Signals+

THE INTERNATIONAL CYTOKINE & INTERFERON SOCIETY NEWSLETTER

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IN THIS ISSUE:

A NOTE FROM THE ICIS PRESIDENT

Kate Fitzgerald

So much has changed since just the last issue of Signals+ when we had only begun working "remotely". The COVID19 pandemic has reached sobering milestones with deaths surpassing one million world-wide and over 219,000 in the US alone and the "mask" issue a political statement. We've also seen mass protests all over the world in the wake of the George Floyd police killing in Minneapolis, to the extent not seen since the civil rights movement of the '60's.

As I wrote my last note in April, the Cytokines 2020 local organizing committee was still planning a face-to-face meeting in Seattle, hoping the virus would be under control by November. Now as we head into the fall, we face a new reality where masks, social distancing and remote work, school and conferences is the norm.

However, despite the seriousness of the situation we as a society face, never has it been more important and challenging to be a cytokine and interferon biologist. As you will read later in Michael Gale, Jr. and Ram Savan's Cytokines 2020 article, ***nearly all of the major breakthroughs in COVID-19 treatments and vaccine developments have connections to ICIS members in academia, government and industry***. These promising cytokine-based therapeutics and immune-modifying biologics will also surely translate into new innovative treatments for the benefit of patients afflicted with other infectious, inflammatory, or autoimmune diseases as well as cancer.

Pandemic aside, it is incredibly important that everyone reading this issue plan to participate in the Cytokines 2020 Virtual Meeting to share your science as well as to consider the diverse work of immunologists as well as those from numerous other research disciplines. We are partnering with LabRoots (www.labroots.com) as our virtual meeting platform to increase the impact and accessibility to the data and bring together all those interested in cytokine and IFN biology to advance human health.

It is our hope that the first four days of November, 2020, will be remembered not only for whatever happens in the US election but as an impetus to move our science forward as diverse ideas are shared both inside and outside our specific areas of expertise. Since the sessions will all be available "on-demand" upon their livestreamed conclusion, we encourage participants to look outside their interests and see what is going on in other areas of cytokine biology.

As we prepare for our annual meeting, I want to congratulate all the 2020 Award Winners who are recognized in this newsletter and on the society's website and social media. Prestigious awards for established investigators, mid-career award (thanks to a new Luminex Award) as well as our early career investigator and trainee awards are provided thanks to the generous support of Philip Milstein and family, PBL Assay Science, BioLegend and Luminex Corporation as well as Dr. Robert Fleischmann and the friends and colleagues of the late Amanda Proudfoot. Science philanthropy is a long-lasting investment in research that can impact millions of lives.

With warmest regards to everyone, stay safe and be well.

Kate

Future Meetings

Cytokines 2021,
October 17 - 20, 2021
Cardiff, Wales, UK

Cytokines 2022,
September 20 - 23, 2022
Big Island, Hawaii USA

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ICIS
International Cytokine & Interferon Society

Cytokines 2020
International Cytokine & Interferon Society ICIS

8th Annual Meeting of the International Cytokine & Interferon Society

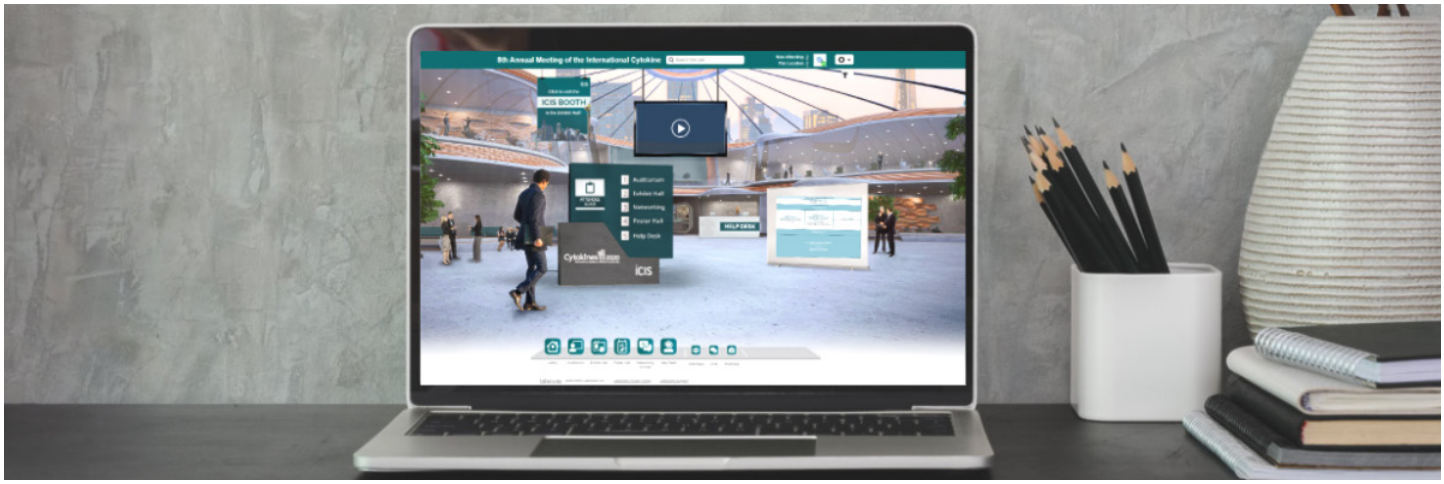
1 - 4 November

Virtual Meeting

Structure-Function & Systems Biology of Cytokines

In recognition of the role of cytokines in COVID-19 and the extraordinary research being done by the cytokine & interferon community, the Local Organizing Committee of the International Cytokine & Interferon Society (ICIS) has re-shaped the program to include the latest findings on SARS-CoV-2/host interactions and COVID-19. Although we are disappointed not to be meeting live in Seattle this year, the pandemic underscores the importance of this meeting and our research to understand the systems biology of cytokines and interferons in human health and disease. ***Nearly all of the major breakthroughs in COVID-19 treatments and vaccine development have connections to ICIS members in academia, government and industry.*** Reflecting the diverse scientific interests in the field of cytokine biology, sessions impacting all aspects of cytokine and interferon basic science, clinical development, and medicine will update participants on these activities to reveal promising research that will lead to or has already launched cytokine-based therapeutics and immune-modifying biologics to treat COVID-19, cancer, autoimmunity, infectious disease and vaccine applications.

After much consideration of the many virtual meeting platform providers, Cytokines 2020 is partnering with *LabRoots* as our virtual meeting platform. *LabRoots* has produced hundreds of virtual events and thousands of webcasts over the past 12 years and is a leading scientific social networking web-based platform, offering top scientific trending news and premier educational virtual events and webinars. As networking and dissemination of ideas are at the heart of the ICIS mission, the Local Organizing Committee of Cytokines 2020 is confident that the *LabRoots* platform and the experienced team behind it, combined with the impactful and diverse content of the scientific program, will facilitate connections of meeting participants in today's virtual environment.



Networking lounges will be available during the meeting to connect and interact with people via chat or video, and discuss specific topics of interest or just reconnect with colleagues. All meeting participants (over 700 registered so far), will be able to search the *LabRoots* platform and contact participating colleagues to message them from a few days before the meeting, throughout the virtual meeting and for at least two weeks following the meeting as participants can access the content on-demand (and see who else is on the platform at the same time).
Please clear your calendars between November 1-4 and plan to participate in as much of the livestreamed program as you can. We have shortened the program on election Tuesday for the Americans who will be glued to their television sets! Discussion forums and content will be available immediately on-demand following live streamed sessions, allowing participants to capture all meeting content.

Although we will miss in-person social events, the poster sessions will have increased impact as they will be presented as pre-recorded "Lightening Talks" and will include embedded interactive live discussion forums organized in topical sessions throughout the 4-day program.

The Local Organizing Committee of Cytokines 2020 has logged many hours of meeting planning and customization of the virtual meeting platform for ICIS members that will deliver a high impact meeting experience, free of travel barriers so that everyone can benefit from the meeting.

Cytokines 2020 would not be possible without the continued support of our sponsors and exhibitors! They have stayed with us into the virtual event even in these difficult times, for which we are most grateful.
Please visit the Cytokines 2020 website https://seattle.cytokinesociety.org/ to view the updated program. We look forward to seeing you virtually November 1-4th.

Sincerely,

Co-Chairs

Michael Gale, Jr. and **Ram Savan**

In Memorium

Uli Siebenlist
1951-2020

This sad news comes to us from Phil Murphy and Steve Holland in NIAID.
Uli Siebenlist, our beloved colleague, passed away on August 4th after a long struggle with cancer. Uli was a brilliant and pioneering molecular immunologist who did foundational work in the area of immune system signal transduction since 1984 in the intramural program of NIAID. He was also a profile in courage until his death as he nurtured his research to publication and mentored his staff toward their career goals.

Uli was born in Germany but emigrated to Arizona with his family as a teenager. He studied Physics as an undergraduate at the University of Arizona, then received a Ph.D. in Biophysics in 1979 from Harvard University working with Nobel Laureate Walter Gilbert. It was there that he cut his teeth on the molecular biology of gene regulation, publishing seminal papers in *Nature and Cell* that elucidated the structure and function of the bacteriophage T7 promoter. For his postdoc, Uli turned to eukaryote gene regulation and one of the major problems of that or any era: immunoglobulin gene regulation, briefly moving to Bethesda and Lasker laureate Phil Leder's Laboratory of Molecular Genetics in NICHD, then back to Harvard when Leder moved there to head the Department of Genetics at Harvard Medical School. He again made major discoveries, publishing seminal papers in Nature and Cell on the structural organization of the IgD and c-myc loci.

From Harvard, he was recruited back to NIH by Tony Fauci as an investigator in the Laboratory of Immunoregulation, NIAID, to apply molecular approaches to the problem of immune activation, becoming the founding Chief of the Immune Activation Section. At NIAID, Uli conducted powerful differential gene screens that disrupted the field, mining gold from mitogen-activated T cells, including two of the first known chemokines (CCL3 and CCL4), the major NF-kB transcription factor family member p50, the atypical IkB family member Bcl-3, and the IL-17 signal transducer and NF-kB regulator CIKS. In the 1990s, Uli's lab was an international powerhouse delineating the precise biochemical mechanisms regulating classical and alternative NF-kB activation. He then reinvented his lab and returned to genes to explore over the next two decades the protean biology of this master immunoregulatory system, moving his lab to the Laboratory of Molecular Immunology of NIAID in 2012, and publishing major papers in the fields of signal transduction, autoimmunity, allergy, infectious disease, cancer and even organ development. It is hard to overestimate the impact of Uli's work on immunology. One measure is his H-factor of 69; another is that 10% of his 167 published papers were published in Science, Nature or Cell.

Uli was a scientist's scientist, passionate about his work, with a vision for the big picture but rigorous to the bone for the details. Every paper was a complete and elegant work typically bearing the fruit of direct tests of hypotheses, integrated genetic and biochemical analyses, the latest cutting edge technologies, and complex genetic mouse models that he created to enable precise cell type-specific statements about the function of genes confusingly scattered across the many cellular outposts of the immune system. He relished the challenges of understanding the biology of the NF-kB system, especially Bcl-3, which has no superior in the immune system as a functional multitasker.

Uli made everyone around him a better scientist. He was possessed of innate humility and gently gave generous and constructive criticism that went to the heart of an issue and helped advance the science. He blended the quantitative rigor of a physicist with the tolerance of a biologist for complexity, ambiguity, and context, all shaped by an expansive curiosity. He was a staunch proponent of the importance of basic science but kept an eye out for clinical relevance.

Uli also made everyone around him a better person. He had great integrity and relentless loyalty to the end to his staff. He also had a finely tuned sense of irony and an eye for the absurd, which made conversation with him endlessly lively, insightful, and fun. He showed us how to live a rich and meaningful life of the mind and the spirit to the fullest despite overwhelming personal challenges.

In the annals of immunology, Uli will be remembered as a paragon of excellence and an architect of immune cell signaling paradigms. In the hearts and minds of his colleagues, he will be remembered as an inspirational and beloved colleague and friend.

Uli leaves behind his beloved family, including his wife, Kathy Kelly of NCI, and their two sons, Nicholas and Patrick.

With sorrow for our shared loss, but vivid memories and gratitude for Uli's time with us.

Photo: Courtesy of Himadri Samanta

Remembering

Peter Lengyel
1929-2020

A Pioneer Researcher in Protein Synthesis and Interferon Action

Ganes C Sen
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Bryan R. G. Williams
Centre for Cancer Research, Hudson Institute of Medical Research, Department of Molecular and Translational Sciences, Monash University, Melbourne, Australia

Peter Lengyel, Emeritus Professor, Department of Molecular Biophysics and Biochemistry, Yale University and who joined the Department in1965, passed away at his home in Woodbridge Connecticut on April 21, 2020. He was 91.

