Immunology News

December 2022 | ISSN 1356-5559

Influential immunology:

An interview with our President, Prof Arne Akbar

Reigniting collaborations: academics & clinicians

Get ready: BSI Congress 2022

***Discovery Immunology*:** inaugural issue

British Society for immunology

www.immunology.org

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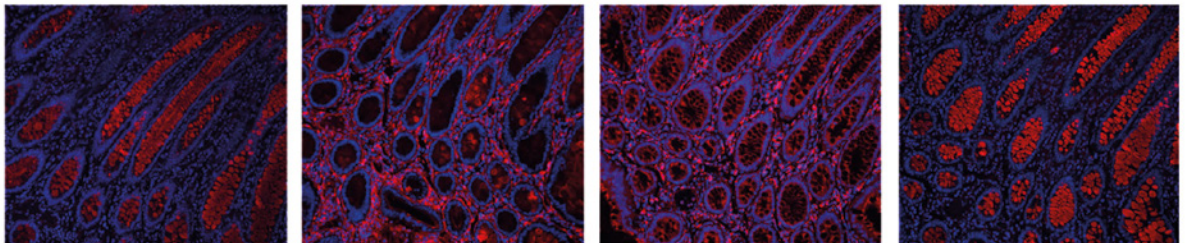

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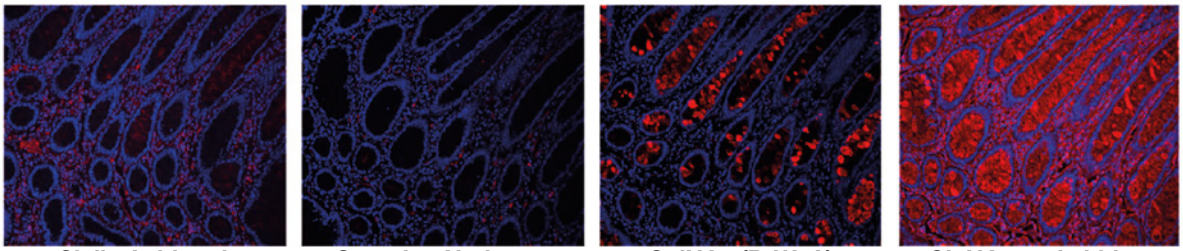

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Welcome to the end-of-year edition of *Immunology News*. We are incredibly excited to be hosting such a large number of you in Liverpool at our Congress. We have been working hard to deliver another unmissable conference, packed with a fantastic range of opportunities relevant to different sectors, career stages, locations and backgrounds of the wonderful members we represent. Make sure you flip to page 8 for tips on how to make the most out of your time and pop by the BSI stand to say hi to the staff team – we'd all love to see you! Without your support and enthusiasm, Congress wouldn't be the much anticipated meeting point for our community, and similarly, this magazine wouldn't be possible without your valuable thoughts and contributions. *Immunology News* is a crucial platform for our members. We're currently expanding our Editorial Advisory Board to better represent the breadth of our membership and continue highlighting issues that matter to you. If you're keen on making a difference and sparking important conversations, please consider submitting an expression of interest to get involved (more details on page 15). Forty pages long, this edition covers a vast array of topics, showcasing what our members are up to and how we have been striving to forward our mission. In particular, I'd like to highlight the feature on *Discovery Immunology* – our journal has been going from strength to strength and your submissions will ensure its long-term success. I hope you explore all the articles and enjoy them as much as I have!

Teresa Prados
t.prados@immunology.org


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The Team

Editorial Advisory Board:
Edd James (Southampton)
Louisa James (London)
Donald Palmer (London)

Managing Editor:
Teresa Prados
Sub Editor:
Rebecca Ramsden
Design:
Qube Design Associates

British Society for Immunology
9 Appold Street,
London,
EC2A 2AP
Tel: +44 (0)203 019 5901
Email: bsi@immunology.org
www.immunology.org

Enquiries and correspondence:
Teresa Prados
t.prados@immunology.org

Advertising queries:
Jane Sessenwein:
j.sessenwein@immunology.org

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VIEW FROM … THE BSI PRESIDENT

It has been a tremendous honour to be the President of the British Society for Immunology for the past four years. When I began my term at the end of 2018, I couldn't have foreseen what this next chapter would entail. I had an important goal: to ensure that the Trustees, committee members and staff team worked together for the maximum benefit of the BSI and its members.

When the pandemic struck, BSI members across all areas played a critical role to drive global research efforts and increase our understanding of COVID-19, protecting the health of millions across the world. The BSI did a fantastic job of harnessing the expertise of immunologists to feed into policy and public discussion whilst bolstering our external facing work. The way the Society and our immunology community came together during this unprecedented time makes me incredibly proud.

However, we have made great strides in a wide range of areas beyond COVID-19. The advances in our understanding of how the immune system works and the potential to significantly better human and animal health are outstanding.

Looking back at my term, it is fantastic to see the brilliant progress the BSI has made to champion immunology and support those working in the field. The Society's strategic plan developed during my time as BSI President set the course of our work over the next few years, with numerous achievements already.

Our membership has expanded, both in numbers and breadth of sectors and career stages; we have ramped up our work engaging with policymakers, the public and patients to materialise the benefits of immunology research and we have diversified our publishing portfolio, including the recent launch of *Discovery Immunology*. We have also expanded the support we provide to different sections of the membership, with the launch of our Career Enhancing Grants aimed at those starting out their careers, and with a programme of work now in place to drive how we support our senior and retired members. This is just a snapshot of some of the many highlights, none of which would have been possible without the enthusiastic support of our members who volunteer their time to forward the BSI's mission.

I feel incredibly grateful for this time working closely with the Board of Trustees to determine the strategic direction of the Society and with the wonderful BSI staff team who translate ambition into outcome. I would like to give my sincere thanks to all of them and the wider membership for their support over the past four fantastic years.

I will always carry with me the fond memories of my time as BSI President, playing a part in supporting our community in driving scientific discovery and making a positive impact on health, but also the collaborative atmosphere and drive with which we worked all together for the benefit of immunology (and of course the always memorable BSI Congress parties!).

The BSI still has a lot to achieve, but I am pleased to finish my term with the Society standing strong and ready for what's to come. I'm delighted to pass the baton to Professor Tracy Hussell, the new BSI President who will commence her term at the AGM on 6 December at BSI Congress and who I am sure will expertly build upon this work.

I am looking forward to continuing to work to advance the field and environment in immunology through my research and as a close ally of the Society.

With best wishes,

Arne Akbar
President,
British Society for Immunology
Email: president@immunology.org

VIEW FROM … THE CHIEF EXECUTIVE

Welcome to our BSI Congress bumper issue of *Immunology News*. First and foremost, we are very much looking forward to hosting many of you at Congress! It is shaping up to be our most exciting one yet – four days of fabulous science and plenty of opportunities to network with colleagues, collaborators and collaborators-to-be. Check out page 8 for more information and please do pop by the BSI stand to meet the team and find out more about what we are doing. You may be pleasantly surprised with a new addition to our cell badge collection!

I am also delighted that we are joining forces with the clinical immunology community to form the new BSI Clinical Immunology Professional Network (page 13). This will be the result of a merger between the BSI and the UK Primary Immunodeficiency Network (UKPIN) and builds on several years of successful collaborative working. Bringing our communities together will undoubtedly lead to greater impact for research, clinical delivery and patient outcomes.

From page 28 you will see information on our corporate members who are an incredibly valuable part of the BSI. I'm sure that you will all join me in thanking them for their support and I look forward to working with them on more exciting initiatives going forwards.

And finally from me, it would be remiss if I didn't say a huge goodbye and thank you to our outgoing BSI President, Arne Akbar. He has had such an enormous impact over the last four years taking the BSI to places we've never been before. We have been lucky to have his stunning leadership and we wish him all the best in his future endeavours (though we will be sure to keep him close to the BSI!). I have no doubt that Tracy Hussell, our President-elect, will continue to take the BSI from strength to strength!

As always, please do reach out if you have any questions or suggestions.

Doug Brown
Chief Executive,
British Society for Immunology
Email: d.brown@immunology.org

SOCIETY NEWS

BSI Diversity & Inclusion focus groups: understanding the needs of our community

The British Society for Immunology recently held two focus groups with BSI members to better understand the equity, diversity and inclusion (EDI) needs of our membership and the immunology community, and to inform our upcoming work in this area.

