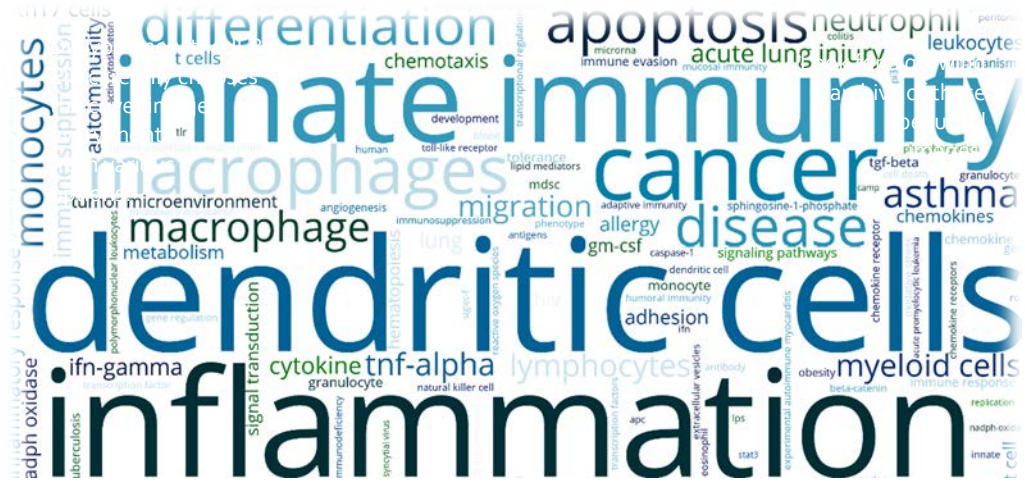


iSLB

SOCIETY FOR LEUKOCYTE BIOLOGY

Spring 2019

Vol 1

OFFICIAL NEWSLETTER OF THE SOCIETY FOR LEUKOCYTE BIOLOGY

IN THIS ISSUE

Preview the 2019 Workshops
Preview the 2019 Satellites:
- Global Science
- Alcohol and Tissue Specific Immunity
- Progress in CRISPR-Cas biology
- Advanced Imaging Approaches
- Resolution of Inflammation and Beyond
- Immunomodulatory Cell Death
- Immune Regulation, Autoimmunity and Infection

MTTG Elevator Pitch Competition
Career Interview with Juhi Bagaitkar
Lunch n' Learn from another perspective
And more…

A Note from the President and iSLB Editor

Lee-Ann Allen,
SLB President

Despite recent volatility in the stock market, the financial position of SLB remains strong. In keeping with this, SLB is continuing efforts to grow our membership in the US and worldwide via new categories of awards and by sponsorship of satellite sessions at other scientific conferences, many of which are held in other countries.

At the same time, excitement is building for the upcoming SLB meeting that will be held in Boston, November 15-18, 2019. The co-Chairs Cherie Butts and Silvia Uriarte have put together a diverse and exciting program around the theme of Tissue Specific Immunity. Additional program features designed to foster member engagement and career development also deserve special attention. Capitalizing on the meeting location, there will be opportunities to tour Biogen, and I expect that this will be of particular interest. Poster flash talks will be featured again this year, whereas the MTTG elevator pitch contest, speed networking career round-tables, and the MTTG workshop on building your CV, NIH Biosketch and LinkedIn profile are new. Special Interest Group Satellites (SIGs) that immediately precede the annual meeting were incredibly successful when launched in 2018 and are back by popular demand. Many proposals for SIGs were received, and a total of six 3-hour SIGs will held on November 15th (two in the morning and four in the afternoon). Details about the SIGs are featured elsewhere in this newsletter and on the website. In addition, Elizabeth Kovacs has organized a full day session on Alcohol and Tissue-Specific Immunity. Thus, I encourage everyone to apply for awards and to sign up for SIGs and other special events when registering for the annual meeting. See you soon in Boston!

Michelle Visser,
iSLB Editor

It is with great pleasure I welcome you to the latest issue of iSLB! As spring is on the horizon, I want to remind everyone that the 52nd SLB annual meeting is approaching and abstract submission is now open! In this issue, we begin to present a preview of the Special Interest Groups (SIG) and Workshops at the 2019 annual meeting. Our JLB Editor in Chief, Luis Montaner has organized a great session (**Global Science: Focus on Advancements in Immunology Research**) which highlights new important immunological research from around the globe. Dr. Amanda Brown together with the Women and Diversity Committee are hosting the workshop **Advocating for Your Goals: the Art of Saying No, So You Can Say Yes!,** focusing on demands that scientists, particularly women and under-represented groups, face during their career and this workshop will provide discussion and tools to improve your success.

Are you interested in learning about many different scientific areas and career choices including academia, industry and government? The **Speed Networking Career Round Table Workshop** designed to foster discussion and interactions between individuals is for you! These sessions are always well attended, so sign up during the annual meeting registration so you don't miss out! See this issue for more details on all the great special interest group sessions!

