iSLB

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OFFICIAL NEWSLETTER OF THE SOCIETY FOR LEUKOCYTE BIOLOGY

Message from the President

Nick Lukacs, SLB President



It's time for the summer 2021 iSLB issue! As we look forward to the 2021 Annual meeting in the next 2 months,

"Immunometabolism: Fueling the Flame of Aging, Cancer and Immunity", we hope that all SLB members are moving to a more normal pace of life and research is back on track. The conference Chairs, Drs. Laura Nagy and Vidula Vachharajani, have organized an exciting program with outstanding talks, abstract presentations, and awards opportunities to all participants. We have already had several fantastic workshops, DEI events, and an outstanding SLB School, all of which highlight what a great value SLB brings to its membership. While the past year has brought challenges for all of us, it has also led us to new opportunities to effectively deliver and utilize virtual content. This alternative virtual arena will continue to be used by SLB and allow new avenues to interact through our science and expand our ability to present our ideas. Thus, there are many ways that that we all benefit from SLB membership and we are excited for the future.

In addition to the organized program for SLB, there are also outstanding presentations by SLB Award Recipients. Cash McCall is this years Legacy Award Recipient, a prestigious award that celebrates outstanding SLB member

researchers that have made significant impact in science and our Society. He will present work on Mitochondria function, innate immunity and its impact during Septic responses on July 5th to kick off the live sessions for SLB 2021. The sessions will continue twice weekly throughout July and into August. Other prestigious award recipients include Mary Dinauer and Marco Cassatella who will be receiving Honorary Life Member Awards for their outstanding research and commitment to SLB over the years. Stay tuned for announcement of other award recipients!

As SLB members, we all have access to outstanding On-Demand content from last year's SLB 2020 meeting, online courses, workshops, and special sessions from throughout the past year(s), including this year's Special Interest Group Satellites, Maladaptive Host-Pathogen and Autoimmunity in Airways Diseases and Innate Immune Training. all These can be found at https://slb.mclms.net/en/package/list and greatly enhance our membership that is committed to research, training, and career development.

As always, we look forward to all of you to engage in SLB activities. Please contact Jen Holland at jholland@leukocytebiology.org to get involved.

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New Membership Option

SLB now offers a lifetime membership option! For a one time fee of \$500 USD, you can secure a lifetime of benefits and your place in the SLB community. Consider this option when renewing for 2022. Contact us with questions.

Don't forget that SLB elections are coming this August. See this issue to review biographies of the candidates to get ready to vote. Remember SLB is YOUR society and this an opportunity to help us prepare for the future.

Finally, as we draw to the end of what will hopefully be a once in a lifetime challenge from the past year or so, we are very grateful to all the membership, volunteers, committee chairs, Council members, and participants in the sessions that have continued to make SLB a great Society to belong.

Thank You!

JLB Author Interview with Sarah Almas By Alan Hsu



Sarah is a medical student at the University of Alberta located in Edmonton, Canada.The following interview is in response to her recent research paper entitled, "Cytokine trafficking of IL-9 and IL-13 through TfnRc+ vesicles in activated human eosinophils"

Q: Where did your journey in science begin (what inspired you to pursue a career in science)?

A: From a young age, I have always been curious to know about how the universe functions and why certain phenomena happen. I would run crude experiments at home in attempt to answer my many questions, and I enjoyed sharing my seemingly big findings with the world at local science fairs. However, as my questions were answered, many more formed. My father, a professor in environmental sciences, has always been passionate about science and influenced my own zeal. I often entertained myself in university laboratories while watching him work, and as I grew older, I became involved in formal research laboratories to work on my own projects. I had known from an early age that I had wanted science to be an integral component of my career, so I pursued a laboratory-focused undergraduate degree that allowed me to work on my project in Dr. Lacy's laboratory through courses and studentships.

Q: How did you choose your current research topic and interest?

A: I first started conducting research in a vast array of topics, from projects in chemical engineering to molecular biology. To explore the health sciences, I joined the Alberta Respiratory Centre and started my project on asthma/allergies. This project exposed me to clinical research and patient interaction, both of which I found immensely captivating. My positive experiences in this environment have guided my career goals of becoming a clinician-scientist.

Q: Could you use a few lay sentences to describe/summarize your findings in this paper?

A: Asthma is a major chronic disease that significantly impacts our livelihood and economic well-being. A prominent inflammatory cell type in asthma is the eosinophil, a white blood cell that undergoes activation to release potent signaling factors known as cytokines that can worsen the immune response. We investigated the intracellular storage sites of these products in eosinophils and their pathways of release. Eosinophils were purified from human blood and labelled with specific fluorescent markers to determine where these factors are stored and trafficked inside cells. We imaged cells using a super resolution microscope and determined whether these factors localize to known organelles in eosinophils. We discovered that these products were found in eosinophil granules and used unique pathways for release from the cell. These findings are exciting as they elucidate the cellular processing in a potent inflammatory cell, paving way to identify potential targets for therapeutic intervention in inappropriately activated eosinophils.

Q: What was the most exciting or memorable moment(s) during the process of this research?

