Signals+

THE INTERNATIONAL CYTOKINE & INTERFERON SOCIETY NEWSLETTER

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IN THIS ISSUE:

A NOTE FROM THE ICIS PRESIDENT

Kate Fitzgerald

I write this note as all of us reach a new norm of working "remotely". I want to extend my sincere appreciation to all members of the ICIS community around the globe who have stepped up to meet the unique and unforeseen challenges of this time. The precautions that have been implemented at all of our institutions and companies, in accordance with local and national public health guidance, will no doubt help mitigate the spread of COVID-19. We should remain firmly committed to physical distancing to make us all safer. We stand with our Italian, Spanish and New York colleagues in particular, who are facing very difficult times right now and hope things will improve there soon.

It's hard to understate the importance of the scientific enterprise and the work we as cytokine and interferon biologists do in light of the COVID-19 pandemic. ***Our past and current efforts to understand the host response to viruses and other pathogens and the importance of IFN and cytokines in controlling infection and the immune response to vaccines could not be more important than it is now.*** Understanding cytokine and interferon biology is fundamental to human health and disease. We hope the knowledge gained from all our efforts can be put to good use to stem the threat of Sars-CoV2.

Beyond the current threat, it is also clear that cytokines and interferons function in disease initiation, development and progression allowing cytokine targeted therapies to come online for the benefit of patients afflicted with a myriad of infectious, inflammatory, autoimmune diseases as well as cancer. Cytokine and interferon biology continue to attract scientists including immunologists as well as those from numerous other research disciplines. As a society we serve as a forum to bring together all those interested in cytokine and IFN biology to advance human health.

It is an honor and a pleasure to serve as the President of the ICIS for the next 2 years. I want to thank Nancy Reich for her service as President for the past two years and for guiding my transition into this role. I am excited to build on Nancy's work as well as that of the past society presidents, David Wallach, Charles Samuel, Luke O'Neill, Richard Flavell and Tadatsugu Taniguchi who collectively established a strong foundation for this wonderful society. I also want to thank Christopher Hunter, President-Elect who has already been an active and willing participant in all of my efforts thus far. We are both so grateful for Joan Oefner, managing director of the society who we were fortunate to work with when we co-chaired the Boston meeting in 2018. Joan is phenomenal. She brings her energy, enthusiasm and drive to all that she does. I am particularly grateful for her ability to think 5 steps ahead and always see the bigger picture. To those of you who serve on all of our committees, I thank you for your service. I hope that as a team we can all build on the success of past leadership and enhance the impact of the society in the coming years.

continued on pg 2

Future Meetings

Cytokines 2020,
November 1-4, 2020
Seattle, USA

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

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

Newsletter Editors:
Howard Young
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Joan Oefner

ICIS
International Cytokine & Interferon Society

continued from pg 1

A major goal of the society is to broaden our reach internationally by encouraging our international colleagues to join the society and contribute to society efforts. In the coming years we have enlisted meeting organizers out to 2024 to hold our annual meeting across the globe. Next fall (fingers crossed) our annual meeting will be held in Seattle, Washington. Michael Gale, Ram Saven and colleagues have put together a spectacular program. Further, 2021, plans are well underway for Cardiff with Simon Jones leading the effort and future meetings being planned for Hawaii, Greece and Korea. I want to especially thank Brendan Jenkins who has done an outstanding job lining up meeting organizers and guiding meeting planning efforts. Brendan has kindly agreed to a second term leading the meetings committee which is a huge benefit to the society. The society will provide all the logistical needs of organizing future meetings through Joan Oefner and our agreement with MCI. This includes the meeting website, registration, coordination of hotels, convention centers, etc. This will free meeting organizers to focus on the scientific program. I encourage members to step-up and reach out to Brendan to discuss organizing future meetings.

I also want to highlight our commitment as a society to diversity and in particular gender balance. It is important that meeting organizers, scientific programs and society committees are balanced both in terms of gender and geographical diversity. There is no shortage of outstanding colleagues across the globe that should be included on our rosters of meeting speakers and committees. I encourage any of you interested in participating on one of our committees and serving the society to reach out to me or Joan.

I also want to alert our society members about our commitment to providing a family friendly environment at our annual meetings. Starting in Seattle, we will be providing complimentary childcare support to allow our fellow scientists with young children the opportunity to attend our meetings and social events. The final night Networking Dinner will also be family friendly at the Seattle Aquarium, a venue sure to delight all generations!

It has always been the aim of the ICIS to keep dues low and make membership affordable for scientists at all levels, from graduate students to Full Professors. We strive to keep our management costs down so the Society can remain viable for many years to come. We also strive to raise funds to support travel awards allowing scientists from across the globe especially those from developing countries to attend our annual meetings. We are incredibly grateful for the generosity of the Milstein family who have supported our society for more than 30 years with the Milstein Awards. The coming years will be challenging for the society however, as support from the Milstein family is ending this year. We are so grateful for their support for the last 30 years and will be working hard to identify alternative donors who can support our annual awards and travel awards which we will continue to include in the meeting budgets. In this regard, the society has established a new Development committee jointly led by Simon Jones and Eleanor Fish, to help leverage our collective contacts to fill this void.

In closing, I want to thank you for being a member of the ICIS and supporting our field. As a society, we have a lot to do. We will continue to voice your concerns, advocate for scientific research, advance the training of students and post-doctoral fellows, and sustain the progress of our field in this era of breathtaking opportunity. I look forward to seeing you all at our next annual meeting in Seattle where the program promises to not disappoint.

With warmest regards to everyone, stay safe during these difficult times and be well.

Kate

“SCIENCEQUOTES”

“Anybody who has been seriously engaged in scientific work of any kind realizes that over the entrance to the gates of the temple of science are written the words: **‘Ye must have faith.’**”

Max Planck

2019 THE MILSTEIN YOUNG INVESTIGATOR AWARDEES

Every year up to five awards are granted to individuals who have made notable contributions to either basic or clinical research. This award is provided by a generous gift of the Milstein Family.

JUAN FUXMAN BASS, Ph.D.

Assistant Professor of Biology
Boston University, Boston, USA

Dr. Fuxman Bass is an Assistant Professor in the Biology Department at Boston University. His overarching scientific goals are to elucidate the underlying principles governing cytokine regulation. In particular, his lab focuses on delineating the gene regulatory networks involved in cytokine transcription and identifying novel transcription factors involved in this process by integrating multiple omics approaches. In addition, his lab studies the role of virally-encoded transcription factors in modulating gene expression as a mechanism of viral immune evasion. His work has been funded by the Pew Charitable Trusts and by the National Institutes of Health through the K99/R00, R35, and U01 mechanisms.

SARAH DOYLE, Ph.D.

Assistant Professor in Immunology
Dept. Clinical Medicine, School of Medicine,
JF Coordinator for BSc in Human Health and Disease,
TBSI, Head of Immunobiology Research Group, Trinity College Institute of Neuroscience (TCIN), Trinity College Dublin, Dublin, Ireland

Dr. Doyle's research lab is focused on the impact of signalling downstream of the innate immune Toll/IL-1 Receptor (TIR)-super family in the maintenance of tissue homeostasis and the initiation of pathology. This family recognizes and responds to host derived danger signals and includes the IL-1 family cytokine receptors IL-1R and IL-18R. One aspect of her research is focused on studying how TIR-induced signaling regulates both inherited and acquired retinal degenerative disease, and in particular how IL-18 controls pathological neovascularisation in Age-related Macular Degeneration (AMD).

2019 THE MILSTEIN YOUNG INVESTIGATOR AWARDEES

RYAN A. LANGLOIS, Ph.D.

Assistant Professor, Dept of Microbiology & Immunology, University of Minnesota, Minneapolis, USA

Ryan Langlois is an Assistant Professor in the Department of Microbiology and Immunology at the University of Minnesota. He earned his Ph.D. from the University of Iowa under Kevin Legge, Ph.D and completed his postdoctoral training in Ben tenOever's lab at Mount Sinai in New York City. Through genetic engineering novel virus reporters and virus systems, the Langlois lab studies both innate and adaptive immune responses to virus infections, particularly influenza. The Langlois lab is particularly interested in early virus-host interactions mediated by interferon. Newer work is also underway to address how virus transmission within, and between, hosts is impacted by the innate immune system and how viruses evolve to overcome species barriers.

JUAN LUIS MENDOZA, Ph.D.

Assistant Professor
The University of Chicago, Chicago, USA

Dr. Mendoza is an Assistant Professor of Molecular Engineering in the Pritzker School of Molecular Engineering and Department of Biochemistry and Molecular Biology, University of Chicago. The Mendoza Group is highly multidisciplinary utilizing expertise in structural and computational biology, cell signaling, and protein engineering to study human disease and drive the discovery of novel therapeutics. One focus is on cell signaling in relation to the immune system and understanding how ligand-cell receptor driven responses can be used to treat diseases such as viral infections, cancer, or autoimmunity. A second focus of the Mendoza laboratory is building computational and engineering tools to accelerate the structural determination of ligand-receptor complexes and design of protein therapeutics as exemplified by his work on the IFN lambda (Immunity, 2017) and IFN gamma systems (Nature, 2019).

2019 THE MILSTEIN YOUNG INVESTIGATOR AWARDEES

YUXIN WANG, Ph.D.

Research Associate, Lerner Research Institute, Cleveland Clinic, Cleveland, USA

Yuxin Wang, Ph.D. is a Research Associate in the Department of Cancer Biology at Lerner Research Institute, Cleveland Clinic. Dr. Wang received his doctoral degree from the joint Ph.D. program at the Lanzhou University in China and Lerner Research Institute Cleveland Clinic in the United States. He performed his postdoctoral training in the laboratory of George Stark at Lerner Research Institute. He has been studying on the crosstalk of cytokine response in cancer cells, and post-translational modification of transcription factors, with a specific focus on STAT2 and IRF9, which are the key factors in type-I-IFN response. His research recently discovered a novel T387 phosphorylation on STAT2, which negative regulates antiviral and anti-proliferative effect of Type-I IFNs. He also disclosed STAT2 collaborated with IRF9 drove a subset of NKκB genes including IL6. This finding suggested a novel role of the STAT2/IRF9 complex, whose function in cancer cells is not yet well understood.

"SCIENCEQUOTES"

"In all science, error precedes the truth, and it is better it should go first than last."

Horace Walpole

2019 CHRISTINA FLEISCHMANN AWARD TO YOUNG WOMEN INVESTIGATORS

This award is made possible through the generosity of the Fleischmann Family and is dedicated to the memory of ISICR member and outstanding interferon research scientist Christina Fleischmann.

MEIKE DITTMANN, Ph.D.

Assistant Professor, Department of Microbiology, New York University School of Medicine, New York, NY, USA

Dr. Meike Dittmann is an Assistant Professor of Microbiology at the New York University School of Medicine.

She completed her doctoral training in Molecular Medicine and Virology at the University of Ulm, Germany, where, under Dr. Thomas Mertens, she examined drug resistance patterns in cytomegalovirus infections. As a postdoctoral fellow with Dr. Charles Rice at The Rockefeller University, she began her studies on innate immunity and the molecular function of interferon-stimulated genes. Her research revealed novel “effector-like” functions of pattern recognition receptors, and identified the first interferon-stimulated host effector that acts in the extracellular space and inhibits virus maturation. The Dittmann laboratory’s main goal is to answer the basic question of how interferons inhibit viruses.

2019 SIDNEY AND JOAN PESTKA POST-GRADUATE AWARDEE

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

BILLUR AKKAYA, MD, D.PHIL

Research Fellow, Laboratory of Immune System Biology, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, USA

Dr. Billur Akkaya received her medical doctor degree at Hacettepe University, Turkey and completed her doctoral studies as a Felix Scholar at the Nuffield Department of Medicine Human Immunology Unit, University of Oxford, UK.