After the publication of our Diversity & Inclusion Framework, which outlined our commitment to collaborating closely with our community to raise the bar for EDI in immunology, we invited BSI members to help shape our future work in this area. Our aim was to engage with people from different backgrounds, experiences and perspectives to gain feedback from the membership around our EDI work across all Society activities and ultimately, better represent the community's needs.

In August and September 2022, BSI members came together for two open and honest discussions about what the Society does well, what we could be doing better and views on areas where we could provide additional support. We had a diverse attendance, comprising those who had sent through expressions of interest to participate and share their experiences and perspectives, as well as representatives from the BSI Forum, our committee who ensures the voice of the different sectors, career stages and locations are fed into our activities.

The two sessions were incredibly valuable and productive, offering a safe and inclusive space to communicate emerging challenges and opportunities, and attendees reported having a positive experience and wishing to continue being involved with the Society's activities in this area.

We covered a wide range of topics that matter to our members, including the various BSI grant schemes and additional ways in which the Society can provide impactful financial support; the importance of recognition of EDI activities and how showcasing the work of our members in this area can help inspire others and move the needle in this area; and event accessibility, for example, considering new ways of planning poster sessions to create a more welcoming and supportive environment.

In these focus groups, we also discussed the progress of EDI in the wider immunology sector, examples of good practice and partnerships. Tackling the leaky pipeline in immunology to ensure diversity higher up in the career ladder, as well as working with universities and organisations to provide guidance and best practice in EDI, are a couple of examples of the areas covered.

We are proud to have started implementing ideas put forward, including opening up the Education and Public Engagement poster category at BSI Congress 2022 to include best practice examples of promoting diversity and inclusion within immunology.

In line with our commitment to tracking our progress openly, we will be publishing more information shortly on the progress that the BSI has made on the back of the discussions from these meetings.

Many thanks to our wonderful members who attended the focus groups. We look forward to continuing to build a platform to learn and grow together. If you have any questions, comments or suggestions, please contact us at **inclusion@immunology.org**.

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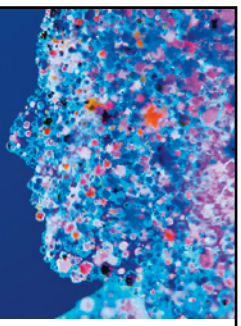

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	T Cell Activation	T Cell Co-Stimulation and Exhaustion	T Follicular Helper and Stem Cell	T and NK Cell Exhaustion	Myeloid and Lymphoid Activation	NK Cell Activation
	CD107a	OX40	CD11a	Tim-3	IL-6	CD181
	IL-2	TIGIT	Tim-3	CD69	CD69	NKp30
	CD69	CD69	CD95 (FAS)	LAG-3	TNFα	NKp46
	TNFα	PD-1	PD-1	NKG2A	CD40	PD-1
	IFNγ	Tim-3	ICOS	PD-1	GM-CSF	NKG2A
	IL-4	ICOS	CXCR4	TIGIT	CD80	ICOS
	CTLA-4	CD136/4-1BB	TIGIT	CD107a	IL-10	TIGIT
	IL-10	CD107a	CD107a	IL-2	CD33	CD107a
	IL-17A	IL-2	IL-2	TNFα	PD-1	IL-2
	Perforin	TNFα	TNFα	IFNγ	IL-1β	TNFα
	Granzyme B	IFNγ	IFNγ	Perforin		IFNγ
		Perforin	Perforin	Granzyme B		Perforin
		Granzyme B	Granzyme B			Granzyme B
Common 30-marker backbone	CD45	CD8a	CD161	CD183/CXCR3	TCRγδ	CD20
	CD196/CCR6	CD1c	CD194/CCR4	CD185/CXCR5	CD294	CD66b
	CD123/IL-3R	CD16	CD25	CD28	CD197/CCR7	HLA-DR
	CD19	CD45RO	CD27	CD38	CD14	IgD
	CD4	CD45RA	CD57	CD56	CD3	CD127

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SOCIETY NEWS

Make a difference for immunology!

The British Society for Immunology is run for its members and by its members. Over the next year, we have a number of vacancies that will become available on our committees.

Society members who are willing to stand for election and contribute their knowledge, expertise and experience as part of our committees are vital to ensure that we are doing all we can to support our members and the field of immunology as a whole. This is a fantastic opportunity for you to get involved in the work of the Society and to make a real difference to immunology in the UK. We would like to actively encourage nominations from members from all backgrounds, career grades and locations around the UK.

Upcoming vacancies

In the new year, we will put out a call for nominations for the following positions:

Board of Trustees
- Three general trustees

These roles are due to commence in July 2023.

Forum
- PhD Representative
- Early Career Representative
- Industry Representative

These roles are due to commence in July 2023.
Appointment for the Board and Forum will be decided by membership elections in late spring.

Congress Committee
We will have two vacancies on this committee for general members commencing in 2023. Positions are selected by an in-house panel to complement the existing expertise on the committee.

Thank you

The end of this year sees some important changes to our Board of Trustees. At our upcoming AGM on 6 December at BSI Congress, Chair of Forum Professor Ann Ager and General Trustee Dr Divya Shah will finish their terms of office with us. We want to thank them both for their dedication and valuable contributions to the BSI. This meeting also marks the end of the term of BSI President Professor Arne Akbar. The BSI owes him a huge debt of gratitude for the time, energy and care he has put into developing our strategy, guiding our activities and ensuring the BSI is run to the highest standards – see page 18 for an interview about his time as President. We look forward to welcoming our upcoming President Professor Tracy Hussell, who will join with our other new faces on the Board of Trustees in the new year as Professor James Brewer and Professor Teresa Lambe start their terms. Welcome all, to the BSI family!

BSI Forum: here to represent you

The BSI Forum is the place where the voice of our membership is fed into our activities. Chaired by Professor Ann Ager, the 18 elected members come from all sections of the Society's membership. Their role is to act as our 'think tank' on issues relating to education and careers, public engagement, policy and public affairs, and communications. Forum aims to help the Society in implementing its strategic plan by providing a mechanism by which the views of the membership can be inputted into our activities.

The most recent meeting opened with a welcome to our newest Forum representatives Dr Gareth-Rhys Jones (Clinical representative), Dr Julia Makinde (England representative), Dr Becca McLean (Veterinary representative) and Dr George Robinson (Early Career representative).

As part of our Diversity and Inclusion framework, the BSI hosted two EDI focus groups in August and September. Displaying their passion for EDI, Forum members who attended had a constructive and open discussion on the topics raised at the groups. Our session also focused on several other important topics, including the effect of the rising cost-of-living on PhD students with members suggesting how the BSI could provide support.

Jane Sessenwein, BSI Head of Conferences and Events, joined the meeting to give an update on Congress 2022. This led to a vibrant conversation on poster sessions where innovative formats were shared along with valuable feedback which will be incorporated into this year's and future events. We then dived into how we work to raise the profile of immunology with policymakers. Finally, Forum was given a brief overview of recent external affairs and outreach activities that the BSI has undertaken to communicate the voice of our immunology community to the wider world.

This was the final meeting for our outgoing Scotland representative Dr Megan McLeod, Public Engagement Secretary Professor Donald Davidson and our Chair of Forum Professor Ann Ager. A big thank you for the positive difference they have made to the BSI during their terms! The BSI Forum and its members are here to represent you. If you would like to raise any issues for Forum to discuss at an upcoming meeting, please contact your relevant Forum member – you can find a list of your representatives on our website at **www.immunology.org/forum.** Alternatively, you can email our Director of External Affairs, Jennie Evans, at **j.evans@immunology.org**.

SOCIETY NEWS

BSI Congress 2022

Monday 5 to Thursday 8 December, Liverpool, UK

There are only a few days to go until the return of our flagship event. We are looking forward to welcoming many of you to Liverpool, as well as those tuning in online from around the world. There's a fantastic programme lined up for you with a mixture of parallel sessions, plenary talks, poster sessions and those important opportunities to network and make new connections!