A: It is hard to pinpoint one exact memorable moment, as this whole journey overall was quite exciting. Over the span of six years, I progressed from a budding scientist to one of the most experienced members on the team who mentored other students. However, if I had to highlight one of the many memorable moments I had, I would have to say it was when I finally viewed my cells on a super-resolution microscope. For many years I collected, isolated, and stained eosinophils using various parameters, and after a quick look through a lowresolution microscope to compare my isotype and test slides, I would often toss those slides and start anew the next day. However, when one of my protocols started providing very promising results, I took those slides to the super-resolution microscope. I watched as these eosinophils lit up in amazing fluorescent colours, and each cell was so magnified that I could see the small details of granules and other intracellular organelles. It felt as though I was looking at the cells that I had been working with for many years for the first time ever, and these images created a beautiful piece of molecular artwork. Seeing these stunning cells as a manifestation of my years of experimentation was immensely rewarding. I was incredibly excited as I realized that I had developed a protocol worked, and that I would move onto the next stage of my project.

Q: What was the biggest hurdle or challenge associated with this story?

A: The biggest hurdle was creating a staining protocol for eosinophils. For us to elucidate the cellular trafficking of cytokines, we first need to label cytokines and cellular compartments with very specific parameters, which is easier said than done. Eosinophils have a very strong autofluorescence, which I learned to attenuate after optimizing various blocking and permeabilization parameters. Additionally, cytokines are difficult to detect in single cells due to their relative low quantity, so I tested various compositions and concentrations of antibodies as well. It was only after many years of optimization was I able to create protocols that allowed for data collection.

Interview With Sarah Almas Cont.

Working on a project from start to finish is quite rewarding once one has crossed the finish line, but it was definitely challenging during the process to maintain perspective of the bigger picture when trials after trials of creating protocols needed to begin the data collection would often fail.

Q: Besides your PI is there anyone that significantly helped you in your path to become a scientist?

A: Alongside Dr. Lacy (who was a phenomenal mentor not only for my professional development but also for my personal development – she is an immense supporter for all of my endeavors, and I would not be where I am today without her), there were also others who supported me in my path to becoming a scientist. My family and friends really encouraged my involvement in the sciences, and I often ran all my thoughts and concerns by them. In the lab, I had amazing mentors including Dr. Vivek Gandhi who helped me come up with ideas when creating protocols, offered training and advice on laboratory techniques, and encouraged me to take various career development opportunities no matter how daunting. I was also constantly surrounded by the support of amazing mentors including Dr. Dean Befus, Dr. Harissios Vliagoftis, and Eduardo Reyes-Serratos. I can't thank everyone enough!

Q: What's next for you?

A: I look forward to completing my medical school training and then pursuing graduate studies in the near future! I have always wanted to complete graduate studies and embark on a career of a clinicianscientist, and when the opportunity presents itself I will quickly jump to it.

Q: What would your advice be for junior or incoming Ph.D. Students who want to pursue a career in science and perhaps your field?

A: This is an amazing new chapter these students will be embarking on (and one I hope to embark on as well in the near future!) and there is so much to discover. Research provides more than just skills in academia, there are opportunities to network, make new friends, develop strong mentorship relationships, increase confidence in personal skills and abilities, and contribute to the scientific community. Commitment, diligence, and enthusiasm will allow you to gain the most of this experience and help with all career endeavors.

Q: Tell us something interesting outside of being a scientist about yourself

A: Outside of classes and research I enjoy the outdoors, whether that is through hanging out with friends, biking through the city, or going on hikes in the Rockies. When indoors, I love various crafting activities, creating henna art, baking, and decorating desserts.

Q: Anything you would like to add.

A: Thank you so much for having me!

Read Sarah's Article in JLB

SLB Job Opportunities

Did you know SLB's job board gets weekly updates with new PostDoc and Faculty level positions? <u>Check it out</u> on the bottom right corner of the home page and see what opportunities are out there calling to you!

SLB Member News



Congratulations to **Dr. Silvia Uriarte** (far-left), Associate Professor in Oral Immunology & Infectious Diseases, who has received a University Scholar appointment. The University Scholar and Distinguished University Scholar Program recognizes faculty who significantly exceed the scholarship necessary for appointment, promotion and tenure at University of Louisville and in doing so achieving an extremely strong national reputation. Dr. Uriarte has also recently been promoted to Professor!

SLB 54TH ANNUAL MEETING

Immunometabolism: Fueling the Flame of Aging, Cancer and Immunity

Register Now

UKOCY



Science Advocacy: FASEB Corner

SLB joined FASEB – the nation's largest coalition of biomedical researchers, <u>representing 29 scientific societies</u> – in 2019. FASEB Corner is a new feature of the newsletter providing updates on recent initiatives that demonstrate the Federation's dedication to its member societies.

<u>Advocating for Research Funding</u> – SLB members Louis B. Justement, PhD and Beth Garvy, PhD were among the 50 scientists from 26 member societies who participated in FASEB's Virtual Capitol Hill Day in March, meeting with 110 House and Senate offices to present <u>FASEB's fiscal year 2022 funding requests</u> for the National Institutes of Health and National Science Foundation. The advocates shared personal stories about how sustained federal funding supports scientific collaboration and advances biological and biomedical research. The <u>FASEB Resources page</u> on the SLB website has links to advocacy tools including factsheets showing the amount of NIH and NSF funding each state receives.

<u>Promoting A Data Sharing Culture</u> – FASEB partnered with several scientific societies on a webinar series to help societies and their members develop a better understanding of the evolving data (and software) sharing research culture. The webinars covered a variety of topics, including incentives for data sharing, building community around data, increasing diversity and democratizing data, and changing culture around data sharing. Archived videos of the webinars are <u>available here</u>.