Don't forget to check out the many SLB award opportunities available for the meeting. In this issue, see highlights of the benefits of winning these awards from previous awardees.

For our trainees and young investigators, see our interview by Irina Molina with Dr. Juhi Bagaitkar describing her journey to begin her own independent research lab.

SLB continues to promote interactions and discussion with colleagues through its member-driven "lunch and learn" program. You can host a lunch and learn session

Editor's message con't

yourself on a topic of interest by getting together with colleagues. See our article by Brittany Boribong, for her perspective as an attendee at a recent lunch and learn session at her institution.

Also, a reminder that there are always many opportunities to play a larger role in the SLB through volunteering with a number of available committees, and we are always looking for your input! As always, thank you to Jen Holland for all her assistance with compiling this iSLB issue!

Get Involved!

SLB is your society and relies on the ideas and energy of members like you. See some examples of how you can get involved and contact us today!

AWARD OPPORTUNITIES

SLB is pleased to offer a variety of award programs honoring, recognizing, and supporting investigators at various stages in their careers. Refer to https://www.leukocytebiology.org/awards to review the full list of opportunities and requirements. Apply during abstract submission.

- Dolph O. Adams Award
- G. Jeanette Thorbecke Award
- Women & Diversity Paper of the Year
- Presidential Awards
- Travel Awards
- Early Career Faculty Travel Award
- Developing Nations Travel Award
- Mentoring Diversity Travel Award

Lorne 2019: SLB Awardees

SLB is pleased to continue to support our members and new promising trainees at other events where they can showcase their work. SLB sponsored 4 different awards at the Lorne Infection and Immunity Conference in Australia this year.

Society for Leukocyte Biology Prize for Best Poster by a Student

Gabriela Constanza Martinez Ortiz, *La Trobe Institute for Molecular Science, La Trobe University, Australia*

Society for Leukocyte Biology Prize for Best Science Bite by a Student

Ebony Monson, La Trobe University, Australia

Society for Leukocyte Biology Career Development Award for a Post-doctoral Researcher

Dr Katherine Martin, *Walter and Eliza Hall Institute, Australia*

Society for Leukocyte Biology Career Development Award for a Student

Chiara Pantarelli, The Babraham Institute, UK

Thank you to our 2019 Sustaining Members:

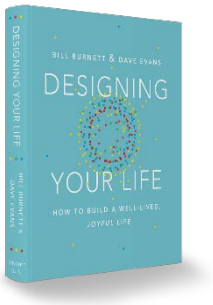
Richard Kew, Stony Brook University

Charles Rinaldo, University of Pittsburgh

Preview the 2019 Workshops…..

Advocating for Your Goals: The Art of Saying No, So You Can Say Yes!

By: Amanda Brown



The Women and Diversity Committee is looking forward to hosting, since its creation by the Society for Leukocyte Biology, its ninth workshop at the annual meeting to be held in Boston, Massachusetts on Sunday, November 17, 2019 from 7 am to 9 am. The workshop is entitled, *"Advocating for Your Goals: the Art of Saying No, So You Can Say Yes!".* This topical area will speak to the competing demands on their time that scientists face. Additional concerns are faced by individuals who identify as women, under-represented, first-generation or a combination of these. Such critical choices occur throughout the different phases of your career and can significantly affect research productivity and career advancement in either a positive or negative manner. This two-hour session will include a panel of career-stage specific peers sharing their experiences and strategies, small group discussions and sharing of best practices and mitigation strategies. Please sign up for the session when you register for the annual meeting, and come ready to learn new skills and share your insights with colleagues in an atmosphere of collaboration. A wonderful book that provides some resources on this topic will be the raffle prize! Complimentary breakfast will be served, and all are welcome.

Sunday, November 17, 2019, 7-9am
Register for this free workshop during registration and hear suggestions on how to prioritize your own goals. Win a copy of the book *Designing Your Life: How to Build a Well-Lived Joyful Life* by Bill Burnett & Dave Evans

Career Roundtable Aims to Increase the Understanding of Different Roles that Contribute to Biomedical Research

By: Cherie Butts

The future of biomedical research lies in valuing the variety of career paths that play a role in the furtherance of science. We are trained as technical experts, which is vital for an understanding of biological processes. What we learn over time is how different sectors (academia, government, industry) cooperate and how the work we do away from the bench or clinic is as important for advancing biomedical research. Very few, however, are afforded the opportunity to learn about the wide range of roles within and across sectors.