Scientific highlights

Bright Sparks in Immunology, PhD and Postdoc
12:30 – 16:00, Monday 5 December

Keynote presentation
World-renowned immunologist Dr Gitta Stockinger (Francis Crick Institute, UK) will discuss her highly influential work on the differentiation conditions of Th17 cells and the aryl hydrocarbon receptor (AHR).
18:00 – 19:00, Monday 5 December

Tropical diseases
Plenary session featuring Prof Helen McShane, Prof Paul Kaye and Prof Faith Osier
09:00 – 10:30, Tuesday 6 December

Innate inborn immunodeficiencies
Plenary session featuring Dr Venetia Bigley and Prof Holm Uhlig
16:30 – 17:30, Tuesday 6 December

Beyond blood
Plenary session featuring Prof Arne Akbar, Prof Rachael Clark and Prof Mala Maini
09:00 – 10:30, Wednesday 7 December

Systems immunology
Plenary session featuring Dr Sarah Teichmann and Dr Nir Yosef
16:30 – 17:30, Wednesday 7 December

Immunotherapies come of age
Plenary session featuring Prof John Isaacs, Dr Joanne Jones and Prof Graham Ogg
09:00 – 10:30, Thursday 8 December

The brainy immune system
Plenary session featuring Dr Vassilis Pachnis and Dr Sophie Ugolini
16:30 – 17:30, Thursday 8 December

BSI CONGRESS 2022

BSI AGM – have your say!

17:30–18:00, Tuesday 6 December
We would like to encourage all BSI members to join us at our 2022 Annual General Meeting. This is your opportunity to find out more about the work of your Society and what we are doing to support our members and represent immunology in the UK. This AGM will also mark the official handover from our outgoing President, Professor Arne Akbar, to the incoming President, Professor Tracy Hussell.

Make the most of your Congress experience

- ✓ **Get inspired at Bright Sparks** – make sure you arrive in time for our Bright Sparks session at 12:30 on Monday 5 December, which highlights the best work from early career researchers. Be ready for innovative science, creative presentations and friendly competition for prizes.
- ✓ **Network** – the BSI Congress is the perfect opportunity to interact with others in your field who you wouldn't normally get a chance to meet. Why not make a point of talking to one person each day who you haven't spoken to before? You can be ready to connect online with anyone you meet by having your LinkedIn profile up to date. We'll be sharing updates from our LinkedIn page throughout the conference; follow us for the latest news on all our activities: **www.linkedin.com/company/british-society-for-immunology**.
- ✓ **Preparation is key** – review the programme before the conference starts and prioritise attending the sessions which are most interesting and relevant to you. Download the BSI Congress app to check the programme on the go and add sessions to your calendar.
- ✓ **Don't miss the poster sessions** – poster sessions are an opportunity to mingle and make new connections while discussing immunology. You might come across a new method or model that could be valuable to your own work.
- ✓ **Get your stamp** – in our 'Passport for Prizes' competition – make sure you visit the exhibition stands to be entered into a prize draw!
- ✓ **Showcase your favourite immune cell** – at BSI Congress 2021 you voted for a new immune cell to add to our line-up of badges – and fibroblasts were victorious. Head to the BSI stand to secure your immune cell badge(s) of choice and wear proudly!
- ✓ **Dance the night away** at the Congress Party taking place at Revolution, St Peter's Square, on the Wednesday evening. The party starts at 21:00 and tickets cost only £15 including two drinks vouchers – book via the Congress website.


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Additional sessions

The BSI is hosting a number of additional sessions in which you can increase your knowledge on a range of topics that can boost your career and widen your horizons.

The Book Club

Four well-known authors will discuss their writing experience, tell the story of their immunology books and the impact on their careers and most importantly the public.
16:00 – 16:45, Monday 5 December

EFIS Vaccine Task Force – a strong voice around vaccination in Europe

Come along to this panel to hear members of the Task Force discuss and share some of the strategies used across Europe to engage the public and ensure a high COVID-19 vaccine uptake.
13:15 – 14:10, Tuesday 6 December

Diversity and Inclusion – building a better future together

Hear about how the BSI have been working with and for our members to integrate equity, diversity and inclusion in our work.
13:15 – 14:10, Tuesday 6 December

Education meet-up

This gathering provides an informal space where delegates with an interest in teaching and learning can discuss current topics in the field and share ideas, techniques and resources.
08:00 – 08:50, Wednesday 7 December

Research integrity in publishing

Speakers from the worlds of publishing and academia will examine topics including plagiarism, conflicts of interest and data deposition to help you spot and avoid potential misconduct when writing, reading or reviewing research.
13:15 – 14:10, Wednesday 7 December

Importance and impact of patient and public involvement in immunology research

Join this session to discover the impact and benefit of involving patients and the public with research and find out more about key considerations when starting out.
13:15 – 14:10, Thursday 8 December

Presentation theatre

Throughout the conference, you can pop in to the presentation theatre in the exhibition hall for 15-minute showcases on a range of areas such as our new training offering, how the BSI is representing you to Government, how we can support your public engagement activities and the grants we offer to support your career development. Be sure to also check out the presentations hosted by our corporate sponsors to find out all about the latest products and techniques to advance your research.

Joint sessions

We work with many different partners to drive knowledge sharing and collaboration between our research communities. At BSI Congress 2022 we're delighted to be holding sessions with the British Society for Allergy & Clinical Immunology (BSACI) and the CARINA network.

BSI-BSACI JOINT SESSION
Understanding adverse reactions
Tuesday 6 December, 11:00 – 12:45
Parallel session featuring Dr Ben Fairfax and Prof Alan Parker

CARINA NETWORK-SUPPORTED SESSION
The immune system across the life course: ageing and immunity
Wednesday 7 December, 14:15 – 16:00
Parallel session featuring Prof Janet Lord and Dr Natalie Riddell

BSI Congress for all

Ensuring that the BSI Congress is accessible to all is extremely important to us. We're pleased to again offer a number of initiatives, including the BSI Carers' Grant to support the cost of attendees' care arrangements while attending the conference and a travel bursary to support as many of our members as possible to join us. We're pleased to offer onsite crèche facilities for delegates wishing to bring their children. Please head to **https://bit.ly/3MJKMMv** for details on all the facilities available at the conference, including prayer and quiet rooms, venue accessibility and bringing children and babies to BSI Congress.

Exhibitors and sponsors

The generous contributions of our corporate sponsors enable us to offer our community another BSI Congress to remember.

We're immensely grateful for their invaluable support and we'd like to encourage all our delegates to explore the exhibition hall and tap into the expertise of our wonderful exhibitors who can answer questions and share with you the latest innovations and technological advances.

Connect with us

Make sure you're following **@bsicongress** on Twitter to stay updated and include the official conference hashtag **#BSI22** in your posts to connect with other attendees.

Stop by the BSI stand (number 23) in the exhibition centre to say hello – we'd love to see you!

Download the Congress app - search for 'BSI Congress'

Stay in touch

Follow our other accounts to keep up with our activities and stay connected with your fellow BSI members:

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Any questions?

www.bsicongress.com

If you have any questions, please email **congress@immunology.org.**

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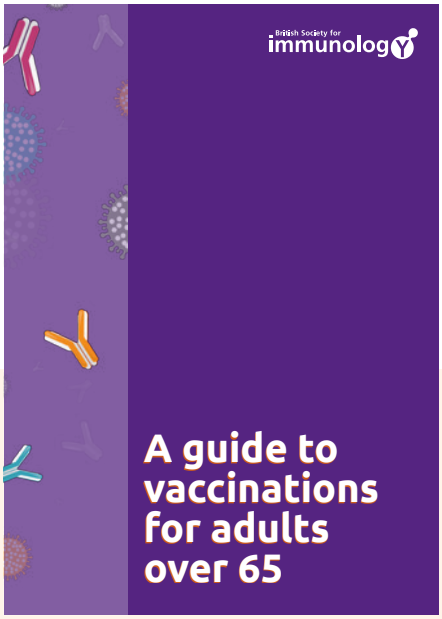
SOCIETY NEWS

A guide to vaccinations for adults over 65

The British Society for Immunology is proud to publish a new guide to vaccinations for adults over 65. Following the success of our previously published guides to childhood vaccinations and guide to COVID-19 vaccinations, our new guide aims to inform adults aged 65 and over about the different vaccines they are eligible for in the UK and answer common questions.



At the British Society for Immunology, we aim to provide reliable, evidence-based information on vaccinations to everyone. We know that the public may have specific questions regarding vaccines for older adults and that's why we have created a free, easy-to-read guide to vaccinations for adults over 65.