<u>Convening Stakeholders to Discuss Strategies for Advancing Shared Research Resources</u> – FASEB hosted a virtual roundtable to engage stakeholders from academia, government, industry, and non-profit organizations stakeholders in a discussion of ongoing challenges and opportunities to advance Shared Research Resources (SRRs). SRRs are scientific instrumentation and expertise that exist within institutional core facilities and provide widespread access to cutting-edge technologies. The roundtable highlighted the FASEB SRR Task Force's final report, "Maximizing Shared Research Resources" and "Establishing a National Strategy for Shared Research Resources," a policy brief available via preprint. The archived live stream of the roundtable can be viewed here.

<u>Supporting Students and Postdocs</u> – to support graduate student and postdoctoral members, FASEB hosted <u>a webinar</u>, "Supporting the Whole Scientist: Careers Beyond Academia." Speakers shared ideas for how institutions and faculty advisors can better assist trainees seeking non-academic jobs.

SLB 2021 Honorary Lifetime Awardees



Congratulations to the 2021 inductees of the Honorary Lifetime Award, <u>Marco Cassatella</u> and <u>Mary Dinauer</u>. Read more about these deserving and dedicated SLB members and join us in celebrating their accomplishments.



SLB 2021 Elections

SLB is your society. Review the candidates, learn how and why they want to serve your interests, and look for your invitation to vote in August!



Candidates for the **Office of President** (2022-2023)

Lou Justement, Ph.D. See Lou's full bio and statement of interest

I am honored to have the opportunity to run for the office of President-Elect of the Society for Leukocyte Biology (SLB). SLB was the first professional scientific society I joined as a graduate student in the laboratory of Bruce S.



Zwilling, my mentor, and a former SLB President. Over the years, I have greatly enjoyed being a member of SLB, getting to know many fellow scientists and trainees, who became friends, colleagues and collaborators. I was also fortunate to have the opportunity to be an active participant in the society, serving as a member and Chair of the Nominating Committee, a member of the Professional Development Committee and finally a member and Chair of the Publication Committee.

Most recently, I served as a member of the SLB Council, which provided me with an appreciation of just how great SLB's focus is on supporting trainees, early-stage investigators, and women in science, as well as diversity, equity and inclusion. I also serve as an editorial board member for the Journal of Leukocyte Biology, and I was a Program Co-Chair for the 2020 annual meeting, which was ultimately converted into a highly successful virtual event due to the pandemic.

As I noted above, over the years, I am struck by the fact that SLB is a very collegial society, and it is one that capitalizes on the dedication and input of its members from the most senior, to the most junior. For me, creating and sustaining a welcoming environment that supports the interests and success of each individual member is the most important thing that a scientific society can do, and I can say without question that this is what makes SLB a wonderful society. Going forward, if I am elected to be the next President-Elect, I will continue to focus on many important issues that are crucial for the success of the society and its members. The issues that I believe are of most importance include the following:

- Supporting the career and professional development of our trainees and early-stage investigators (ESI). 1)
- A continued commitment to foster diversity, equity and inclusion in the biomedical sciences. 2)
- A continued emphasis on recruiting members from the international community and developing new initiatives to increase 3) awareness of SLB globally.
- The promotion of scientific outreach and sound science policy. 4)

In addition to these critical issues, I will focus on ensuring that SLB continues to grow its membership, that we continue to support the mission of JLB, and that we continue to promote top-notch science and opportunities for collaboration at the annual meetings, which I am sure we all anticipate being in-person going forward.

In closing, I sincerely look forward to having the opportunity to serve as President-Elect of SLB because I am passionate about this society, and it is my intent to share this passion to benefit the society and the success of every member.



2021 Image Contest Winners

Thank you to our members who participated in the annual SLB Image Contest in celebration of the International Day of Immunology. Congratulations to our winners tied for first place, Ekaterina Pylaeva and Rachel Kratofil. See all of the beautiful submissions and consider participating next



Rachel Kratofil

Ekaterina Pylaeva

Mark Quinn, Ph.D.

See Mark's full bio and statement of interest

The Society for Leukocyte Biology (SLB) has been an integral ingredient in my career since the time I joined back during my postdoctoral years in Dr. Al Jesaitis' lab at The Scripps Research Institute. Initially, I joined so that I could receive the *Journal of Leukocyte Biology* and benefit from meeting discounts. The SLB meetings were the place where I was able to meet the real stars in the leukocyte field and helped me immensely in expanding my knowledge and collaborative connections. The meetings also reignited my



excitement for my research and exposed me to new areas of leukocyte investigation. Because of this excitement and interest in the SLB, I have become more involved in the SLB, serving on the Nominating Committee, Scientific Council, and as Treasurer for the past four years. I feel that this society is the one society of all of the many scientific societies out there that has really fostered leukocyte research specifically and has provided a broad forum for leukocyte biologists studying every sort of leukocyte to support our common interest...leukocytes. Thus, I feel that my mission as SLB President, should I be elected, would be to continue to foster the development of young scientist by engaging them in the leukocyte field, enhancing their careers through relevant society is vibrant and financially stable with an outstanding journal, and I am fortunate to have played some small part in the SLB over the years. I hope that as President I would be able to nurture continued growth of the society and continued engagement of our members in society functions and governance so that we will maintain in our current positive trajectory into the future.

Candidates for the Office of Councilor (2022-2025) *2 Positions

Peter Keyel, Ph.D.