Peter was born in Budapest, Hungary in 1929 and when he grew up he expected to follow several relatives including his grandfather and become a physician. Surprisingly, his grandfather dissuaded him from that path, instead encouraging him to become a scientist and study the scientific basis of medicine. Peter's undergraduate studies were in chemical engineering and after serving in the Hungarian army for two years, he enrolled as a biochemistry graduate student at the Semmelweiss University Medical School in Budapest with Professor of Biochemistry, F. B. Straub, who himself was a former student of the Hungarian biochemist and Nobel laureate Albert Szent-Gyorgyi. When Soviet troops brutally suppressed the Hungarian uprising in 1956, Peter fled the country with his partner Suzanna, first to Vienna, where they were married, then to the United States as immigrants.

An interest in the RNA synthesizing enzyme polynucleotide phosphorylase (PNP) that he had developed in Budapest led him to contact, upon his arrival in New York, its discoverer and subsequent Nobel laureate Severo Ochoa. Peter suggested[1] that it was Ochoa's sympathy for the Hungarian cause coupled with his own enthusiasm that led him to being accepted as a graduate student with Ochoa at NYU. His graduate studies were focused on deciphering the genetic code in an extraordinarily competitive environment with the laboratories of Nirenberg and Khorana chasing the same goal. Following attendance at a lecture given by Sydney Brenner on messenger RNA, Peter suggested to his mentor that perhaps using simple synthetic messengers such as homopolyribonucleotides in cell-free amino-acid-incorporating systems could be the key for the deciphering of the code. Although Nirenberg was the first to use a cell free system to show that poly U could stimulate the incorporation of phenylalanine into polyphenylalanine, Peter and his colleagues refined the cell free system and used randomly ordered synthetic polynucleotides that contained several different nucleotide residues to direct the incorporation of other amino acids. Overall they were able to assign codons for 18 amino acids, publish five papers in PNAS, and in 1962 Peter was able to submit his thesis entitled "Use of Synthetic Polynucleotides in the Deciphering of the Genetic Code".

Following a one-year post-doctoral fellowship at the Pasteur Institute in the laboratory of Jacques Monod, Peter was recruited to Yale where he spent the remainder of his career. While he continued to work on protein synthesis, Peter was attracted by evidence from Phillip Marcus, Joyce Taylor and others that interferons may exert their antiviral activity by inhibiting viral protein synthesis. Among other early results, his laboratory demonstrated that extracts from interferon-treated cells contained an endoribonuclease activity that required double stranded RNA and ATP to degrade viral mRNA. Again he entered a very competitive field that included the laboratories of Ian Kerr and Michel Revel and others that raced to determine the underlying biochemical basis for the inhibitory activity found in extracts from interferon treated virus infected cells (2). Subsequent studies from these and other laboratories revealed the existence of a double stranded RNA activated protein kinase (PKR) that phosphorylated and inhibited the initiation factor of protein synthesis eIF2 and a family of 2'5' oligoadenylate synthetases (OAS) that produced 2'5' oligoadenylates that activated the latent endonuclease activity first described by Peter's laboratory and now termed RNAseL.

In the later 1970's, Charles Weissmann, a former colleague of Peter from the Ochoa laboratory, engaged with Peter in an attempt to functionally clone mouse interferon using a Xenopus oocyte assay system pioneered by Paula Pitha's laboratory at Johns Hopkins. While Charles moved on to clone human interferons, Peter's interest shifted to the cloning and characterization of interferon stimulated genes leading to the characterization of the P200 family [2, 3].

Photo: Courtesy of Himadri Samanta

Remembering Peter Lengyel 1929-2020

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This turned out to be a treasure trove of interesting proteins with multiple cellular functions. The originally cloned 202 gene (Ifi202) is a member of a cluster of at least 10 genes on mouse chromosome 1, all inducible by interferon. There exists a homologous set of genes in humans termed the HIN family. Peter's laboratory established that the p202 and 204 proteins have complex mechanisms of action, inhibiting transcription, apoptosis and cell growth by binding to different transcription factors and proapoptotic proteins. They found that p204 can both modulate differentiation and proliferation, was present in nucleoli and inhibited ribosomal RNA synthesis. During skeletal and cardiac muscle differentiation p204 translocates to the cytoplasm where it can bind both K and H-Ras inhibiting Ras-dependent signaling pathways. This and other findings suggest that p204 could function as a tumor suppressor. Interest in the p200 family members and their human counterparts continues in laboratories around the world. This has been stimulated by the discovery of their role in innate immune sensing in addition to functions described above[4].

As the children of well-educated Hungarian parents Peter and Suzanna were fluent in many languages including English and Suzanna became a sought after English editor in her role as a Systems Analyst at the Sterling Memorial Library, Yale University. Both shared passionate interests in art, classical music and world cultures and Peter was still able to quote the poems of Goethe late in life. Peter is remembered by his colleagues at Yale as "a beloved and a highly respected member in the Molecular Biophysics and Biochemistry department. He was renowned for his tremendous recall, vast knowledge of science and all things cultural, and his meticulous, precise, and fluent lectures delivered without notes, using only chalk and a blackboard to convey the most complex subjects" [5].

One of us (GCS) was trained by Peter, and introduced to interferon research. GCS and Peter became very good friends and shared many happy hours together over the last 45 years. Peter loved to take long walks and at conferences or during visits by GCS to New Haven, they enjoyed these walks together discussing not only science but all aspects of life. Peter's intellectual curiosity was broad and deep. GCS remembers him explaining at the Smithsonian, the intricacies of ancient Chinese landscape paintings or on the plane to a meeting in Nice, how societal behaviour influenced the spread of plague in medieval Europe. As recent immigrants to the USA who grew up elsewhere, Peter and GCS shared admiration for the American people and the natural beauty of the vast nation. It has been distinct privilege of GCS to know Peter as a close friend.

In recognition for his contributions to interferon research in 2008 Peter was awarded Honorary Membership in the International Cytokine and Interferon Society.

Peter's wife Suzanna died in 2019 and son Michael and daughter Carole and three grandsons survive him.

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4 Jakobsen MR, Paludan SR IFI16: At the interface between innate DNA sensing and genome regulation. Cytokine Growth Factor Rev. 25(6):649-55. 2014.

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> "Nothing will ever be attempted if all possible objections must first be overcome."
> — *Samuel Johnson*

2020 Seymour and Vivian Milstein Award

THE MILSTEIN AWARDS

WARREN J. LEONARD, MD

Warren J. Leonard, MD, NIH Distinguished Investigator, Chief, Laboratory of Molecular Immunology, and Director, Immunology Center, National Heart, Lung, and Blood Institute, NIH, Bethesda, USA

The ICIS Awards Committee has chosen Warren J. Leonard, MD as the recipient of the 2020 Seymour & Vivian Milstein Award for Excellence in Interferon and Cytokine Research in recognition of his ground breaking scientific contributions in both the basic biology of cytokine signaling (particularly IL-2 and related cytokines) and translational aspects, where he performed pioneering work in the area of X-linked severe combined immunodeficiency. His work continues to explore the role of cytokines in immune dysregulation.

Dr. Leonard is a physician-scientist whose contributions represent the "pinnacle of scientific achievement in interferon and cytokine research". He has made outstanding contributions in both basic science and translational areas, with many of his contributions being notable for innovation, creativity, and the potential for clinical application.

His ground-breaking scientific contributions in the area of cytokines began in the early 1980's when he cloned the IL-2 receptor α chain (IL-2Rα). After cloning IL-2Rα, he went on to co-discover IL-2Rβ and then in a truly transformative study demonstrated that mutations in the *IL2RG* gene (encoding IL-2Rγ) cause X-linked severe combined immunodeficiency (XSCID, also known as the "Bubble Boy" disease) and then discovered that multiple cytokines share IL-2Rγ, leading him to rename IL-2Rγ as the common cytokine receptor γ chain (γc) and to name these cytokines as the γc family of cytokines. He also discovered additional forms of human SCID (*JAK3*-deficient SCID, and *IL7R*-deficient SCID) that result from defective cytokine signaling, co-discovered the IL-21 receptor, and over the years has performed a remarkable range of studies related to c family cytokines, spanning their biology, signaling, gene regulation, and epigenetics, with exciting more recent studies on novel IL-2 partial agonists and super-enhancers.

Leonard's finding the genetic basis for these forms of human inherited immunodeficiency were milestone discoveries, establishing that they were distinct diseases and allowing precise molecular diagnosis. Moreover, Leonard's group established proof of principle in curing "XSCID mice" by gene therapy, paving the way to subsequent human gene therapy by Alain Fischer. Furthermore, in his paper describing human *JAK3*-deficient SCID, Leonard hypothesized that *JAK3* inhibitors would be immunosuppressive, providing scientific rationale for the development of such agents, such as Pfizer's tofacitinib, which is now a major medication for rheumatoid arthritis and other diseases. Because XSCID, *JAK3*-deficient SCID, and *IL7R*-deficient SCID account for over half of all human XSCID, Leonard's contributions have impacted more SCID patients than the work of all other investigators in the world combined related to allowing precise genetic diagnosis of SCID.

WARREN J. LEONARD, MD

THE MILSTEIN AWARDS

Continued

Moreover, his *Il2rg*-deficient mice were used to create NSG mice, which are extensively used world¬wide in tumor models.

Over the years, Leonard has continued to make extraordinary contributions spanning from basic science to important translational studies, summarized as follows:

- He cloned the IL-21 receptor with colleagues at SmithKline, pioneering and helping shape the field along with investigators from Zymogenetics
- To identify the biological role of key cytokines and their receptors, Leonard's group has made many critical knockout and transgenic mice and tremendously increased our understanding of the biology of these systems.
- His group also showed that IL-21 promotes the development of multiple forms of autoimmune disease, including type I diabetes and autoimmune uveitis.
- He was a pioneer in applying ChIP-Seq methodology to STAT proteins in T cells and discovered a genome-wide cooperation of STAT3 and IRF4, which represented a new STAT-IRF association. His group then co-discovered AP1-IRF4 consensus elements (AICEs) and demonstrated that they were key regulators of IL-21 signaling in T cells.
- More recently he demonstrated a complex interplay between IL-21 and type I interferons related to the clearance of methicillin resistant*aureus*and in other seminal work with Luca Gattinoni, his group compared the metabolic effects of IL-2 and IL-21 and elucidated mechanisms for enhanced antitumor efficacy in adoptive T cell immunotherapy.
- He identified a role for TSLP in allergic inflammation in the lung and discovered that TSLP activates Janus family tyrosine kinases JAK l/JAK2, thereby overturning the prevailing dogma that TSLP did not activate JAK kinases.
- He was the first to establish the significance of STAT tetramerization in vivo. His group generated *Stat5a/Stat5b* double knockin mice and discovered critical roles for STAT5 tetramerization for IL-2-induced T cell proliferation as well as for the development of and sustaining normal NK cell numbers.
- He then teamed with K. Christopher Garcia's laboratory at Stanford University, to study novel partial agonists of IL-2– the first partial agonists for a type I cytokine, to demonstrate that engineered cytokine partial agonists were new ways to fine-tune cytokine signals. These studies included the analysis of a potent antagonist of IL-2 that his group showed is an inhibitor of graft versus host disease and can markedly inhibit the growth of cells from patients with the chronic-smoldering form of adult T cell leukemia.
- His group also has identified and characterized genome wide IL-2/STAT5 and IL-21/STAT3-based super-enhancers and studied chromatin interactions and the functional role of the super-enhancer in the gene encoding IL-2R , the gene he had cloned early in his career.

Biography

Dr. Warren J. Leonard received his A.B. in mathematics, magna cum laude and Phi Beta Kappa, from Princeton University and his M.D. from Stanford University. After completing residency training in medicine at Barnes Hospital and a year of research in biochemistry at Washington University in St. Louis, Dr. Leonard came to the NIH as a postdoctoral fellow in the Metabolism Branch, National Cancer Institute. He began directing his own laboratory in the Cell Biology and Metabolism Branch, National Institute of Child Health and Human Development and then joined the NHLBI.
Dr. Leonard is the recipient of many honors and awards, including the American Federation for Clinical Research Foundation Outstanding Investigator Award, the Food and Drug Administration Center for Biologics Evaluation and Research Outstanding Service Award, the American Association of Immunologists (AAI)-Huang Foundation Meritorious Career Award, and the Honorary Lifetime Membership Award of the International Cytokine and Interferon Society. Dr. Leonard has authored or coauthored more than 375 research and review articles and book chapters and holds 23 patents.
He is currently an Associate Editor and former Co-Editor of Immunity, on the editorial board of Cytokine, an Associate Editor of International Immunology, and a contributing member of the Faculty of 1000. Moreover, he is past-President of the International Cytokine Society, a former member of the Board and former Vice President of the Foundation for Advanced Education in the Sciences (FAES), and has served on the Council of the Association of American Physicians. He is a member of the American Association of Immunologists, the American Society for Clinical Investigation, the Association of American Physicians, a Fellow of the American Association for the Advancement of Science, and a member of the National Academy of Inventors, the National Academy of Medicine, the National Academy of Sciences, and the American Academy of Arts and Sciences.