The guide explains how vaccines work, answers common questions about vaccinations as well as providing up-to-date information on the vaccines available for adults over 65 in the UK. We would like to thank all our members, especially Dr Emma Chambers, and the healthcare professionals who helped with creating this guide.

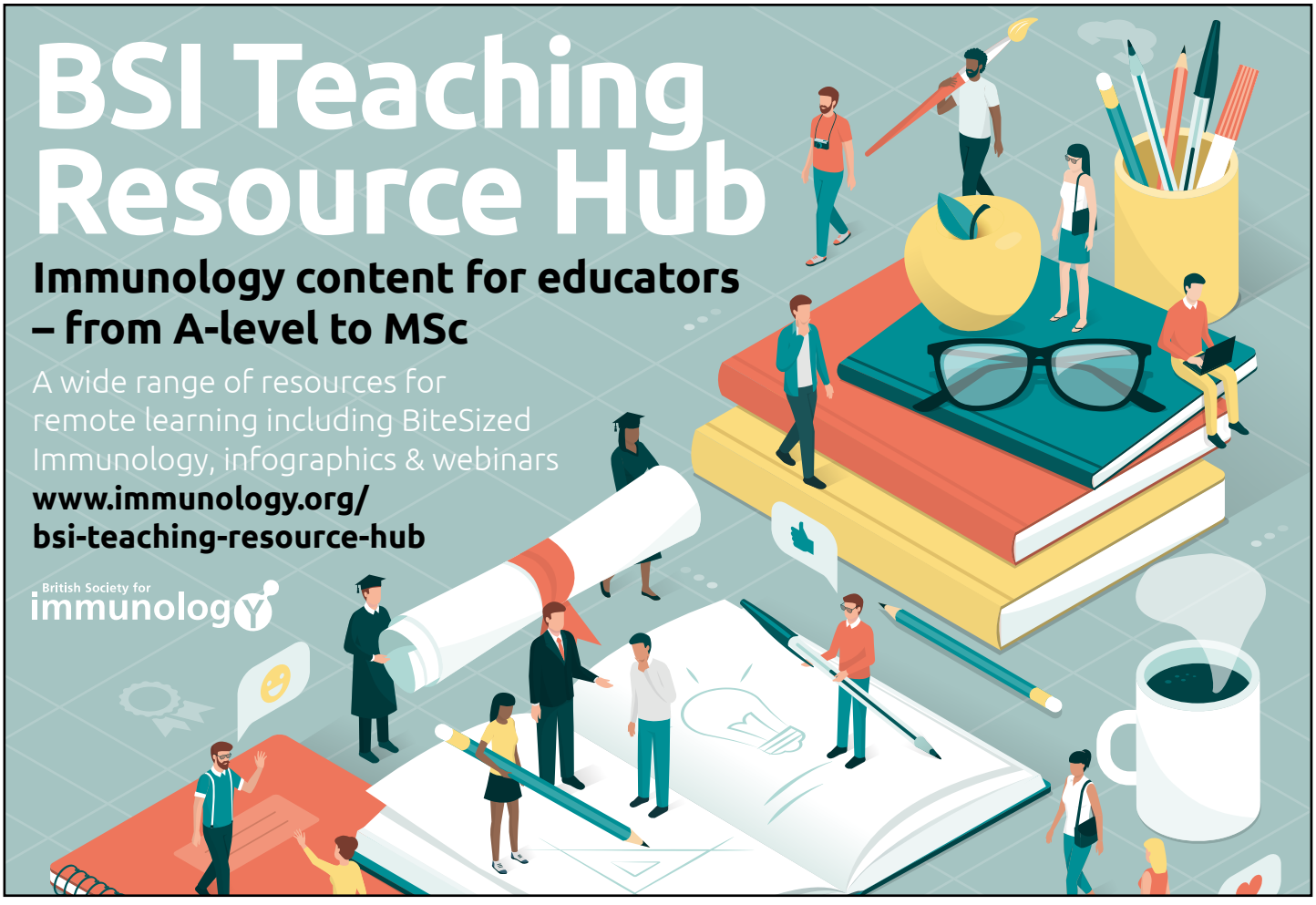
This guide was written in November 2022 and is accurate at the time of publishing. Information will be updated as it becomes available.

You can download the guide for free here: **www.immunology.org/guide-vaccinations-adults-over-65**.

It has been developed in partnership with the CARINA Network (**www.immunology.org/carina**) and is sponsored by the UK SPINE Knowledge Exchange Network (**www.kespine.org.uk**).

CARINA Immunity for life

UK SPINE Knowledge Exchange



SOCIETY NEWS

BSI and UKPIN merger

The British Society for Immunology is intending to merge with the UK Primary Immunodeficiency Network (UKPIN; **www.ukpin.org.uk**). This will result in the establishment of a new, professional network for clinical immunology within the BSI – **the BSI Clinical Immunology Professional Network (CIPN)**. The merger is in the final stages of approval and is hoped to take effect before the end of this year.

British Society for Immunology
CIPN
Clinical Immunology Professional Network

The BSI-CIPN will fully represent all aspects of clinical immunology practice in the UK. It will deliver better support for the immunology community to network and engage with each other across many disciplines, building closer links between clinical practitioners and basic scientists. It also combines the expertise of the BSI and UKPIN to strengthen the voice of clinical immunology in policy and the public arena to increase the impact of our work in advocating for the care of patients with immunodeficiencies.

UKPIN has achieved much since its formation to bring together the clinical immunology community. Through this merger, we hope to provide an even stronger platform for clinicians, healthcare professionals and scientists to engage and share best practice.

We greatly value the support of our membership and hope that you share our enthusiasm and ambition for this next step to further the mission of the BSI and deliver our strategic plan to support our immunology community in driving scientific discovery and making a positive impact on health.

Professor Arne Akbar, President of the British Society for Immunology, said:
"This merger marks an exciting milestone for the British Society for Immunology. It promises to create more networking and engagement opportunities in the clinical sector, strengthening the BSI's ongoing mission and increasing our reach within the immunology community."

Dr Sinisa Savic, Chair of UK Primary Immunodeficiency Network (UKPIN) & incoming Chair of BSI-CIPN, said:
"We are delighted to be joining forces with the BSI to form this innovative, integrated professional network. This will allow us to continue to provide for the evolving needs of those working in the clinical immunology space and build on our work to improve standards across the practice."

Dr Suzanne Elcombe, Secretary of UK Primary Immunodeficiency Network (UKPIN), said:
"By bringing the UKPIN and BSI membership together to create a representative and visible network for clinical immunology, the community will benefit from a stronger voice and increased engagement between our different fields, supporting our aligned objective of improving care for patients."

Professor Colin Dayan, Clinical Secretary of the British Society for Immunology, said:
"The BSI's Clinical Immunology Professional Network is an important move forward to provide a stronger, holistic platform for clinical immunologists of all backgrounds to collaborate and share best practice."

Expanding horizons within clinical immunology: redefining the scope of clinical practice

The inaugural meeting of the BSI's CIPN will take place in Liverpool on Monday 5 December 2022 alongside the BSI Congress. The programme will feature presentations from leading experts in the field on the latest advances in clinical science and patient care and will be the first opportunity for members of the network to come together.

Find out more

If you have any further questions about the merger between BSI and UKPIN and how it might affect you, please take a look at our FAQs: **www.immunology.org/bsi-and-ukpin-merger-faqs**.

SOCIETY NEWS

BSI Annual Review 2021–22

The BSI is pleased to publish our Annual Review showcasing our activities and achievements over the last year. We are now well on the way to delivering our current strategic plan and the past 12 months have seen the organisation achieve some important milestones, both in terms of the support and activities that we provide for our members and our work engaging with the wider world to ensure that immunology is centre stage.

©Shutterstock/Dmitry Demidovich

2021 saw us welcome our membership back in person to the BSI Congress, with over 1,500 delegates joining us in Edinburgh for a four-day immunology feast! We also put a focus on membership support through the launch of our new Career Enhancing Grants. Other activity highlights include our ongoing engagement work around vaccines and COVID-19, updates to our journals portfolio, our growing and highly successful partnership initiatives and the launch of our Diversity and Inclusion Framework.

None of these achievements would be possible without the support of our members, who volunteer in a myriad of ways to support the ongoing work of the BSI. We're incredibly grateful to you all for your help and support throughout the year.