See Peter's full bio and statement of interest

Scientific societies collectively face the challenges of public skepticism of scientific experts, declining participation, and the declining impact of society-led journals. To survive, scientific societies need successfully navigate these challenges, which requires adapting to demographic and cultural changes. This presents a tremendous opportunity for SLB to be the premier scientific society of the future, and set the standard that other scientific societies will follow. For example, the Reviewer Training Task Force that I chair is innovating

on reviewer preparation to improve the numbers and quality of scientific reviewers. This training series will provide unique, new value to society members, the *Journal of Leukocyte Biology*, and the scientific community as a whole. As a member of the SLB Council, I would advocate pursuing new approaches to public engagement, finding new ways to bring value to members, especially early career members and trainees, and help SLB position itself to model scientific societies in the 21st century. While many opportunities for SLB exist, three that I think will help SLB thrive in the face of current challenges are: 1) Lay membership options to empower and engage the public 2) Increasing professional development modules 3) Adopting cutting-edge technologies to connect members and accelerate science. I believe SLB has the unique opportunity to forge a new path forward for scientific societies.

Darren Lee, Ph.D.

See Darren's full bio and statement of interest

Darren has been a member of SLB since 2013 and attended every meeting since then. From his first SLB meeting Darren has established collaborations and networked amongst immunologists from all around the world. He immediately joined the website committee and assisted with the organization of the new website in 2014. As Chair of the website committee, he was able to encourage the implementation of Whova, the conference app, and accomplish another redesign of the website, so understands the importance for SLB to have a virtual presence



and how to lobby for the implementation of new technologies. He has also had the opportunity as a Program co-chair of the 2018 meeting to plan and organize the annual meeting in Chandler, Arizona, so understands the mechanics of putting together a meeting. As a Councilor for SLB he would like to accomplish several goals. First, to help with the continued growth of SLB membership and meeting attendance. Second, to expand his knowledge about the decision-making process that goes into SLB. Finally, he would like to assist in promoting the Society at local, national, and international levels.



Gustavo Menezes, Ph.D.

See Gustavo's full bio and statement of interest

I have been working since I was 17 years old on the leukocyte biology field, and I am glad life has directed me to this point. Having moved back to Brazil after my international training to build my own lab was a decision that trespassed my own dreams and plans, and this has become a life changing opportunity to many low-income students that could receive cutting-edge lab training in South America. Two years ago, I was invited by SLB to initiate a collaboration between Brazilian Society of Immunology (BSI) and SLB. We since have been working

together to build a strong network that can tightly connect South America with the rest of the World. To demonstrate this, I have coedited the 2018's Journal of BSI-Leukocyte Biology Special Issue – which published dozens of high profile papers derived from different Latin America labs. I will be performing this mission again in 2021, and am sure that the success will be even higher. As a member of the SLB Council, I would focus on enhancing the opportunities that SLB can offer to both young and senior investigators in South America, increasing not only the frequency of our students in foreign meetings, but also allowing international Leaders to attend in Conferences and Initiatives in Latin America. For this, I will be the SLB corresponding Scientist and organizer inside not only Brazilian Society of Immunology, but also in our Cell Biology Society. Together, these two Societies can gather more than 2.000 highly motivated scientists, which could consist in a strong pool of human resources to maintain Leukocyte Biology reaching scientists in all different continents. Finally, having on your continent a representative of one of the largest scientific societies in the world is not only an honor, but also an inspiration to our people that Science is the greatest instrument of freedom, breaking barriers sometimes imposed by socioeconomic issues. So, I believe that becoming a SLB Council Member will be a fundamental step in this direction.

Jamie Sturgill, Ph.D.

Lébanon

Jordo

o Haifa

Israe

See Jamie's full bio and statement of interest

As a first generation college student from Appalachia, I am very passionate about mentoring and science communication. As a graduate student as VCU, I received the University Leadership Award, one of the highest awards bestowed to students across campus, for my role in establishing the VCU Women in Science organization and fostering mentoring programs for elementary students across the region. I feel that SLB has allowed me to pursue these interests on a larger scale and I hope to continue this if I am elected to serve

on SLB council. Additionally, I see the value in team science and clinical collaborations and am a strong advocate for translational science. Thus, if elected to SLB council I will advocate for translational science workshops, educational platforms, etc, to advance our society to the forefront of medicine and science.

Research Around the World: Miki Rahat, Israel



We are located in Haifa, a port city in the north of Israel. The last year has been very eventful for us, with no dull moment. In the beginning of 2020, our lab was making good progress on our research goals. We are a small lab, located inside a hospital that is affiliated with the Technion's Faculty of Medicine, but physically separated from it (the Faculty is located on the Mediterranean shoreline, while our lab and hospital are located on top of the Carmel Mountain). This of course, complicates our participation in the faculty's mainstream activities, but the eruption of the Zoom technology made our life easier in this sense. Our lab is very diverse, and over the years, we have had students from all over the world, including Nepal, Nigeria, Lithuania, and USA, as well as Israeli citizens (both Jews and Arabs). So, when Covid-19 broke out in Israel in late March 2020, it was especially hard for some of our students, who were very far from home. Israel underwent three long periods of lockdowns during this time, but luckily, working for a hospital has its advantages, and we could continue working most of the time. The only real pause was when our building was taken over by the Covid response team and turned into a Covid ward – they simply kicked us out of our lab...







Research Around the World Cont...