Networking has never been more crucial to ensure career success. This year, the SLB annual meeting will include a networking career roundtable session that will take place on **Saturday, November 16th (10:45 AM – 12:00 PM)**. The session will introduce different roles across academia, government, and industry. It will also highlight activities at and away from the bench or clinic that are important for driving the direction of biomedical research. Participants will meet in a small-group format with accomplished immunologists to learn their career paths and the different skills needed to be successful. The session will offer an opportunity to network in a relaxed environment and receive personalized feedback on scientific interests/objectives. All are encouraged to attend! The following scientific leaders will share their experiences –

- Cherié Butts, Biogen
- Rachel Caspi, NEI/NIH
- Wanjun Chen, NIDCR/NIH
- Xiaoyu Hu, Tsinghua University
- Bruce Levy, Brigham & Women's
- Luis Montaner, Wistar
- Phillip Murphy, NIAID/NIH
- Richard Ransohoff, Third Rock Ventures
- Ann Richmond, University of Richmond
- Mate Tolnay, CDER/FDA
- Joanne Turner, Texas Biomedical Research Institute
- Silvia Uriarte, University of Lousville
- Daniela Verthelyi, CDER/FDA
- Tom Wynn, Pfizer
- Arturo Zychlinsky, Max-Planck

Preview the 2019 Satellites….

SLB continues the program in 2019 where members are invited to host their own special interest group satellite at the annual meeting. See the program offerings for 2019 below and consider submitting your own proposal for 2020!

Global Science: Focus on Advancements in Immunology Research

Friday, November 15th, 1-4pm

By: Luis Montaner

JLB is Going Global! We are excited to be sponsoring the first Global Special Interest Group Satellite at the upcoming SLB 2019 Boston meeting. The session will feature distinguished speakers from South Korea, China, Japan, South Africa and Malawi as JLB focuses on the long-term objective to grow our global representation. All invited speakers were identified based on the impact and relevance of their research to JLB and the society. We hope you will join us Friday, November 15th and attend this exciting session! Sign-up during meeting registration. Come meet our special global guests and join us in giving them a warm SLB/JLB welcome.

Global Science: Focus on Advancements in Immunology Research
Chair: Luis J. Montaner, *Wistar, JLB Editor-in-Chief*

South Korea

- Byoung S. Kwon, Eutilex Co., *Mediates the Polarization of CD4 T cells to Th1, Th2 and Th17, and Converts Treg to Th1 and Eradicates Solid Tumors*
- Gap Ryol Lee, Sogang University, *The Role of PTEN in Th17 Cell Differentiation*

China

- Bin Li, Shanghai JiaoTong University, *FOXP3+Treg Functional Stability and their Clinical Applications*
- Xiaoyu Hu, Institute for Immunology, Tsinghua University, *Amino Acid Metabolites Modulate Cytokine Responses and Reprogram Macrophage Polarization*

Japan

- Kensuke Miyake, The University of Tokyo, *Mechanisms Controlling Innate Immune Responses to Nucleic Acids*
- Motonari Kondo, Toho University School of Medicine, *SATB1, A Nuclear Protein Necessary for Establishment of Immune Tolerance*

South Africa & Malawi

- Clive Gray, University of Cape Town, *The Impact of HIV Infection on Treg Populations in the Placenta and Adverse Birth Outcomes*
- Henry C Mwandumba, Malawi-Liverpool-Wellcome Trust Clinical Research Programme, *The Impact of HIV Infection on Lung Immunity and Control of Mycobacterium tuberculosis Infection*

Byoung S. Kwon
Eutilex Co.

Gap Ryol Lee
Sogang University

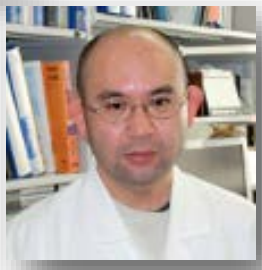
Bin Li
Shanghai JiaoTong University

Xiaoyu Hu
Tsinghua University

Kensuke Miyake
The University of Tokyo

Clive Gray
University of Cape Town

Henry C Mwandumba
Malawi-Liverpool-Wellcome Trust



Motonari Kondo
Toho University School of Medicine

2019 Special Interest Group Satellites

Organized by members for members, enjoy our second year of Special Interest Group Symposiums. Vastly expanded from the 2018 program, join the meeting on **Friday, November 15th, 2019** for these focused sessions. View all of the offerings HERE. Attend one session or hop between sessions. A nominal $20 registration fee applies. Sign-up during meeting registration.