You can download the full Annual Review from our website at **www.immunology.org/annual-review** to discover more about how the BSI has made a difference for immunology over the last year. Print copies will also be available on the Society's stand at Congress, so do pop along to pick up a copy and talk to us about how you can get involved with our work. You can also request a print copy from **membership@immunology.org**.

SOCIETY NEWS

Call for Editorial Board Members: shaping *Immunology News*

Offering a mix of recent Society news, synopses of cutting-edge immunology research and feature articles about our members' ventures, this magazine showcases the latest developments and hot topics in the world of immunology. As the BSI membership magazine, *Immunology News* is an important channel that enables our mission to be a focal hub for the immunology community.

We are currently renewing our Editorial Advisory Board and are seeking BSI members to get involved in shaping the content pipeline through offering their ideas and commissioning articles.

Immunology News aims to not only highlight how we're supporting our members and representing immunology on a wider stage, but also to amplify the voice of our membership. With this in mind, the magazine's Editorial Advisory Board must represent the breadth of our membership to be able to authentically provide a platform for our members' interests and areas that matter to them.

Are you interested in contributing to the development of the BSI membership magazine? If so, we'd love to hear from you!

We welcome expressions of interest from members from all membership categories. As part of the *Immunology News* Editorial Advisory Board you will:

- Have the chance to share ideas of topics that matter to you, for example around careers or science innovation, and bring forward proposals of potential authors and pieces to build the content pipeline for 2023
- Contribute to sparking conversations within our community through content that inspires, educates and engages
- Develop knowledge and skills in commissioning content for a printed publication, as well as the publishing process of a Society magazine

We are interested in recruiting members within all areas of immunology as we are committed to creating an Editorial Advisory Board that truly represents the diversity of our community.

We are particularly interested in members from:

- Different areas across the UK and beyond, especially north of London and including the devolved nations
- The spectrum of immunology, both in terms of research areas and of sectors, such as industry and clinical
- A range of career stages, such as postdocs and early career researchers
- Underrepresented communities in science and those interested in building a fairer, more inclusive immunology community

All of the Society's work and the production of *Immunology News* is made possible through of the support and enthusiasm of our members – a big thank you for reading, sharing and contributing with your experiences.

If you're interested in making a difference and supporting the Society's mission through its magazine, please email an expression of interest to Teresa Prados, Managing Editor of *Immunology News* at **t.prados@immunology.org** by Friday 13 January outlining why you'd like to be part of the Editorial Advisory Board and what you feel you could contribute (max. 200 words).

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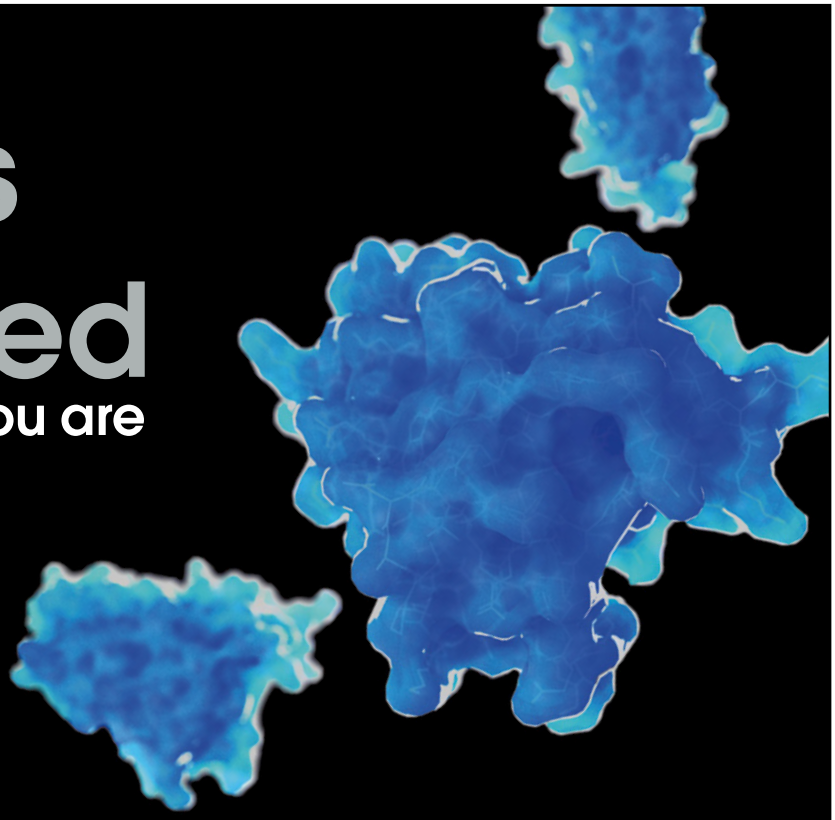
obsessed
as you are



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Barriers to academic–clinician collaborations

Translational research needs productive interdisciplinary collaborations between academics and clinicians to maximise the positive impact of science on patients and the wider society. Here, researchers from Oxford discuss a recent informal survey on the barriers to these important collaborations, reigniting a discussion around potential ways to enable cooperation in biomedical research.


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As a group of academics and clinicians, we are aware both that interdisciplinary collaborations are critical to translational research, but also that establishing these collaborations is often challenging.

To explore possible obstacles to collaboration, we conducted a survey of nearly 200 biomedical academics, clinicians, and clinical academics working at the University of Oxford or Oxford University Hospitals NHS Foundation Trust (with those from 'Infection and Immunology' making up a quarter of respondents). Our central question was 'What are the main barriers preventing you from establishing an academic–clinical collaboration?'. Over 80% of respondents indicated that they had personally encountered barriers to collaboration. While both academics and clinicians flagged 'Funding' and 'Difficulties with contracts, data sharing, or other legal issues', the major barrier we encountered was 'Identifying someone with the right skill set or expertise'.

We believe this is problematic and that translational research is undermined by inefficient identification of cross-disciplinary collaborators. When lab-developed concepts cannot be moved from bench to bedside, this leads to reduced research output, reduced positive impact on patients, and wasted potential in the expertise of the biomedical research community. Conversely, institutions or Hospital Trusts that better facilitate links between cross-disciplinary collaborators would be expected to improve these outputs as compared with environments with more pronounced research silos. While our survey was conducted in the Oxford context, we suspect these trends are more universal.

There are many potential reasons an individual academic or clinician may struggle to identify a collaborator. Websites are often out-of-date or too high-level. Perhaps there is an issue of jargon around specific techniques and, for example, a clinician does not know a sufficiently specific term for the type of analytical expertise they are seeking in an academic. The language used for the same concepts may also differ between different specialities, making comparing notes difficult. Also probable is that 'cold' contacting potential collaborators is met with a limited response rate. Indeed, of the survey respondents who had previously participated in an academic–clinician collaboration, over 60% reported they had met the collaborator through an introduction by a colleague. The power of social / professional networks in enabling new collaborations therefore continues to appear – unsurprisingly – profound. This may render initiating new cross-disciplinary collaborations disproportionately difficult for early career researchers or other historically disenfranchised groups. The reliance on interpersonal introductions and networking poses potential ethical issues if it propagates a lack of diversity in research teams and reduction of inclusion of thought.

Based on our survey results, the most successful strategy to enhancing successful collaborations is likely to be a multipronged approach, embedding opportunities to facilitate introductions within frameworks that integrate academic and healthcare systems. Such opportunities could include in-person opportunities to engage, as well as online platforms that allow clinicians and academics to easily search for each other. For the latter, careful planning is required to ensure details remain up-to-date for any opt-in system (the preference of our survey respondents, as opposed to an automated enrolment approach). Our own preliminary efforts in this area also highlighted how difficult it can be to give virtual access to platforms across different University and Trust systems; strong institutional support will be central to overcoming such digital infrastructure hurdles.

Efforts to address the other major barriers to academic–clinician collaboration – such as funding – may be equally thorny; indeed costs for even small pilot studies are often substantial. Furthermore, while our survey did not garner specifics of the funding concerns, anecdotally we hear from clinicians and clinician scientists that this is often related to needing to 'buy time' due to a lack of dedicated research hours. Here again, institutional support may be able to play a role in supporting managers and their teams to participate in research activities, perhaps through honorary contracts or other similar mechanisms.

Our survey does not represent a formal academic study, but rather a more informal starting point for a discussion about facilitating collaborations in the biomedical research environment. This is critical to support translational research and also the career development of staff with diverse backgrounds. Other institutions may benefit from conducting such surveys to understand the extent of the problem in their area in order to design bespoke solutions.