Dr. Leonard will accept the Milstein Award at Cytokines 2020 Virtual Meeting at the Awards Ceremony on Sunday, 1 November, 2020 and give a talk in the Opening Session.

@nih_nhlbi
https://irp.nih.gov/pi/warren-leonard

2020 THE ICIS-BIOLEGEND WILLIAM E. PAUL AWARD for Excellence in Cytokine Research

BioLegend®
Enabling Legendary Discovery™

2020 ICIS-BioLegend William E. Paul Award Winners - **Professors Sarah Gaffen** and **Vijay Kuchroo** are being jointly recognized for the ICIS-BioLegend William E. Paul Award for their combined contributions deciphering the role of a key cytokine IL-17 in health and disease.

SARAH L. GAFFEN, Ph.D.

Gerald P. Rodnan Professor of Rheumatology Director of Basic Rheumatology Research University of Pittsburgh School of Medicine Department of Medicine, Division of Rheumatology and Clinical Immunology Pittsburgh, USA

VIJAY K. KUCHROO, DVM, Ph.D.

Samuel L. Wasserstrom Professor of Neurology at Harvard Medical School & Director, Evergrande Center for Immunologic Diseases Harvard Medical School and Brigham and Women's Hospital, Boston, USA

SARAH L. GAFFEN,Ph.D.

Continued

Professor Sarah Gaffen is a world leader in the field of IL-17 biology and function and has become virtually synonymous with this cytokine within the broad scientific community. Dr. Gaffen is recognized for her role on IL-17-producing T cells (TH17 cells). Her laboratory first showed the role of Th17 cells in fighting yeast infections with candida albicans. IL-17 and its receptor are unique in structure and sequence from other known cytokines, and the Gaffen lab has been a leader in studying signaling pathways mediated by this novel family of cytokines. Dr. Gaffen started working on IL-17 back in 1999, at the time IL-17 was still an obscure and poorly understood cytokine, showing impressive foresight in working on this cytokine long before it was on anyone else's radar. In remarkably short order, Dr. Gaffen became a leading expert on IL-17 biology, which is now widely recognized as a major axis of immune signaling in biomedicine, and she made major headway in establishing systems for its investigation. Her group described the "IL-17 signature" that is now widely used in the field as a measure of IL-17 activity. Many early IL-17 researchers were stymied by the surprisingly weak activities of this cytokine. Undaunted, Dr. Gaffen demonstrated that, while IL-17 acts in a modest capacity on its own, IL-17 synergizes with other cytokines and microbial stimuli. Indeed, the concept of IL-17/TNF synergy is now the basis for clinical approaches to treat refractory autoimmune disease, and she received a grant from Janssen to pursue the clinical implications of this synergy (J Immunol 2018).

Her group's early analyses of the IL-17 receptor accurately predicted its 3-dimensional architecture and led to a patent (with Amgen) for methods to block IL-17 signaling activity (PNAS 2007; Science Signaling 2009; JBC 2010; J Immunol 2010; US Patent #8,460,647). Today, many groups use tools and systems that her lab developed to understand IL-17 biology. In recent years her group has discovered mechanisms by which IL-17 signal transduction is constrained to limit inflammation (Science Signaling [2013, 2018]; Immunity [2015]; Journal of Immunology [(2017]). Undeniably, Dr. Gaffen has a unique talent for recognizing areas of science that have been overlooked but are critically important, clinically relevant, and ripe for influential discoveries; these include IL-17 but extend far beyond IL-17 to other fields such as oral mucosal immunity and fungal immunity.

Presently, Sarah is internationally recognized for her groundbreaking work on oral mucosal immunity. Her signaling studies led her to recognize that mucosal epithelial cells are responsive to IL-17, but the oral mucosa remained neglected in this regard. Recognizing this gap, Dr. Gaffen was the first to show that IL-17 is host-protective in the oral mucosa, using a model of anaerobic periodontal bacterial infection (Blood 2007; Infect Immun 2008; Science Immunol 2020); importantly, this work inspired others in the dental field to evaluate IL-17 in this setting. Additionally, she showed IL-17 signaling is critical for immunity to the opportunistic fungus Candida albicans (JEM 2009). The latter paper is widely considered a seminal paper in the fungal field, with almost 900 citations, two Faculty of 1000 recommendations and an accompanying commentary in J Exp Med. Strikingly, these findings were validated in humans, as rare mutations in the IL-17R pathway cause oral mucosal candidiasis but surprisingly few other infections. One prediction from her work was that oral candidiasis would be a side effect of anti-IL-17 biologic therapy, which is indeed the case.

Work from her team in the candidiasis system revealed that not just Th17 cells, but also novel subsets of innate immune lymphocytes, are vital mediators of immunity to candidiasis (Mucosal Immunol 2013; J Exp Med 2014; Science Immunology 2017). Dr. Gaffen has used these concepts to develop a strain of C. albicans expressing IL-17 for use as a probiotic (Infect Immun 2015; US Patent # 10,160,974). Recognizing the paucity of tools to study events in the oral cavity, her group created a new mouse system to allow conditional gene deletion in the oral/esophageal mucosa. She used this system to show that IL-17 in oral epithelial cells is necessary for immunity to oral candidiasis (Cell Host Microbe 2016). Thus, Dr. Gaffen's group has pioneered studies of IL-17 in oral immunology and continues to lead the field with novel findings and innovative approaches.

Dr. Gaffen's research program has impressive momentum. In the last few years she has published in Immunity, Cell Host & Microbe, Science Signaling, JEM, Nature Immunology, Nature Communications and Science Immunology.

SARAH L. GAFFEN,Ph.D.

Continued

In 2016 she took advantage of a sabbatical leave at King's College London to develop expertise in epithelial cell biology, a logical extension of her work on IL-17 in the oral mucosa. This led to her exciting work on Candidalysin, a virulence factor for invasive Candida. Gaffen's publication record is stellar, with over 129 publications, many in the top journals of the field.

She has also written many high impact reviews, including Nature Immunology (2019), Nature Reviews Immunology (2009, 2014) and the 25th Anniversary Edition of Immunity (2019). She is regularly called upon to write commentaries about articles in the field, which have appeared in Science Signaling, Immunity and Nature Reviews Immunology. Dr. Gaffen has been elected to leadership roles in professional societies (e.g., ICIS Secretary and Councilor). She chaired a standing NIH study section, organized major conferences (including the 2013 inaugural meeting of the ICIS), and is on several journal editorial boards, notably Deputy Editor at the Journal of Immunology and member of the Advisory Board of Science Immunology. She won a Young Investigator Prize from the International Cytokine Society in 2004; in 2008 she was named to the prestigious Henry Kunkel Society; and in 2009 she was invited to join the Faculty of 1000. On the strength of her many accomplishments, she was awarded the Gerald P. Rodnan Endowed Chair in Rheumatology in 2015, one of only 3 endowed chairs in her Division and the only PhD or woman to be so honored. Dr. Gaffen received the 2018 University of Pittsburgh Chancellor's Senior Scholar Research award, one of the highest honors the University bestows, and one which is competitive across disciplines. Sarah's stature is the field is also evidenced by her having received the top score at the 2001 Arthritis Foundation grant application (Hulda Irene Duggan Arthritis Investigator Award). Dr. Gaffen rapidly obtained NIH R01 funding, which she has maintained continuously to this day. She holds R21 and R03 grants and a Senior Investigator grant from the Rheumatology Research Foundation. Dr. Gaffen is currently PI of three R01 grants. Notably, the R01 renewal grant based on her sabbatical research was given a MERIT award, an honor given to fewer than 5% of NIH investigators, to "provide long-term grant support to investigators whose research competence and productivity are distinctly superior and who are highly likely to continue to perform in an outstanding manner."

Dr. Sarah Gaffen received her BS in Biological Sciences from Carnegie Mellon University and her PhD in Molecular and Cellular Biology from the University of California at Berkeley. After a postdoctoral fellowship at the Gladstone Institute for Virology and Immunology at UC San Francisco working on IL-2 and JAK-STAT signaling in T cells, she joined the faculty at the University at Buffalo, State University of New York Dental School. In 2008 she re-located to the University of Pittsburgh, Division of Rheumatology and Clinical Immunology, where she holds the Gerald P. Rodnan Endowed Chair in the Department of Medicine, Division of Rheumatology and Clinical Immunology.

Website:
https://www.immunology.pitt.edu/person/sarah-gaffen-phd

Twitter:
https://twitter.com/slg1717

VIJAY K. KUCHROO, DVM, Ph.D.

Professor Vijay K. Kuchroo is recognized for his impact on many of the fundamental discoveries related to cytokine research over the past decade. In particular, he was instrumental in defining the IL-17 producing Th17 cells and their role in autoimmunity and how their modulation effects immune function and tissue inflammation. His work contributed to the development of immunotherapeutics that target both Tim-3 in cancer and IL-17 for autoimmune diseases. Dr. Kuchroo is also recognized for his seminal and original contributions to our understanding of the basic mechanisms of T cell differentiation and tolerance.

Dr. Kuchroo is recognized as one of the major forces in the MS research community. Many of the reagents and tools generated by his laboratory are willingly shared with the research community including multiple TcR transgenic mice, specific for myelin proteolipid protein and Myelin Oligodendrocyte Glycoprotein (MOG), which are used widely in every laboratory working in the field of Experimental Autoimmune Encephalomyeltis (EAE) and multiple sclerosis (MS). These transgenic mice are used by immunologists all over the world and have become a gold standard for studies with EAE. He has utilized EAE in mice as a tractable system to understand how autoimmunity develops and causes disease that is relevant to patients with MS. His initial work embraced the new technology of animal transgenesis to develop animal models for human autoimmune diseases. The journal Nature Immunology judged two of Dr. Kuchroo's papers as "classics in autoimmunity" and he received The Jacob Javits Neuroscience Investigator Award from the National Institutes of Health for this work in 2002. In addition, he was invited to give the prestigious Newsom-Davis lecture by the International Society of Neuroimmunology in 2016 and in 2019 was the recipient of the MileStones in Research Award from the National Multiple Sclerosis Society.

He has made enormous contributions to our understanding of autoimmunity, T cell differentiation and tolerance. His 400 studies have been cited more than 87,000 times and he has an H-index of 140. One of his papers on Th17 differentiation is one of the highly cited papers in Immunology. He is a pioneering T cell biologist who has made critical discoveries in the area of co-stimulation discovering TIM-3 and TIM family of genes in 2002. He has also made an important contribution to the field of innate lymphoid cells, most recently in relation to neuroimmune aspects and T cell subset differentiation, where he uncovered pathways for differentiation of Th17, Tr1 and Th9 cells. Thus, Dr. Kuchroo's work has had enormous impact not only the basic understanding of the immune system but his basic observations have had clinical impact.

As the field of Th17 biology has matured, Dr. Kuchroo has been at the forefront of adopting the parallel advances in the technologies that allow systems biology approaches to be applied to the analysis of immune populations. He has undertaken a temporal high-density transcriptomic analysis in collaboration with Aviv Regev at the Broad Institute, that has defined the circuitry of Th17 development. In addition to Th17 cells, Dr. Kuchroo also undertook single cell RNAseq analysis of ILC2 from the lung and identified the neuropeptide receptor- Neuromidine U receptor 1 (NMUR1), as uniquely expressed on ILC2. This study also showed that the cytokine IL-25 and the Neuropeptide NMU converts homeostatic ILC2 into pro-inflammatory allergenic ILC2 and contributes to lung inflammation.

Vijay Kuchroo is the first incumbent of the Samuel L. Wasserstrom Professor of Neurology in Inflammatory Diseases at Harvard Medical School and senior scientist at Brigham and Women's Hospital. He is founding director of the Evergrande Center for Immunologic Diseases at Harvard Medical School and Brigham and Women's Hospital. He is an institute member of the Broad Institute and a participant in a Klarman Cell Observatory project that focuses on T cell differentiation. Dr. Kuchroo came to the United States in 1985 and was at the National Institutes of Health, Bethesda as Fogarty International Fellow for a year before joining the Department of Pathology, Harvard Medical School as a Research Fellow in the fall of 1986. Dr. Kuchroo joined the Center for Neurologic Diseases, Brigham and Women's Hospital in 1992 where he was promoted to the rank of Associate Professor in 1996 and full Professor in 2004.