Alcohol and Tissue Specific Immunity – (Alcohol Immunology Research Interest Group; AIRIG)

By: P. Mandrekar, S. M. Yeligar, T. A. Wyatt, M.A. Choudhry and E.J. Kovacs

Friday, November 15th, 9am-5pm

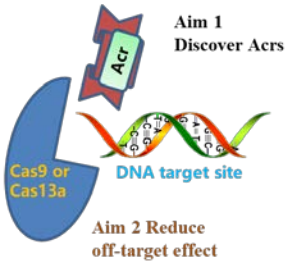
At the SLB 2019 in Boston, a satellite session to engage researchers to present their ideas and share new insights into the mechanism of alcohol's effects is planned by the AIRIG. In the United States, alcohol is one of the most commonly abused substance and according to the 2018 CDC Report more than 15 million people report alcohol abuse disorders, of which merely 8% receive treatments. Alcohol consumption has widespread effects on multiple organ systems. Experimental evidence supports that alcohol consumption modulates the immune and inflammatory response. Additionally, alcohol consumption results in immune dysfunction and increases the risk of infection. Research over the past several years has focused on various aspects of alcohol's effect on innate immune responses mediated by monocyte/macrophages, neutrophils, NK cells and adaptive immune mechanisms driven by T and B cells, in various organ systems. Approaches ranging from uncovering new cellular immune mechanisms to studying the role of immune cells in inter-organ crosstalk such as gut-brain, gut-liver-lung, adipose-liver during alcohol exposure has been a major focus of research in this field. Thus, understanding and deciphering tissue-specific mechanistic alterations in an attempt to provide effective therapies for alcohol related pathologies will significantly reduce the economical and health burden of alcoholic disorders. This year the overarching theme of the meeting will integrate diverse areas of alcohol and immune response including mechanisms related to alcoholic liver disease, development of biomarkers to identify alcohol misuse and its impact on immune response, organ injury, and health consequences. (Support provided by an NIH meeting grant, R13AA020768-07)

- Majid Afshar, MD, MS, Loyola University Chicago, *Blood and Urine Biomarkers for Identifying Alcohol Misuse in Trauma Patients*
- Leon G. Coleman, Jr., MD, PhD, University of North Carolina, Chapel Hill, *Neuroimmune Mechanisms of Alcoholic Neurodegeneration and Negative Affect*
- Rebecca McCullough, PhD, University of Colorado Denver, *Targeting the Resolution of Inflammation with a Novel Cell-based Therapy in Alcoholic Liver Disease*
- Vasilis Vasiliou, PhD, Yale University, *Biomarkers and Novel Pathways Involved in the Development of Alcoholic Liver Disease*
- H. Joe Wang, PhD, NIAAA, *Funding and Training Opportunities*

Progress in CRISPR-Cas biology and gene editing

By: Min Wu

Friday, November 15th, 9am-12pm



The birth of CRISPR-Cas gene editing tools has revolutionized our view by enabling easy vector construction and targeted delivery. Ironically, the original interest in understanding the bacterial adaptive immunity is somewhat overshadowed by this new-found frontier. Nevertheless, CRISPR-Cas systems not only attract great attention from scientific researchers from all areas and all nations, but also garner media love and notice from almost everyone. CRISPR-Cas systems do not let their followers down with flood of discoveries in high impact journals as well as recently media explosion due to the gene editing in human babies. However, they also have Achilles' Heels, the notorious off-target effects and toxicity to the human body. Strong efforts have been made in reducing off-target effects for Cas9 through engineering or designing better target sequences; however, progress in this regard remains slow. Importantly, the recently discovered anti-CRISPR (Acr) molecules may help reduce the unwanted effects; however, Acr's role in improving CRISPR-Cas function has been barely tested. To this end, this workshop has invited 5 world class experts in the field to deliver much awaited, up to date knowledge. You will be not disappointed and the front-line knowledge in a layman language will be highly educational and enjoyable. The expert panel will discuss the following topics: the CRISPR biology, gene editing, ever growing CRISPR members, and finally, can we improve Cas9 or find the best CRISPR for clinic applications?

- Can we find or reinvent the best CRISPR-Cas for gene editing?
- How the unique structures of CRISPR-Cas facilitate the gene editing?
- How many applications the CRISPR biotechnology can bring to us?
- How many ever expanding CRISPR-Cas can we have?
- Structural and function for CRISPR-Cas research, the recent highlight.

Advanced Imaging Approaches to Visualize Immune Cell Behavior

Sponsored by: The Histochemical Society (HCS)

Friday, November 15th, 1-4pm

Organized and chaired by:

Sergio Catz, PhD

Professor, Department of Molecular Medicine

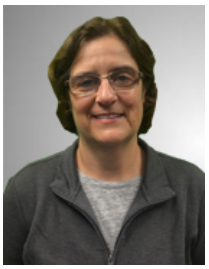
The Scripps Research Institute, Jupiter, Florida

Margarida Barroso, PhD

President, Histochemical Society

Professor, Department of Molecular and Cellular Physiology

Albany Medical College, Albany, NY



Recently, Histochemical Society and Society for Leukocyte Biology joined forces to support the MTTG (Members in Transition and Training) Workshop: State-of-the-Art High-Resolution Imaging Modalities presented at the Joint Meeting of the Society for Leukocyte Biology and the International Endotoxin Innate Immunity Society 2018 meeting. The success of this workshop both in number of attendees as well as of positive feedback led HCS to continue its support of SLB meeting now by sponsoring a Pre-Meeting Special Interest Group Satellite on advanced imaging approaches in immune cell biology.