Dr Carolyn Nielsen, Department of Biochemistry, University of Oxford
Dr Amy Cross, Nuffield Department of Surgical Sciences, University of Oxford
Dr Francesca Aroldi, Department of Oncology, University of Oxford
Dr Jasleen K Jolly, Nuffield Department of Clinical Neurosciences, University of Oxford; Vision and Eye Research Institute, Anglia Ruskin University

An interview with... Arne Akbar

Professor Arne Akbar is stepping down from the post of President of the British Society for Immunology. His Presidency has spanned a tumultuous four-year period that has seen huge societal changes including the COVID-19 pandemic, establishment of the Black Lives Matter movement, the cost-of-living crisis and Brexit. During this time, the Society has published an ambitious new strategy, influenced Government policy during the pandemic, published a new Diversity and Inclusion Framework and expanded its journal portfolio. As Professor Akbar leaves this role, he reflects on his time as President, the unique role the Society plays and the challenges immunology as a profession still faces.

What were your hopes for this role when you first started as BSI President?

I took the role of President because I wanted to give back to the Society, after benefiting so greatly from being a member of the BSI for the last 44 years. When I started as President, I was most concerned with keeping the BSI stable and for nothing to go wrong on my watch. I also hoped my Presidency would see the Society grow greater international links, bring the BSI Board of Trustees and staff team closer, and find new ways of harnessing the expertise of immunologists from the beginning to the end of their careers.

Did things go as you expected?

Little did I know that the COVID-19 pandemic would come along during my Presidency and present unprecedented challenges to the BSI and the field of immunology. As a Society we needed to support our members during this challenging time, keep the BSI going, while making sure the public and policymakers heard the views of immunologists and had access to knowledge from the latest research findings.

What do you see as the most important role of the BSI?

Everything the BSI does is for its members and our membership is growing every year. We constantly ask what we can do to make things better for immunologists at every stage of their career. Our five-year strategy lays out our big ambitions for the future. We want to build a more interconnected immunology ecosystem to support collaboration between sectors and disciplines. We will provide sector-leading careers support to attract and retain talent in immunology. We are also making sure our immunology knowledge improves health and influences policy, and that immunology research has the right conditions to thrive.

These are bold ambitions given our lean size and resources. The BSI staff team is small – just 20 people – but they are highly qualified and all work together for the members. They achieve so much and punch way above their weight; we use our limited resources to make the biggest difference.

How has the role of the Society evolved during your time as President?

The Society has become even more outward facing – both in terms of our public engagement and influencing policymakers during the pandemic. We have always cared about public engagement, but COVID-19 made this work even more important. Along with our work to engage with different communities about COVID vaccines, the BSI has also worked with members of the public to provide patient and public involvement (PPI) input into some of the most high-profile COVID-19 immunology studies. We work very closely with patients and members of the public in many areas – as scientists we must listen to the views of the public to better our research, and they can help us make our work more accessible. Everyone is expected to write public summaries of their work now, but many of them are not written in a way that is truly accessible. We do a lot to make sure our members can produce accessible information, striving to connect them both to the public and patients.

Awarding the BSI Global Impact & Innovation Award to the Oxford/AstraZeneca COVID-19 vaccine team. The award was accepted by Prof Teresa Lambe, Prof Sarah Gilbert & Prof Andrew Pollard on behalf of the wider group.

Over your time as President, what are you most proud of?

I feel so strongly about the important role of the BSI; I really wanted to protect the Society and make sure nothing went wrong while I was President. Far from it, through the incredible uncertainty and challenge of the last few years, the BSI has tackled everything that has been thrown at it effectively.

I am pleased at the progress we have made in bringing early career researchers closer to heart of the Society and they now have a role on our Board. They have helped us develop our innovative new BSI Career Enhancing Grants. Researchers come to us with a variety of suggestions about how they would spend the money to aid their career development – it is a very flexible scheme. It means early career researchers can do something different, that would be hard to fund from other sources.

We are also looking to make sure we don't lose the knowledge and expertise of Society members as they move towards and beyond retirement. Recently we held a dinner with very senior immunologists to ask how they can continue to share their valuable knowledge and experience from a lifetime of hard work with the Society.

I am also proud of the work we have done to develop and expand our journal portfolio. We launched *Immunotherapy Advances* in 2021, the BSI's first journal launch in over 60 years, and *Discovery Immunology* in 2022. These journals provide important new places to publish immunology research for the immunology community and provide a valuable source of income for BSI activities that aim to support our membership, such as grant schemes and BSI Congress.

Can you tell us more about the important role the Society played during the pandemic?

The BSI played many different and essential roles during the pandemic. Perhaps most importantly we brought researchers together to give collective opinions to share with the public and policymakers – this was very important as the situation was evolving so quickly.

Very early on we sent an influential letter to Government, the Chief Scientific Advisor and Chief Medical Officer. We stressed that herd immunity would not provide a short-term solution to the pandemic. Moving from herd immunity to isolation was a radical step early in the pandemic, but an important one.

We also rapidly assembled a BSI COVID-19 Taskforce of researchers with diverse backgrounds and worked with the Academy of Medical Sciences to produce a report on COVID and immunology. The conclusions of this work influenced SAGE, Government, and were shared widely within the scientific community and beyond.

Opening ceremony at BSI Congress 2019


With members of the Board of Trustees

At that point we didn't know why certain sectors of the public were particularly affected by COVID-19, beyond knowing that age, ethnic background and co-morbidities were important factors. We broke down the questions that most urgently needed answering and were clear about what actions needed to happen in the short and longer term. The BSI office did an incredible job of bringing key opinions and documents together at speed for review by the group.

The BSI also worked to increase confidence in vaccines during the pandemic?

It was fantastic that vaccines for COVID-19 were developed so quickly, with British immunologists at the forefront of their development. However, the speed of development also brought challenges. When the vaccines were first introduced there was a great deal of worry about which vaccine people received, whether it was Pfizer or AstraZeneca. There was a lot of space for the spread of misinformation.

Our BSI COVID-19 Taskforce, working with other members of the Society, did a great job during this time. They brought together the very latest research and distilled it into clear and accessible information for the public. This allowed us to be a sensible and trustworthy voice on COVID vaccination. We never told anyone what to do – that was really important. Instead, we made sure people had the best information to make their own decisions. We also did a great deal of work to support our members to have their own discussions with the public, media and their family and friends.

What do you think science has learnt from the pandemic?

Scientists have learnt that they can put competition aside and come together to rapidly solve problems. I didn't expect the scientific community to come together quite as well as it did. In normal times scientists need to compete with each other to be successful. Yet, during the pandemic, data and samples were shared widely and we excelled at collaboration. It was particularly pleasing to see significant papers being published with 50 or more authors, with the research itself carried out unbelievably quickly.

What are the biggest challenges that the field of immunology still needs to overcome?

We need to persuade more younger people there is a career in immunology. Academia is an uncertain path with job insecurity, though it is a rewarding and fascinating career for those who pursue it. An immunology degree can also lead to many other careers; there is interesting work in healthcare, industry, grant giving bodies, policy work and in the media. We need to do more to communicate this to people at an early age so they can find immunology as a career.

Another major challenge is to encourage different ethnic groups to study immunology. Despite seeing ethnic diversity in those studying science degrees, there still are very few people from minority groups in senior positions in immunology – or indeed – wider science. The BSI is working hard to change this, and this is one of the aims of our recently published Diversity and Inclusion framework – which will help us strive to foster a culture within immunology that ensures that fair treatment and opportunity for all no matter their gender, ethnicity, other factors or background.

I haven't talked a lot about my own ethnicity, but I do hope that by being President of the BSI, I have inadvertently opened the door to others. I hope other people from minority ethnic groups will be encouraged to apply for senior positions in science.

Why should researchers from all sectors and backgrounds engage with the BSI?

Immunology will make the greatest advances if people from many different disciplines and backgrounds work together. We need academia, industry and clinicians to come together, but that won't happen without encouragement. The BSI has an essential role here as the glue to bring all the strands of immunology together as a whole. Bringing clinicians and industry, in particular, into our activities and our membership is very important for immunology as a sector to thrive.

After giving oral evidence to the House of Lords Science and Technology Committee inquiry on 'Ageing: science, technology and healthy living'.

With Dr Doug Brown, BSI Chief Executive at the Connect Immune Research launch event.