During her graduate studies, she characterized the outcome of Programmed Death-1 (PD-1) stimulation by antibody superagonists in CD4+ and CD8+ T cells under co-supervision of Simon Davis and Richard Cornall. She then moved to the United States to perform her post-doctoral research on regulatory T cell biology in Ethan Shevach's lab at National Institutes of Health. Her post-doctoral research revealed a novel mechanism by which regulatory T cells perform antigen-specific suppression. She completed her doctoral studies in Oxford as a University of Oxford Felix Scholar and was awarded 2019 American Association of Immunology Thermo Fisher Trainee Achievement Award, 2018 National Institutes of Health Fellows Award for Research Excellence, 2011 University of Oxford Christ Church College Hugh Pilkington Scholarship, and 2007 Hacettepe University Medical School Intern of the Year (Seref Zileli) Award. She currently works as a research fellow at the National Institute of Allergy and Infectious Diseases.

2019 SIDNEY AND JOAN PESTKA GRADUATE AWARDEE

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

ANUKRITI MATHUR, Ph.D. candidate

Department of Immunology and Infectious Disease, The John Curtin School of Medical Research, Australian National University, Canberra, Australia

Anukriti is a third year Ph.D. student at the Australian National University, Australia, under supervision of Dr Si Ming Man.

Her Ph.D. project focuses on understanding how the innate immune system triggers an inflammatory response following host recognition of infection. Her research identified a multi-subunit toxin, haemolysin BL, of the bacterial pathogen Bacillus cereus, driving activation of the NLRP3 inflammasome, leading to robust production of interleukin-1beta and interleukin-18. Anukriti completed her Bachelor of Technology in Biotechnology at Amity University, India in 2010. She received a Master of Engineering in Biotechnology from the Birla Institute of Technology & Science, Pilani Campus, India in 2016. In 2015, she was awarded a Khorana fellowship by the Government of India which allowed her to conduct a research project at the Harvard Medical School, USA. Anukriti's doctoral work has been recognised by a Gretel and Gordon Bootes Medical Research Foundation grant award, an Australian Society for Microbiology Nancy Millis student Award, and an International Association of Inflammation Societies Travel Award.

2020 ICIS Awards

Seymour & Vivian Milstein Award for Excellence in Interferon and Cytokine Research

THE MILSTEIN AWARDS

www.milstein-award.org

The preeminent Seymour & Vivian Milstein Award for Excellence in Interferon and Cytokine Research, commonly known as The Milstein Award, recognizes individuals who have made exceptional contributions to interferon and cytokine research, either in a basic or applied field. Many of these achievements have led to the advancement of human health. **Award**: $10,000 from the Milstein Family Grant. ICIS Crystal and travel reimbursement from ICIS as well as meeting registration waived for the year of the Award. Oral presentation at the Annual Meeting of the International Cytokine & Interferon Society, Cytokines 2020, 1-4 November in Seattle, USA. **www.seattle.cytokinesociety.org**.

The Milstein family also supports **The Milstein Young Investigator Awards** and **The Milstein Travel Awards** for ICIS members presenting abstracts at Cytokines 2020.
Deadline to submit your 2020 application is **15 May 2020**.

The Milstein Young Investigator Award

ICIS member who attend Cytokines 2020 in Seattle and who have received a Ph.D or M.D. within the previous 10 years are eligible. Every year up to five awards are granted to individuals who have made notable contributions to either basic or clinical research. This award is provided by a generous gift of the Milstein Family. ICIS members may either apply themselves or nominate other eligible members for Milstein Young Investigator Awards. A CV and letter of recommendation (including confirmation of eligibility) should accompany the application. Deadline to submit your 2020 application is **15 May 2020**.

The Milstein Travel Awards

ICIS members who attend the annual meeting are eligible for Travel Awards. They are provided through a grant from the Milstein Family based on the scientific merit of the abstract and financial necessity. This award does not exempt payment of the conference registration fee. There are no age restrictions to this award. However, if both senior and junior members from the same laboratory apply for an award, preference is given to the junior member. This award is dependent on availability of funds. Deadline to submit your 2020 application is **1 June 2020**.

Honorary Life 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. Honorary Life Members are accorded all rights and privileges of active members, are exempted from Society dues and are listed in the dedicated Honorary Life Members section of the Society web site. The winner(s) is elected by vote of the ICIS Council. Nominations should be communicated to the Awards Committee of the ICIS. Deadline to submit your 2020 application is **17 April 2020**.

ICIS BioLegend William E. Paul Award

BioLegend®
Enabling Legendary Discovery™

This prestigious award is given to an investigator that has made significant contributions to cytokine and interferon research throughout their career. Through the generosity of BioLegend the award consists of $2500, ICIS Crystal (3 D structure of IL-4), travel reimbursement and meeting registration waived for the year of the Award. Oral presentation at Cytokines 2020. The deadline to submit nominatoins was 5 March, winner will be announced soon.

2020 ICIS Awards

The Sidney & Joan Pestka Graduate & Post-Graduate Awards for Excellence in Interferon and Cytokine Research sponsored by PBL Assay Science

These awards are targeted to graduate students and post-doctoral fellows who have begun to make an impact in interferon and cytokine research. The Awards are designed to fill the gap among the awards currently offered by the ICIS to more senior investigators. Candidates must be actively working in interferon/cytokine research. Each award includes a $3500 cash award, $1500 travel grant to attend Cytokines 2020, a $2500 PBL Assay Science product credit for each awardee, and a complimentary one-year ICIS membership. Deadline to submit your 2020 application is **15 May 2020**.

The ICIS Amanda Proudfoot Tribute Award

is bestowed on an individual whose research on chemokine biology has had an impact on the field early in his/her career. Graduate students and postdoctoral fellows are eligible for this Award. This annual award is presented at the annual ICIS Meeting. Amanda Proudfoot is internationally recognized for her important contributions to the field of chemokine biology. Her research focused on the development of anti-inflammatory and anti-infective therapeutic agents and many of the advances in chemokine biology trace back to seminal discoveries made by her. Her group identified and characterized novel chemokines, including CXCL4 and CXCL8, and cloned the chemokine receptors CCR1, CCR2 and CCR4. She provided the first evidence that inhibition of HIV infection of primary macrophages could be achieved through inhibition of CCR5, leading to a new paradigm in the search for HIV inhibitors. Amanda's research led to the elucidation of several important aspects of the immune system. Nomination/Application Deadline: **15 May 2020**.

The Christina Fleischmann Award to Young Women Investigators

This award is open to young women investigators working in the cytokine, chemokine and interferon biology, thanks to the generosity of the Fleischmann Foundation in memory of outstanding interferon research scientist Christina Fleischmann. The award includes a $2000 cash award through a grant from the Fleischmann Family Fund. Deadline to submit your 2020 application is **15 May 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. Nominations should be communicated to the Awards Committee of the ICIS. Deadline to submit your 2020 application is **17 April 2020**.

Call for Nominations for Prestigious Awards of the International Cytokine & Interferon Society (ICIS)

Nominations for all awards should be submitted using the Awards Nomination Form on the Society's website. Full details about the awards and nomination submission can be found here http://cytokinesociety.org/icis-prestigious-awards/

Awards will be presented at Cytokines 2020 in Seattle, WA.

More information/submission site: **https://cytokinesociety.org/awards/**

Objective: **A little story from the Italian COVID-19 Storms**

by Nicola Ivan Lorè

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Today it seems that the "COVID-19 Storm" peak is approaching, according to the head of the country's national health institute. This news made our regional community (Lombardia) feel better and new hopes are growing in my sad locked-down city.

Ok, but this is already the end of my story; to explain my thoughts better I should start at the beginning. Although we thought that COVID-19 was something that would never devastate or touch our lives, from February 25th we began to understand that we had been wrong.

Both our private and working life, as researchers, initially went through a great confusion due to the fear of getting sick and spreading the virus to our loved ones, in particular to the elderly population. I have a 7 month old baby and the news that COVID-19 was not causing serious illness in infants comforted me regarding the risk of going to work and coming back home. Of course, from that moment on, my family and I have avoided meeting our loved elders to avoid infecting them. During those days SARS-COV-2 continued to spread around Milan and after a few days the complete lock-down of Italy was implemented by our government. I felt safer thanks to this decision, considered from my point of view as a more rational and "scientific" approach by politicians. Of course as researcher I had to stop all the scheduled activities. My Institution has only authorized us to conclude ongoing experiments and to run those related to COVID-19. Since I mainly investigate the role of cytokines (with particular attention on the IL-17 field) in respiratory infection by bacteria, I have only been able to conclude long-term experiments. In daily lock-down life, we started our period of isolation. To be honest, I am lucky to have my wonderful family, my wife Laura and my son Federico. I began to hear from friends only on the phone or in video-calls, since leaving the house without an "essential" reason, as well as all the social and aggregation events, such as public markets or meetings in the open parks, were not allowed. **But what was most unusual and unforgettable is hearing daily press releases from our country's national health institute, at 6 pm, on the number of new infections, the dead, and healed individuals. Unfortunately, it looked (and still looks) like a war report.** I felt, fortunately only for few moments, like our grandfathers when they experienced anxiety and hope at the same time listening to the famous "Radio London" during the Second World War. They prayed for the end of the war, today we hope that deaths are decreasing.

In this scenario, together with my colleagues of the "Emerging Bacterial Pathogens Unit" at Ospedale San Raffaele, we started organizing a weekly laboratory meeting through video-call conferences. **While our lives are upside-down, I want to share one thought that astonishes and honors me to be part of this International Cytokines Society. Little by little, people around me (like relatives who have never studied biology or medicine), the media and television started talking about a "cytokine storm" that may be relevant in exacerbating the severe disease induced by SARS-COV-2. I was really surprised to hear that. For the first time the term "cytokine" is a common word recognized by all the people living in Italy.** This was amazing! In addition to my amazement, I have selfishly thought that it will finally be easier to explain my work to all the people I know outside the biological area, once the emergency is over. Moreover public discussions have been raised, for example on television talk shows, between physicians proposing clinical trials targeting the "cytokine storm" (e.g. Tocilizumab) and those affirming that antiviral therapy is more relevant. Anyhow, it is not my intention to enter into this discussion since I am not a clinician, but all this has made me feel me a little more proud to be part of this society and to be involved in basic research on biological mechanisms underlying cytokine-mediated host response to respiratory bacterial infection.

In this regard, I was happy to read the approval of clinical trials targeting cytokine-mediated response during COVID-19 disease. We could also suppose that shared common dogmas and public concerns regarding the use of immunomodulatory drugs during respiratory infections may also decrease after this crisis.

Today, March 31, it seems that the peak of "COVID-19 Storm" is approaching and that the hope of overcoming this emergency may be on the horizon. **As a citizen of my country, I want to dedicate this short letter to all the people who died and are dying in this "war", and to all those who are working for our well-being. I believe that science was, is, and will be essential to fight and win this "battle".** As a researcher, I hope that citizens all over the world do not easily forget the importance of scientific research once the dawn of a new prosperous and safe period arises. Finally, as a researcher of this amazing Cytokine Society, I hope for all of you that your families and your loved ones are safe and healthy.

Sincerely yours,

Nicola Ivan Lorè

In Memorium

Wolfgang K. Jolik
1926 -2019

Dr. Wolfgang Karl (Bill) Joklik, noted virologist, teacher and mentor, who pioneered the application of biochemical, molecular and genetic techniques to studies of how viruses replicate, interact with their hosts and cause disease, died in Durham, NC, on July 7, 2019.

Bill was born in Vienna, Austria. When he was eleven, his family moved to Sydney, Australia, where his father, an engineer, was General Manager of the Australian branch of Styrian Steelworks, a manufacturer of fine steels. He graduated from Sydney University with a First Class Honors Bachelor of Science degree in Biochemistry in 1948 and a Master of Science degree in 1949,and obtained a D. Phil. Degree from the University of Oxford, England in 1952, working on the mode of replication of bacteriophage T1 in the laboratory of Sir Paul Fildes, the "Father of English Microbiology," at the Sir William Dunn School of Pathology, the head of which was Sir Howard Florey, the Australian who was awarded the Nobel Prize for his work on the development of penicillin. After a year's postdoctoral work at the Institute of Cytophysiology of the University of Copenhagen,where he teamed with Paul berg to isolate and characterize nucleoside diphosphokinase, the enzyme that exchanges the γP between nucleoside triphosphates, he joined the staff of the Department of Microbiology, headed by Prof. Frank Fenner at the Australian National University in Canberra. It was there that he started work on animal viruses, more specifically, on vaccinia virus. It was a highly propitious time for a biochemist to start working with animal viruses. Techniques for growing viruses in cultured mammalian cells, as well as powerful techniques for purifying and isolating proteins and nucleic acids had just been developed, which together generated the new fields of molecular cell biology, molecular genetics, and molecular virology.

