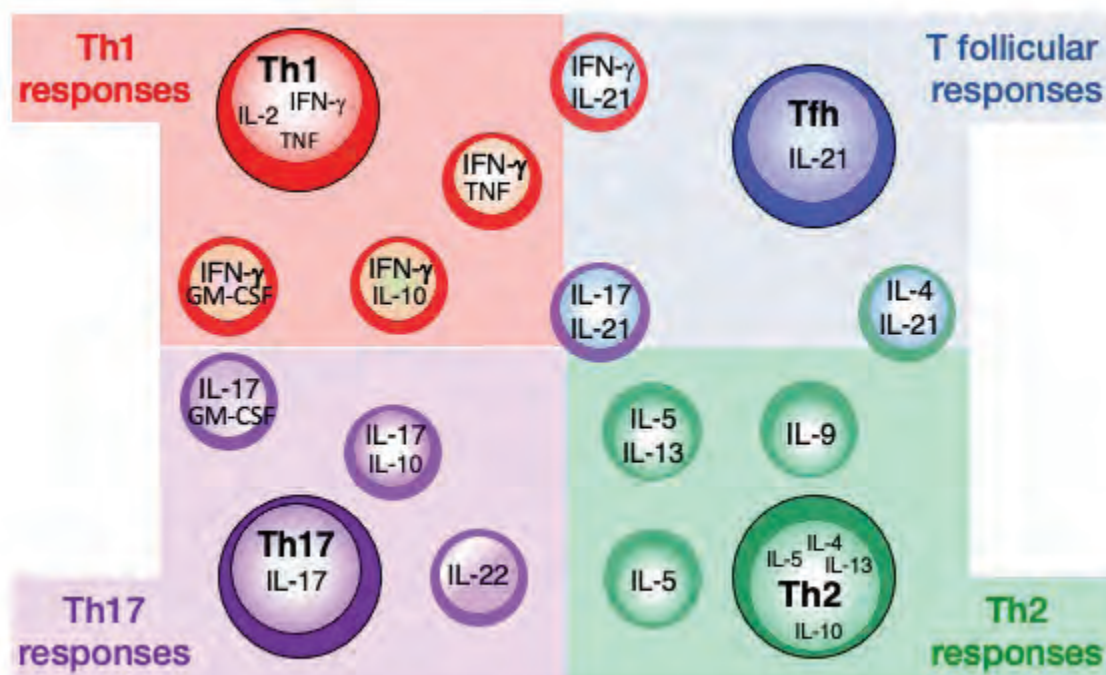
Panel D: Protein Details Table

Protein ID	Gene	UniProt ID	Accession	Length	Weight	Species	Enzyme EC	Protein ID	Accession	Length	Weight	Species
MECHNETOR	CBFA2T3	P08022	MECHNETOR	481	1.0	Homo sapiens	3.1.4.1	MECHNETOR	P08022	481	1.0	Homo sapiens
MECHNETOR	CBFA2T3	P08022	MECHNETOR	481	1.0	Homo sapiens	3.1.4.1	MECHNETOR	P08022	481	1.0	Homo sapiens
MECHNETOR	CBFA2T3	P08022	MECHNETOR	481	1.0	Homo sapiens	3.1.4.1	MECHNETOR	P08022	481	1.0	Homo sapiens
MECHNETOR	CBFA2T3	P08022	MECHNETOR	481	1.0	Homo sapiens	3.1.4.1	MECHNETOR	P08022	481	1.0	Homo sapiens
MECHNETOR	CBFA2T3	P08022	MECHNETOR	481	1.0	Homo sapiens	3.1.4.1	MECHNETOR	P08022	481	1.0	Homo sapiens