As everyone knows, Israel leveraged its highly efficient community health services and its well-known improvisation skills to quickly vaccinate almost all of its adult population, leading to an early exit from lockdowns and other pandemic-related limitations. In fact, at the time I am writing this, Israel is just 3 days away from removing the last limitation – the facemask mandate for closed spaces. In a population of 9 million, the number of confirmed new cases of Covid-19 has dropped to a low single-figure number per day.

Then, just as things were beginning to get back to normal, a new 'mini war' broke out with our neighbors on the south, and thousands of rockets and bombs were launched against central and southern Israel. Luckily, Haifa was far enough to be safe, but on a more personal note, my first grandson was born hours after a rocket hit a private building next to my daughter's residence. All this was a bit nerve racking. And if the external war was not enough, we had incidents of violent demonstrations and deadly clashes between the Jewish majority and the Arab minority across the country, including in Haifa. However, all the staff members in the hospital and in our lab, both Jewish and Arab, kept working side by side and supported each other with many of acts of solidarity. We had to work hard to keep these tensions outside, support our students and focus on achieving our goals. So, after such a year, we now hope for a quiet and uneventful year, that will allow us to promote our science peacefully.

SLB 2021 SCHOOL in Review



By Caitlin Gillis and George Karagiannis

What a busy yet intensely rewarding week it has been at the SLB SCHOOL! The second (virtual) edition of the *Symposium for Career Development and Hands-On Opportunity to Learn*, organized by the MTTG in conjunction with the SLB annual meeting, has just wrapped up but is available for online viewing for registered members. This year's SCHOOL took the central theme of immunometabolism and expanded it to bring in some practical tools and career development tricks especially aimed at early career researchers.



Natalia Romero



Rafael Argüello

Catherine Blish







David Entenberg

Elizabeth Kovacs

We were off to a flying start with a deep dive into the **SeaHorse XF Technology** by **Dr. Natalia Romero**, who broke down the utility of SeaHorse to understand cell metabolism. Then, **Dr. Rafael Argüello** (CIML, France) presented us with **SCENITH**: the innovative technology that he and colleagues have developed to functionally profile energy metabolism, using just a flow cytometer. The single-cell resolution of this approach was thought to be its most attractive feature, based on a live poll by Dr Argüello. These two sophisticated, and complementary, tools (SeaHorse and SCENITH) together have many promising applications; particularly when investigating one of the most challenging paradigms of immunometabolism: understanding the metabolic complexities of tumor-infiltrating immune cells in the microenvironment of solid cancers.

What do the pathogens know? "They know our immune system better than we know ourselves..." according to **Professor Catherine Blish** from Stanford University's School of Medicine. Still living as we are, unfortunately, in the shadow of the worldwide pandemic, it was fascinating to hear Dr Blish's breakdown of her (and colleagues') work to understand **Covid-19 and the host response**. Dr Blish was senior author on one of the first single-cell sequencing studies of peripheral immune perturbations in patients infected with SARS-CoV-2. She shared with us some key insights from that work, and the recent follow-up study using multi-omics profiling in a larger clinical cohort. SARS-CoV-2 infection completely reconfigures the transcriptional landscape of peripheral myeloid cells (namely monocytes and neutrophils), and emergency myelopoiesis is a hallmark of severe disease. Intriguingly, a population of 'developing' neutrophils associate strongly with fatal outcomes. We also saw the beautiful 'mini-lungs' that the Blish lab are developing (distal 'apical out' lung organoids), together with cultures of whole human lung slices, as novel *in vitro* systems to model SARS-CoV-2 infection. Together with the single-cell immune atlas of Covid-19 patients, Blish and colleagues hope to use these approaches to better understand the host-pathogen interaction biology that dictates the variable disease course of Covid-19, and ideally to elucidate novel treatment strategies.

SLB 2021 SCHOOL in Review Con't...

Returning to the central theme of **immunometabolism**, **Dr. Luke O'Neill** (Trinity College, Dublin) provided us with a riveting historical perspective. A quick literature search makes it evident that the field has literally bloomed in the last decade, possibly as a result of emerging tools and techniques to study metabolism in immune cells. Throughout his presentation, Dr. O'Neil made it clear that even the definition of immunometabolism has gone through a paradigm shift over the years: although early studies focused on the role of nutrition, environment, and exercise in regulating the immune system (through systemic metabolic changes in the body), the current viewpoint is that metabolism is a central driver of gene expression and cytokine production at the intracellular level. Breakthrough data in this research niche, discussed by Dr. O'Neill, highlights how immune stimuli and mitochondrial dysfunction can cause metabolic reprogramming and affect macrophage polarization and function. Why work on immunometabolism? Dr O'Neill inspired us with two big reasons: it is a scientifically challenging & fascinating field, and novel therapies can emerge.

What is an image? Just a series of numbers really! **Dr. David Entenberg** from the Albert Einstein College of Medicine gave us an extremely valuable session on **image analysis**. From a theoretical perspective, we had a comprehensive breakdown of image formats, and the bits and pixels that comprise them; with some historical perspective on how open-source image analysis programs came to be. This was followed by a constructive hands-on session, where Dr Entenberg ran through a series of practical scenarios to compile, break down, and analyze images using the Fiji/ImageJ platform. Dr Entenberg had fun preparing the session, and indeed we had fun watching right 'til the end! A very informative webinar that embodied a central goal of the school: to bring our members useful tools.