Bill pioneered studies on the nature of the genome of poxviruses (he was the first to isolate intact vaccinia virus DNA) and on the nature of the mechanisms that enable poxviruses to enter cells (the "uncoating process"). It was while he was engaged in these studies that he accepted in 1962,an invitation from Dr. Harry Eagle, of tissue culture fame, in whose laboratory at the National Institutes of Health he had spent a sabbatical in 1959, to join him in the Department of Cell Biology at the Albert Einstein College of Medicine in New York, the Chair of which Dr. Eagle had assumed in 1961.It was there that Bill began working on the nature of "early" and "late" poxvirus mRNAs and their association with ribosomes to form polyribosomes, the identification of poxvirus "early enzymes" like thymidine kinase, and DNA-dependent RNA polymerase and poly(A) polymerase, and the nature of the structural proteins of a variety of subviral poxvirus particles components and their synthesis and assembly during morphogenesis. It was also at this time that he started work on an aspect of virology that always interested him, namely how to inhibit virus infections.

Among the agents capable of inhibiting virus multiplication on which he worked were interferon, for which he established its primary mode of action; isatin-β-thiosemicarbazone (IBT), a derivative of which played an important role in eradicating smallpox virus from human populations in the late seventies; and ribavirin, currently used to control infections in humans of viruses like respiratory syncytial virus and hepatitis C virus. It was also in 1967, while he was still at the Albert Einstein, that Bill started working on the double-stranded RNA-containing reovirus, a research interest that lasted three decades.

In 1968 Bill was offered the Chair of the Department of Microbiology and Immunology at Duke University Medical Centerin Durham, NC,a position he held for 25 years, guidingthe growth of the Department from an initial six faculty members to thirty-three when he retired and to a ranking as one of the top three Medical School Microbiology Departments in the country. As for his work with reovirus, he demonstrated the segmented nature of its genome, isolated, characterized, and identified the functions of the proteins encoded by its genome segments, sequenced most of them, and by elaborating a system in which these genome segments are infectious, developed a "reverse genetics" system for reovirus that permits the introduction of foreign genes into its genome, thereby transforming it into a carrier virus, which has great potential for engineering highly efficient nonpathogenic vaccine strains for members of the Reoviridae family like the human rotavirus, the virus that causes human infantile enteritis and that kills more than one million infants annually worldwide. The third group of viruses with which Bill worked are the retroviruses. Using the avian sarcoma viruses Rous sarcoma virus and B77 avian sarcoma virus as models, he worked on aspects of the maturation of retrovirus particles following budding, the nature of their reverse transcriptase and protein kinase, and the effect of interferon on their ability to replicate. All these studies, extending over a period of almost five decades, involved almost one hundred graduate students and postdoctoral fellows, and it was always his interaction with them that provided him with the greatest pleasure. Nothing pleased him more than launching them into solid scientific careers. He maintained cordial relations with many of them for many years, advising them, nominating them for promotions, writing letters of recommendation for them, visiting them worldwide, greatly enjoying return visits from them, and hearing of their often very significant successes.

continued on pg 13

In Memorium

Wolfgang K. Jolik
1926 -2019

continued from pg 12

Bill published more than 250 scientific papers. He was elected to the National Academy of Sciences in 1981 and to its Institute of Medicine in 1982.He was awarded a Humboldt Senior Investigator prize in 1986 and the ICN International Prize in Virology in 1991.For 25 years he was Editor-in-Chief of and a major contributor to seven editions of Zinsser Microbiology, one of the two leading texts for medical students. He was Editor-in-Chief of Virology for eighteen years, from 1975 to 1993; and Editor-in-Chief of Microbiological Reviews for five years. He was Founder and first President of the American Society for Virology in 1982, and President of the American Medical School Microbiology Department's Chairmen's Association in 1979.Bill's career at Duke was similarly distinguished. He was elected to a James B. Duke Professorship within four years of his arrival, was a member of the Academic Council and of the Duke University Press Board, and, in 1971 played a leading role in founding the Duke Comprehensive Cancer Center. He was the first Chairman of the Cancer Center Planning Committee.

One of Bill's most important contributions was made in the early nineties. Following the eradication of smallpox virus in human populations by1980, the World Health Organization set up a Smallpox Eradication Committee to effect and oversee the destruction of smallpox virus stocks in scientific laboratories worldwide. Bill was the US delegate to that Committee. All countries agreed to destroy their smallpox virus stocks except the Soviet Union. As a result it was agreed that all smallpox virus stocks would be destroyed except stocks in the Research Institute for Viral Preparations in Moscow, and in the Centers for Disease Control (CDC) in Atlanta. In the late eighties, however, scientists who had been active in the smallpox eradication program in the seventies began to lobby for the destruction of smallpox virus stocks in the Soviet Union and the United States also.

This did not seem advisable to Dr. Joklik since one could not possibly be certain that no smallpox virus stocks whatsoever had escaped destruction either by chance or by design. Clearly the existence of smallpox virus in the hands of terrorists in the absence of smallpox virus in the possession of manufacturers of smallpox vaccine would present a tremendous problem because it would then be impossible to measure the effectiveness/potency of any such vaccine. Bill therefore initiated a campaign against the destruction of smallpox virus stocks in CDC laboratories by writing and publishing a series of article and papers in in the early nineties. After intensive debate, his views were adopted and the smallpox virus stocks in the CDC and the Soviet Union were not destroyed. In 2002, the US government, fearing the existence of smallpox virus stocks in unauthorized hostile hands, ordered the manufacture of hundreds of millions of doses of smallpox vaccine. The effectiveness of this vaccine could not have been tested and established if the smallpox virus stocks in Atlanta had been destroyed.

Bill was an outstanding scientist, administrator, mentor, and teacher. Strongly rooted in two cultures, the Austrian/German and the British/American, Dr. Joklik will be remembered as a true world citizen, greatly interested in international affairs, a devoted husband, father, and grandfather, a life-long traveler, a lover of classical music, and a golfer and tennis player when time permitted. Bill married Judith Vivien Nicholas in 1955 in Canberra, Australia. Judith succumbed to breast cancer in 1975 after a most courageous eight year fight. In 1977 he married Patricia Hunter Downey, whose first husband had died of lung cancer in 1974. He is survived by Pat, his son Richard of Columbia, MD and his family; his daughter Vivien of Cary, NC and her daughters; his brother Frank of Salt Lake City, UT, and his family.; and a son and three daughters of Pat's first marriage and their families.

Remembering

Amanda E.I. Proudfoot
1949-2019

Amanda Proudfoot, internationally recognized for her seminal contributions to the field of chemokine biology, passed away on December 19, 2019, in France.

Her research focused on the development of anti-inflammatory and anti-infective therapeutic agents and many of the advances in chemokine biology can be traced back to the discoveries made by her. Amanda's research broke new ground, and led to the elaboration of several important aspects of the immune system. Amanda was a generous and enthusiastic collaborator and a loyal and warm friend to many.

Born in Johannesburg, South Africa, Amanda received her B.Sc.Hons. from the University of Witwatersrand, Johannesburg. She then relocated to Europe to complete a Ph.D. in Biochemistry at the University of Geneva. Her career thrived in Geneva, first at Glaxo Wellcome, then as Head of Protein Biochemistry at the Serono Pharmaceutical Research Institute. In 2007 she was Principle Scientist at the Merck Serono Geneva Research Centre, and until recently served as consultant for several biopharmaceutical companies. Amanda led two therapeutics through pre-clinical development into clinical trials.

In the early days of chemokine research, her group identified and characterized novel chemokines, including CXCL8 and CXCL4, and in collaborative studies cloned the chemokine receptors, CCR1, CCR2 and CCR4. Her important discoveries led the field of chemokine research, with her goal to interfere with the chemokine network in order to ameliorate diseases. Cognizant that several viral pathogens successfully target the chemokine system, Amanda's strategy was "If pathogens can successfully inhibit the chemokine network, why can't we?"

During her work on the production of recombinant chemokines, Amanda identified a potent CC chemokine antagonist, Met-RANTES, formed by the retention of the initiating methionine in the prokaryotic expression system. Met-RANTES proved to be extremely useful in elucidating the power of inhibiting the chemokine system in numerous disease models. Met-RANTES specifically competed with CCL5 and CCL3 for binding to cell receptors and inhibited T cell chemotaxis, eosinophil function, and HIV-1 infection. Extension of the amino terminus of RANTES (CCL5), specifically the generation of the variant amino-oxypentane (AOP)-RANTES, resulted in a potent anti-HIV infectivity agent. The use of this variant provided the first demonstration that inhibition of infection of primary macrophages through inhibition of CCR5 was feasible. Her studies identified that the mechanism of this inhibition was through removal of cell surface CCR5 expression, leading to a new paradigm in the search for HIV inhibitors.

Amanda then turned her attention to a second essential chemokine characteristic, their low affinity binding to cell surface glycosaminoglycans (GAGs). Using chemokine variants in which GAG binding had been abrogated, she and her group were able to demonstrate that this interaction was essential for chemokine mediated cell recruitment in vivo. It was then shown that abrogation of this interaction invokes anti-inflammatory activity, again providing a novel therapeutic pathway.

Knowing that ticks must evade host immune cell recruitment for success as a parasite, Amanda's group screened a cDNA library constructed from the salivary glands of the common dog-tick to identify proteins able to bind and inhibit chemokines. She identified a protein they designated Evasin-1. Evasin-1 was a selective inhibitor for three CC chemokines: CCL3, CCL4, CCL18. She later identified tick Evasin-3, able to bind CXCL1 and CXCL8, and Evasin-4, able to bind CCL5 and CCL11, all exhibiting potent anti-inflammatory activity.

Amanda established many successful collaborations and partnerships over the years. Beyond generously sharing materials, Amanda was an enthusiastic and collegial collaborator, bringing the right people together, someone whose energy and enthusiasm was infectious, motivating those around her. I met Amanda in 1998 at a conference in Jerusalem, and being among the few female scientists there, we gravitated towards each other. Amanda had an infectious laughter, and intertwined with talk about chemokines and cytokines, Amanda's joie de vivre was evident. From those days forward we built a friendship that, although we were separated by thousands of miles, was enduring. My collaboration with Amanda led to the discoveries that CCL5 activated JAK tyrosine kinases, best known to function in cytokine signaling, and the need for glycosaminoglycan binding for CCL5-mediated T cell apoptosis. Her intellect and insightfulness pioneered new concepts, creating new fields of research. Although her stature as the 'Queen of Chemokines' was undeniable, Amanda was unassuming and self-effacing, reticent to take centre-stage. Amanda brought people into her circle of science, with warmth and friendship, whether trainees, young investigators or colleagues. During her time in industry Amanda instituted student programs and mentored many MSc and Ph.D. students. Indeed, Amanda took personal responsibility for the trainees in her group, serving as a role model and inspiration for women in science: mentoring, advocating on behalf of and promoting trainees. As a member of the International Cytokine Society and then the International Cytokine & Interferon Society, Amanda was active on various committees, organized international meetings and was awarded an Honorary Lifetime Membership Award, acknowledging her service to the societies.

Amanda was someone who loved life: her passion for horse riding from an early age and her love of photography, especially when on safari in southern Africa, - an activity she pursued during her extensive world travels. Most recently, she discovered a joy in painting, capturing memorable scenes of her travels. New adventures, new ideas, new goals. Amanda was spontaneous – she flew to Toronto to be at my first art show. Amanda was devoted to her family, her husband Bernard, her step-children Florence and Philippe and brother, Charles. She was the glue for her family, their anchor. Her many lifelong friends and colleagues will remember her sharp intellect and inquisitive mind, her joyful exuberance, her loyalty and generosity; she had an impact on so many and these will be our lasting memories of Amanda.