He obtained his degree in veterinary medicine from the College of Veterinary Medicine, Hisar, India. Subsequently, he specialized in veterinary pathology at the University of Queensland, Brisbane (Australia), where he obtained a Ph.D. in 1985.

VIJAY K. KUCHROO, DVM, Ph.D.

Continued

He received the Fred Z. Eager Research prize and medal for his Ph.D. research work at the University of Queensland. Based on his contributions, he was awarded the Javits Neuroscience Award by the National Institutes of Health in 2002 and the Ranbaxy prize in Medical Research from the Ranbaxy Science Foundation in 2011 for discovery of Th17 cells. He was named Distinguished Eberly lecturer in 2014, Garber Lecturer by the French Society of Immunology in 2014 and was recipient of Nobel Laureate Peter Doherty lecture/prize in 2014.

Dr. Kuchroo has been on the Editorial Boards of the journals *Autoimmunity, Journal of Immunology, Scandinavian Journal of Immunology, International Journal of Immunology and Journal of Experimental Medicine* and an ad hoc reviewer for a number of Immunology related journals. He was a permanent member of the grants review boards of the Juvenile Diabetes Research Foundation, New York and is currently on the scientific review board of the National Multiple Sclerosis Society, New York. Dr. Kuchroo is also an ad hoc reviewer for the research grants for various study sections at the National Institutes of Health.

Dr. Kuchroo has over 25 patents and has founded 6 different biotech companies. He also serves on the scientific advisory boards of a number of big pharmaceutical companies including Pfizer, Novartis, Sanofi/Genzyme and Glaxo-Smith-Klein (GSK). He is also on the boards of Biocon Pharmaceuticals, Syngene International and Bicara Inc.

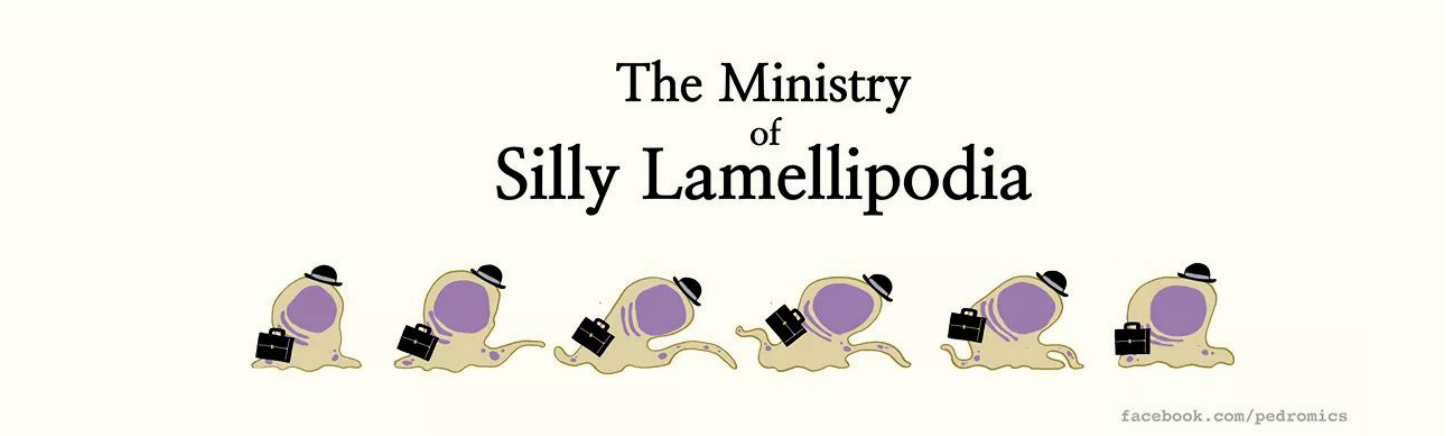
Website: https://kuchroolab.bwh.harvard.edu/principal-investigator/

Website: https://www.dfhcc.harvard.edu/insider/member-detail/member/vijay-k-kuchroo-dvm-phd/

IUIS
International Union of Immunological Societies

The ICIS is now an Associate Member of International Union of Immunological Societies (IUIS)

The IUIS is an umbrella organization for many of the regional and national societies of immunology throughout the world.



2020 ICIS AWARD WINNER

HONORARY LIFETIME MEMBERSHIP

Honorary Lifetime Membership Award

Nominations are solicited for Honorary Life Memberships in the ICIS. Each year an individual will be awarded 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 an historical perspective and valued research tradition.

ANNE O'GARRA, FRS, FMedSci.

Senior Group Leader, Laboratory of Immunoregulation and Infection
The Francis Crick Institute, London, England

Anne O'Garra is honored with the 2020 Honorary Lifetime Membership Awards as a tribute to her seminal and original contributions to our understanding of the role of cytokines in immunobiology and active engagement in cytokine research.

Anne O'Garra obtained her PhD in microbiology and undertook a Postdoctoral Fellowship in immunology at the Medical Research Council National Institute for Medical Research (NIMR; now part of the Francis Crick Institute) in London. At the DNAX Research Institute, California, USA (1987-2001), as an independent group leader, she defined functions and mechanisms for cytokines in the immune response, for which she was named 2nd of Highly Cited Authors in Immunology, 1992-2002 (ISI Science Indicators).

Anne returned to the UK in 2001 to form the Division of Immunoregulation at NIMR, to interface research in immunology and infectious diseases. Anne continues research on the role and function of cytokines in the immune response and how key cytokines are regulated at the transcriptional level. Her group now also study the immune response in tuberculosis in mouse models and human disease. Anne stepped down from her position as Associate Research Director at the Francis Crick Institute in June 2019, remaining as Senior Group Leader to focus on her lab's research on cytokines and the immune response in tuberculosis.

In addition to being a Fellow of the Royal Society, Anne was also elected a Fellow of the Academy of Medical Sciences, a Fellow of the American Association for the Advancement of Science and as a Member of EMBO, the European Molecular Biology Organization and is member of a number of Scientific Advisory Boards, including the Keystone Conferences and an Editor of the Journal of Experimental Medicine. As an advocate of Women-In-Science O'Garra chaired the Athena Swan Institute Pilot Bronze award for the NIMR.

She was co-chair of Cytokines 2018, 6th Annual Meeting of the International Cytokine & Interferon Society in Boston, Scientific Advisory Board and invited lecturer at Cytokines 2019 and is an ICIS Council Member.

*Anne O'Garra is also Professor of Infection Immunology, NHLI, Faculty of Medicine, Imperial College, London

NEW ICISAWARD

The society is pleased to announce a new award honoring mid-career success in cytokine and interferon biology. The award called the ICIS-LUMINEX John R. Kettman Award for Excellence in Interferon & Cytokine Research is generously supported by the *Luminex Corporation*. The award will honor 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. Candidates must be within 15 years from their terminal degree (Ph.D., M.D., or equivalent and be an independent research scientist (PI); postdoctoral fellows are not eligible. We are happy to consider exemptions to this 15 year limit on a case by case basis, if family-related, personal, or other circumstances resulting in extended time out of the laboratory.

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. Dr. Kettman received his undergraduate degree in biochemistry at the University of California, Berkeley, and completed his Ph. D. at Oregon State University under the advisory of TE King. He completed his postdoctoral work in immunochemistry with E. Benjamini and immunobiology with RW Dutton. He was a member of the Basel Institute for Immunology 1972-1973 and spent twenty-eight years as on the faculty of the Microbiology Department at University of Texas Southwestern Medical School in Dallas, Texas. He currently serves as a Professor Emeritus in the Department of Immunology, at the University of Texas Southwestern Medical School at Dallas. Jack was a co-founder of Luminex Corporation and former member of Board of Directors (1995) and a partner and member of board of Directors, Radix BioSolutions, Georgetown TX. He is author or co-author of over one hundred publications in reviewed scientific Journals.

'The ICIS-LUMINEX John R. Kettman Award for Excellence in Interferon & Cytokine Research makes a terrific addition to the slate of other ICIS awards, honoring those who are between early career and senior established investigators in the field. We are delighted that Luminex will support the society and we look forward to working to identify the most talented individuals for this honor', says Kate Fitzgerald, President of the ICIS. Upon announcement of the award, Michael Gale, Chair of the 2020 Seattle Meeting noted: 'In particular I am very pleased to be part of this activity, as I was on the Microbiology faculty at UT Southwestern with Jack Kettman, while he was developing the bead platform and before he left to join Luminex full-time. He is a great guy and was very good to me when I was an Assistant Professor right out of my postdoc, as he helped my new group dig into flow cytometry and cytokine analysis'.

Further details on the Luminex and other awards can be found here: https://cytokinesociety.org/awards/

2020 ICIS-LUMINEX JOHN R. KETTMAN EARLY-CAREER AWARD WINNER

Announcing the NEW ICIS-Luminex John R. Kettman Early-Career Award

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***.

Luminex®
complexity simplified.

GREGORY F. SONNENBERG, Ph.D.

Associate Professor of Microbiology & Immunology in Medicine
Department of Medicine, Gastroenterology Division,
Department of Microbiology & Immunology
Jill Robert's Institute for Research in IBD
Weill Cornell Medicine, Cornell University, New York, NY USA

Gregory F. Sonnenberg is an Associate Professor of Microbiology & Immunology at Weill Cornell Medicine, Cornell University. He obtained his Ph.D. in Immunology from the University of Pennsylvania in 2011 and was recipient of a NIH Director's Early Independent Award in 2012, permitting the establishment of the Sonnenberg Laboratory. He was recruited to Weill Cornell Medicine in 2014 and currently holds primary appointments in the Department of Medicine and Division of Gastroenterology, the Department of Microbiology & Immunology, and the Jill Robert's Institute for Research in Inflammatory Bowel Disease.

The focus and long-term research goals of the Sonnenberg Laboratory are to interrogate the cellular and molecular mechanisms by which the mammalian immune system controls tissue homeostasis, immunity, inflammation and cancer. This research thus far has defined numerous novel functions for innate lymphoid cells, populations of dendritic cells and emerging cytokine networks in controlling states of health and disease. Dr. Sonnenberg has published over 50 peer-reviewed primary and review papers and is funded by the NIH and private foundations. He is also been a recipient of the Searle Scholar Award, the Burroughs Wellcome Fund Investigator in the Pathogenesis of Infectious Disease Award, and the Caner Research Institute Lloyd J. Old STAR Award.

Website of the lab: http://sonnenberglab.weill.cornell.edu

2020 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.

JOAN SALUZZI-OEFNER

Managing Director, International Cytokine & Interferon Society

Joan Oefner is honored with the 2020 ICIS Distinguished Service award in recognition for her extraordinary contributions and service to the ICIS and to the cytokine research community at large.

Since she joined our Society as Managing Director in 2016, she has reached far beyond expectations to ensure the administrative, conference, and financial success of ICIS and has devoted significant time and energy to further the goals of the Society.

Joan founded her association management company in San Francisco in 1993 to support international scientific and medical societies. After moving to Germany in 2005, she found it surprisingly difficult to convince prospective new clients that a virtual business model is the most efficient and responsive way to to support the missions and goals of international non-profit scientific and medical societies. Past-President Nancy Reich and the ICIS Council, however, had no issues with this concept and boldly hired Joan's "Virtual Office".

Joan received her Bachelor of Arts, Psychology, in 1982 from the University of Colorado, Boulder. She obtained the CAE (certified association executive) designation in November 1998 from the American Society of Association Executives. She is not a scientist but loves working for scientists and even married her favorite one, Peter Oefner, who is Chair of the Department of Functional Genomics, Institute of Functional Genomics at the University of Regensburg (thus the move to Germany).

"Finding qualified people to take over growing, established organizations is easy enough; my talent is recognizing promising organizations and investing myself in helping them reach their full potential. At this stage in my career, I am also looking for opportunities to use my energy, experience and skills to help break the cycle of social, racial and economic inequality."