What is a **job talk**? Well, certainly not just a *slide presentation during the seminar day*; a job talk begins already with the art of crafting a successful cover letter and (hopefully) ends with the "after-the campus" communication & negotiations, according to Dr. Elizabeth Kovacs (University of Colorado, Denver). Dr. Kovacs presented a solid perspective on the topic and elegantly targeted all career stages, from students looking for postdocs to postdocs looking for faculty positions. After 25 years of experience and successful mentorship of more than 120 mentees, Dr. Kovacs shared several valuable life lessons for academic job searching: e.g. "If you don't ask, you don't get" and "you never get a second chance to make a first impression". Dr. Kovacs didn't neglect to add humor to her webinar with the incorporation of deliberate examples in an effort to show "the good, the bad, and the ugly" of slide presentations. An eye-opening career faithfully missions development webinar that served one of the of the school. key

SEE THE ON-DEMAND RECORDINGS

Transitional Agreements in the Publishing World By Jane Taylor, Wiley

The last few years have seen huge change across research publishing as open access (OA) becomes more and more prominent. These days more pressure is being placed on the traditional subscription model, as policy and funder mandates favor routes toward OA publication. As SLB's publishing partner, Wiley is committed to helping support an open access future that is sustainable for hybrid journals like JLB that publish both subscription and OA articles. We are supporting the transition to a more OA-friendly environment in a number of ways, one of which is through the negotiation of country-level agreements combing access (reading) and publishing on large scales. We first began negotiating these deals in 2016 with the Netherlands (VSNU) and Austria (KEMO). Since then we made our landmark agreement with Projekt DEAL at the start of 2019. We then made further transitional agreements with Norway (Unit), Hungary (EISZ), Sweden (Bibsam), and Finland (FinELib) throughout 2019. The agreement with Jisc in the UK was announced in early 2020. The first half of 2021 has seen a number of agreements finalized, including our first partnership in North America with lowa State University.

Transitional agreements allow researchers unlimited access to a portfolio of journals, plus the funding to cover OA Article Publication Charges (APCs). The aim of these agreements is to remove the barriers to open access publishing for all researchers at participating institutions. As a JLB author, if your affiliated institution is a member of one the participating consortia you are able to take advantage of these agreements to publish open access and have your fees covered! It's important to note that the agreements only cover the open access APC and do not cover any publication charges levied by the journal.

<u>This table</u> provides a summary of the types of agreements we have in place at Wiley. It's important to note that while each agreement is unique there are some common elements in most: the combined read access and open access publishing; many include the ability to publish OA in both hybrid and fully Gold OA journals; most include a discount on the APC; and they cover research articles and reviews unless otherwise noted.

All authors at participating institutions are encouraged to take advantage of these agreements and consider publishing your next article open access in JLB! To see if your what institutions are covered by a transitional agreement please <u>CLICK HERE</u>.

Immunology Educators Webinar Series in Review Making Lemonade (for the immunology classroom) Out of a Lemon of a Year

For many science classrooms this past year, the struggle has been all too real. The need to shift from in person modalities to online while still clearly conveying information, providing necessary academic experiences, and engaging students was extremely challenging for many educators. But as instructors systematically overcame such challenges, a positive aspect emerged - increased engagement with one another. Science educators weren't just using technology to connect with their students, they were also connecting with one another to share ideas and resources. In immunology education, where resources and educational networks were previously limited, this past year opened a door of communication opportunity in conjunction with the support offered by science organizations such as the Society for Leukocyte Biology.





Heather Bruns



Ashley Kalinski



ski Cristin Gavin

Highlighting the increased engagement of immunology educators, there has been outstanding participation for the first two webinars of the four-part Immunology Educator Resources Webinar Series sponsored by the SLB. As part of these webinars, panelists are not only describing the activities in their classrooms, but they are also sharing their materials with participants in an effort to develop connections and create resource networks. There were over 120 registrants for the first webinar on April 9th, "Using Activities to Enhance Engagement, Promote Learning, and Teach Immunology". Panelists discussed active learning strategies they were using in their biology and immunology classrooms and how those activities increased student engagement and learning. If you are interested but missed the session, <u>contact us</u> to access the recorded session and materials. Displaying the efforts of immunology educators as they overcame the challenges of the past year, the second webinar, "Incorporating COVID-19-Stimulated Topics in the Classroom", was held on May 26th. During this webinar, panelists shared a diverse array of activities that were developed in response to the changing classroom environment and student needs.

Many educators that were faced with transitioning interactive hands-on laboratory experiences into online labs within weeks due to COVID-19 enforced restrictions are now spending the summer de-transitioning back to in-person labs. This is an opportunity to reflect on the innovations that were introduced during the pandemic and determine how we can apply some of those innovations in-person when we meet back up in classrooms and laboratories in the fall. Certainly COVID-19 provided a unique opportunity to teach not only foundational immunology topics and laboratory techniques in the classroom, but also branch further into the astonishing capability of the biotechnology industry to rapidly deploy vaccines and treatments, and the humbling realities of socioeconomic inequities, racial divides, and health care disparities. Classroom lessons should continue to build on this foundation and resources made available and shared widely. One section of the SLB webinar focused on foundational immunology techniques for a laboratory that were applied to a COVID-19 related scenario, and worksheets were provided for students to practice concepts in cell culture, antibody purification, western blot and ELISA and these worksheets can continue to provide practice for students in data analysis. Further, during the pandemic many of us developed new activities and identified new resources for online labs that will continue to benefit future labs such as a new focus on grant proposal development, data presentation, bioinformatics applications and imaging analysis. A list of relevant resources was provided for continued use in the post-pandemic teaching lab.