Eleanor Fish

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Retrospective: **Walter Fiers** 1931-2019

By Jan Tavernier and Rudi Beyaert

Walter Fiers, professor in Molecular Biology at Ghent University, Belgium, passed away July 28th, 2019.

Walter Fiers, professor in Molecular Biology at Ghent University, Belgium, passed away July 28th, 2019. From the very beginning of his scientific career, Walter Fiers has made pioneering contributions in a vast number of domains ranging from pure molecular biology, molecular virology and immunology, as well as recombinant DNA technology. He was multidisciplinary 'avant la lettre' and used his background in chemistry to develop novel technologies that allowed him to decipher the biology of organisms on a molecular level. An extensive obituary was published in Cell 179(6) 1241-1243. We here focus on his key contributions to the interferon and cytokine field.

By 1975, recombinant DNA-technology, in part thanks to contributions of Walter Fiers, had sufficiently progressed that one could start the pursuit of medically important goals. Walter Fiers' choice was to go for interferon, a then mysterious substance which could protect against viral infection, and might possibly be used as an anti-cancer agent if available in unlimited quantities. To enable this goal, a tripartite collaboration was set up with Erik De Clercq (KULeuven) and Jean Content of the Brussels Pasteur Institute. Erik De Clercq, trained by Piet Desomer, brought extensive interferon expertise to the collaboration, including a sensitive bioassay, whilst Jean Content had developed a system to convert interferon mRNA into protein. Expertise from Fiers' lab allowed generating a library of plasmid vectors containing cDNAs derived from cells expressing interferon mRNA. A painstaking screening process led in January 1980 to the cloning of the human fibroblast, now interferon-beta, gene, and to the primary structure of the protein. As turned out later, Tadatsugu Taniguchi had already succeeded 2 months earlier to obtain such a clone. But the Fiers lab was the first to express the clone in E. coli, providing definite proof that the cloned gene coded for human interferon-beta, and opening the gateway to industrial production we know today.

This work coincided with the cloning of interferon-alpha genes by the team of Charles Weissmann in Zurich, and these success stories heralded the cloning of dozens of new cytokines, thus fundamentally changing the face of the interferon and cytokine field. Walter Fiers' lab contributed by the cloning of interferon-gamma, interleukins 2 and 6 and tumor necrosis factor. At that time his world-wide reputation in gene cloning and recombinant protein expression made him member of the Scientific Council of Biogen company (founded in 1978), together with colleagues such as Walter Gilbert, Charles Weissmann, Phillip Sharp, Heinz Shaller and Kenneth Murray.

Pursuing earlier observations by William Coley, Lloyd Old and colleagues described in 1975 a factor, now known as tumor necrosis factor (TNF), which killed L929 cells in vitro and showed anti-tumor effects in tumor bearing mice. Obviously, such a cure for cancer fired the imagination of Walter Fiers and many others, and the TNF gene was cloned by several groups, including the Fiers lab. Sure enough, TNF, especially in combination with interferon-gamma, shrank many types of tumors in mice, but mice suffered badly from the treatment. Hence while some scientists studied the anti-tumor cell effects, others concentrated on the multiple deleterious effects of TNF. TNF made a brief entry in the clinic but was rapidly dropped because of its side-effects. Marc Feldmann demonstrated that TNF was really at the apex of a shower of cytokines leading to rheumatoid arthritis and TNF was later shown to be a key cytokine in several other inflammatory diseases such as psoriasis and inflammatory bowel disease. Obviously, several TNF inhibitors made it to the clinic and the global market for TNF inhibitors now amounts to more than $40 billion. In the meantime, TNF research in Walter Fiers' team further focused on the mechanism of action of TNF, which led to several novel insights in intracellular signaling that currently still form the topic of intense research in Ghent and many other labs worldwide. A recent paper by one of us on TNF and interferon-gamma designer cytokines to suppress the systemic toxicity problems was dedicated to Walter Fiers (EMBO Mol Med 2020, doi: 10.15252/emmm.201911223).

The impact of Walter Fiers on biotechnology and molecular biology can hardly be overestimated (706 articles, 52000 citations and an h index of 114). His involvement in the discovery and characterization of several cytokines is astonishing. Together with Marc Van Montagu and Jozef Schell, Walter Fiers turned Ghent University into an important hub in molecular biotechnology. Furthermore, Walter was one of the founding fathers of the VIB institute. Walter received numerous prestigious awards for his research, such as the Francqui Award, the Dr. Beijerinck Gold Medal for Virology, the Artois-Baillet Latour Prize, the Carlos J. Finlay Prize, and the Robert Koch Prize. In 1990, Walter Fiers was awarded the title of Baron. He also belongs to the select group of 100 most cited authors in the biotech sector. Walter Fiers retired in 1997 and became a free-lance employee in his former laboratory to focus on research into the universal flu vaccine.

Walter has been central to much of what we have done together. He was a modest man and an inspiring leader. His groundbreaking work has been a breeding school for many successful researchers, several of which are now continuing cytokine research in their own labs. His legacy and our memories of him will last forever.

Jan Tavernier (jan.tavernier@ugent.be) and Rudi Beyaert (rudi.beyaert@ugent.be) are professor at the Ghent University and group leader at the VIB. They were trained by Walter Fiers and worked together in various capacities for many years.

NEW ICIS MEMBERS

We welcome these new members to the ICIS and we look forward to their attendance at the annual meeting and involvement in the society. The ICIS Membership Committee and Council especially thanks the Sponsoring Members noted below. As of March 24, 2020, there are 957 ICIS Members; 464 from the USA and 493 from outside the USA. The membership type break down is as follows: 538 Academic/Government (including 69 Life Members); 331 Student/Postdoc Members; 45 Honorary Lifetime Members; 22 Emeritus Members; 21 Industry Members

Seto Aladenika
University of Nigeria
Nigeria

Mariah Grace Alorro
Olivia Newton-John Cancer Research Institute
Australia
Research Advisor:
Prof. Matthias Ernst

Anje Cauwels
Belgium

Jieliang Chen
Fudan University
China

Chen Dong
Tsinghua University
China

Fana Kidane
University of Veterinary Medicine Vienna (Vetmeduni Vienna
Austria

Tadasuke Komori
Japan

Shitao Li
Tulane University
United States

Tanja Limberger
Medical University of Vienna
Austria

Li-Fan Lu
UCSD
United States

Lydia Lynch
Harvard University/Trinity College Dublin
United States/Ireland
Sponsoring Member:
Kate Fitzgerald

Anne Maina
University of Nairobi
Kenya

Aslan Mansurov
United States
Research Advisor:
Jeffrey Hubbell

Sarah McGlasson
University of Edinburgh
United Kingdom
Research Advisor:
Dr. David Hunt

Tina McIntyre
NIH/CSR
United States

William Miller-Little
Case Western Reserve University
United States
Research Advisor and Sponsoring Member:
Xiaoxia Li

Yoshihiro Morikawa
Wakayama Medical University
Japan

Oluwafemi Oguntibeju
Cape Peninsula University of Technology
South Africa

Ia Pantsulaia
Tbilisi State Medical University
Georgia

Maja Papic
University Medical Center of the Johannes Gutenberg University Mainz
Germany
Research Advisor:
Ari Waisman

Prashant Rai
National Institutes of Environmental Health Sciences / NIH
United States
Research Advisor:
Michael B. Fessler

Andrea Ramspacher
Research Program for Receptor Biochemistry and Tumor Metabolism, University Hospital for Pediatrics, Paracelsus Medical University, Salzburg
Austria

Tommy Regen
University Medical Center Mainz
Germany
Research Advisor:
Ari Waisman

Aaron Ring
Yale University School of Medicine
United States
Sponsoring Member:
Christopher Hunter

Renga Samy
United States

Daniella Schwartz
United States

Nick Shah
DiCE Molecules
United States

Yufang Shao
Bon Opus Biosciences
United States

Yoshiya Tanaka
University of Occupational and Environmental Health
Japan

Peter Taylor
Imperial College
United Kingdom

Christine Vazquez
Duke University
United States
Research Advisor:
Dr. Stacy M. Horner

Andreas Wack
The Francis Crick Institute
United Kingdom

Ifor Williams
American Association for the Advancement of Science
United States

Owen Wilson
SOBI
United States

New Member MINIBIOs

Chen Dong, Ph.D.
Professor and Director of the Institute for Immunology and Dean of the School of Medicine, Tsinghua University, Beijing, China

Professor Chen Dong was a Professor of Immunology and the Director of the Center for inflammation and Cancer at the University of Texas MD Anderson Cancer Center before joining Tsinghua University. He is the founding director of the Institute for Immunology at Tsinghua University, a dynamic immunology research center in the world. Chen became the Dean for the School of Medicine at Tsinghua University in 2016.

Dr. Chen's lab has made seminal contributions to the field of CD4 T cell subsets. In addition to Th1 and Th2 cells discovered in 1986, Chen and others independently discovered Th17 lineage cells in 2005, which are crucial in inflammatory diseases. His group conducted a series of work to identify the key transcription factors and cytokines in Th17 cell development. His group also characterized the roles of Th17 cells in inflammatory diseases and cancers.

In 2008-2009, Chen and others defined another T cell subset - T follicular helper cells, which critically regulates humoral immunity. He first proposed these cells as a distinct subset of T cells and then independently discovered Bcl6 as the necessary factor for the development of these cells. His group also co-identified the T follicular regulatory (Tfr) cells that inhibit germinal center reactions.

In addition, Chen and his colleagues have systemically analyzed the function of IL-17 family cytokines in the immune system. They applied mouse genetic approaches to identify key functions of IL- 17A, IL-17F, IL-25/IL-17E, IL-17C and IL-17B as well as their receptors in inflammatory diseases. They were the first to find Act1 as an adaptor for the signaling of IL-17 family cytokines.

He has published more than 200 papers and is a Highly Cited Researcher from 2014 - 2018. He was Young Investigator awardee of the International Cytokine & Interferon Society and was given the American Association of Immunologists BD Bioscience Investigator Award In 2009. He was elected fellow of the American Association for the Advancement of Science in 2011. He currently serves as Editor -in-chief for T Cell Biology Section of Frontiers in Immunology an editorial board member of Immunity. Professor Chen was awarded the 2019 ICIS-BioLegend William E. Paul Award at the Society's 2019 Annual Meeting (Cytokines 2019) in Vienna.

Li-Fan Lu, Ph.D.
Associate Professor
Section of Molecular Biology
Division of Biological Sciences
University of California-San Diego
9500 Gilman Dr., NSB 5314
La Jolla, CA 92093-0377

Li-Fan Lu is an Associate Professor in the Division of Biological Sciences at UC San Diego. His laboratory is interested in understanding the molecular determinants and cellular components that govern the magnitude and duration of immune responses. He began his graduate training with Dr. Randolph Noelle at the Dartmouth Medical School investigating the effector mechanisms of TNFR signaling with a focus on the interplay of different immune cell populations in establishing long term graft tolerance. He then joined the laboratory of Dr. Alexander Rudensky in 2006 to further investigate the molecular regulation of the genomic program that governs the development and function of regulatory T cells. After starting his own laboratory at UC San Diego in 2011, his lab continues to study the cellular and molecular mechanisms that control the balance between immunity and tolerance.

Prashant Rai
National Institutes of Environmental Health Sciences / NIH
Durham, United States

I am currently pursuing my postdoctoral studies at NIEHS/NIH, North Carolina. My overall research interest is in the area of infectious diseases and autoimmune disorders, specifically investigating processes during autoimmunity as susceptibility or resistant factors for successful bacterial infection. At the moment I am studying the role of mitochondria in innate immune system that could trigger pathogenic interferon production.