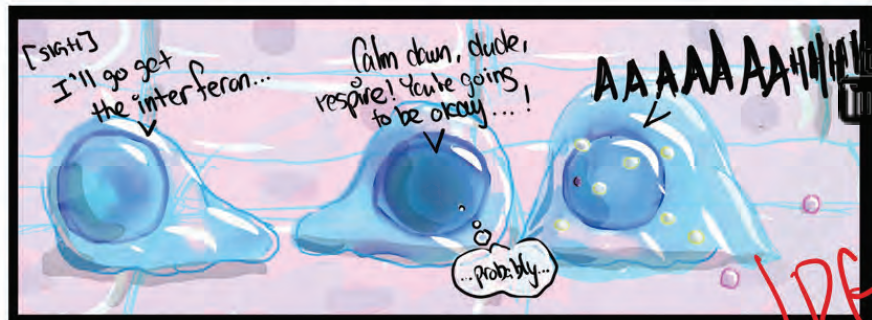
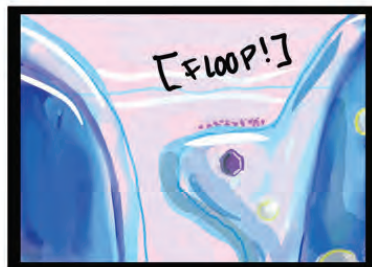
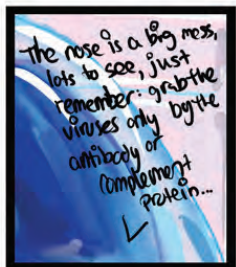
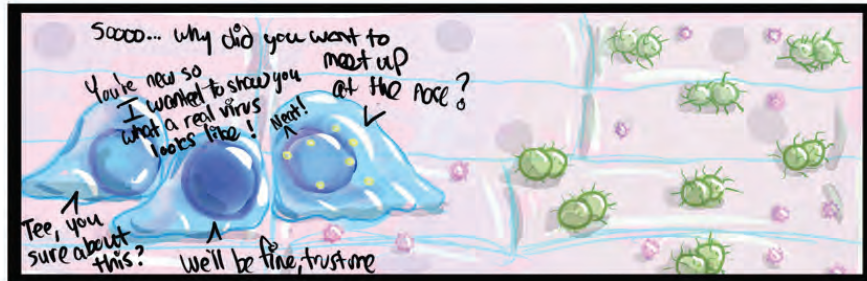
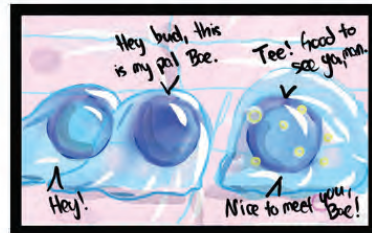
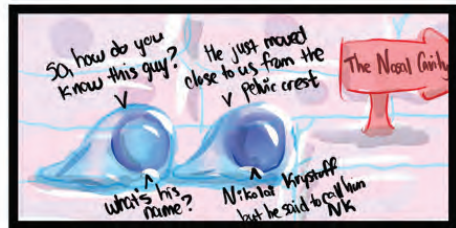
FOOD FOR THOUGHT: NEW T CELL SUBSETS?

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The current model of CD4+ T helper subsets is founded on both differentially expressed cytokines and the distinct functions mediated by these cytokines. It comprises the initially identified Th1 and Th2 effector cells as well as Th17 and Tfh lymphocytes (depicted with big circles). The complexity of Th lymphocytes responses in time (multistep maturation process) and place (various tissues) revealed additional but still poorly understood heterogeneity in the cytokine expression profiles of CD4+ T lymphocytes (small circles). Moreover, data from new technologies, such as fate-mapping and single-cell RNA sequencing, have added new complexity challenging the utility of the original cytokine-based Th nomenclature in understanding immune responses. Tuzlak et al. (1, 3) propose a new classification system for effector CD4+ T lymphocytes based on the type of help exerted and the nature of the cells engaged. Thus, in their nomenclature “type 1” helpers are those activating phagocytes, “type 2” helpers those stimulating B cells, eosinophils, mast cells and “type 3” those targeting stroma and epithelia. Jankovic et al. (2) argue that because individual Th effectors can affect the function of diverse hematopoietic or non-hematopoietic cell types and induce distinct but often opposing transcriptional programs in them, the classification proposed by Tuzlak and co-authors may be of limited applicability. They favor the retention of the original Th effector subset nomenclature based on cytokine profiling while expanding the concept to embrace the ever-evolving complexity of T helper immune responses.



1. Tuzlak, S., Dejean, A.S., Iannacone, M. et al. Repositioning TH cell polarization from single cytokines to complex help. *Nat Immunol* 22, 1210–1217 (2021). <https://doi.org/10.1038/s41590-021-01009-w>
2. Jankovic, D., Ciucci, T., Coffman, R.L. et al. Comment on: Repositioning TH cell polarization from single cytokines to complex help. *Nat Immunol* (2022). <https://doi.org/10.1038/s41590-022-01144-y>
3. Tuzlak, S., Ginhoux, F., Korn, T. et al. Reply to 'Comment on: Repositioning TH cell polarization from single cytokines to complex help'. *Nat Immunol* (2022). <https://doi.org/10.1038/s41590-022-01142-0>



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