COVID-19 also provided a unique opportunity to expand social justice discussions into the science classroom. A portion of the webinar focused on a classroom exercise exploring racism in academia and pandemic-related health care disparities. Students were provided a multi-media module of content related to the health impacts of racism, implicit bias, racially-driven health care disparities, and personal accounts of racism in science and medicine. Their subsequent reflections demonstrate a need for more education on implicit bias and continued discussion of systemic racism in both the classroom and academia at large.

As technology continues to advance, educators are faced with a new hurdle: information and misinformation overload. Students are able to access information with the click of a button and often turn to online resources to guide their studies. With this incredible advancement comes the challenge of finding accurate scientific information and credible resources. Two segments in this webinar focused on 5 key components of scientific literacy – Identifying, finding, evaluating, applying and acknowledging appropriate scientific literature. The first focused on evaluation and application of two prechosen articles related to COVID-19. Through this activity students focused on understanding and communicating the information provided in the articles. Importantly, the activity utilized a review article which set the foundation for the analysis of the subsequent case report. The second segment focused on identifying and evaluating the validity of COVID-19 themed articles from non-scientific news sources. The students had to critically assess the non-scientific news sources for accurate scientific information and determine if the information was credible. Both of these activities highlighted that teaching students how to become information literate can improve their critical thinking and problem-solving skills. Additionally, these activities improved student's abilities to engage with and communicate scientific literature in a way that is often overlooked in undergraduate education.

Join us for the next webinar on July 23, as we move our focus to case study development. Many immunology educators cater to pre-medical and medical students that value learning immunology in a clinically relevant context, and many immunology educators do not have clinical experience making this a bit of a challenge. We will host panelists that will share their experience developing case studies and active learning approaches in immunology and related disciplines to the student inspired by medicine and improving human health.

DEI Workshop Review: Celebrating Diversity and Supporting Inclusive Environments: Why is it Important?

The SLB Diversity, Equity and Inclusion (DEI) Committee hosted its annual workshop on "Celebrating Diversity and Supporting Inclusive Environments" on June 24th, 2021. Four panelists at different stages of their scientific careers discussed the impact of COVID-19 and of the social justice movement on their personal and professional lives as well as ways how non-minorities colleagues and social media can help promote inclusion and diversity. The workshop was moderated by SLB member Hazel Ozuna, a PhD candidate at the University of Louisville, and included panelists Dr. De'Broski Herbert, Associate Professor of Immunology at U Penn; Ernesto Leon, a 4th year PhD student in the Biological & Biomedical Sciences Program at UNC Chapel Hill; Alexis Mobley, a 6th year graduate student at the University of Texas MD Anderson Cancer Center and the co-founder and current president of "Black in Immunology"; and Dr. Cristin Gavin, an Assistant Professor of Neurobiology at the University of Alabama at Birmingham. All four panelists highlighted that the COVID-19 pandemic increased stress – this involved greater workloads for faculty members through increased Zoom calls, grant writing and online teaching demands, whereas students experienced stress because they had to pause their laboratory work. Panelists described strategies that they had used to cope with the increased stress, which included exercising in nature, practicing gratitude and connecting over social media. Because the social justice movement had increased public interest in improving the situation for minorities, minority scientists described struggling to balance more frequent requests to represent minority groups on committees and panels and their own desire to advocate with other professional demands. Ms. Mobley successfully used this increased public interest to launch the "Black in Immunology" group as a platform to make lasting changes to our profession. Part of the panel discussion was devoted to discussing what nonminority colleagues can do to advocate for minorities. The consensus was that the burden to advocate should not fall solely on the minorities, but that non-minorities had a responsibility to step up and educate themselves. Specific commitments and milestones set by institutions to increase diversity across all stages of the academic career pathway would be more helpful than general statements of support. Social media were generally seen as a useful tool for advocacy if used to share successes, show support and to educate SLB members are able to watch a recording of this workshop through the SLB website. The SLB DEI committee would like to thank all the panelists for sharing their insights and engaging in a stimulating discussion.



De'Broski Herbert



Alexis Mobley



Ernesto Leon



Cristin Gavin

Mexican Society for Immunology: SLB Trainee Awards

The Mexican Society for Immunology meeting was originally planned to be held in Monterrey, Mexico in April 2020. Due to the Covid19 pandemic it was postponed to April 2021; and eventually it was decided to hold the meeting as virtual event. SLB sponsored 10 Trainee Awards of 100 \$ each including a one year free membership in SLB for excellence in research in leukocyte biology. SLB welcomes as new Trainee Award members: Ivette Mendoza Salazar, Angélica Aponte López, Monserrat Carrera Martínez, Mextli Yoali Bermejo Haro, Aranza Miranda Gutiérrez, Jocelyn Carolina Pérez Lara, José Francisco Cruz Flores, Saúl Arteaga Cruz, Rodrigo Tonalli Camacho Pacheco and Marco Aurelio Tapia Maltos. They presented posters and flash-talks in diverse reesarch topics such as memory T cell biology, B cell functions, macrophage differentiation and neutrophil effector functions. Moreover, they benefitted from an excellent scientific program including keynote lectures of renowned speakers such as Nobel Laureate Bruce Beutler, Mitchell Kronenberg, Stefan Kaufmann and William Muller. There was also a live Q&A session on general scientific topics with Nobel Laureate Peter Doherty for which trainees could submit their questions. Moreover, JLB has dedicated a special issue to this meeting and submissions are welcome by August 31st.