New Member MINIBIOs *Continued*

Liwu Li, Ph.D. (Lifetime Member)
Glasgow Caledonian University,
Glasgow, United Kingdom

Dr. Liwu Li is a tenured Professor of Inflammation Biology & Immunology at Virginia Tech. His research group studies the fundamental paradigms of innate immune memory dynamics. Dr. Li's research revealed signal-strength dependent programming of innate leukocyte memory as reflected in priming, tolerance and exhaustion of innate leukocytes persistently challenged with rising dosages of endotoxin. At the translational level, Li's group clarified the contribution of memory innate leukocytes (monocytes and neutrophils) to the pathogenesis of both acute (sepsis) and chronic (atherosclerosis, cancer) diseases. Integrating experimental and systems approaches, his current research continues to define the dynamic decision-making mechanisms of innate leukocytes in health and disease, with both animal models and human peripheral blood leukocytes. The competing and intertwined cellular circuitries that underlie the priming, tolerance and exhaustion of innate leukocytes are actively examined in Li's laboratory. Dr. Li has served on the board of Inflammation Research Association as a secretary, treasurer, and president; on the council of Society of Leukocyte Biology; as well as a member for various NIH review panels. He also serves as the associate editor for the Molecular Innate Immunity Section of the Frontiers of Immunology. Li co-organized several meetings related to innate immunity and leukocyte memory.

Lydia Lynch, Ph.D. (Cytokines 2019 Keynote Speaker)
Harvard Medical School
Harvard Institute of Medicine
Boston, United States
And Trinity College, Dublin

Professor Lydia Lynch received her B.Sc. degree in Cell Biology and Genetics from University College Dublin, Ireland. She received her Ph.D. in Immunology in 2008 from University College Dublin, in the lab of Prof. Cliona O'Farrelly in St. Vincent's University Hospital. Lydia received a Newman Fellowship for her early post-doctoral studies with Prof. Donal O'Shea in St. Vincent's University Hospital, Dublin. Here they established the Immunology and Obesity Lab, which coordinates international, collaborative, translational research in obesity and its complications. Lydia then received the prestigious UNESCO-L'Oreal International Women In Science Fellowship, where she moved to Harvard Medical School to study iNKT cells in adipose tissue in the lab of Mark Exley. In 2009, Lydia received an International Marie Curie Fellowship to continue her postdoctoral studies in immunometabolism, in the labs of Prof. Michael Brenner and Prof. Ulrich von Andrian in Harvard. In 2013, she became a junior faculty member at Brigham and Women's Hospital and Harvard Medical School. In 2014, Lydia started her independent lab with a joint appointment between the Division of Endocrinology and the Division of Rheumatology and Immunology, at Brigham and Women's Hospital and Harvard Medical School.

Dr Lydia Lynch had a major breakthrough when she discovered iNKT (invariant natural killer T-cells) in fat, and demonstrated that therapies to activate these cells could help manage obesity, diabetes and metabolic disease. She went on to find a critical role for IL-17 in the normal functions of fat, in particular in keeping us warm. The Lynch lab is interested in the effects of obesity and diet on immune cell functions, particularly innate cells including iNKT cells, NK cells and gd T cells, and how this impacts on cancer risk.

The Lynch lab is particularly interested in 'non-immune' roles for the immune system, particularly the local immune system in adipose tissue in mice and humans in the regulation of metabolism and body weight and thermogenesis.

Lydia (38), is from Greenhills in Dublin, has three children, Erin (22), Luka (14) and Layla (8). She was a single teenage mum to Erin and went on to do a BSc in cell biology and genetics followed by a Ph.D. in immunology. She was recruited as an assistant professor at Harvard Medical School, and now lives between Boston and Dublin. She was recently awarded a European Research Commission starting grant (€1.82m), which allowed her to return to set up a laboratory at Trinity College, where she is an associate professor.

Lydia has won a dazzling array of awards, including the UNESCO-L'Oréal International Women in Science Award ($40k/€36k), a Marie Curie International Fellowship ($350k/€313k), an American Diabetes Association Award ($600k/€537k) and a Cancer Research Institute Award ($200k). She was selected as one of the 'Women on Walls' of the Royal Irish Academy, where her portrait hangs on the wall, the first female portrait in the 230 year history of the RIA. Lydia's ambition is to make a real difference in human health, particularly by finding new ways to use our immune system to fight against cancer.

New Member MINIBIOs *Continued*

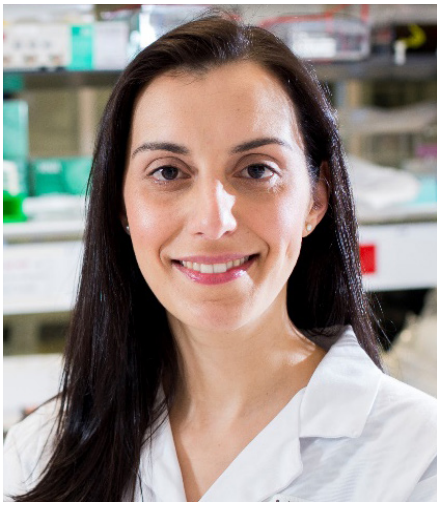
Seng-Lai "Thomas" Tan, Ph.D.
VP and Head of Immunology
Elstar Therapeutics
Cambridge, USA

I was one of the recipients of the 1999 Milstein Young Investigator Awards for my research contributions to the field of viral evasion of the interferon-mediated immune response. Even though that was 20 ago, I still recall vividly the award ceremony as it was held inside the beautiful Hôtel de Ville in Paris, where the city's local administration is housed. Then ISICR President, Bryan Williams, handed out the awards to us along with the obligatory photo op. It was my first trip to Paris and I was able to visit the Louvre Museum, Cathédrale Notre-Dame de Paris and Eiffel Tower. It remains one of the most memorable events in my career.

After graduating from the University of Washington School of Medicine in 1999, I have immersed myself in biopharmaceutical drug discovery and development, spanning different therapeutic areas, including oncology, autoimmunity and infectious disease. I have worked at both small and large companies and across various modalities, including small molecules, monoclonal and multi-specific antibodies, antibody drug conjugates, and cell-penetrating stapled peptides. Currently, I oversee immunology discovery, mechanistic and translational studies at Elstar Therapeutics, a small biotech company in Cambridge, MA. I have maintained a balanced pursuit of academic interests, as it helps maintain my intellectual sanity at work. I have over 60 publications and book editorials and have held adjunct faculty positions in the Department of Microbiology and Immunology at the Indiana University School of Medicine, Indianapolis, and at the Asian Institute of Medicine, Science and Technology. I also had the privilege of mentoring two postdoctoral fellows at Eli Lilly and Company.

I'm passionate about developing transformative medicines for treatment of cancer and other grievous diseases. However, as we know, drug discovery and development can take many years and is unpredictable, which is why it is important to consider other ways to impact patient lives. I believe raising awareness and engaging the public is another important way to make an impact on research priorities, while inspiring the next generation of healthcare providers to tackle unmet medical needs. On this note, I have combined my love for long distance running with charity fundraising. Please visit my website and consider a donation: https://fundraise.cancerresearch.org/fundraiser/1578392

WHERE ARE THEY NOW?



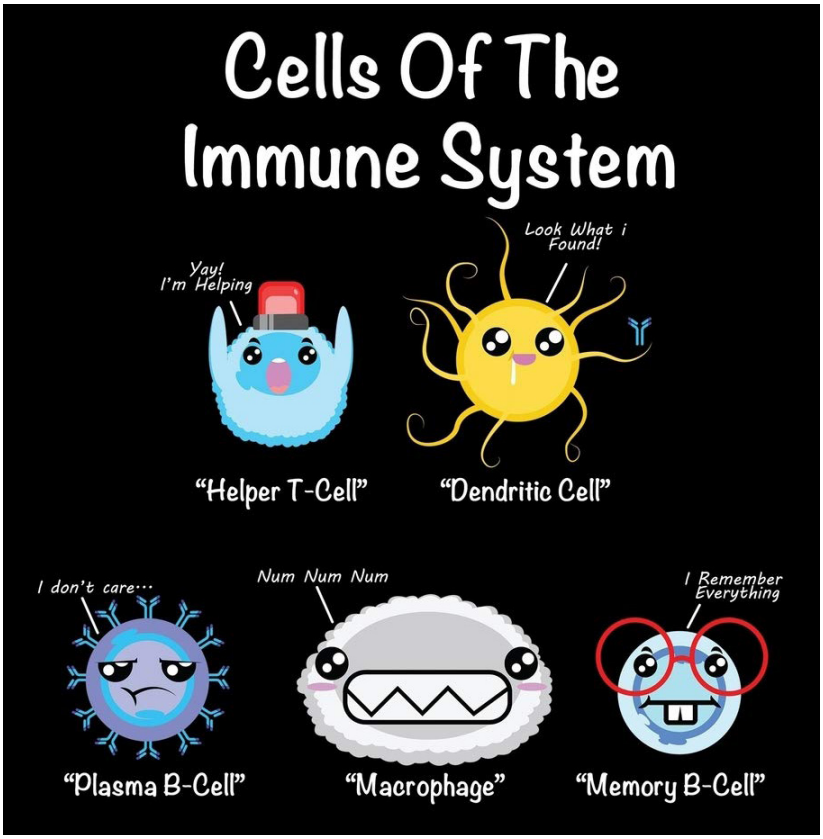
Maria Kaparakis-Liaskos

Maria Kaparakis-Liaskos is an Associate Professor and Head of the Bacterial Membrane Vesicles and Host-Pathogen Interactions Group at La Trobe University, Melbourne, Australia. She is also the Deputy Director of the La Trobe Research Centre for Extracellular Vesicles. Her team focuses on understanding the cellular and molecular mechanisms of host-pathogen interactions with particular focus on *Helicobacter pylori* and bacterial membrane vesicles.

Since receiving the Milstein Young Investigator Award in 2014, Maria has been awarded the Australian Society of Microbiology Frank Fenner Award, an Inaugural veski Inspiring Women Fellowship and a Victorian Young Tall Poppy Award. Her research is funded by the Australian Research Council and the National Health and Medical Research Council of Australia.

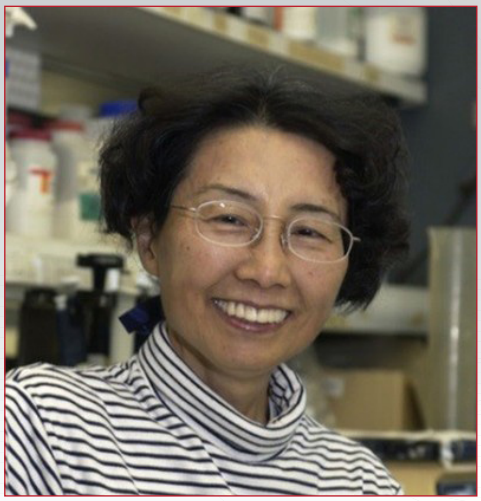
MEMBERS IN THE NEWS

Congratulations to Kate Fitzgerald and Akiko Iwasaki for their election into the American Academy of Microbiology.



Courtesy of ErrantScience.com

SPOTLIGHT



Keiko Ozato, Ph.D.,
Credit: NIH

Spotlight: Women in Science: Reflecting on Five Decades of Research with **Keiko Ozato**

Thursday, February 7, 2019

NICHD researcher Keiko Ozato, Ph.D., will turn 78 years old later this year. She gets to work by 7 a.m. on most mornings, leading a laboratory that she started (https://science.nichd.nih.gov/con!uence /display/smgi/Home) back in 1981. Dr. Ozato considers NICHD to be one of the friendliest places for conducting basic research and exploring the fundamental mechanisms that underlie development. Her joy and appreciation stem from early experiences that were not so pleasant. “On the day I started my graduate work, all of us [women] were called into the professor’s large office and told, ‘Hey girls, this is not a woman’s place. We will be very happy to help you get a job in a women’s college as a teacher. Think about it.’ That’s what we were told,” said Dr. Ozato about her time in Kyoto University during the 1960s and 1970s.

Early Years in Japan

Dr. Ozato was born in northern Japan in 1941, the same year that Japan attacked Pearl Harbor and the United States entered World War II. The war ended four years later, but as Dr. Ozato put it, “Everything was turned upside down. The Emperor was no longer almighty. What was valued culturally was trashed and replaced by a new American culture.” Like most Japanese families during that time, Dr. Ozato’s family was poor. Consecutive famines left Japan with very few resources. “Most kids were small and skinny and always hungry.”

