Immunology Update - Summer 2022



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FOCIS Announces New Board and Steering Committee Leadership



FOCIS is proud to announce the 2022-2023 Board of Directors and Steering Committee.

FOCIS Board of Directors

The Board of Directors oversees the management, direction, and control of the business, policies, and affairs of the Federation.

The Officers and Executive Committee of the FOCIS Board of Directors include President Megan Sykes, M.D., Columbia University, President-Elect Ignacio Anegon, MD, Nantes University, Secretary/Treasurer Jonathan Maltzman, MD, PhD, Stanford University, and Past President Mark Anderson, MD, PhD, University of California, San Francisco.

The FOCIS Board of Directors is also comprised of FOCIS Committee Chairs, At Large and Ad Hoc Directors and Compliance Officer. The FOCIS Committee Chairs are Jeffrey Rathmell, PhD, Vanderbilt University (FCE), Olivier Boyer, MD, PhD, Normandy University (FCE Multinational), Stephanie Eisenbarth, MD, PhD, Northwestern University (Education), Betty Diamond, MD, Feinstein Institute (Membership/Scientific Outreach), and Jane Grogan, PhD, Graphite Bio (Scientific Program Committee).

At Large and Ad Hoc Directors include Robert Balderas, MBA, BD Biosciences, Todd Brusko, MD, University of Florida, Jane Buckner, MD, Benaroya Research Institute, Leonie Taams, PhD, King's College London, Laurence Turka, MD, Rubius Therapeutics, Megan Levings, PhD, University of British Columbia, Miriam Merad, MD, PhD, Mount Sinai Medical Center, Elaine Reed, PhD, D(ABH), University of California, Los Angeles, and Compliance Officer Jordan Pober, MD, PhD, Yale University.

FOCIS Steering Committee

The FOCIS Steering Committee is composed of 20 Member Society representatives representing the Federation in their disciplines. It advises the Federation on the Annual Meeting program and abstracts, develops satellite programs, promotes Federation meetings and activities, and votes on approval of candidates for the Board of Directors.

The Steering Committee welcomed four FOCIS Member Societies and their official representatives for the 2022-2023 term. Joining the Steering Committee are Indian Immunology Society representative Amit Awasthi, PhD, Ukrainian Society of Specialists in Immunology, Allergology & Immunorehabilitation representative Halyna Koval, PhD, Sociedad Mexicana de Inmunologia representative Yvonne Rosenstein, PhD, and Japanese Society of Clinical Immunology (JSCI) representative Yoshiya Tanaka, MD, PhD.

Continuing members on the Steering Committee and their representatives include:

Australasian Society of Clinical Immunology and Allergy, Stephen Adelstein, MD, PhD Italian Society of Allergy and Clinical Immunolgy, Raffaele De Palma, Di.M.I. Crohn's and Colitis Foundation of America, Andres Hurtado-Lorenzo, PhD The Transplantation Society, Fadi Issa, MD International Society for Neuroimmunology, Vijay Kuchroo, DVM, PhD American Uveitis Society, Phoebe Lin, MD, PhD Society for Immunotherapy of Cancer, Francesco Marincola, MD Immune Tolerance Network, Gerald Nepom, MD, PhD American College of Rheumatology, Deepak Rao, MD, PhD American Society of Histocompatibility & Immunogenetics, Elaine Reed, PhD Immunology of Diabetes Society, Bart Roep, MD, PhD American Academy of Allergy, Asthma and Immunology, Lanny Rosenwasser, MD National Institute of Allergy and Infectious Disease, Daniel Rotrosen, MD British Society for Immunology, Jessica Strid, PhD Clinical Immunology Society, Troy Torgerson, MD, PhD Society for Mucosal Immunology, Ifor Williams, MD, PhD

The full membership of the Board of Directors and the Steering Committee can be viewed here. Member listings for the FOCIS Committees are available here.

Our sincere appreciation goes out to all of the FOCIS leaders for their dedication, commitment, and leadership of FOCIS!

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FOCIS 2022 Annual Meeting Highlights

The 22nd Annual Meeting of the Federation of Clinical Immunology Societies (FOCIS 2022) was held June 21-24, 2022 at the San Francisco Marriott Marquis in San Francisco, California. Over 800 attendees from 32 countries participated.

The FOCIS Annual Meeting continues to be <u>THE</u> meeting in translational immunology and this year was no exception! FOCIS 2022 boasted 277 abstracts, 50 speakers, 79 travel award recipients, four pre-meeting educational courses, 13 Member Society symposia, and 10 industry tutorials.