2020 ICIS Young Investigator Awards

MILSTEIN YOUNG INVESTIGATOR AWARDS

Aaron M Ring, MD, PhD

Assistant Professor of Immunobiology, Yale University School of Medicine, New Haven, USA

Elia Tait Wojno, PhD

Assistant Professor, Department of Immunology, University of Washington, Seattle, USA

Zhenyu Zhong, PhD

Assistant Professor, Department of Immunology, University of Texas Southwestern Medical Center, Dallas, USA

THE CHRISTINA FLEISCHMANN AWARD TO YOUNG WOMEN INVESTIGATORS

Carrie L Lucas, PhD

Assistant Professor of Immunobiology, Yale University, Department of Immunobiology, New Haven, USA

THE SIDNEY & JOAN PESTKA POST-GRADUATE AWARD

Autumn York, PhD

Hanna H. Gray Postdoctoral Fellow, Howard Hughes Medical Institute, Laboratory of Richard Flavell, Department of Immunobiology, Yale University, New Haven, United States

THE SIDNEY & JOAN PESTKA GRADUATE AWARD

Jack Major

PhD Student (4th and final year), Francis Crick Institute, Present Immunoregulation laboratory (student at Imperial College London)

2020 INAUGURAL AMANDA PROUDFOOT TRIBUTE GRADUATE STUDENT/POSTDOC AWARD FOR ADVANCES IN CHEMOKINE BIOLOGY

Matteo Massara, PhD

Postdoctoral researcher, Prof. Johanna Joyce's Lab
University of Lausanne, Ludwig Institute for Cancer Research, AGORA Cancer Center
Lausanne, Switzerland

Full bios and pictures will be in the April 2021 issue of Signals and are on the Society's website.

DON'T SKIP THIS PAGE THIS JUST BECAUSE IT LOOKS WEIRD. BELIEVE IT OR NOT, YOU **CAN** READ IT.

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Amzanig huh?

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. As of October 7, 2020, there are **1,047** ICIS Members as follows: Academic/Government Life Membership (74); Academic/Government Member (461); Emeritus Member (12); Honorary Life Member (45); Industry Member (14); Student PostDoc Three Year Membership (441).

Nicholas Adams
New York University School of Medicine
United States
Research Advisor: Boris Reizis

Remsha Afzal
Royal College of Surgeons in Ireland (RCSI)
Ireland
Research Advisor: Claire McCoy

Ajay Akhade
Institute for Systems Biology
United States
Research Advisor: Naeha Subramanian

Jasmine Alexander-Floyd
United States
Research Advisor: Sunny Shin

Noemie Alphonse
King's College London
United Kingdom
Research Advisor: Charlotte Odendall

Pierette Appasamy
Chatham University, Pittsburgh PA
United States

Nathalie Arhel
IRIM
France

Tatiane Assone Dos Santos
Brazil
Research Advisor: Johan Van Weyenbergh

Harshini Shankika Hewagama Asurappulige
University of West of England
United Kingdom
Research Advisor: Dr. Ruth Morse

Theint Aung
University of Chicago
United States
Research Advisor: Juan Mendoza

Samantha Avina
Rutgers University School of Graduate Studies-Newark
United States
Research Advisor: Amariliz Rivera

Kevin Baker
University College Cork
Ireland
Research Advisor: Dr. Elizabeth Brint

Steven Baker
University of Wisconsin-Madison
United States
Research Advisor: Andrew Mehle

Katherine Balka
Monash Biomedicine Discovery Institute
Australia
Research Advisor: Dominic De Nardo

Ab Rouf Banday
NIH
United States

Angela Barbero
UNNOBA
Argentina
Research Advisor: Virginia Pasquinelli

Adriana Barbosa
Lauro of Souza Lima Institute
Brazil

Brianne Barker
Drew University
United States

Yvonne Baumer
NIH/NHLBI
United States

Dirk Baumjohann
University Hospital Bonn/ University of Bonn
Germany

Iris Behrmann
Luxembourg

Jelena Bezbradica
University of Oxford
United Kingdom

Fabian Bick
VIB UGent – Center for Inflammation Research
Belgium
Research Advisor: Prof. Dr. Bart Lambrecht

Dylan Boehm
Oregon Health and Science University
United States
Research Advisor: Victor DeFilippis

Sara Botto
Oregon Health & Science University
United States

Dave Boucher
Uninversity of York
United Kingdom

Ian Boys
UT Southwestern Medical Center
United States
Research Advisor: John Schoggins

Achille Broggi
Boston Children's Hospital
United States

Brianna Busscher
Case Western Reserve University
United States
Research Advisor: Tsam (Sam) Xiao

Scott Canna
University of Pittsburgh/ Children's Hospital of Pittsburgh
United States

NEW ICIS MEMBERS

Continued

Grace Carreno-Florez
University of Pittsburgh, Microbiology and Molecular Genetics Department
United States
Research Advisor: Jennifer Bomberger

Rebecca Casazza
UNC Chapel Hill
United States
Research Advisor: Helen Lazear

Ainara Castellanos-Rubio
Spain

Jieliang Chen
Fudan University
China

Hsin-Hsiang Chen
Taiwan
Research Advisor: Chien-Kuo Lee

Jie Cheng
Georgetown University
United States
Research Advisor: Marta Catalfamo

Maria Ciofani
Duke University Medical Center
United States

Estefania Claudio Etienne
NIH
United States

Slater Clay
Harvard T.H. Chan Scool of Public Health
United States
Research Advisor: Dr. Wendy Garrett

Anna Cliffe
UVA Dept of Microbiology, Immunology and Cancer
United States

Rachel Coleby
William IHarvey Research Institute
United Kingdom
Research Advisor: Prof Michele Bombardieri

David Constant
Oregon Health & Science University
United States
Research Advisor: Tim Nice

Carolyn Coyne
University of Pittsburgh
United States

Sean Cuddy
University of Virginia
United States
Research Advisor: Dr. Anna Cliffe

Nerea Cuesta - Gomez
United Kingdom
Research Advisor: Gerard Graham

Ang Cui
United States
Research Advisor: Dr. Nir Hacohen

Devika Dahiya
Royal College of Surgeons in Ireland
Ireland
Research Advisor: Claire McCoy

Wendy Dankers
Australia
Research Advisor: Prof. Eric Morand

Kaustav Das Gupta
Institute for Molecular Bioscience
Australia
Research Advisor: Professor Matthew J. Sweet

Matthew Daugherty
University of California, San Diego
United States

Michael Davis
University of Washington
United States

Ruby Dawson
Australia
Research Advisor: Brendan Jenkins

Chiara De Santi
Royal College of Surgeons in Ireland
Ireland
Research Advisor: Dr. Claire McCoy

Maren de Vries
NYU Grossman School of Medicine
United States
Research Advisor: Meike Dittmann

Farhad Dehkhoda
The Walter and Eliza Hall Institute of Medical Research
Australia
Research Advisor: Associate Professor Sandra Nicholson

Ruth Dickenson
King's College London
United Kingdom
Research Advisor: Charlotte Odendall

Simion Dinca
United States
Research Advisor: Dr. Cheryl Jorcyk

Karen Dixon
United States
Research Advisor: Vijay Kuchroo

Jessica Doerner
University of Pennsylvania
United States
Research Advisor: Sunny Shin

Evidio Domingo-Musibay
University of Minnesota
United States

Eunice Dotse
City University of Hong Kong
Hong Kong
Research Advisor: Dr. Kwan Ting Chow

Jennifer Dowling
Royal College of Surgeons in Ireland
Ireland
Research Advisor: Claire McCoy

Samantha Drinan
Boston University
United States
Research Advisor: Dr. Juan Fuxman Bass

Darragh Duffy
Institut Pasteur
France

Conor Duffy
Royal College of Surgeons in Ireland
Ireland
Research Advisor: Dr. Claire McCoy

Stephanie Dufresne
Université de Montréal
Canada
Research Advisor: Nathalie Grandvaux

Marina Dukhinova
ITMO
Russian Federation
Research Advisor: Dr. Alexander A. Shtil

Alexis Duray
United States
Research Advisor: Alexis Duray

Frank Eckerdt
Northwestern University, Feinberg School of Medicine
United States

NEW ICIS MEMBERS

Continued

Bill Edens
RayBiotech
United States

Marisa Egan
United States
Research Advisor:
Dr. Sunny Shin

Moritz Eissmann
Olivia Newton-John Cancer Research Institute
United States
Research Advisor:
Matthias Ernst

Lana Elkins
Arkansas State University
United States
Research Advisor:
Maureen Dolan

Melinda Engevik
Baylor College of Medicine
United States

Erika English
United States
Research Advisor:
Dr. James Krueger

Vanessa Espinosa
Rutgers School of Biomedical Sciences
United States
Research Advisor:
Amariliz Rivera

Nesrine Fakhfakh
Université de Montréal - CRCHUM
Canada
Research Advisor:
Dr. Nathalie Grandvaux

Wenchun Fan
United States
Research Advisor:
John W. Schoggins

Barbara Felber
National Cancer Institute
United States

Ninoshka Fernandes
United States

Matthew Fischer
United States
Research Advisor:
Karen Edelblum

Ruth Franklin
Harvard University
United States

Marta Gaglia
Tufts University School of Medicine
United States

Katrina Gee
Queen's University
Canada

Giovanna Germano
Brazil
Research Advisor:
Dra. Vânia Niéto Brito de Souza

Sreya Ghosh
Boston Children's Hospital
United States
Research Advisor: Ivan Zanoni

Kurt Giuliani
The University of Queensland
Australia
Research Advisor:
Professor Helen Healy

Jennifer Go
University of Washington
United States

Himanshu Gogoi
University of Florida
United States
Research Advisor: Immunology

Nandan Gokhale
University of Washington
United States
Research Advisor: Ram Savan

Itziar Gonzalez Moro
UPV/EHU
Spain
Research Advisor: Izortze Santin

Trever Greene
University Of California San Diego
United States
Research Advisor: Elina Zuniga

William Grubbe
University of Chicago
United States
Research Advisor:
Juan Mendoza

Lili Gu
Trinity College Dublin
Ireland
Research Advisor:
Andrew Bowie

Coralie Guy
Trinity Biomedical Sciences Institute
United States
Research Advisor:
Andrew Bowie

Emily Gwyer Findlay
University of Edinburgh
United Kingdom

Nika Hajari
University of Washington
United States
Research Advisor:
Michael Gale Jr.

Ben Hale
University of Zurich
Switzerland

Natasha Hanners
UT Southwestern
United States

Christopher Harpur
Australia
Research Advisor: Michelle Tate

Oliver Harrison
Benaroya Research Institute
United States

Victoria Hartley
University of Illinois at Chicago
United States
Research Advisor:
Donna MacDuff

Kun He
United States
Research Advisor:
Amanda Poholek

Nicholas Heaton
Duke University School of Medicine
United States

Colin Hockings
Walter & Eliza Hall Institute of Medical Research
Australia
Research Advisor:
Sandra Nicholson

Reiko Horai
National Eye Institute
United States

Diana Hotea
Université de Montréal
Canada
Research Advisor:
Nathalie Grandvaux

Kate Hsu
Taiwan

Stuart Hughes
Cardiff University
United Kingdom
Research Advisor:
Prof Simon Jones

Jennifer Hyde
United States

Andrea Iannucci
Italy
Research Advisor:
Prof. Marisa Gariglio

NEW ICIS MEMBERS

Continued

Jun Ishihara
University of Chicago
United States
Research Advisor:
Jeffrey Hubbell

Rafique Islam
National Institutes of Health
United States
Research Advisor:
Dr. Powell-Wiley

Luo Jia
Rutgers university-New Jersey Medical School
United States
Research Advisor:
Karen Edelblum

Kristina Johansson
University of California San Francisco
United States
Research Advisor: Mark Ansel

Cheryl Julia
Washington State University
United States

SEVASTI KARALIOTA
NCI/NIH
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Adam Kenney
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Research Advisor: Jacob Yount

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Sangmi Kim
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Dr. Kwan Ting Chow

Nadine Köhler
Otto von Guericke University
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Prof. Dr. Fred Schaper

Hirotada Kojima
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Research Advisor: Katrina Gee

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Wendy Watford, PhD

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Mandy mcGeachy, Phd

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Xing Liu
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Michela Locci
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Mayoorey Murugathasan
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IRIM
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Weizmann Institute for Science
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Aran Son
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National Insititute of Eye
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Research Advisor:
Rachel R. Caspi

Didi Zhu
UCSF
United States
Research Advisor: K Mark Ansel

New Member MINIBIOs

Ruth A. Franklin, PhD
Assistant Professor of Stem Cell & Regenerative Biology
Faculty of Arts & Sciences
Faculty of Medicine
Harvard University, Harvard Medical School
www.ruthfranklinlab.com
she/her/hers

Ruth A. Franklin is an Assistant Professor of Stem Cell and Regenerative Biology at Harvard University, a member of the Committee on Immunology at Harvard Medical School, and a Principal Faculty member of the Harvard Stem Cell Institute. Dr. Franklin earned a B.A. from Bowdoin College in Biology and a Ph.D. in Immunology and Microbial Pathogenesis from Weill Cornell Graduate School of Medical Sciences. She completed her graduate studies with Dr. Ming Li at Memorial Sloan Kettering Cancer Center where she defined the lineage and function of tumor-associated macrophages in breast cancer development. She then pursued postdoctoral training with Dr. Ruslan Medzhitov in the Department of Immunobiology at Yale University School of Medicine, expanding her work on macrophages to study their homeostatic functions. She demonstrated how relative ratios of different cell types within tissues are regulated through the exchange of growth factors. The Franklin lab opened in 2020 and is focused on understanding how cells of the innate immune system, such as macrophages, communicate with non-immune cells via cytokines and other secreted factors to elicit local and systemic responses in homeostasis and disease.