Compounding the family’s poverty was her father’s battle with tuberculosis—a disease that affected many families in Japan. He did not have access to antibiotics until much later in life, so he suffered for quite a long time. The disease not only affected Dr. Ozato’s family and upbringing, but it would later influence her focus on immunology, the study of the body’s immune system. Despite the challenges of growing up after World War II, certain values remained unchanged in Japan. People still respected science and encouraged children to pursue higher education. Dr. Ozato loved science; it appeared limitless in her young mind.

continued

Japan's new Constitution gave women the right to vote and to receive the same education as men for the very first time, providing new sources of confidence. In 1973, Dr. Ozato completed her graduate studies on cell differentiation—how cells reach their mature forms—with Tokindo S. Okada, Ph.D. (http://www.kyoto-u.ac.jp/cuttingedge/ awards_honors/medicine_life/index2.html), a well-known developmental biologist at Kyoto University. During that time, developmental biology was very different. DNA and RNA studies were not common, despite being a cornerstone to modern developmental biology today. The field was derived from classical embryology, which used frogs as a model organism. As the field evolved, pioneers like Drs. Okada and Ozato incorporated new models and new techniques.

Challenges for Women

While research itself is quite demanding, being a woman meant extra challenges for Dr. Ozato. She recalled that women made up roughly 10 percent of science students during her graduate school years in Japan. Professors didn't quite know how to treat them, including the one who bluntly told them that they didn't belong. Dr. Ozato believes that the professors, though misguided, had meant well, at least in their own minds. "In Japanese society at the time, the guy in the family gets the salary, bread, rice, and everything. And the woman worked under him. And when you got older, you followed your sons," she remarked. Not surprisingly, none of her female colleagues heeded the advice of that professor. They all completed their studies, but they faced a new challenge upon graduation—getting a job. Dr. Ozato always assumed she would get a job. "I believed in the Constitution—as long as you got a good education, you'll have a job. That was an unrealistic expectation." She looked for a job for an entire year, but no one offered her a position. Meanwhile, most of the men in her class got jobs. Some of the women did, too, but the posts were usually at colleges where teaching was the priority, not research. Among those who didn't get a job, some classmates confided that they decided to accept marriage proposals instead. "There was too much pressure, and some people didn't want to fight against their parents. [They're thinking], 'So if I marry this guy, everyone in the family will be happy, so I'll do that.' Some women had to do that, no question about it," said Dr. Ozato. Luckily, Dr. Okada suggested that she pursue research in the United States. He wrote a letter of recommendation to one of his colleagues, James Ebert, Ph.D. (https://www.nytimes.com/2001/05 /25/us/james-d-ebert-79-biologist-helped-developembryology. html), a prominent developmental biologist at the Carnegie Institution of Washington in Baltimore, Maryland. Dr. Ebert offered her a Carnegie fellowship, and Dr. Ozato moved overseas for the first time. She recalled with a laugh, "At that time, I felt that I was expelled from Japan. So, I will never ever, never ever, go back to Japan."

A Flourishing Career

NICHD researchers Richard Maraia, M.D. Keiko Ozato, Ph.D., and Bruce Howard, M.D., Credit: NIH

Dr. Ozato worked as a postdoctoral researcher with Dr. Ebert until 1978, exploring immunology as a model for developmental biology. "The fact that antibody-producing cells may undergo mutation in the somatic state was a revolutionary finding. People argued about it, how this happened, whether this was common, as a principle of development. So, it was a very exciting time," she said, in reference to how immune cells mutate on purpose to generate a range of antibodies. During her postdoctoral years, she also met and married her husband, Igor Dawid, Ph.D. (https://science.nichd.nih.gov/con!uence/display/sdb/Home), a fellow researcher. Dr. Ozato felt that part of their strong connection resulted from their shared immigrant and World War II experiences. Dr. Dawid's father was from the Austro-Hungarian Empire and, because they were Jewish, his family constantly moved around Europe during the war. Some of his relatives died in the Auschwitz concentration camp in Poland. But he eventually earned his Ph.D. at the University of Vienna and came to the United States to pursue his own research career. They both ended up at the National Institutes of Health (NIH) in 1978. Dr. Ozato first worked as a staff fellow in the Experimental Immunology Branch at the National Cancer Institute, in the laboratory of David H. Sachs, M.D. Dr. Sachs ran the Transplantation Biology Section, where Dr. Ozato worked on the major histocompatibility complex (MHC) (https://www.niaid.nih.gov/research/immune-cells), which plays a big role in tissue rejection for organ and bone marrow transplants. Her research helped explain the genetic basis for MHC differences and paved the way for modern tissue typing and transplant matching. In 1981, NICHD recruited Dr. Ozato to start her own independent research lab. As she remembers it, NICHD was undergoing leadership changes with a new institute director, Mortimer B. Lipsett, M.D., and scientific director, James Sidbury, Jr., M.D. The institute had also recently lost prominent immunologist Philip Leder, M.D., to Harvard University, so it recruited Dr. Ozato, as well as John Robbins, M.D., and Rachel Schneerson, M.D. (/newsroom/releases/cviawar2), who both later developed a landmark vaccine for Hemophilus influenzae type b. Describing her early years at NIH, working as a staff fellow, Dr. Ozato said, "I felt so liberated seeing other female postdocs. It was one of my ideal places to work, and I was so excited to be here. I felt, 'Finally, I'm one of them.'" She received tenure in 1987 under scientific director Arthur Levine, M.D. To this day, her lab is the Section on Molecular Genetics of Immunity.

"The field advances as a community"

When asked about her scientific achievements, Dr. Ozato is remarkably humble, especially for a prolific researcher who has published more than 400 papers, including studies in top journals like Nature and Cell. "There are great scientists. But after all, it's a community effort, a community achievement. I cannot say a single person has done everything. Most of the time, the field advances as a community." But Dr. Ozato's colleagues are eager to talk about her achievements and impact, for the field and for subsequent generations of scientists. Her lab continues to explore the molecular mechanisms underlying innate immunity, including transcriptional gene regulation, which basically asks: how does an immune cell know what to do under different circumstances? Dr. Ozato feels lucky to have gotten into the field early on, when most transcription factors were unknown (Transcription factors help a cell turn DNA instructions into action. They act like a cell's foreman. Scientists estimate that people have more than 3,000 transcription factors (https://www.nature.com/scitable/topicpage/transcription-factors-and-transcriptional-control-ineukaryotic-1046/). Over the course of her career, Dr. Ozato refined techniques to discover transcription factors, which other scientists have used in their own work, and she identified several new transcription factors and regulators. Two of the most important regulators discovered by her lab are IRF8 and BRD4. IRF8 directs stem cells to develop into various innate immune cells, which have many roles and protect the body against bacteria, viruses, and other disease-causing microbes. It's not lost on Dr. Ozato that IRF8 is essential for fighting off the bacteria that causes tuberculosis, the disease that affected her father. Because of the diverse role of immune cells, IRF8 is also considered a tumor suppressor gene, inhibiting the growth of blood cancers. It contributes to chronic inflammatory diseases, including heart disease, and autoimmune diseases, like multiple sclerosis. BRD4 is important in epigenetics (https://www.genome.gov/about-genomics/factsheets/Epigenomics-Fact-Sheet) and reads signal marks on histones, proteins that help package and organize DNA into structures called chromatin (https://www.genome.gov/genetics-glossary/Chromatin?id=32). Dr. Ozato's work, along with others, paved the way for the development of small molecule inhibitors that target BRD4 and proteins similar to it. These drugs are now promising therapeutic candidates for treating blood cancers and a range of inflammatory diseases. Being nearly 78 hasn't diminished Dr. Ozato's passionate curiosity. Currently, she is studying the role of BRD4 in neuroinflammation and multiple sclerosis. She's also refining the idea of cellular memory. "Immunological memory is one of the most important concepts in immunology, but it is limited to T and B lymphocytes. Neurons remember, and neurons keep memory. Most people think that the nervous and immune systems are the only two where memory works. But we now think that ordinary cells, including innate immune cells, also have the ability to make memory through chromatin. This memory improves the cell's ability to respond to external cues. That's what I'm really excited about."

"I was able to continue"

Stephen Katz, M.D., and Keiko Ozato, Ph.D., Credit: NIH

Dr. Ozato shares that people often ask her when she will retire and what she will do. But she says that she cannot fathom retiring because most of her interests are in the lab. Despite challenges and feeling isolated at times in the past, either because she is a woman or because she is an immigrant, she has always prevailed. "Lab work is literally my way oflife," she said. "The bottom line: I was able to continue working. Even if there are difficulties, the research community allows anyone to pursue the American Dream."

Her success is perhaps best illustrated by an award she received in 2012. She was given the Order of Sacred Treasure, Gold Rays with Neck Ribbon—an honor bestowed by the Japanese government and the Emperor of Japan for her research achievements and contributions to the scientific community and to Japan. She, along with Stephen Katz, M.D., the former director of the National Institute of Arthritis and Musculoskeletal and Skin Diseases, were honored in a ceremony (https://nihrecord.nih.gov/newsletters/2012/11_23_2012/milestones.htm) at the residence of the Japanese ambassador, Ichiro Fujisaki, in Washington, D.C. The award also meant traveling to Tokyo to meet the Emperor of Japan, which she did, despite her earlier, impassioned vow to never return. Because of her experiences, Dr. Ozato is eager to mentor young scientists. While older researchers could argue that the young ones have it easier, she believes the opposite. Dr. Ozato thinks that young scientists face many new challenges, and that the older generation should help shoulder these burdens. She also has great admiration for young scientists, explaining that they're often more informed, know what they want, and are better focused than scientists were when she was younger. "I now realize how important it is to provide a nurturing environment for the younger generation. I'm not doing anything special; I'm just following NIH's grand tradition."

Cytokines 2020
International Cytokine & Interferon Society ICIS

8th Annual Meeting of the International Cytokine & Interferon Society

1 - 4 November

Hyatt Regency Seattle, USA

Structure-Function & Systems Biology of Cytokines

IMPORTANT MEETING UPDATE

Understanding cytokine and interferon biology is fundamental to human health and disease such as COVID-19. We are still planning on holding the Annual Meeting, 1-4 November 2020. However, as the SARS-CoV-2 pandemic has not peaked in many parts of the world, we will remain flexible with our plans. The Organizing Committee is closely following the guidance of the Centers for Disease Control (CDC) and World Health Organization (WHO), along with Washington State and Seattle public health authorities, and are following developments within the academic and business communities concerning travel and meeting policies. Based on recommendations from these agencies we will decide whether the meeting will be held as planned in Seattle in combination with a virtual component (this is the most likely scenario) or whether we will hold a virtual meeting instead of gathering in person, or a combination in person. So, either way, we encourage you to prepare and collaborate with colleagues for Cytokines 2020.

The International Cytokine & Interferon Society and its members have made sustained efforts to understand the host response to pathogens. The interferons and cytokines are central to controlling viral infection and developing effective vaccines.

In the coming weeks and months, we expect there may be a number of changes and updates and will ensure that all ICIS members and attendees have access to the information they need in a timely fashion. Updates will be available on seattle.cytokinesociety.org, through ICIS social media and email. Current deadlines for abstract submission and registration can be accessed at seattle.cytokinesociety.org/important-dates/. Scientific Program: Sessions will include cutting edge and basic and clinical presentations, Keynote Lectures from four world leaders in cytokine and interferon research, with 2 timely poster sessions, and a total of 55 presentations by invited speakers as well as oral abstract presentations. Attendees from all career stages will participate in 4 ground-breaking Plenary and 14 highly relevant scientific sessions.

Don't Forget to Vote!