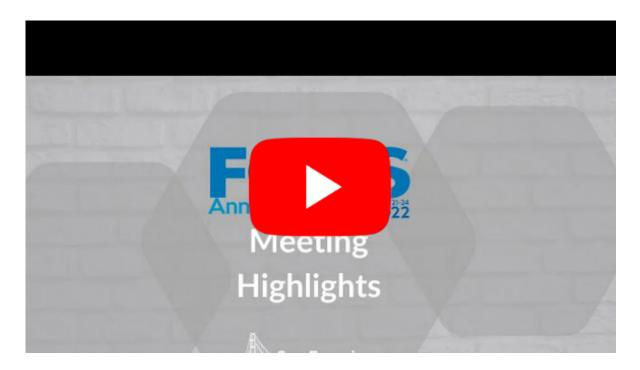
Three keynote presenters (Tadatsugu Taniguchi, PhD, University of Tokyo; Joseph Derisi, PhD, University of California, San Francisco; Susan Kaech, PhD, Salk Institute for Biological Studies), gave inspiring presentations bridging the gap between basic and clinical immunology, and our fourth keynote speaker, FOCIS President Mark Anderson, MD, PhD, University of California, San Francisco, delivered the Robert B. Nussenblatt Presidential Lecture.

Several awards were presented. The C. Garrison Fathman Fellows Fund Trainee Travel Award recipient was Isaac Rosado-Sánchez, PhD of The University of British Columbia, BC Children's Hospital, Vancouver, Canada. Together with FOCIS, Elsevier and Clinical Immunology presented Ghamdan Al-Eryanim, PhD of Garvan Institute in Sydney, Australia with the Clinical Immunology Award. The British Society for Immunology awarded its first annual Poster Prize Award to Patrick Ho, PhD of the University of California – San Francisco. FOCIS also welcomed Lupus Research Alliance's Lupus Insight Prize Award Ceremony, where the award was presented to Akiko Iwasaki, PhD of Yale University.

Many thanks to the FOCIS 2022 Scientific Program Committee for their time and talent in putting together a stellar lineup of topics and speakers.

- View the FOCIS 2022 Final Program
- Download the FOCIS 2022 Abstract Supplement

Highlights Video - Check out the memories from FOCIS 2022 below. Thank you to our members, leaders, and partners for a successful return to in-person meetings!



Save the Date!



Join us in Boston at the Boston Marriott Copley Place on June 20-23, 2023 for FOCIS 2023. Registration and abstract submission will open for FOCIS 2023 in October 2022.

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Member Society News: BSI Congress 2022



Join us in Liverpool or online for the British Society for Immunology Congress 2022! This is the UK's premier immunology event attracting over 1,500 attendees to enjoy our extensive four-day programme of cutting-edge research from leading UK and international researchers. Our Congress Committee have put together an inspiring programme covering the breadth of immunology while shining a spotlight on hot topics. Submit your abstract before **September 5** for the chance to showcase your latest work. Head to www.bsicongress.com!

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2023 Advanced Course in Basic and Clinical Immunology

Plan now to join FOCIS in San Diego this spring for the Advanced Course in Basic & Clinical Immunology! This popular course continues to attract a worldwide audience of clinicians, researchers and trainees.

This event is scheduled from February 26 - March 1, 2023 at the Estancia La Jolla.

The three-day course is a clinical spin on the major topics in cellular and molecular immunology. Renowned speakers will explore major topics in cellular and molecular immunology, including innate immunity, NK cells, T cells, and dendritic cells and cytokines. In the second half of the course, lecture topics move into autoimmunity, transplantation, allergy, cancer, and immunodeficiency diseases.

Registration opens in September 2022.

View the Details >>

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FOCIS Center of Excellence Pan'THER Holds 1st Scientific Symposium

The FOCIS FCE, PAn'THER, held a symposium on Autoimmunity and cellular immunotherapy of cancer on March 17, 2022 at the UFR Santé in Rouen, France.