Nathaniel West, PhD
Scientist, Department of Cancer Immunology
Genentech, South San Francisco, USA

Nathan completed his PhD at the British Columbia Cancer Agency (in association with the University of Victoria, Canada), under the mentorship of Dr. Peter Watson. During his graduate studies, Nathan studied the effects of inflammatory cytokines on the phenotypic plasticity of breast cancer, along with the association between tumor-infiltrating leukocytes and clinical response to chemotherapy. Nathan joined the lab of Prof. Fiona Powrie at the University of Oxford in 2012, where he studied novel cytokine pathways in the context of colorectal cancer and treatment-refractory inflammatory bowel disease. Nathan joined Genentech in 2017 as a group leader in Cancer Immunology, where his lab investigates the roles of cytokines in anti-tumor immunity and cancer immunotherapy.

Dr. Larisa Labzin
IMB Fellow
NHMRC CJ Martin Fellow
Institute for Molecular Bioscience
The University of Queensland
Brisbane Qld 4072 Australia

Dr. Larisa Labzin is postdoctoral research fellow at the Institute for Molecular Bioscience (IMB) at the University of Queensland, Australia. Dr Labzin studies how viruses are recognized by innate immune receptors to trigger anti-viral and inflammatory pathways, with a view to understanding how these pathways influence infection resolution, and how dysregulation of these pathways contributes to viral pathogenesis and immunopathology. Dr Labzin completed her undergraduate studies at the University of Queensland, and her interest in innate immunity began during her honours training with Prof. Matt Sweet at the IMB, looking at regulation of TLR4 signalling. Dr Labzin subsequently moved to Germany to undertake her PhD with Prof. Eicke Latz at the Univeristy of Bonn. Here, Dr Labzin investigated the anti-inflammatory effects of High Density Lipoprotein and identified the transcriptional repressor ATF3 as a novel regulator of interferon beta expression. Dr Labzin then moved to Cambridge, UK as an EMBO postdoctoral fellow to work with Dr. Leo James at the Medical Research Council Laboratory for Molecular Biology. In Dr James' lab Dr Labzin investigated how antibodies against adenovirus modulate macrophage inflammatory responses. While in Cambridge, Dr Labzin was awarded an NHMRC CJ Martin Fellowship to return to Australia. Dr Labzin returned to the IMB in September 2019 to work with Prof. Kate Schroder on how viruses activate the inflammasome. Dr Labzin continues to investigate how antibodies modulate innate sensing of viruses and the ensuing inflammatory responses.

New Member MINIBIOs *Continued*

Prof. Dr. Leon Schulte
"RNA Biology of Inflammation and Infection"
Institute for Lung Research / iLung
Philipps-Universität Marburg
Marburg, Germany

Leon Schulte is an Associate Professor at the Institute for Lung Research, Philipps-University Marburg, Germany, where he studies the regulation of cytokine and interferon production by regulatory RNAs during bacterial infections. He completed a Ph.D. in Molecular Biology at the Max-Planck-Institute for Infection Biology and Humboldt-University Berlin. During his PhD and post-doctoral studies in the lab of Jörg Vogel, he revealed the regulation of IL6 and IL10 mRNAs by let-7 microRNAs during macrophage infection, and the subversion of the host STAT3-IL6 axis in the human intestinal epithelial compartment by the pathogen Salmonella Typhimurium. In 2017 Leon Schulte was appointed as a Junior Professor at Philipps-University; in 2019 he received the prestigious MarBiNa Nano- and Biotechnology award. Published and ongoing work in the Schulte lab addresses the roles of lncRNAs and phase-separated ribonucleoprotein particles in type I interferon production and cell-autonomous defence of human phagocytes against bacterial pathogens.

Anastassia Voronova, Ph.D.
Assistant Professor
Canada Research Chair Tier II in Neural Stem Cell Biology
Department of Medical Genetics
University of Alberta
Edmonton, Canada
https://sites.google.com/ualberta.ca/voronova-lab-web-site/home

Dr. Anastassia Voronova obtained her Ph.D. degree from the University of Ottawa (Canada) under the tutelage of Dr. Ilona Skerjanc, where she studied the regulation of embryonic stem cells. During her postdoctoral fellowship at the Hospital for Sick Children in the laboratory of Drs. Freda Miller and David Kaplan, she discovered fractalkine, an immunological cytokine, is responsible for cell-cell communication between neural stem cells and inhibitory neurons. She further showed interneuron-secreted fractalkine instructs neural stem cells in the developing brain to become oligodendrocytes, the myelinating cells of the central nervous system. Dr. Voronova is now an Assistant Professor and Canada Research Chair Tier II in Neural Stem Cell Biology at the University of Alberta, Canada. Her independent research program focuses on how neuronally secreted chemokines and cytokines regulate neural stem cell function in the developing and remyelinating brain.

Jason Weinstein
Rutgers New Jersey Medical School
New Jersey Medical School Cancer
Newark, USA

Dr. Jason Weinstein has long-held an interest in immunology, particularly in understanding T-B collaboration in normal and autoimmune responses. As a graduate student at the University of Florida, he studied the mechanisms underlying the generation of autoreactive B and T lymphocyte responses in lupus. As a postdoctoral fellow at Yale he examined the developmental requirements of T follicular helper cells, with the goal of applying these findings to autoimmunity. Jason used state-of-the-art bioinformatics and functional genomics to identify novel Tfh-cell specific enhancer elements from chronically inflamed human tonsils. Jason then integrated bioinformatics and genomics tools with cellular immunology approaches to assess how cytokines are regulated in Tfh cells. He is currently examining how the regulation of these cytokines alters B cells responses in acute viral and helminth infections, models of type 1 and type 2 immune responses, respectively, with the goal to then dissect chronic autoimmune models for similarities.

New Member MINIBIOs *Continued*

Nicholas S. Heaton, PhD
Assistant Professor
Department of Molecular Genetics and Microbiology (MGM)
Duke University Medical Center
Durham, USA
https://sites.duke.edu/heatonlab/
Twitter: @heatonlab

I received BS degrees in Bacteriology and Biology from the University of Wisconsin-Madison. I did my graduate studies from with Dr. Glenn Randall at the University of Chicago and then worked with Dr. Peter Palese as a post-doctoral fellow. My laboratory at Duke University is focused on understanding regulation of innate immune responses during acute respiratory viral infections.

REMEMBER TO VOTE!!

You know you are living in 2020 when...

1. You accidentally enter your PIN on the microwave...
2. You haven't played solitaire with real cards in years.
3. You have a list of 15 phone numbers to reach your family of three.
4. You e-mail the person who works at the desk next to you.
5. You pull up in your own driveway and use your cell phone to see if anyone is home to help you carry in the groceries.
7. Every commercial on television has a web-site at the bottom of the screen.
8. Leaving the house without your cell phone, which you didn't even have the first 20 or 30 (or 60) years of your life, is now a cause for panic and you turn around to go and get it.
9. You get up in the morning and go on-line before getting your coffee
10. You are too busy to notice there was no #6 on this list.
11. You actually scrolled back up to check that there wasn't a #6 on this list!

Cytokines 2021, the 9th Annual Meeting of the International Cytokine & Interferon Society,

17 – 20, October, Cardiff City Hall, Cardiff, Wales, UK

This meeting annually attracts 700-850 of the world's leading immunology experts and covers both fundamental and clinical research specific to the role of cytokines in health and disease. Many of the major advances in cytokine biology where first reported at this annual conference, and we very much look forward to continuing this strong tradition next year in Cardiff.

As a consequence of COVID-19, Cytokines 2020, originally planned for Seattle, will be held virtually. It is hoped that the Cytokines 2021 meeting in Cardiff will go ahead in the real world or through a blended real world-virtual platform and we are now turning our attention to the programme. We are adapting to the completely new circumstances in this "new normal" by maintaining an unwavering focus on participants' needs, putting the safety of our members, invitees and staff first.

Celtic Cytokines– Sensing and Interpreting Cytokine Cues

Day-1 Sunday 17th October:	**Welcoming remarks, Opening Introductions and Awards** Welcome reception – Museum or Cardiff Castle
Day-2 Monday 18th October:	**Mechanisms of Cytokine and Cytokine Receptor Systems** Keynote reception – Cardiff University International Office, (Glamorgan House) Early Career Researcher Event(s) – City or Royal Welsh College of Music & Drama
Day-3 Tuesday 19th October:	**Translating Cytokine Biology in Health and Disease** Banquet – Coal Exchange, Cardiff Bay – Luke's Band
Day-4 Wednesday 18th October:	**New light through old windows – The future of cytokine biology**

Preliminary List of Session Topics:

- CYTOKINES IN CELLULAR METABOLISM AND IMMUNE HOMEOSTASIS
- Designer cytokines and cytokine immunotherapy
- Tissue homeostasis and barrier immunity
- Cytokines in anti-viral immunity
- Epigenetic control of cytokine responses
- Mechanisms of Cytokine Release Syndromes
- Single cell analysis of inflammatory outcomes
- UNDERSTANDING MULTIMORBIDITY IN CHRONIC DISEASE
- Cancer inflammation
- Mechanisms of interferonopathies
- Determinants of disease heterogeneity
- Cytokines in allergic reactions
- Japanese Interferon Society Symposium
- Cytokines in psychoneuroimmunology and pain
- Stromal tissue as orchestrators of disease outcome
- Determinants of cell fate
- Repurposing of biological therapies
- Advances in precision medicine
- SYSTEMS APPROACHES IN PRECISION MEDICINE

Local Organizing Committee:

- Simon A Jones (Chair), Cardiff University
- Luke O'Neil, Trinity College Dublin
- Clare Bryant, University of Cambridge
- Clare Margaret Lloyd, Imperial College London
- Iain McInnes, University of Glasgow

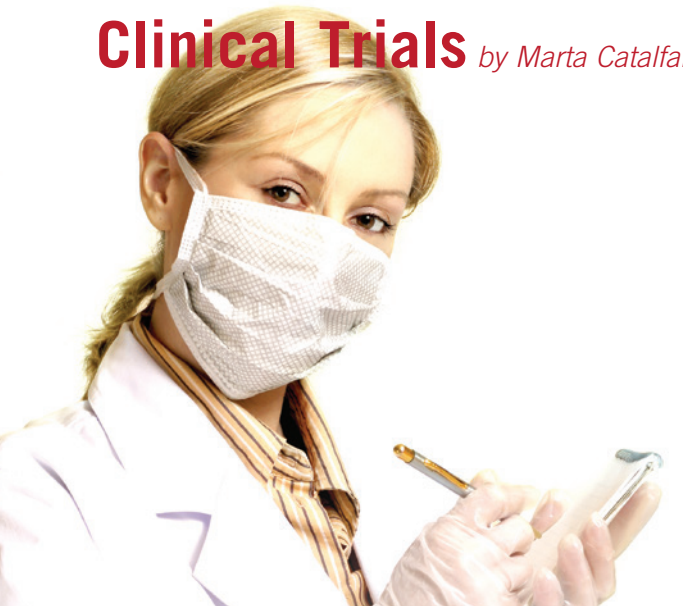
I very much hope to see you all in Cardiff next year and I hope you and your families are healthy and safe in these challenging times.