SLB 2019, together with Histochemical Society, will present a satellite session on "Advanced imaging approaches to visualize immune cell behavior" to provide an overview of several advanced imaging approaches to visualize immune cell dynamic behavior. Our main goal is to address the general field of immune cell biology processes as visualized using advanced microscopy approaches. The recent advances in fluorescence microscopy and microfluidics have revolutionized our ability to visualize and quantitate dynamic cell behavior. In this session, different imaging approaches will be described to assay metabolism, cell migration, subcellular organelles and other immune cell processes in live cells and in vivo using intravital imaging. We will introduce attendees to several different advanced imaging approaches with emphasis on quantitative fluorescence microscopy, Forster Resonance energy transfer (FRET) imaging, intravital microscopy and live-cell probes and imaging to provide information about immune cell function in health and disease. Our focus is two-fold, one is to provide an overview of the imaging techniques that allow for detailed investigation of cellular processes. Another goal is to describe how those techniques can be used to address immune cell processes. Recently, crucial advances in intra-vital microscopy as well as super-resolution microscopy have allowed for imaging of immune cells in their native environment and at high resolution.

- Sergio Catz, The Scripps Research Institute, Florida, "Application of Total Internal Reflection Fluorescence and Super resolution microscopy to the study of neutrophil function"
- Margarida Barroso, Albany Medical College, New York, "Fluorescence lifetime and FRET based approaches to visualize immune cell function"
- David R. Entenberg, Albert Einstein College of Medicine, New York, "Broadening the Reach of Intravital Imaging through Surgical Engineering";
- Klaus Ley, La Jolla Institute for Immunology, "Microfluidics-based side view flow chamber reveals tether-to-sling transition in rolling neutrophils"
- Mauricio Terebiznik, University of Toronto, "pH of endophagosomes controls association of their membranes with Vps34 and PtdIns(3)P levels"

New Meeting Event: MTTG Elevator Pitch Contest

This year we will have something new – an 'elevator pitch' competition – and we need you to participate! All postdocs, graduate students, and undergraduates in our community have the opportunity to deliver a **30 second pitch** on their work, similar to this YouTube video or this one by Jon Hoggatt. This is an excellent way for trainees to practice communicating their scientific goals clearly and succinctly to a wide audiences, whether they be fellow scientists, investors, journalists, or family members. Videos *do not* have to be studio quality – smartphone recordings are perfect. We ask that the audio is clear. Infuse it with your personality to make it captivating for the audience. Putting together a 30 second script for an elevator pitch can be daunting. The following framing might be helpful:

How to participate:

1. Create a script for a **30 second pitch** about your research, make a video, post it on YouTube, and submit it to SLB.
2. 3 candidates will be selected
3. At the annual meeting, selected participants will present a 3 minute elevator pitch.
4. The audience will vote for the best pitch.
5. The winner will receive a price.

Template: *My research tackles [insert your focus/general problem], which [impact of problem]. I will [summary of your work] to clarify [name/explain the specific problem]. These findings will help [target beneficiary] overcome [primary difficulty]. My research is different from [competition/current therapy] in that it [unique differentiator].*

Resolution of Inflammation and Beyond

Friday, November 15th, 9am-12pm

By: Stephania Libreros and Charles Serhan

This symposium will focus on scientific presentations that illustrate the biology, chemical mediators and mechanisms of resolution of inflammation. These discoveries provide a new paradigm for understanding of the inflammatory process with the appreciation of genetic, molecular and cellular mechanisms that are actively regulated during resolution of inflammation. Uncontrolled inflammation is considered a unifying component of a wide range of diseases including sepsis, cancer, cardiovascular and metabolic diseases, among others. Human leukocytes play a critical role during acute inflammatory phase by controlling host defense mechanisms, local inflammation via the production of endogenous lipid mediators, and its resolution leading to homeostasis. During inflammation, an increase in number of circulating leukocytes enter the inflammatory site, where they become activated and augment the capacity to kill and ultimately clear pathogens. These early events are essential for host response, survival and are initiated by lipid mediators (prostaglandins and leukotrienes), cytokines, and chemokines. The resolution of inflammation is governed by the spatial and temporal production of specialized pro-resolving mediators (SPMs) by leukocytes. SPMs counter regulate the production of pro-inflammatory mediators and limits neutrophil infiltration, while stimulating non-phlogistic recruitment of monocytes and macrophage-mediated clearance of apoptotic cells (efferocytosis) in a receptor dependent manner, stimulating tissue repair and homeostasis. These are the hallmarks and the cardinal signs of resolution of inflammation.

The symposium will convene pre-eminent researchers at the cutting edge of this field to discuss mechanism of inflammation, tissue repair and regeneration, the potential impact of fail resolution, and new clinical approaches for resolution-based pharmacology.