Organized by Olivier Boyer and Catalina Abad, the event attracted 89 participants and eight sponsors, drawn by a scientific program featuring faculty members:

- Monica Guzman, Weill Cornell Medicine, New York, USA
- Andrew Mammen, National Instituted of Health (NIH), Bethesda, USA
- · Werner Stenzel, Charité, Berlin, Germany
- Ignacio Anegon, University of Nantes, Nantes France

- · Pascal Joly, PAn'THER FCE, Rouen, France
- Gaëtan Riou, PAn'THER FCE, Rouen, France
- Catalina Abad, PAn'THER FCE, Rouen, France
- Olivier Boyer, PAn'THER FCE, Rouen, France

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The Promise of Interleukin-2 Therapy for Autoimmune and Inflammatory Diseases, Allergy, Transplantation and Cancer



After the success of the first edition of the Promise of IL-2 therapy, we are pleased to inform you that the second edition of the meeting will be held this year, from September 14 to 17, at the *International Conference Center of Sorbonne University* in Jussieu, Paris, France.

The second edition will be entirely dedicated to the biology and therapeutic use of IL-2 in the fields of autoimmune diseases, inflammatory diseases, allergy, Treg cell therapy, transplantation and cancer. Given the advance of the field, a large part of the program will be dedicated to results from IL-2 clinical trials.

Many opinion leaders have already confirmed their participation: https://www.il-2-2022.com

This meeting is organized in the context of iMAP project, a French Investment for the Future program, and will be a very unique opportunity gathering academic teams and private firms working in this stimulating field.

To register, please visit our website.

We are looking forward to meeting you!

Best regards,

The Organizing Committee Abul Abbas, Christophe Benoist, Jeff Bluestone, David Klatzmann (Chair), Thomas Malek, Georges Tsokos

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DIVERSITY IN LUPUS RESEARCH AWARDS

CAREER DEVELOPMENT AWARD POSTDOCTORAL AWARD

up to \$600,00 over 4 years

up to \$170,00 over 2 years



The Lupus Research Alliance (LRA) is the world's largest nonprofit funder of lupus research. The organization aims to transform lupus treatment while advancing towards a cure by funding innovative research and fostering diverse scientific talent.

The LRA encourages all qualified researchers to consider applying for the following opportunities:

- Diversity in Lupus Research Career Development Award
 - Up to \$600,000 over 4 years
 - Provides sustained support to outstanding early-career underrepresented minority investigators establishing a competitive independent research program in lupus.
- Diversity in Lupus Research Postdoctoral Award
 - Up to \$170,000 over 2 years
 - Supports promising underrepresented minority scientists to help them generate the scientific data and unique research ideas necessary to transition to independence.
- Administrative Supplement to Promote Diversity in Lupus Research
 - Up to \$30,000 over 2 years for underrepresented minority post-doctoral trainees
 - Up to \$15,000 over 2 years for underrepresented minority pre-doctoral trainees

The LRA is also accepting nominations for the 2023 Lupus Insight Prize, which recognizes an outstanding investigator who has developed a novel research insight in scientific domains relevant to lupus.

Please visit the LRA's website for additional information about our grant programs.

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FOCIS Career Opportunities

August 2022 Listings

Research Assistant Professor

Northwestern University

View Now >>

Postdoctoral Research Fellow

Northwestern University

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Rheumatology Clinical Trialist - Assistant/Associate/Full Member

Oklahoma Medical Research Foundation (OMRF)

View Now >>



Clinical Rheumatologist - Assistant/Associate Member

Oklahoma Medical Research Foundation (OMRF)

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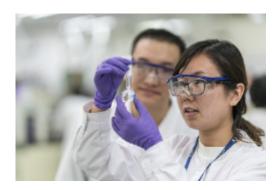
At Janssen, we are relentlessly dissatisfied with the status quo, and are working to create a future where disease is a thing of the past. Janssen Immunology is focused on redefining care by delivering transformational therapies and regimens to patients living with autoimmune disease.

Tackling Today's Unmet Needs

Unmet patient need drives us in our work every day. Across the US, Canada, Japan, and the EU5, nearly 30 million people are diagnosed with moderate to severe forms of immune-mediated disease. Of these 30 million, just five million receive advanced treatments, and only two million achieve clinical remission. Treatment is often inadequate and, in fact, for many of these diseases, nonexistent. Clearly, there is a need for further innovation in types of treatments available and patient access to care.

Blazing a Path to Innovative Drug Discovery

We believe transformational thinking drives transformational science. Whereas the old paradigm of drug discovery took a disease-centric approach, treating disorders of various organ systems as distinct and in isolation, research has since revealed that many immune-mediated diseases share cellular and molecular pathways.



Janssen has made significant strides in the search for new therapies by taking a holistic, pathway-focused approach and considering the commonalities among disease mechanisms.

Our strategy enables innovation in modulating the diverse drivers of disease, with targets spanning the innate and adaptive immune systems, pro-inflammatory and pro-resolution pathways, and tissue-specific signals.