How important is international work to the BSI?

It was a priority for my time as President to make sure that BSI had a greater international reach. For a small country, our immunology research packs a big punch and the calibre of UK immunology is world renowned. I wanted to integrate our immune experience in the UK with that of the rest of the world and I think we are achieving this. Our work is supporting the British immunology community to build collaborative links around the world, and in fact I have just returned from trips to Singapore and the US. We chair the European Federation of Immunological Societies' Vaccine Task Force, bringing together stakeholders from around Europe to share best practice in improving vaccine uptake.

> 'Immunology will make the greatest advances if people from many different disciplines and backgrounds work together. We need academia, industry and clinicians to come together, but that won't happen without encouragement. The BSI has an essential role here as the glue to bring all the strands of immunology together as a whole.'

You joined the BSI in 1978, can you tell us how being a member has supported your career?

Attending the BSI Congress has always been incredibly important to me. These get-togethers include junior and senior researchers and see people from all areas of immunology coming together to share ideas. I always felt included, felt welcomed – and they were the best meetings I went to every year. It is these events that really made me feel part of the BSI throughout my career and made me want to give back to the Society.

What advice would you give to someone embarking on an immunology career today?

You have to be driven by curiosity; everything else is secondary. Find something you are interested in and give it a go, have the courage to take it forwards. Embrace the excitement – if you are not excited by it, don't do it.

It is also important to know that you don't need to be conventionally disciplined and serious to have a career in immunology. I wasn't a stellar academic all the way through my education. I could have been described as bad boy at school, but I was curious and fascinated by science. I can see now that having a slightly undisciplined mind is an advantage that helps me go in a different direction and see things differently from my peers.

Any advice to the next BSI President?

I am delighted that Tracy Hussell will be taking over as President; I have known her for a long time and know how able she is. She will bring her own style to the role and I really look forward to seeing what she delivers. I wish her all the best and have total confidence that the BSI will go from strength to strength under her leadership.

Interview by **Claire Bithell**

Inaugural issue of *Discovery Immunology*

We're delighted to present the inaugural issue of *Discovery Immunology*, our new Open Access journal publishing high-quality research on novel mechanisms controlling the immune response. The editorial team, led by Professor Simon Milling, have been working hard over the past year to bring you a collection of high-quality articles from leading researchers. Here, *Discovery Immunology*'s editors take us through the cutting-edge articles featured in the inaugural issue.

Changing the rules of TCR engagement

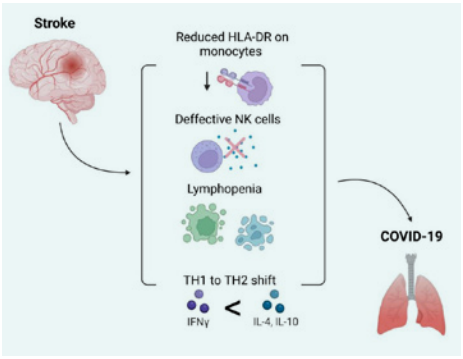
Jade R Hopkins, Bruce J MacLachlan, Stephen Harper, Andrew K Sewell & David K Cole
https://doi.org/10.1093/discim/kyac001

Professor Simon Milling, Founding Editor-in-Chief, said:
"I'm very pleased that our first issue includes this thought-provoking review which describes how our understanding of MHC I:peptide complexes (pMHC) needs to consider that both the peptide and the presenting MHC molecules are flexible. This flexibility affects how the pMHC complex is recognised by the T cell receptor and can have a significant influence on the outcome of the T cell response. The article describes interesting molecular mechanisms and places them in the wider context of their effects on the immune response. It represents a fantastic example of the type of work I'm looking forward to reading in future issues of *Discovery Immunology*."

Stroke-induced changes to immune function in severe COVID-19

Laura McCulloch, Isobel C Mouat, Kieron South, Barry W McColl, Stuart M Allan & Craig J Smith
https://doi.org/10.1093/discim/kyac004

Dr Emily Gwyer Findlay, Senior Editor, said:
"We know that after a stroke, patients are more likely to suffer worse infections. In this article, the authors describe the immunological mechanisms behind this observation and discuss what this means for COVID infections in particular. I'm excited to highlight this article which is at the interface of neuroimmunology and infection biology, and which is hugely interesting to consider medically and for policy perspectives. I hope we can develop this theme at *Discovery Immunology*!"



Looking into the IL-1 of the storm: inflammasomes in cytokine storm syndromes

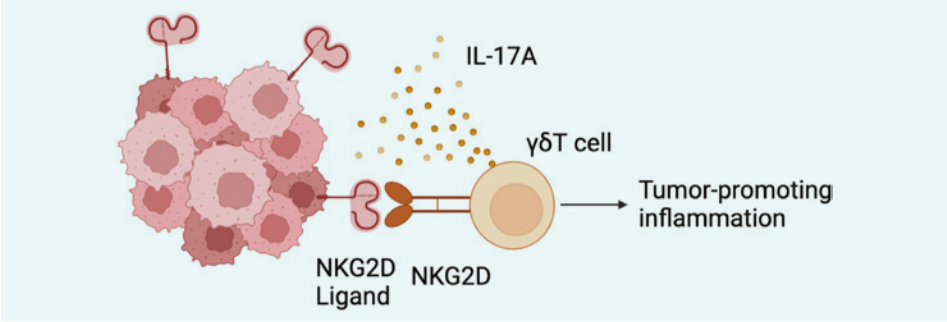
Tara A Gleeson, Erik Nordling, Christina Kaiser, Catherine B Lawrence, David Brough, Jack P Green & Stuart M Allan
https://doi.org/10.1093/discim/kyac005

Dr Lai Guan Ng, Senior Editor, said:
"This fascinating article describes the connection between cytokine storm and thrombosis in hyperinflammatory disease and discusses the potential relevance of inflammasomes and interleukin-1 cytokines as crucial mediators and therapeutic targets. Future investigations into the relationship between cytokine storm and disseminated intravascular coagulation, including the development of biomarkers, mechanistic studies, and patient management, will be essential, and we look forward to publishing more research on the topic."

Unconventional T cell signalling through NKG2D can promote cancer progression

Sophie Curio, Sarah C Edwards, Toshiyasu Suzuki, Jenny McGovern, Chiara Triulzi, Nagisa Yoshida, Gustav Jonsson, Teresa Glauner, Damiano Rami, Robert Wiesheu, Anna Kilbey, Rachel Violet Purcell, Seth B Coffelt & Nadia Guerra
https://doi.org/10.1093/discim/kyac002

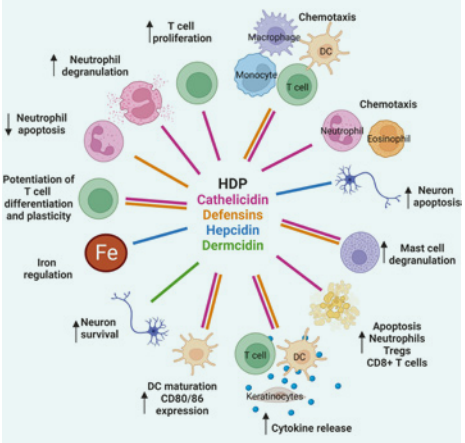
Professor Awen Gallimore, Senior Editor, said:
"Adding to our knowledge of how the NKG2D response shapes tumour development and growth, this new study shows that NKG2D signalling instigates a pro-tumour function of γδT cells in the tumour microenvironment. These important findings reveal a new function of NKG2D on γδT cells in driving tumour growth and metastasis. They also underpin the crucial importance of understanding how features of the tumour microenvironment and niches within it affect the behaviour of immune cells, so that new therapies can be designed accordingly. I can't wait to see more cutting-edge cancer research coming across my desk."



Antimicrobial host defence peptides: do they modulate immune responses in the CNS?

Katie J Smith & Emily Gwyer Findlay
https://doi.org/10.1093/discim/kyac003

Professor Fran J Quintana, Senior Editor, said:
"This article explores the intriguing potential roles of antimicrobial host defence peptides (HDPs) in the CNS. This is an important subject, because although HDPs are usually studied in the context of their antimicrobial activity, they possess immunomodulatory activities which suggest multiple roles in the regulation of the immune response in the CNS in health and disease. We look forward to receiving more manuscripts in this exciting area of neuroimmunology!"