Aranza Miranda Gutiérrez

Rodrigo Tonalli

Legacy Interviews: Cash McCall



Charles (Cash) McCall

This year, we are featuring the science and the scientists published in the *RES: Journal of the Reticuloendothelial Society*, the predecessor to the *Journal of Leukocyte Biology*. Issues of *RES: Journal of the Reticuloendothelial Society* from 1973 to 1983 are available to SLB members by visiting the <u>RES</u> <u>Archive Section of the Society's Website</u>.

Here, we feature our conversation with Charles (Cash) McCall, Professor of Medicine at Wake Forest University School of Medicine, who had published four articles in the *RES* detailing the characteristics and contributions of neutrophils to airway inflammation and sepsis. Dr. McCall has a distinguished career that includes over 47 years of NIH funding, academic leadership roles, and membership in prestigious scientific organizations. Among his scientific accolades, Dr. McCall was named the 2021 Society for Leukocyte Biology's Legacy Awardee and will present a keynote lecture on Monday, July 5 at 12-1pm Eastern.

We were delighted to speak with Dr. McCall on a range of topics, from his academic publications to the impact of these publications and, more broadly, the publication process.

Q: What do you consider the highlights of your four publications in the Journal of the Reticuloendothelial Endothelial Society (JRES Journal)?

A: My publications in the JRES began soon after my move from the Harvard Thorndike Research Laboratory to Wake Forest in 1968, my only academic job. I was already in love with polymorphonuclear neutrophil leukocytes (PMN) and their potential role in human sepsis. I had passed up working at the Rockefeller Institute with James Hirsch and Zanvil Cohn of leukocyte fame; crazy as it might have been and sounds now.

My JRES publications began in 1972 based on the universal survival principle of "fight or flight," expressed as acute systemic inflammation during sepsis. Sepsis exemplifies the extreme environmental stress response of environmental adversity promoted by uncontrolled infection—experienced by all surviving life histories. Since research should ask an important unanswered question, we first wanted to know whether catecholamines arm PMN to fight, and if so, how?" We reasoned they should be armed since they are our blood-born frontline soldiers. We found that PMN begin a fight even without an enemy by increasing oxygen consumption and within seconds after the neurochemical stimulus. We then pursued the mechanisms underlying the PMN respiration-associated "fight" as our major project. Now we focus more on the "flight" component of survival.

Q: What was known at that time, what was not known, and what challenged the project?

A: Although monocytes and macrophages and the so-called reticuloendothelial system (RES) dominated the research thinking after its Society's inception in the 1950s, the importance of PMN metabolism emerged rapidly in the 70s and never stopped. Published evidence showed that the PMN fight against stress depends on glycolysis and glycogen breakdown, which occurs in tandem with oxidative respiration, largely independent of mitochondria. The unknown molecular biology underlying PMN respiration most challenged my early research projects. Fueling this interest was a leukemia patient who died of infection and whose PMN lacked a hexose monophosphate shunt.

My first RO-1 awarded in 1969 supported the ever-present funding challenge of academia. It allowed me to purchase a Clark oxygen-sensing electrode to quantify PMN respiration. The NIH grant's title was "The metabolic and functional properties of human toxic neutrophils." A talented team supported my research, and we began filling gaps in PMN biology and translating the evidence to blood leukocytes during life-threatening sepsis. Now, over a half-century later, the molecular biology of sepsis remains unknown and without molecular-targeted therapeutics. My research is still trying to fill the gap in understanding sepsis's molecular biology and has landed in mitochondria energetics.

Q: What was it like to publish in the JRES at the time, compared with the way publishing is conducted today?

A: Your question reminds me of a favorite Bob Dylan ballad, "The times are a changin." The RES of the 1950s-60s and its JRES of the 1970s -1980s espoused the rapid progress, but somewhat misguided concept, that immunity couples to a reticulum, endothelial cells, and leukocytes, perhaps in particular macrophages. When I arrived at my Wake Forest position, Chair of Microbiology and Immunology, Quentin Myrvik, then editor of the JRES, promoted my joining the RES and urged publishing my research about PMN changes during sepsis in the JRES.

Now, biomedical knowledge deeply penetrates molecular and cell biology, rejoins chemistry, implements multi-omics, single-cell analyses for advancing precision, and encounters repressed representation of people interested in science. The NIH funding base supply still separates supply from demand. Some knowledge gaps narrow, and others like sepsis and now COVID 19 broaden.

The SLB and JLB kept up. The partnership has a sophisticated publication process, supports science education, brings academicians together virtually or physically, and teaches mentoring. Rather than just persisting, it grows in publishing cutting-edge scientific research that fits its mission. It champions social ferment, young and senior investigators' collegiality, and advocates for underserved populations' rights and value, focusing on women. It has family warmth. I find the SLB and JLB scintillating, and they are my favorites.

Q: Are there any other comments you had?

A: Yes!

My deepest gratitude to the weird toxic neutrophils I observed in a rapidly dying patient on the Cambridge River banks in Boston in 1966 and wondered what and why? What an exciting ride they launched! In the upcoming Legacy Award lecture on July 5th, I will provide evidence that sepsis reflects mitochondrial mismanagement of evolution's fight or flight universal survival formula. A "Back to Future" story. Finally, and most importantly, kudos, thanks, and deep affection to the SLB and JLB administrative staff, the editors, and the whole leukocyte academic



* pending review for appropriate content