Considering treatments through a pathways lens, we believe combination therapies targeting complementary pathways that, together, contribute to immune cell dysfunction may represent a promising avenue for achieving remission. We envision fit-for-purpose regimens and approaches based on the unmet needs in distinct patient populations. Deep expertise is needed here, as we try to restore balance to the immune system by elegantly combining accelerator and brake mechanisms, without tipping the immune "scale" out of balance.

Redefining the Industry, Again

Janssen's immunology expertise and heritage runs deep. We were an early leader in developing antibody therapies, developing the first anti-TNF-alpha therapy. We have since led the industry in finding innovative solutions for neutralizing dysfunctional immune-modulating signals with monoclonal antibody therapies targeting interleukin (IL)-12 and/or IL-23, together with our anti-TNF-alpha therapies.



Janssen Immunology employs world-class discovery and translational medicine teams and works in close collaboration with partners all over the world to bring innovative ideas and therapies from the lab into the clinic. We strive to advance the science and development of novel therapeutics to help patients in need, to achieve a world free from immune-mediated diseases.

Interested in joining our team? Learn about open roles and apply at janssen.com/immunology/immunologycareers.



Join us in redefining the future of immunology. Click here to view our open positions today.



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FCE Spotlight



Get to Know FCE Director Yannick Muller, MD, PhD | Assistant Professor, University of Lausanne

Take a moment to learn more about FCE Director Yannick Muller. FOCIS interviewed Dr. Muller about his career path, proudest achievements, involvement with FOCIS and his work with the University of Lausanne. Read excerpts from that interview below, or listen to the full interview and read the transcript, here.

How did you first get involved in immunology?

During my medical studies, I would say very early on, I was interested in the field of transplantation. I was always fascinated by this idea that you can live with an organ from someone else that is not yours. I think, really intuitively, it just brings you back to a very fundamental notion in immunology. That is, what is the self and the non-self, and how our own body can make the difference, and maybe how you can manipulate this. Secondly, I would also say that when you make a transplant, it requires a network of specialists, including a coordination team, surgeon, you need a transplant specialist who can be, for example, a nephrologist, gastroenterologist, cardiologist or pulmonologist. You need an immunologist to

assess the histocompatibility between the recipient and the donor. You also have experts from infectious diseases. So ultimately, this is really a big team working together. This is also what, I believe, immunology is right now. It's all about working together with so many different specialists and specialty teams. So, yes, transplantation, that's how I got started in immunology.

Tell us about the research you're most proud of.

I'm a young researcher still, so I hope I will be proud of much more research to come. Going back to my MD, PhD, I joined the lab with expertise on islet transplantation. Islet transplantation relies on having diabetic mice. For inducing diabetes, the most widely used diabetes agent is a glucose analog named streptozotocin. Streptozotocin targets insulin producing cells (or the beta cells) in the islets. When I joined the lab, my first task was to compare different immunosuppressive protocols and evaluate their impact in a rat-to-mouse islet transplantation model. And at the end of the day, I just realized that the mice that were injected with streptozotocin are, per se, already immunosuppressed. These mice are in fact lymphopenic and in this lymphopenic environment, you can observe an expansion of regulatory T cells. I think this an important bias for evaluating new drugs which many people are not aware of.

Listen to the full interview or read the transcript here.

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Center of Human Immunology at Lausanne University Hospital Named New FOCIS Center of Excellence

The Center of Human Immunology at Lausanne University Hospital (CHIL), in collaboration with the Faculty of Biology and Medicine at the University of Lausanne, Switzerland (CHUV-UNIL), has been named a new FOCIS Center of Excellence (FCE) by the Federation of Clinical Immunology Societies



(FOCIS). The FCE Director is Yannick Muller, MD, PhD. The FCE Co-Director is Laurent Perez, PhD. This is the first FCE in Switzerland.

Dr. Muller obtained his Swiss Federal Medical Diploma at the University of Geneva. He completed an MD, PhD program at the University of Geneva and worked on the potential of T regulatory cells to protect pancreatic islet grafts. Afterward, he completed his residency in internal medicine, clinical immunology and allergy and obtained a certification

for both specialties. Dr. Muller is responsible for the advanced cell therapy and allergy program in the division of Immunology and Allergy at the University Hospital of Lausanne. His laboratory primarily focuses on precision gene editing and redirecting human regulatory T cells specificities.

Dr. Perez was trained in physical chemistry and immunology. He leads the laboratory of molecular immunology and vaccinology. His research aims at understanding the cellular and molecular basis of antibody-mediated pathogen neutralization and designing next-generation vaccines.