- **Professor Charles N Serhan Ph.D. DSc.,** from Harvard Medical School and Brigham and Women's Hospital, on the identification and structural elucidation of novel mediators of inflammation resolution and tissue regeneration.
- **Matthew Spite Ph.D.,** Associate Professor, from Harvard Medical School and Brigham and Women's Hospital will present on lipid mediators at the interface of resolution of inflammation and tissue repair.
- **Barbara White M.D.,** from Corbus Pharmaceuticals will present on cannabinoid agonist activation of pro-resolving lipid mediators in humans results from a recent clinical trial.
- **Gabrielle Fredman Ph.D.,** Assistant Professor, from Albany Medical College will present on resolving D1 enhancing necroptotic cell clearance.
- **Daniel Irimia M.D. Ph.D.,** Associate Professor, from Harvard Medical School and Massachusetts General Hospital will present on lipid mediators of neutrophils swarming.

Immunomodulatory Cell Death

Friday, November 15th, 9am-12pm

Chairs: Ben A. Croker, *Boston Children's Hospital,* Kristopher Sarosiek, *Harvard T.H. Chan School of Public Health*

The SIG on Immunomodulatory Cell Death will feature talks on diverse types of cell death that influence the immune response. The session will illustrate how the immunomodulatory actions of cell death signaling within dying cells and in cells protected from cell death affect responses to infection and cancer immunotherapy. The SIG will also discuss the role of cell death signaling in controlling neutrophil effector functions. While the dominant-acting immunomodulatory signals that are released from dying cells remain to be fully characterized, it is clear that release of molecules such as IL-1α, IL-1β, IL-33, and both nuclear and mitochondrial components, can all play key roles in shaping immune responses.

Many solid tumor types including melanomas, Merkel cell carcinomas and non-small cell lung cancers are known for their high mortality rates and resistance to radio- and chemotherapy, but they can also be highly immunogenic. These circumstances have led to a recent surge in the development of therapies aiming to boost anti-tumor immune responses in cancer patients. Among these immunotherapies, neutralizing antibodies targeting the immune checkpoints T-lymphocyte-associated protein 4 (CTLA-4) and programmed cell death protein 1 (PD-1) have been incredibly successful. These antibodies have resulted in dramatic improvements in disease outcome and even cures in some patients with advanced disease, leading to their FDA approval for several cancer types. However, the majority of advanced stage patients do not respond. The lack of more broad and durable patient responses may potentially be due to variations in cell death-associated signaling between tumors. In this SIG section, we will discuss how cancer cell death can potentially be modulated to improve patient responses to immunotherapies.

Immunomodulatory Cell Death SIG con't

The session will also explore how neutrophils actively engage non-apoptotic cell death signaling to elicit the generation of antimicrobial effector functions, and modulate the immune system by releasing endogenous inflammatory factors. GSDMD-dependent pyroptotic cell death and RIPK3/MLKL-dependent necroptotic cell death are two examples of cell death signaling pathways that increase inflammatory responses and may in some cases directly restrict pathogen replication. Both pyroptotic and necroptotic signal transduction leads to the release of IL-1 family members but recent studies from multiple investigators demonstrate that pyroptotic and necroptotic cell death signaling is intimately associated with neutrophil extracellular trap (NET) formation. These studies linking cell death signaling to both canonical and non-canonical forms of NETs provide new targets in infectious, inflammatory, and autoimmune diseases.

Alterations in lifespan of leukocytes, and induction of inflammatory forms of cell death are recognized to influence the progression of a wide range of infections. A change in the type of leukocyte cell death appears to influence the efficiency of pathogen clearance, the number of leukocytes in an inflamed tissue, the ability of phagocytic cells to clear apoptotic bodies, the nature of the adaptive immune response, and the potential for a chronic inflammatory response to be initiated. Understanding the complex and intricate signaling networks in immunomodulatory forms of cell death will provide a much-needed framework to characterize the pathways regulating leukocyte survival in disease settings.

Immune Regulation, Autoimmunity and Infection

Chairs: Rachel Caspi, NIH & WanJun Chen, NIH

Friday, November 15th, 1-4pm

In this coming SLB annual meeting, NIH/FDA Immunology Interesting Group (IIG) will sponsor a special satellite session to discuss the latest advances in the field of immune regulation in autoimmunity and infection. Seven distinguished speakers will use their model systems to address how basic research can benefit translational applications.

Dr. Philip Murphy will present his most recent progress to treat WHIM syndrome which is an autosomal dominant primary immunodeficiency disorder caused by gain-of-function mutations in the CXCR4. WHIM patients develop myelokathexis caused by retention of neutrophils in the bone marrow. Dr. Murphy's group is developing cure strategies for WHIM syndrome involving transplantation of HSCs or CRISPR/CAS9-mediated inactivation of the disease allele.