Best regards,

Professor Simon A Jones
Dean of Research, The School of Medicine
Division of Infection & Immunity
Cardiff University
Cardiff, Wales, UK
JonesSA@cardiff.ac.uk

Yr Athro Simon A Jones
Deon Ymchwil Ysgol Meddygaeth Prifysgol Caerdydd
Yr Isadran Haint ac Imiwnedd
Adeilad Tenovus
Parc y Mynydd Bychan
Caerdydd, Cymru, DU

Clinical Trials *by Marta Catalfamo*



Peginterferon Lambda-1a for the Prevention and Treatment of SARS-CoV-2 (COVID-19) Infection (PROTECT)

Principal Investigators: Mark Sulkowski, MD. Johns Hopkins Hospital. Baltimore, Maryland, 21287. USA
Contact: Stephanie Katz, RN, MSN. **Phone:** +1 410-955-7568
ClinicalTrials.gov Identifier: NCT04344600

Interferon Lambda Therapy for COVID-19

Principal Investigators: Thomas Marron, MD. Icahn School of Medicine at Mount Sinai
New York, New York, 10029. USA
Contact: Lynn Bui. **Phone:** +1 212-824-7860
ClinicalTrials.gov Identifier: NCT04388709

Tocilizumab in the Treatment of Coronavirus Induced Disease (COVID-19) (CORON-ACT)

Principal Investigators: Peter M. Villiger, Prof. Dr. Med. University Hospital Bern (Inselspital) Bern, 3010. Switzerland.
Contact: Stephan Reichenbach, Prof. Dr. Med.
Phone: +41 31 631 56 98
ClinicalTrials.gov Identifier: NCT04335071

Ruxolitinib in the Treatment of Covid-19

Principal Investigators: Marcelo Iastrebner, MD. Clinica Zabala. C1426 AAM. Buenos Aires. Argentina
Contact: Marcelo Iastrebner, MD. **Phone:** +5491169816300
ClinicalTrials.gov Identifier: NCT04414098

Treatment of Moderate to Severe Coronavirus Disease (COVID-19) in Hospitalized Patients

Principal Investigators: Lisa Barrett, MD. Nova Scotia Health Authority. Halifax, Nova Scotia, B3H 1V7. Canada
Contact: Barbara Goodall. **Phone:** (902) 292-0132
ClinicalTrials.gov Identifier: NCT04321993

Early Treatment of Cytokine Storm Syndrome in Covid-19.

Principal Investigators: Walter W Chatham, MD. University of Alabama at Birmingham. Birmingham, Alabama, 35294. USA
Contact: Angela Kendrach. **Phone:** +1 205-996-5602
ClinicalTrials.gov Identifier: NCT04362111

Treatment of COVID-19 Patients With Anti-interleukin Drugs (COV-AID)

Principal Investigators: Bart Lambrecht, MD, PhD. University Hospital Ghent. Gent, 9000. Belgium
Contact: Anja Delporte. **Phone:** +32-9-3320228
ClinicalTrials.gov Identifier: NCT04330638

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

Principal Investigators: Diwakar Davar, MD. University of Pittsburgh Cancer Institute (UPCI).
Pittsburgh, Pennsylvania, 15232. USA
Contact: Diwakar Davar, MD. **Phone:** +1 412-647-8073
ClinicalTrials.gov Identifier: NCT03030378

Evaluating the Effect of NT-I7, a Long Acting Interleukin-7, to Increase Lymphocyte Counts and Enhance Immune Clearance of SARS-CoV-2 (COVID-19)

Principal Investigators: Mary McLennan, M.D. and Alexandre Lacasse, M.D. Saint Louis University Hospital. Saint Louis, Missouri, 63110. USA
Contact: Mary McLennan, M.D. **Phone:** 314-768-8028
ClinicalTrials.gov Identifier: NCT04498325.

Interleukin-15 (IL-5) in Combination With Avelumab (Bavencio) in Relapsed/Refractory Mature T-cell Malignancies

Principal Investigators: Milos Miljkovic, M.D. National Institutes of Health Clinical Center.
Bethesda, Maryland, 20892. USA.
Contact: NCI Medical Oncology Referral Office.
Phone: +1 240-760-6050
ClinicalTrials.gov Identifier: NCT03905135

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

Principal Investigators: Jean-Philippe Lanoix, MD. CHU Amiens. Amiens, 80480. France Contact: Aurélien Mary, MD.
Phone: +33 22087140
ClinicalTrials.gov Identifier: NCT04469491

Interferon γ-Primed Mesenchymal Stromal Cells as Prophylaxis for Acute Graft v Host Disease

Principal Investigators: Muna Qayed, MD. Emory University. Atlanta, Georgia 30322. USA
Contact: Muna Qayed, MD. **Phone:** +1 404-785-1441
ClinicalTrials.gov Identifier: NCT04328714

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

Principal Investigators: Nicolas Mach, Prof. MD. Geneva University Hospital, Oncology Department. Geneva, Switzerland
Contact: Barbara Ziffels, PhD. **Phone:** +39 057717816
ClinicalTrials.gov Identifier: NCT04471987

HIV Reservoir Reduction With Interleukin-2 (IL2)

Principal Investigators: Michael Lederman, MD. Case Western Reserve University. AIDS Clinical Trials Unit Recruiting.
Cleveland, Ohio, 44106. USA.
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ClinicalTrials.gov Identifier: NCT03308786

REVIEWS OF INTEREST

Contributed by Zhian Chen and Di Yu

IL-9-producing T cells: potential players in allergy and cancer.
Angkasekwinai P, Dong C.
Nat Rev Immunol. 2020 Aug 12. doi: 10.1038/s41577-020-0396-0. PMID: 32788707

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REVIEWS OF INTEREST

Contributed by Zhian Chen and Di Yu

Continued

COVID-19 SPECIAL COLLECTION

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WWW

Contributions from Supreet Agarwal

GLOBAL IMMUNOTALKS

https://labs.biology.ucsd.edu/zuniga/global_immunotalks.htm

ORGANIZED BY: Carla V. Rothlin and Elina I. Zúñiga

Live on Wednesdays 9AM PST, 12PM EST, 4PM GMT

ZOOM LINK: https://ucsd.zoom.us/j/91053505061

Q&A via TWITTER with #globalimmuno (contingent on speaker availability)

The 2020Tang Prize in Biopharmaceutical Science Awarded to Three Lifetime Honorary Members of the ICIS

https://cytokinesociety.org/covid-19/

The 2020 Tang Prize in Biopharmaceutical Science was jointly awarded to Drs. Charles Dinarello, Marc Feldmann and Tadamitsu Kishimoto, "for the development of cytokine-targeting biological therapies for treatment of inflammatory diseases" that brought a ray of hope to hundreds of thousands of patients debilitated by this degenerative condition. The Tang Prize Foundation, Experimental Biology (EB) and National Cheng Kung University co-hosted the 2020 Tang Prize Masters' Forum on biopharmaceutical science, on September 22. This forum featured three 2020 laureates speaking on the topic, "**Targeting the Hyperactive Immune System, from Autoimmune Disease to Cytokine Storm**s," keeping us abreast of the latest development in biomedical science in the age of coronavirus.

In addition, 2014 Tang Prize and 2018 Nobel Prize winners Dr. James P. Allison and Dr. Tasuku Honjo also took part in the discussion, brainstorming with the audiance to spot all the opportunities for the development of biopharmaceutical research that could be opened up because of this health crisis. On-demand access to this historic session is available on the ICIS website at: https://cytokinesociety.org/covid-19/

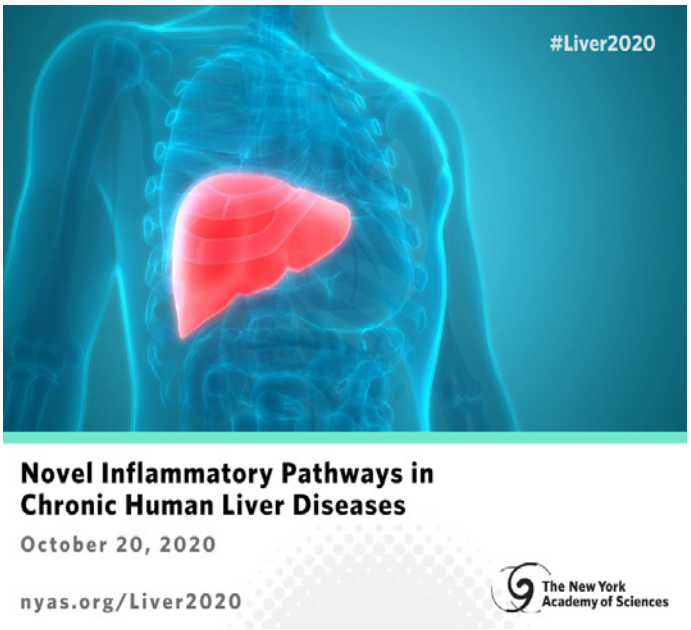
The New York Academy of Sciences

[Virtual Symposium] Novel Inflammatory Pathways in Chronic Human Liver Diseases

Event Link & Registration: nyas.org/Liver2020
Event Hashtag: #Liver2020

Tuesday, October 20, 2020 | 10:30 AM - 5:00 PM EDT

Event Description: NASH is projected to be the leading cause of liver failure and transplant in the coming decades. This symposium will highlight emerging mechanisms regulating immune and inflammatory responses during disease progression, with the overarching goal of identifying novel therapeutic targets for chronic liver diseases.



Rethinking the Science Poster

https://convention.apa.org/blog/rethinking-the-science-poster

- By Russell D. Shilling, PhD and David Ballard, PsyD, MBA
- 25 Jun, 2019

#BetterPoster at APA 2019

APA mod template
If you've been to a scientific conference recently, or have been following the media buzz, you'll know that there is a growing movement away from dense, text-heavy posters and towards posters that are more straightforward, engaging, and easy to understand in a short glance.

Continued

The discussion was kicked off by doctoral student Mike Morrison's video "How to create a better research poster in less time." In this video, he lays out a way to "improve the knowledge transfer efficiency" of posters by clearing the clutter and homing in on the critical point that needs to be relayed.

At APA, we're excited by this new approach, want to apply effective psychological principles to the way we present information in our posters, and think that it has many benefits for presenters and attendees. We like it so much that we've even created our own **APA mod template** of the Better Poster and encourage presenters to use it, or a similar format, at APA 2019. Here's why:

- The new format fosters conversation
- It's easy to identify critical takeaways
- It's visually appealing and eye-catching which makes people more likely to stop and read more
- It helps posters stand out from the pack
- It encourages presenters to be creative, think about how to translate their findings, and focus on what is important.

What's different about the APA mod?

- The poster title is across the top because many attendees will scan the convention program and make a note of poster titles that are of interest to them. We want to make sure it's easy for them to find the posters that they've flagged to check out.
- Since not everyone is a fan of QR codes, we've dropped them in favor of a URL to the full paper. Bitlys or other short links are recommended.
- We've made a few other minor changes to the language that we believe are more inclusive (goodbye Ammo Bar, hello Wonkville)

TEMPLATE DOWNLOAD

Mass cytometry analysis of immune cells in the brain

https://www.nature.com/articles/nprot.2017.155

Ben Korin,Tania Dubovik & Asya Rolls

Nature Protocols volume 13, pages 377–391(2018)

Immune cells comprise a diverse and dynamic cell population that is responsible for a broad range of immunological activities. They act in concert with other immune and nonimmune cells via cytokine-mediated communication and direct cell–cell interactions. Understanding the complex immune network requires a broad characterization of its individual cellular components. This is especially relevant for the brain compartment, which is an active immunological site, composed of resident and infiltrating immune cells that affect brain development, tissue homeostasis and neuronal activity. Mass cytometry, or CyTOF (cytometry by time-of-flight), uses metal-conjugated antibodies to enable a high-dimensional description of tens of markers at the single-cell level, thereby providing a bird's-eye view of the immune system. This technique has been successfully applied to the discovery of novel immune populations in humans and rodents. Here, we provide a step-by-step description of a mass cytometry approach for the analysis of the mouse brain compartment. The different stages of the procedure include brain perfusion, extraction of the brain tissue and its dissociation into a single-cell suspension, followed by cell staining with metal-tagged antibodies, sample reading using a mass cytometer, and data analysis using SPADE and viSNE. This procedure takes <5 h (excluding data analysis) and can be applied to study modifications in the brain's immune populations under normal and pathological conditions.

Traceless aptamer-mediated isolation of CD8+ T cells for chimeric antigen receptor T-cell therapy

https://www.nature.com/articles/s41551-019-0411-6

Nataly Kacherovsky, et. al

Nature Biomedical Engineering volume 3, pages 783–795(2019)

Chimeric antigen receptor T-cell therapies using defined product compositions require high-purity T-cell isolation systems that, unlike immunomagnetic positive enrichment, are inexpensive and leave no trace on the final cell product. Here, we show that DNA aptamers (generated with a modified cell–SELEX procedure to display low-nanomolar affinity for the T-cell marker CD8) enable the traceless isolation of pure CD8+ T cells at low cost and high yield. Captured CD8+ T cells are released label-free by complementary oligonucleotides that undergo toehold-mediated strand displacement with the aptamer. We also show that chimeric antigen receptor T cells manufactured from these cells are comparable to antibody-isolated chimeric antigen receptor T cells in proliferation, phenotype, effector function and antitumour activity in a mouse model of B-cell lymphoma. By employing multiple aptamers and the corresponding complementary oligonucleotides, aptamer-mediated cell selection could enable the fully synthetic, sequential and traceless isolation of desired lymphocyte subsets from a single system.