Dr. Muller (on the left) and Dr. Perez (on the right), Assistant and Associated Professor respectively at the Faculty of Biology and Medicine of the University of Lausanne

The CHIL was inaugurated in July 2021 as a joint initiative between the University Hospital of Lausanne (Centre Hospitalier Universitaire Vaudois, CHUV) and the Faculty of Biology and Medicine from the University of Lausanne (UNIL). It consists of a multidisciplinary 'task force' of scientists and physicians aiming to tackle the immunological complexity of inflammatory, infectious, and oncological diseases.

The CHIL currently regroups laboratories of 11 clinical divisions and a biomedical data science center. Specifically, it includes (1) the division of Immunology and Allergy led by Dr. Pantaleo, (2) the division of transplantation led by Dr. Pascual, (3) the division of Immuno-Oncology led by Dr. Coukos, (4) the division of Neurology led by Dr. Du Pasquier, (5) the division of Rheumatology led by Dr. Hügle, (6) the division of dermatology led by Dr. Gilliet, (7) the division of Infectious Diseases led by Dr. Calandra, (8) the division of Nephrology led by Dr. Fakhouri, (9) the division of Pneumology led by Dr. Von Garnier, (10) the division of Gastroenterology led by Dr. Moradpour, (11) the division of Pathology led by Dr. De Leval, and the Biomedical Data Science Center led by Dr. Gottardo.

The primary missions of the CHIL are to define the immunological fingerprint of the innate and adaptive immune system, to expand routine clinical diagnostics by implementing new technologies to create a uniform platform aiming at academic excellence in teaching and the development and generation of new immunotherapies, including monoclonal antibodies, cell-based therapy, vaccine-based nanoparticles, and novel corrective gene-editing tools.

A FOCIS Center of Excellence (FCE) is based at an academic medical center, comprised of a multidisciplinary group of researchers from three or more areas relevant to clinical research. The FCE network creates a community of researchers and clinicians accelerating multidisciplinary scientific and clinical innovation and education worldwide.

FOCIS provides FCEs:

- Students/fellows with training opportunities and travel support
- Researchers and clinicians with continuing education opportunities
- Opportunity for networking and collaboration to enhance research opportunities

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IBEX: A Highly Multiplexed Antibody-Based Application for 65+ Color Microscopy

Highly multiplexed single-cell technologies such as spectral flow cytometry and new methodologies like single-cell multiomics have greatly expanded the ability to simultaneously analyze multiple parameters on a single cell. While single-cell multiomic technologies provide a wealth of data related to cell state and phenotypes, none of these techniques offer insight into the tissue superstructure or spatial relationships of cells within entire organs. These relationships are critical for understanding the biology of cells and proteins as it relates to in vivo function and pathogenesis. This is where investigators turn to conventional techniques like colorimetric or fluorescent immunohistochemistry. However, there is a limit to the number of parameters that can be simultaneously analyzed with these conventional methods, as they are typically limited by the number of unique chromogens or fluorophores that can be deconvoluted in a single imaging cycle.

Highly multiplexed microscopy methods now allow for the analysis of dozens of parameters (up to 50 or more) within a single tissue section. These methods may utilize different technologies to achieve simultaneous detection of dozens of parameters. These include mass spectrometry-based detection, DNA-oligo conjugated antibodies with fluorescent DNA probes, and cyclical techniques where common fluorophore-conjugated antibodies have their signal masked or destroyed to allow for multiple staining/imaging cycles.

Iterative Bleaching Extended multi-pleXity (IBEX) Method

Dr. Andrea Radtke and colleagues of the Lymphocyte Biology Section in the National Institute of Allergy and Infectious Diseases (NIAID, NIH) have recently developed an open cyclical imaging technique, Iterative Bleaching Extended multi-pleXity (IBEX), that utilizes conventional microscopes and requires only basic laboratory skills to implement. IBEX allows for repeated cycles of staining, imaging, and bleaching, conveniently using hundreds of commercially available antibodies. Using IBEX, the laboratory of Dr. Ronald Germain has demonstrated high-resolution imaging in a wide range of mouse and human tissues, including lymph nodes, spleen, thymus, liver, kidney, small intestine, skin, and lung. The IBEX method can be implemented at various scales and is not restricted to specific instrumentation. Below is a representative image of a human mesenteric lymph node acquired using the IBEX method and over 60 commercially available antibodies targeting various protein biomarkers in the tissue (2, 3).

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