Dr. Munir Akkaya will address how B cell proliferation and differentiation are differentially regulated by TLR and B cell-T cell interactions. Dr. Akkaya's study shows that TLR signals drive B cells toward rapid T cell-independent differentiation to plasma cells providing rapid neutralizing antibody. In contrast, B cells that receive survival signals from T cells are induced to undergo a time-consuming process that is necessary for antibody affinity maturation and long-lasting immune memory.

Dr. Mate Tolnay discovered that FCRL3 (Fc receptor-like 3) inhibits the suppressive function of human regulatory T cells. They propose a novel physiological mechanism, whereby secretory IgA through FCRL3 signals mucosal breach and drives regulatory T cell plasticity. FCRL3 is a cell surface protein with restricted expression, therefore a realistic therapeutic target, potentially representing a novel class of immune checkpoint inhibitors.

Dr. Daniela Verthelyi will address how virus infection causes neuron diseases. The immune responses elicited by neurotrophic viruses can disrupt the architecture of the central nervous system, causing neuropathology. Dr. Verthelyi will discuss how neonatal immune-competent models of arenavirus, filovirus, flavivirus, and alphavirus infections provide insight into distinct host-pathogen interactions and inform the safety and efficacy of potential therapeutics and vaccines.

Dr. Rachel Caspi will discuss Th17 effector regulation in ocular inflammatory disease. Dr. Caspi's lab demonstrated that initiation of the Th17 response can be controlled through a novel NK-DC regulatory feedback loop. New data indicate that the effector phase of the Th17 response is controlled by its signature cytokine IL-17A itself. The loss of this regulatory pathway may be pertinent the unexpectedly disappointing outcome of clinical trials targeting IL-17A in uveitis.

Dr. Billur Akkaya will report her new discovery how regulatory T cells specifically suppress immune responses. Regulatory T cells suppress target cells through diverse mechanisms. Her study demonstrates that regulatory T cells in vivo strip complexes of cognate peptide and major histocompatibility complex class II from dendritic cells and thereby help to maintain immune homeostasis.

Dr. Wanjun Chen will highlight his exciting finding of the function of D-mannose in T cell immune responses. They found that supraphysiological levels of D-mannose suppress immunopathology and increase the proportion of $Foxp3^+$ regulatory T cells by promoting TGF-β activation. Unpublished data show that D-mannose also regulates the balance of gut microbiota, which influence mucosal and systemic immune responses. This previously unrecognized immunoregulatory function of D-mannose may have clinical applications for immunopathology.

Impactful Science

A sample of highly cited articles from JLB….

JLB JOURNAL OF LEUKOCYTE BIOLOGY

10.1189/jlb.3MR0316-118RR	Molecular mechanisms of innate memory and tolerance to LPS Seeley, John J.; Ghosh, Sankar
10.1189/jlb.3MR0416-204R	Danger-associated molecular patterns in Alzheimer's disease Venegas, Carmen; Heneka, Michael T.
10.1189/jlb.4MR0516-223R	Interferon-inducible guanylate-binding proteins at the interface of cell-autonomous immunity and inflammasome activation Man, Si Ming; Place, David E.; Kuriakose, Teneema; Kanneganti, Thirumala-Devi
10.1189/jlb.3RI0716-335R	Human T cell immunosenescence and inflammation in aging Bektas, Arsun; Schurman, Shepherd H.; Sen, Ranjan; Ferrucci, Luigi
10.1189/jlb.5VMR1016-449R	The clinical evidence for targeting human myeloid-derived suppressor cells in cancer patients Tobin, Richard P.; Davis, Dana; Jordan, Kimberly R.; McCarter, Martin D.
10.1189/jlb.4RU0416-175RR	Interleukin 32: a novel player in the control of infectious diseases Ribeiro-Dias, Fatima; Gomes, Rodrigo Saar; Silva, Lucas Luiz de Lima; dos Santos, Jessica Cristina; Joosten, Leo A. B.
10.1189/jlb.4MR0616-288R	Hero turned villain: NLRP3 inflammasomeinduced inflammation during influenza A virus infection Ong, James D. H.; Mansell, Ashley; Tate, Michelle D.
10.1189/jlb.4MR0216-066R	Cellular metabolism of myeloid cells in sepsis Arts, Rob J. W.; Gresnigt, Mark S.; Joosten, Leo A. B.; Netea, Mihai G.
10.1189/jlb.3MR0617-250R	Molecular mechanisms of inflammasome signaling Mathur, Anukriti; Hayward, Jenni A.; Man, Si Ming
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Career Interviews: A Journey as a New Principal Investigator

An Interview by Irina Miralda

Dr. Juhi Bagaitkar

Dr. Juhi Bagaitkar is an Assistant Professor in the Department of Oral Immunology & Infectious Diseases at the University of Louisville. She started her lab 2 years ago and was awarded the SLB First Year Lab Travel to attend the 2018 SLB Meeting. I sat down with Juhi to ask about her journey as a new principal investigator.

Q: Did you always know that you wanted to be a PI and have your own lab?