Att: American citizens, please note that the 2020 ICIS meeting overlaps with the USA election. Learn more here and get your absentee or mail-in ballot at this link: https://www.usa.gov/absentee-voting

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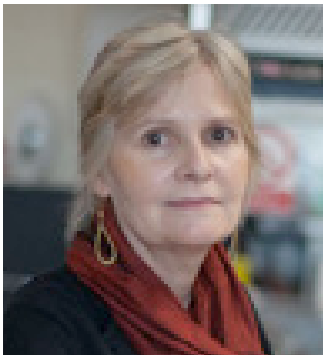
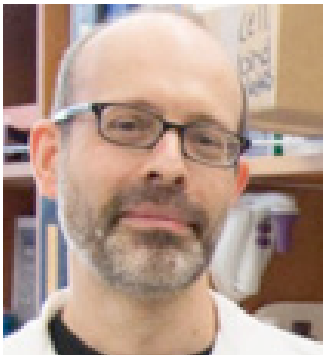
KEYNOTE SPEAKERS



Judi Allen
Professor of Immunobiology, University of Manchester, Manchester, UK



Michael S. Diamond
The Herbert S. Gasser Professor, Departments of Medicine, Molecular Microbiology, Pathology & Immunology, Washington University, St. Louis, USA

Lalita Ramakrishnan
Professor of Immunology and Infectious Diseases at the MRC Laboratory of Molecular Biology, University of Cambridge, Cambridge, UK

Ellen Rothenberg
Albert Billings Ruddock Professor of Biology, Caltech, Pasadena, USA

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CONFIRMED INVITED SPEAKERS

Kristina Adams-Waldorf, University of Washington, Seattle, United States

Judith Allen, University of Manchester, Manchester, United Kingdom

Maninjay Atianand, University of Pittsburgh, Pittsburgh, United States

Glen Barber, University of Miami, Miami, United States

Betsy Barnes, Feinstein Institutes for Medical Research, Manhasset, United States

Sonja Best, NIH, Rocky Mountains Labs, Hamilton, United States

Estelle Bettelli, Benaroya Research Institute, Seattle, United States

Igor Brodsky, University of Pennsylvania, Philadelphia, United States

Jörn Coers, Duke University, Durham, United States

Jason Cyster, University of California, San Francisco, United States

Michael Diamond, Washington University, St Louis, United States

Marlène Dreux, INSERM, Lyon, France

Kate Fitzgerald, University of Massachusetts Medical School, Worcester, United States

Chris Garcia, Stanford University, Stanford, United States

Jorge Henao-Mejia, University of Pennsylvania, Philadelphia, United States

Kristin Hogquist, University of Minnesota, Minneapolis, United States

Stacy Horner, Duke University, Durham, United States

Curt Horvath, Northwestern University, Evanston, United States

Christopher Hunter, University of Pennsylvania, Philadelphia, United States

Jennifer Hyde, University of Washington, Seattle, United States

Stephen Jameson, University of Minnesota, Minneapolis, United States

Simon Jones, Cardiff University, Cardiff, United Kingdom

Eiryo Kawakami, Graduate School of Medicine, Chiba University, Japan

Nikki Klatt, University of Miami, Miami, United States

Robyn Klein, Washington University, St. Louis, United States

David Levy, NYU Langone, New York, United States

Png Loke, NYU Langone, New York, United States

Jennifer Lund, Fred Hutch, Seattle, United States

Andrew McKenzie, MRC, University of Cambridge, Cambridge, United Kingdom

Daniel McVicar, National Cancer Institute, Frederick, United States

Anna Molofsky, UC San Francisco, San Francisco, United States

Timothy Nice, Oregon and Health Sciences University, Portland, United States

Mariko Okada, Institute for Protein Research, Osaka University, Japan

Selinda Orr, Queen's University Belfast, Belfast, United Kingdom

Chandrashekhar Pasare, Cincinnati Children's, Cincinnati, United States

Louis Picker, OHSU, Portland, United States

Fiona Powrie, University of Oxford, Oxford, United Kingdom

Anne Puel, The Rockefeller University, New York, United States

Lalita Ramakrishnan, University of Cambridge, Cambridge, United Kingdom

Gwendalyn Randolph, Washington University, St. Louis, United States

Barbara Rehermann, NIH, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, United States

Boris Reizis, NYU Langone, New York, United States

Aaron Ring, Yale, New Haven, United States

Ellen Rothenberg, Caltech, Pasadena, United States

John Schoggins, UT Southwestern, Dallas, United States

Rafick-Pierre Sékaly, Case Western Reserve University, Cleveland, United States

Daniel Stetson, University of Washington, Seattle, United States

Naeha Subramanian, Institute for Systems Biology, Seattle, United States

Mehul Suthar, Emory Vaccine Center, Atlanta, United States

Jenny Ting, University of North Carolina, Chapel Hill, United States

Shannon Turley, Genentech, San Francisco, United States

Monika Wolkers, University of Amsterdam, Amsterdam, Netherlands

Joshua Woodward, University of Washington, Seattle, United States

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Networking dinner at the Seattle Aquarium

Tuesday 3 November from 18:00 – 22:00

The official meeting networking evening is a great opportunity for delegates to exchange and share knowledge in a relaxed atmosphere and strengthen their connections with potential collaborators as well as reconnect with colleagues outside of the talks and poster sessions.

This year's networking dinner will be at the Seattle Aquarium on Tuesday 3rd November 2020 from 18:00 – 22:00. The Aquarium is located on Pier 59 at the edge of Puget Sound's Elliott Bay on the waterfront in downtown Seattle, a 17-minute walk from the Hyatt Regency Seattle Hotel. All participants will be charged a nominal extra registration ticket ($50 / $25 for trainees).

Child care for accompanying children

Keeping with the ICIS commitment to making the Cytokine Meetings inclusive for scientists with young families. Meeting rooms will be available close to the main session rooms, for nursing mothers (with a refrigerator for breast milk and formula), and an adjacent meeting room will be used as a daycare center through a licensed day care service provider, for children of registered attendees, at no cost to participants. Baby-sitters will not be necessary for the networking dinner at the Aquarium as it will be "family friendly" and participants will be able to bring their accompanying children along. By the time of the event, we anticipate the accompanying children will have become acquainted at the day care, and we can reserve tables for children to sit together and make this an unforgettable event for them as well!

We hope the COVID-19 situation will be manageable for international travel by November and our planning is proceeding with that assumption, while at the same time planning for a potentially reduced live participation combined with a virtual meeting and/or virtual meeting.

We hope to greet you in Seattle!

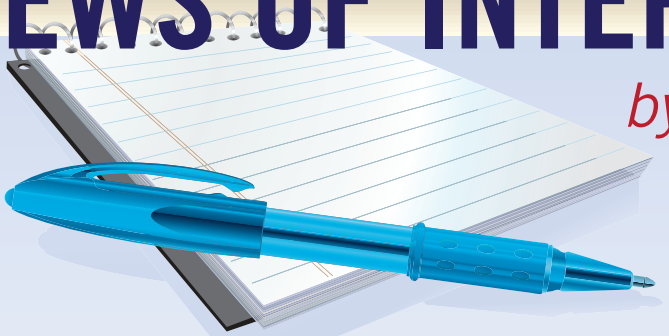
Local Organizing Committee

- Michael Gale, Jr., University of Washington, Seattle, USA, meeting chair
- Ram Savan, University of Washington, Seattle, USA, meeting co-chair
- Renee Ireton, University of Washington, Seattle, USA
- Sarah Gaffen, University of Pittsburgh, Pittsburgh, USA
- Naeha Subramanian, Institute for Systems Biology, Seattle, USA
- Steve Ziegler, Benaroya Research Institute, Seattle, USA
- Yueh-Ming Loo, AstraZeneca, Inc., Gaithersburg, USA

International Advisory Committee

- Simon Jones, Cardiff University, Cardiff, UK
- Eleanor Fish, University of Toronto, Toronto, Canada
- Kate Fitzgerald, University of Massachusetts Medical School, Worcester, USA
- Georg Schett, Friedrich-Alexander-University, Erlangen, Germany
- Akinori Takaoka, Hokkaido University, Sapporo, Japan
- You-Me Kim, Pohang University of Science and Technology, Pohang, South Korea

REVIEWS OF INTEREST



by Di Yu and Zhian Chen

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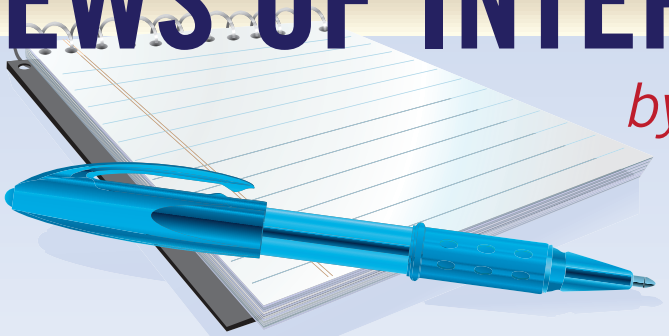

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The IL-17 Cytokine Family in Tissue Homeostasis and Disease" that we are publishing in Frontiers in Immunology.
Guest editors: Nicola I Lorè, Kong Chen, Katarzyna Bulek
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Regulation of Host-Microbe Interactions at Oral Mucosal Barriers by Type 17 Immunity
Gaffen SL, Moutsopoulos NM
Science Immunology 03 Jan 2020: Vol. 5, Issue 43, eaau4594 DOI: 10.1126/sciimmunol.aau4594
PMID:31901072

WWW

Welcome to Hopkins ABX Guide

http://www.hopkins-abxguide.org/

Hopkins ABX Guide is a guide to disease-causing bacteria, the most common bacterial infections, rare but potentially life-threatening conditions and other things you always wanted to know about bacteria and their impact on human health. Signs and symptoms of the infection, factors that put you at increased risk of developing the infection, complications, treatment options, etc. Everything is covered and everything presented in an easy to understand manner.

Integrated Microbial Genomes and Microbiomes

https://img.jgi.doe.gov/

The **mission** of the Integrated Microbial Genomes & Microbiomes(IMG/M) system is to support the annotation, analysis and distribution of microbial genome and microbiome datasets sequenced at DOE's Joint Genome Institute (JGI).

IMG/M is also open to scientists worldwide for the annotation, analysis, and distribution of their own genome and microbiome datasets, as long as they agree with the IMG/M data release policy and follow the metadata requirements for integrating data into IMG/M (see IMG/M submission site).

Binding MOAD

http://www.bindingmoad.org/

We have created a subset of the Protein Data Bank (PDB), containing every high-quality example of ligand-protein binding. Hence, we call it the Mother of All Databases (MOAD). Binding MOAD's goal is to be the largest collection of well resolved protein crystal structures with clearly identified biologically relevant ligands annotated with experimentally determined binding data extracted from literature.

BRAGI: A Protein Visualization and Modeling Program

https://bragi.helmholtz-hzi.de/index.html

- well-established package for viewing and modeling of proteins running on SGI IRIX
- BRAGI is free
- it operates hardware accelerated with OpenGL on ordinary Windows, Linux (32bit and Itanium) and SGI computers.
- It seems to run on Windows 7, even in 64 bit mode.
- First tests on Snowleopard were successful.
- The user interface is completely rewritten to give the usual "look and feel" and a more intuitive, easier usage.
- Now we integrate information from public databases like Swiss-Prot or InterPro to PDB entries, display features from these in the 3D view and link data via standard browser.
- Almost unlimited numbers of molecules can be displayed in the program.
- BRAGI is a joint effort of
  - Department of Structural Biology at the HZI
  and
  - institute for Biochemistry, University of Köln

CELL IMAGE LIBRARY

http://ccdb.ucsd.edu/pages/about

This Image Library is a repository for images and movies of cells from a variety of organisms. It demonstrates cellular architecture and functions with high quality images, videos, and animations. This comprehensive and easily accessible Library is designed as a public resource first and foremost for research, and secondarily as a tool for education. The long-term goal is the construction of a library of images that will serve as primary data for research. The Library effort represents not only the creation of the electronic infrastructure, but also a systematic protocol for acquisition, evaluation, annotation, and uploading of images, videos, and animations.

WWW

Continued

Electron Microscopic Atlas of cells, tissues and organs in the internet

http://www.drjastrow.de/WAI/EM/EMAtlas.html

A teaching offer by PD Dr. med. H. Jastrow, Specialist in Anatomy

Images from the History of Medicine

https://www.nlm.nih.gov/hmd/ihm/index.html

Images from the History of Medicine (IHM) in NLM Digital Collections provides online access to images from the historical collections of the U.S. National Library of Medicine. IHM includes image files of a wide variety of visual media including fine art, photographs, engravings, and posters that illustrate the social and historical aspects of medicine dating from the 15th to 21st century.