PhIP-Seq characterization of serum antibodies using oligonucleotide-encoded peptidomes

https://www.nature.com/articles/s41596-018-0025-6

Divya Mohan, et.al.

Nature Biomedical Engineering volume 3, pages783–795(2019)

Nature Protocols volume 13, pages 1958–1978(2018)

The binding specificities of an individual's antibody repertoire contain a wealth of biological information. They harbor evidence of environmental exposures, allergies, ongoing or emerging autoimmune disease processes, and responses to immunomodulatory therapies, for example. Highly multiplexed methods to comprehensively interrogate antibody-binding specificities have therefore emerged in recent years as important molecular tools.

WWW

Continued

Here, we provide a detailed protocol for performing 'phage immunoprecipitation sequencing' (PhIP-Seq), which is a powerful method for analyzing antibody-repertoire binding specificities with high throughput and at low cost. The methodology uses oligonucleotide library synthesis (OLS) to encode proteomic-scale peptide libraries for display on bacteriophage. These libraries are then immunoprecipitated, using an individual's antibodies, for subsequent analysis by high-throughput DNA sequencing. We have used PhIP-Seq to identify novel self-antigens associated with autoimmune disease, to characterize the self-reactivity of broadly neutralizing HIV antibodies, and in a large international cross-sectional study of exposure to hundreds of human viruses. Compared with alternative array-based techniques, PhIP-Seq is far more scalable in terms of sample throughput and cost per analysis. Cloning and expression of recombinant proteins are not required (versus protein microarrays), and peptide lengths are limited only by DNA synthesis chemistry (up to 90-aa (amino acid) peptides versus the typical 8- to 12-aa length limit of synthetic peptide arrays). Compared with protein microarrays, however, PhIP-Seq libraries lack discontinuous epitopes and post-translational modifications. To increase the accessibility of PhIP-Seq, we provide detailed instructions for the design of phage-displayed peptidome libraries, their immunoprecipitation using serum antibodies, deep sequencing–based measurement of peptide abundances, and statistical determination of peptide enrichments that reflect antibody–peptide interactions. Once a library has been constructed, PhIP-Seq data can be obtained for analysis within a week.

Free Tool Box

https://www.molecularcloud.org/Free-Tool-Box.html

A tool box of frequently used bioinformatics tools, to assist your daily design work, including qPCR primer and probe design, DNA construct design, gRNA design and codon optimization.

iDEP

http://bioinformatics.sdstate.edu/idep/

This website can be useful for biologists who would like to analyze RNAseq data using a user interface pipeline. It allows point & click RNAseq analysis from start to end including pathway and network analysis.

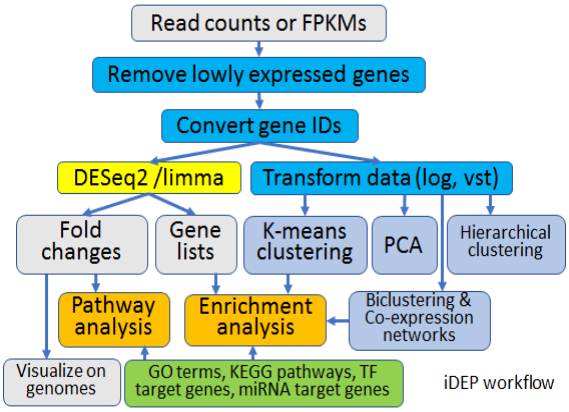
Run iDEP locally on your laptop, lab computer, HPC, or in the cloud.

New 5/24/2020! Try out our new version 0.92, which is still in testing mode. While the code is not changed, the new version is based on Ensembl release 100 with more (392) species, updated annotaton, and many manually collected pathways for 20 model organisms. iDEP 0.92

Massively upgraded annotation database! V0.90 includes 315 organisms in Ensembl release 96, plus all species from STRINGdb (v10):115 archaeal, 1678 bacterial, and 238 eukaryotic species Now published on BMC Bioinformatics!

Due to lack of funding, iDEP has not been thoroughly tested. Please let us know if you find any issue/bug.

We are happy to help prepare your data for iDEP. Dr. Ge is also open to bioinformatics consulting during the summer.

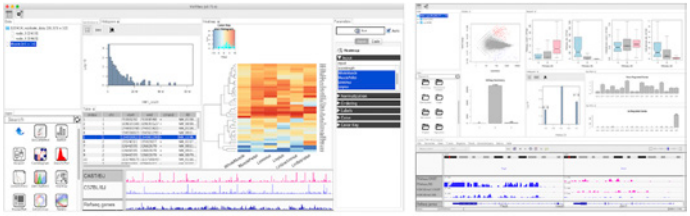


iDEP workflow

VisR

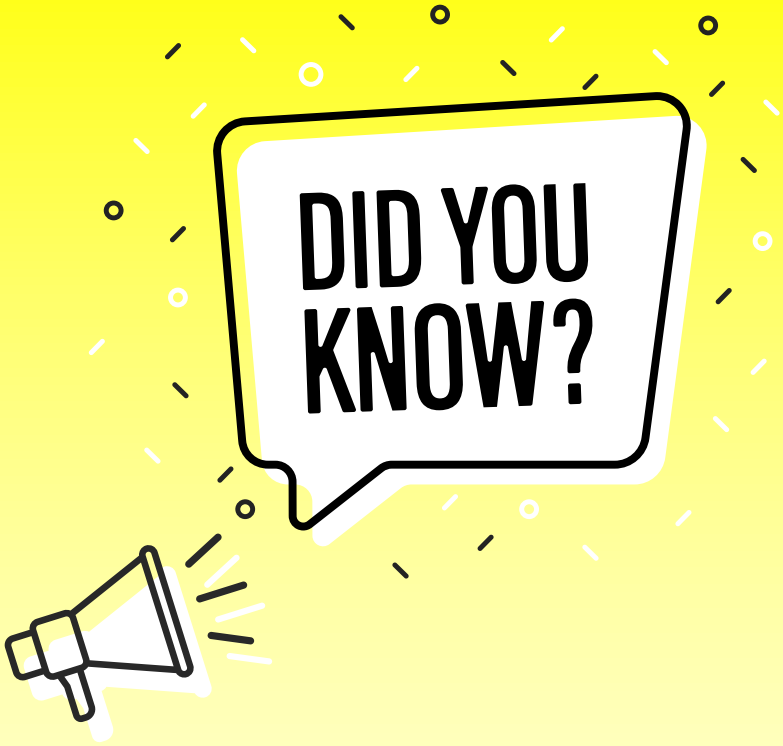
https://visrsoftware.github.io/

VisR (formerly called VisRseq), is a framework for analysis of sequencing datasets that provides a computationally rich and accessible framework for integrative and interactive analyses without requiring programming expertise.



Features

- **R Apps:** Offering an auto generated and unified graphical user interface for computational packages in R and repositories such as Bioconductor.
- **Interactive Apps:** several native apps provide exploration and brushing operations.
- **Chaining Apps:** The apps can be chained together to create more powerful analysis workflows.
- **Built-in genome browser integration:** Integrated with the Integrative Genome Viewer (IGV).
- **Data manipulation:** Creating data tables and processing sequencing data into data columns.
- **Computations on data columns:** Using an excel or R syntax.



Men can read smaller print than Women can; Women can **hear** better.

•••••••

Coca-Cola was originally **green**.

•••••••

It is impossible to lick your **elbow**.

•••••••

Intelligent people have more **zinc** and **copper** in their hair.

•••••••

In Shakespeare's time, mattresses were secured on bed frames by ropes. When you pulled on the ropes, the mattress tightened, making the bed firmer to sleep on. Hence the phrase: '**Goodnight, sleep tight**'.

Each king in a deck of playing cards represents a great king from history:

Spades - King David
Hearts - Charlemagne
Clubs - Alexander, the Great
Diamonds - Julius Caesar

•••••••

Q. What do bulletproof vests, fire escapes, windshield wipers and laser printers have in common?
A. All were invented by **women**.

•••••••

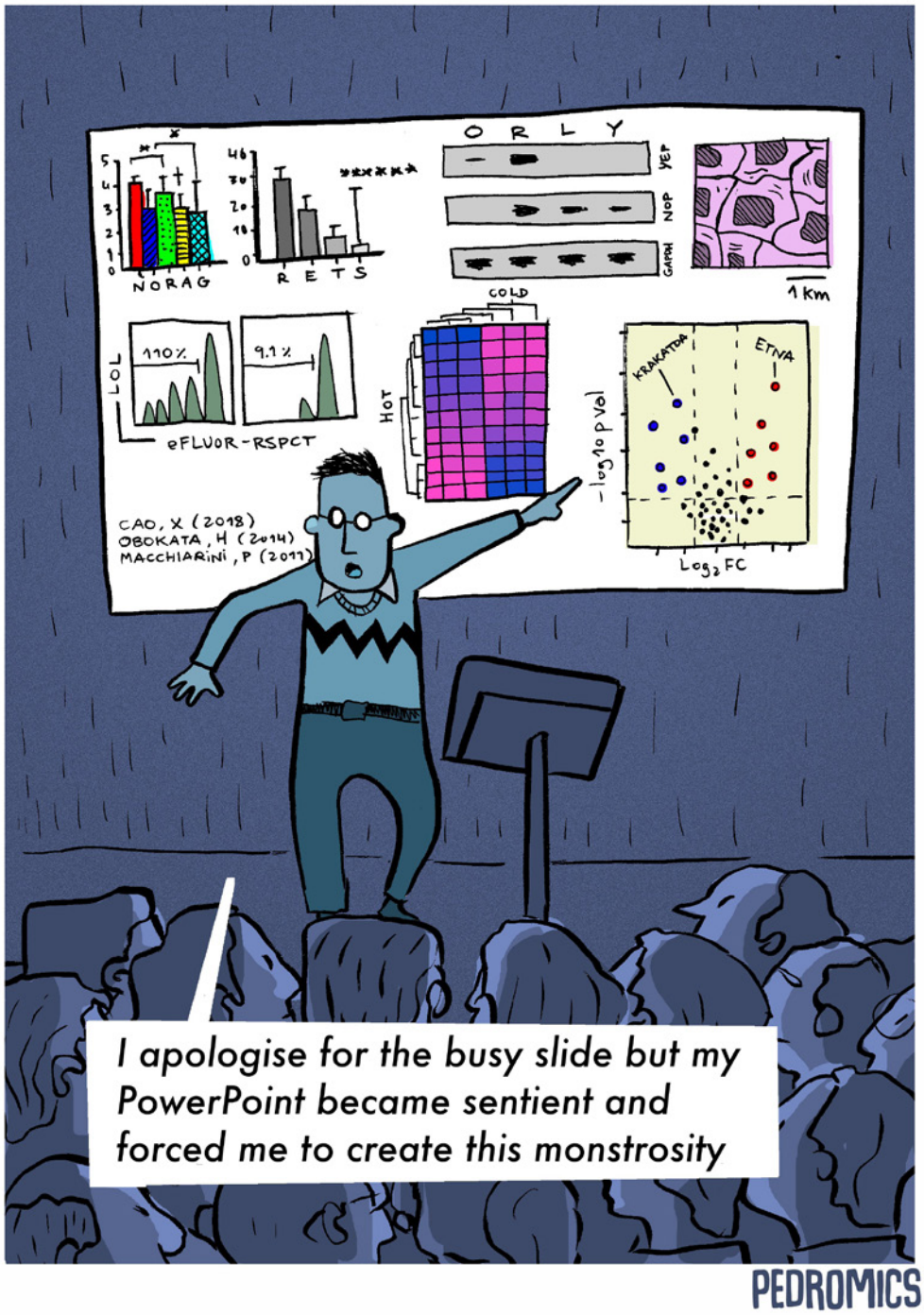
Q. What is the only food that doesn't spoil?
A. Honey

•••••••

It was the accepted practice in Babylon 4,000 years ago that for a month after the wedding, the bride's father would supply his son-in-law with all the mead he could drink. Mead is a honey beer and because their calendar was lunar based, this period was called the honey month, which we know today as the **honeymoon**.

•••••••

At least 75% of people who read this will try to lick their elbow!



Follow our official social media accounts

Join the conversation with over 3,000 professionals dedicated to the same cause by using the hashtag **#@CytokineSociety**