A: No, not really. I was undecided about what I wanted to do until I did my postdoc at WashU. During my time there I had the opportunity to explore my truly build my own projects, network with faculty and then best integrate my pre-doctoral and post-doctoral training to start by own lab. In those 5 year, it truly distilled my passion to start my own lab.

Q: From your post-doc, how did you know you were ready to start your own lab and go to the next step?

A: It was a long process that started way before I finished my postdoc. I realized that I had two fronts to work on. First, was coming up with the short-term and long-term research questions that I wanted to pursue. Second was understanding how to market myself and my future research plans for faculty positions. For the first part, towards the end of my 3rd year as a postdoc, I started thinking about ideas that I could independently pursue. Long conversations with my postdoctoral mentor as well other scientists, immunologists that I met at meetings were helpful. I think it is crucial to get honest feedback and really think about what the specific aims of your first grant proposal would be. It takes time to really refine your ideas. For the second part over the last year or so, I started connecting with newly appointed faculty members and asked about their experiences with the process. In all honesty, you are never ready. You just have to do you due diligence and find a place that a best fit for you and your skillsets.

Q: What factors went into selecting the University of Louisville to start your lab in?

A: I always wanted to combine my pre- and post-doctoral training to ask some of the fundamental questions related to oral mucosal immunology. University of Louisville has one of the best departments for this kind of research and has a supportive environment.

Q: Looking back on your career so far, what decisions or experiences helped you be ready for your new role as a PI? Would you do anything differently?

A: I cannot pin it down to a single experience. I would say I ran the gamut from some excellent judgement calls to some bitter experiences. But like anything new and exciting it takes time to truly settle down and establish your lab. Personally, I would recommend reading a book on management. As a graduate student and postdoc you get really well trained on the science but it takes time to understand how to manage and motivate personnel.

Q: What has been the hardest thing about starting your lab?

A: Time management. You have to find time to write your grants, complete you teaching responsibilities, train students and also work at the bench when possible. I think it is critical to spend the time in the lab working at the bench as well.

Q: Did anyone give you good advice about starting a lab? What advice would you give to someone considering becoming a PI?

A: I received some insightful suggestions and mentorship from my postdoctoral mentor, as well as some of the senior members at SLB and friends. I was fortunate to develop these relationships. My advice to someone would be, do your homework, start early, and really sit and refine your research questions through discussions with your mentors.

Q: Where do you see the lab in 5 years? In other words, what do you want your lab to be known for?

A: Good solid science, that's all.

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SLB Lunch and Learn: From the Other Side of the Table

By Brittany Boribong

In a past issue, we presented an article from Coy Allen regarding his organization of an SLB hosted lunch n' learn program. In this issue, we offer a different perspective of a participant of that program. See how valuable these events are for early career investigators and consider hosting your own lunch n' learn session this year. Contact us to learn more.

I started my PhD program at Virginia Tech in July 2015. For my first year, I rotated between three different labs, with my first lab being Dr. Liwu Li's Immunology and Inflammation lab. I was still very new to immunology and thus spent a lot of my time reading papers to get a greater understanding of the field. Through reading so many papers during my undergraduate studies and all of these papers in this lab, I thought I had a good idea of how to read a scientific research article.

In August, my lab mates mentioned that a member from our lab, Allison Rahtes, would be presenting at the Virginia Tech Summer Immunology Journal Club, hosted by Dr. Coy Allen. Our entire lab, including graduate students, post-docs, and our PI, Dr. Li, made plans to attend the journal club in support of Allison. As a new member, I was invited to join as well and I was excited at the opportunity to join, not only for the scientific discussion, but for the promised free food.

On the day of the journal club, our entire lab walked over to the vet school, where the journal club was taking place. As soon as we entered the room, I was shocked to see the entire room was packed with people. Since I was a new student, I was not aware so many people on Virginia Tech's campus was interested in immunology. The journal club allowed me the opportunity to meet other students and professors on campus with similar research interests.

The most exciting part of the journal club, however, was the actual article discussion. Allison gave a thorough, but accessible, presentation on the article she was presenting. She gave enough background information for everyone in the audience to understand the context of the research, she thoroughly explained the methodology used, she discussed each figure individually so that we had a clear understanding of what the paper was trying to convey. Throughout the presentation, several people had questions and Allison did a great job of answering the questions and leaving room for discussion on the paper.

I was stunned throughout this entire presentation. I had read a lot of papers by this point, but this presentation showed me how to read a paper rigorously and how to discuss it with other scientists. This was my first impression of a graduate student studying immunology. It scared me; would I ever know enough to present an article at this level? I was also inspired; I wanted to be like Allison. To this day, I am very grateful I had the opportunity to go to Dr. Allen's journal club, as it not only taught me several lessons on how to be a good scientist, but it also introduced me to a community of immunologists at Virginia Tech and the Society of Leukocyte Biology as a whole.

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