The Big Picture Book of Viruses

BROUGHT TO YOU BY THE GARRY LAB

http://www.virology.net/Big_Virology/BVHomePage.html

The Big Picture Book of Viruses is intended to serve as both a catalog of virus pictures on the Internet and as an educational resource to those seeking more information about viruses. To this end, it is intimately linked to All the Virology on the WWW, and our collection of Virology Courses and Tutorials.

There are several ways to access the information in the Big Picture Book of Viruses. All viruses are listed according to the family to which they have been assigned by the International Committee on Taxonomy of Viruses (ICTV).

SCHOOL OF MEDICINE DEPARTMENT OF PATHOLOGY

Memorial Sloan Kettering Cancer Center

CD Markers

http://www.pathologyoutlines.com/cdmarkers.html

Authors: Nat Pernick, M.D., Charanjeet Singh, M.D., Lauren N. Stuart, M.D., M.B.A.

Revised: 26 December 2019 **Copyright:** 2002-2019, PathologyOutlines.com, Inc.

EBiSC2

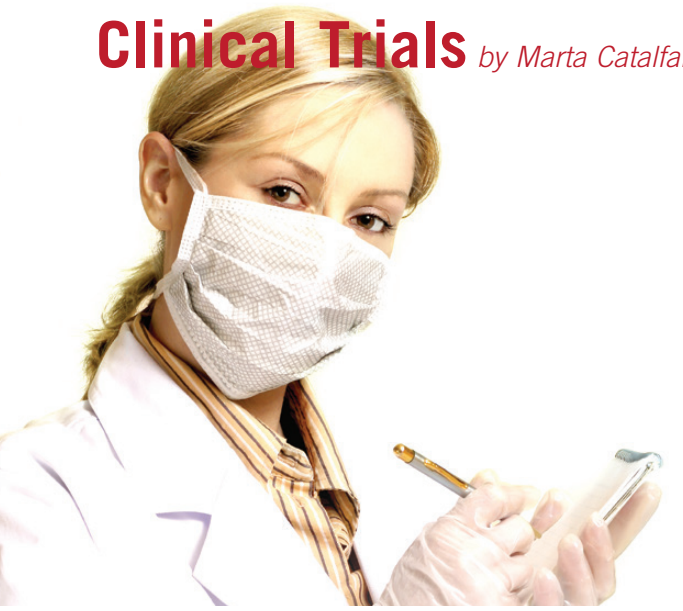
https://www.phe-culturecollections.org.uk/

Public Health England (PHE) is the custodian of four unique collections that consist of expertly preserved, authenticated cell lines and microbial strains of known provenance for use in medical science and laboratory healthcare.

All the collections are developed, managed and maintained by highly trained, dedicated staff who work in accordance with internationally recognized quality standards including certification to ISO 9001:2015.

Cultures from the collections are used by scientists who need to reassure themselves and others that the materials they are using are authentic, so the conclusions to their studies are valid and relevant. This is particularly important where research may lead to peer-reviewed publications, for example, in drug discovery and vaccine efficacy studies. Authenticated reference strains are also of paramount importance for clinical diagnostic testing, food, water and environmental microbiology testing and validation studies.

Clinical Trials *by Marta Catalfamo*



Pharmacodynamic Biomarkers to Support Biosimilar Development: Interferon Beta-1A Products

Principal Investigators: Carlos Sanabria, MD. Spaulding Clinical Research LLC, WI 53095. USA
Contact: Sarah Kemp Phone: 800.597.4507
ClinicalTrials.gov Identifier: NCT04183491

Study of the Efficacy and Safety of Lonafarnib / Ritonavir With and Without Pegylated Interferon -Alfa-2a (D-LIVR)

Principal Investigators: Eiger BioPharmaceuticals. Palo Alto, CA 94306. USA
Contact: Sue Speyer. Phone: 650-272-6138
ClinicalTrials.gov Identifier: NCT03719313

Modified Virus VSV-IFNbetaTYRP1 in Treating Patients With Stage III-IV Melanoma

Principal Investigators: Roxana S Dronca, MD. Mayo Clinic in Florida. Jacksonville 32224-9980, Florida, USA
Contact: Roxana S Dronca, MD. Phone: 855-776-0015
ClinicalTrials.gov Identifier: NCT03865212

QUILT-3.055: A Study of ALT-803 in Combination With PD-1/PD-L1 Checkpoint Inhibitor in Patients With Advanced Cancer

Principal Investigators: Altor BioScience. Miramar, FL 33027. USA
Contact: Amy Rock, PhD. Phone: 954-443-8600
ClinicalTrials.gov Identifier: NCT03228667

GTB-3550 (CD16/IL-15/CD33) Tri-Specific Killer Engager (TriKE™) for High Risk Heme Malignancies

Principal Investigators: Erica D Warlick, MD. Masonic Cancer Center, University of Minnesota. Minneapolis, Minnesota, United States, 55455. USA
Contact: Jeffrey S Miller, MD. Phone: 612-625-7409
ClinicalTrials.gov Identifier: NCT03214666

Biomarkers in Rheumatoid Arthritis Treated With Anti-interleukin-6 Therapy (INTER-ACT)

Principal Investigators: Achille Aouba, MD PhD. CHU de Caen Normandie. Caen 14000, France.
Contact: Samuel Deshayes, MD. Phone: +33-231-064579
ClinicalTrials.gov Identifier: NCT04281602

Role of Interferon-gamma 1-b (IFN-γ) on Cells of the Innate Immune System: Functional, Biochemical and Gene Expression Studies in Patients With Chronic Granulomatous Disease

Principal Investigators: Daniel R. Ambruso, MD. University of Colorado Anschutz Medical Campus. Aurora, Colorado 80045, USA.
Contact: Wendy Moore, MPH, CCRP Phone: 720-777-6353
ClinicalTrials.gov Identifier: NCT03548818

Intraperitoneal Infusion of Autologous Monocytes With Sylatron (Peginterferon Alfa-2b) and Actimmune (Interferon Gamma-1b) in Women With Recurrent or Refractory Ovarian Cancer, Fallopian Tube Cancer or Primary Peritoneal Cancer

Principal Investigators: Christina M Annunziata, M.D. National Cancer Institute (NCI). National Institutes of Health Clinical Center. Bethesda, Maryland, 20892. USA.
Contact: Ann C McCoy, R.N. Phone: +1 240-760-6021
ClinicalTrials.gov Identifier: NCT02948426

A Study to Investigate the Safety and Efficacy of an Anti-IFN-gamma mAb in Children With Systemic Juvenile Idiopathic Arthritis (sJIA) Developing Macrophage Activation Syndrome/ Secondary Hemophagocytic Lymphohistiocytosis (MAS/sHLH)

Principal Investigators: Alexei Grom, MD. Cincinnati Children's Hospital. Cincinnati, Ohio 45229, USA
Contact: Maria Ballabio, MD. Phone: +41 61 201 1324
ClinicalTrials.gov Identifier: NCT03311854

Anakinra for the Treatment of Chronically Inflamed White Matter Lesions in Multiple Sclerosis

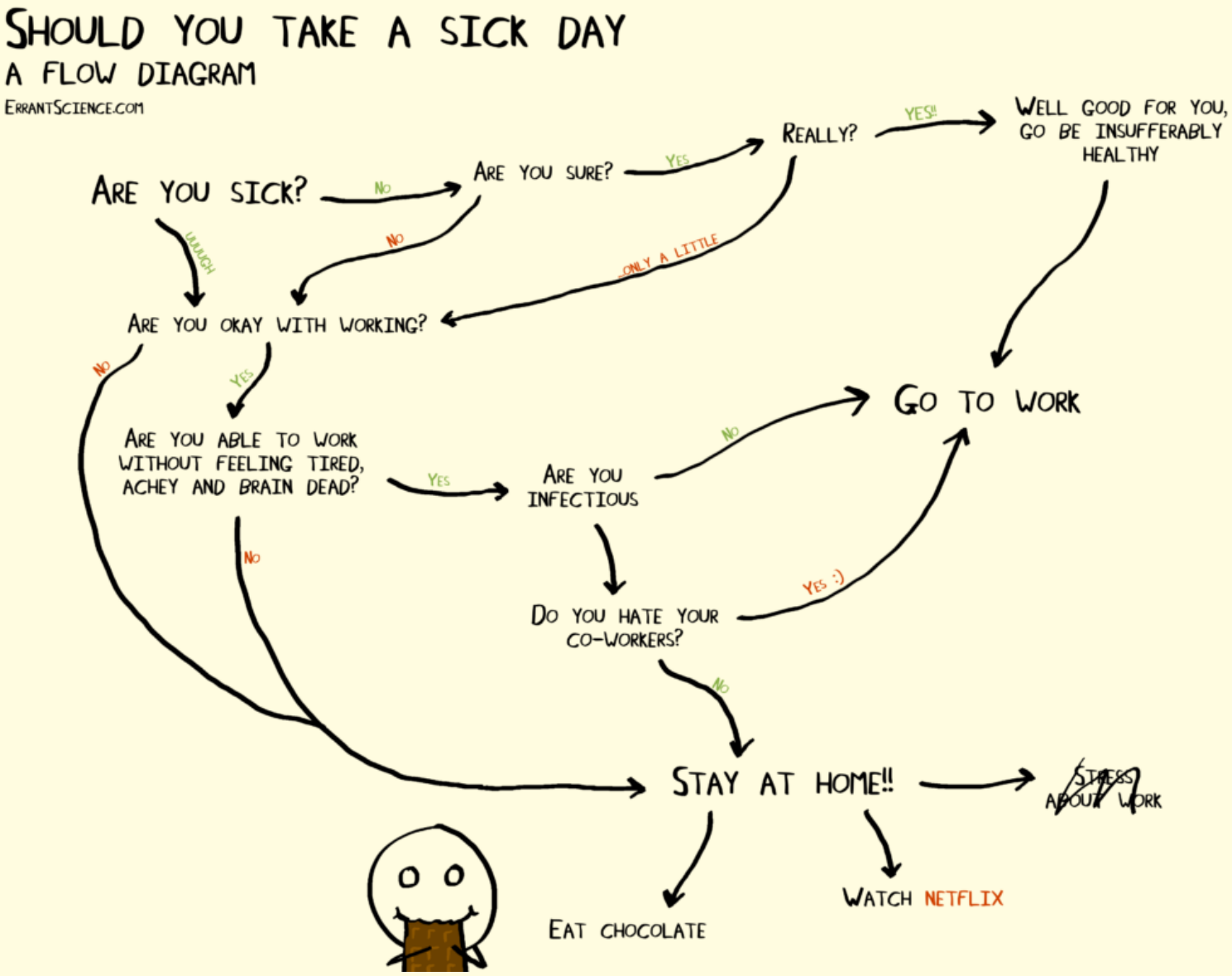
Principal Investigators: Irene CM Cortese, M.D. National Institute of Neurological Disorders and Stroke (NINDS). National Institutes of Health Clinical Center. Bethesda, Maryland 20892, USA.
Contact: Joan M Ohayon. Phone: +1 301-496-3825
ClinicalTrials.gov Identifier: NCT04025554

Lopinavir/ Ritonavir, Ribavirin and IFN-beta Combination for nCoV Treatment

Principal Investigators: Ivan FN Hung, MD FRCP. The University of Hong Kong. Queen Mary Hospital. Hong Kong.
Contact: Ivan FN Hung, MD FRCP. Phone: +862 22554049
ClinicalTrials.gov Identifier: NCT04276688

Effects of Anti-IL5 Biological Treatments on Blood IgE Levels in Severe Asthmatic Patients (BIONIGE)

Principal Investigators: Marco Contoli, Professor. Azienda Ospedaliero Universitaria Ferrara. Ferrara 44124, Italy.
Contact: Marco Contoli, Prof. Phone: +390532688148
ClinicalTrials.gov Identifier: NCT04181190



Courtesy of ErrantScience.com

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