The conflicting roles of IL-33 in fibrotic disease

Samuele Di Carmine, Molly M Scott, Mairi H McLean & Henry J McSorley
https://doi.org/10.1093/discim/kyac006

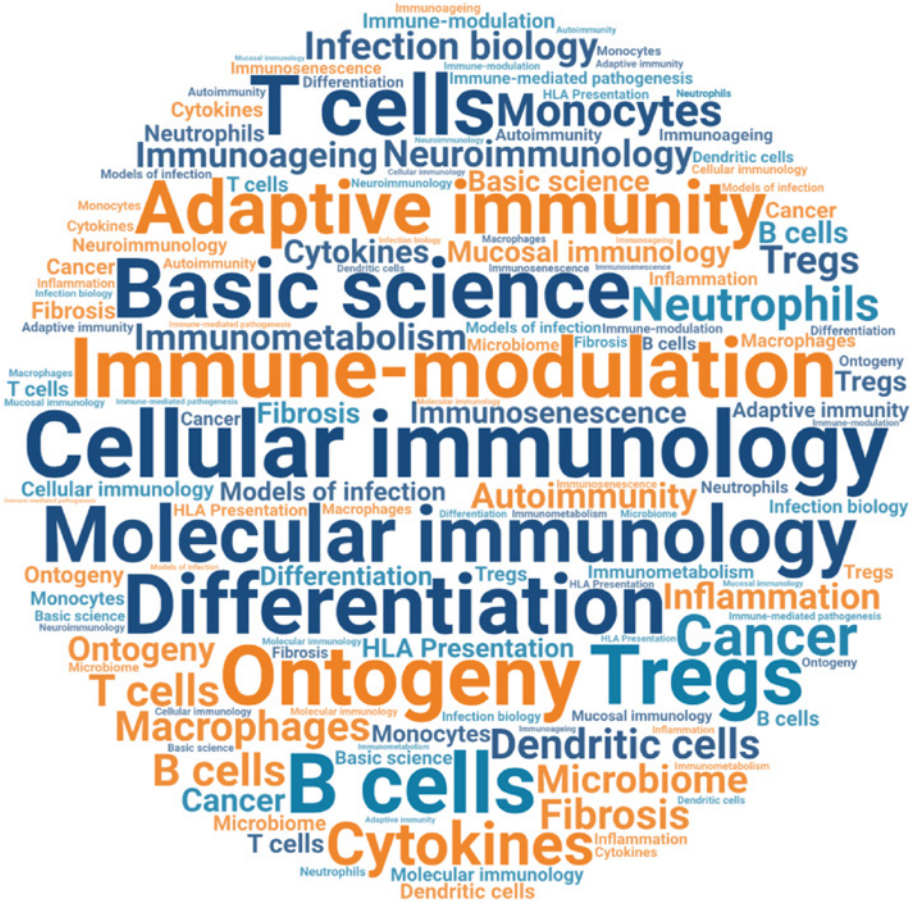
Dr Meera Ramanujam, Senior Editor, said:
"This review expertly summarises the complexity around the role of IL-33 in different organ fibrosis. The role of IL-33 as an anti- or pro-fibrotic cytokine is unclear and dependent on tissue, species and more importantly on other factors that work in unison. A detailed understanding of the protective or detrimental effect of the role of IL-33 in different stages and different organ fibrosis is absolutely required to position or not the various anti-IL-33 agents for fibrosis. We look forward to receiving articles that address the role of IL-1 family members in fibrosis and articles that address the interplay between immune and fibrotic mechanisms."

BSI journals: Find a home for your next paper

Are you considering where to submit your next paper? With rapid turnaround times, excellent author service and backed by the strong reputation of the BSI in promoting excellence in immunology, one of your Society's journals could be the perfect home for your next article. The BSI publishes three peer-reviewed journals in partnership with Oxford University Press. Our family of journals includes fully Open Access journals, *Discovery Immunology* and *Immunotherapy Advances*, and our long-standing hybrid journal *Clinical & Experimental Immunology*. The scopes of our journals have been developed through close and collaborative communication between their Editors-in-Chief to offer a home for papers from the widest range of immunologists, from those performing fundamental basic research, through more translational work, to studies of potential therapeutics and human clinical trials. Visit **immunology.org/journals** and discover where you research fits within the scopes of our journals.

BSI member discount

We are proud to offer BSI members a discount on publication fees. Those submitting to our hybrid journal, *Clinical & Experimental Immunology*, receive a 33% discount on Open Access charges. For our fully Open Access journals, *Discovery Immunology* and *Immunotherapy Advances*, we offer authors a discounted fee of £1,680.



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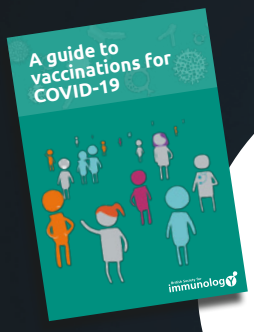

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Public engagement during my PhD:
my experience as an intern at the BSI

At the BSI, we offer an internship scheme for graduates interested in exploring the career possibilities available within learned societies. In August 2022, Holly Acford-Palmer joined the BSI team as an intern to work on important public engagement activities over three months, as part of a placement during her PhD. Here, Holly shares some of the highlights and learnings during her time.


Holly Acford-Palmer at the Cambridge Big Biology Day.

In autumn 2021 I entered the third year of my PhD, moving past the halfway point in my funding and knowing I had to find my Professional Internships for PhD Students (PIPS) placement. PIPS are three-month placements conducted by BBSRC-funded PhD students. Other UKRI-funded doctoral training programmes have their own versions, but all have the three-month internship integrated into their funding timelines. The only rule is that it must be unrelated to your PhD project.

Expanding career pathways

My project is on the genomics of neglected *Anopheles* mosquitoes, specifically vectors of the malaria species *Plasmodium vivax*. My background is predominantly microbiology, with a side of immunology. I previously had the chance to get involved with public engagement around the gut microbiome while working as a project scientist, which kick-started my interest in public engagement and science communication, which is how I ended up at the BSI.

I knew who the BSI were but hadn't had any interactions with them. Having seen the internship scheme on their website, it sounded like a great opportunity to do some more public engagement and get experience in a charity/learned society. So, I applied, and here I am!

My main role, initially, was to update vaccine engagement resources; this covered existing COVID-19 vaccine resources such as the COVID-19 vaccination in pregnancy infographic and the guide to COVID-19 vaccinations. This also led into the creation of new resources, such as infographics around polio vaccination and the autumn 2022 COVID-19 booster programme. Alongside these, I've helped to finish a guide to older adults' vaccines due to be published soon after finishing my internship in November.

Engagement is key

In recent years, childhood vaccination rates in England have been falling, and the disruption from COVID-19 and increasing spread of vaccine misinformation have had a negative effect on these. This shows the importance, more than ever, of engaging with the public to have open conversations about how vaccines work and why they are so important! As we've seen recently with polio virus detected in sewage water in some London boroughs, diseases we thought confined to history can come back to haunt us if we don't continue to actively encourage vaccine uptake. All of this has highlighted the importance of my work over the past three months and made this experience feel worthwhile.

Outside of the vaccine resources, I had the opportunity to help organise a public engagement event at Cambridge Big Biology Day, which gave me the chance to build some project management skills. We built origami viruses and antibodies, used magnets to demonstrate antibody/antigen specificity, and had a pathogen treasure hunt to show the variety of micro-organisms that can cause disease. Breaking complex scientific concepts in a way that everyone can understand is the basis of public engagement, and the reason I applied for the internship scheme at the BSI. It was great to experience it with such an enthusiastic audience and excellent volunteers!

Networking and tweeting!

Throughout my time, I've also seen the different aspects of public engagement such as enabling other people to communicate science by assisting the BSI Communication and Engagement Grant process (www.immunology.org/communication-engagement-grant). I attended the National Core Studies Immunity Patient and Public Involvement panels where representatives of different patient groups get to hear about the latest research around COVID-19 and feed back directly to researchers about the wider implications of their research.

‘Breaking complex scientific concepts in a way that everyone can understand is the basis of public engagement, and the reason I applied for the internship scheme at the BSI.’

I also got the chance to attend BSI Forum meeting, where BSI membership representatives discuss topics important to people working immunology around the UK. Plus, I learnt how to write social media posts – keeping to 280 characters is harder than it seems!

A big BSI welcome

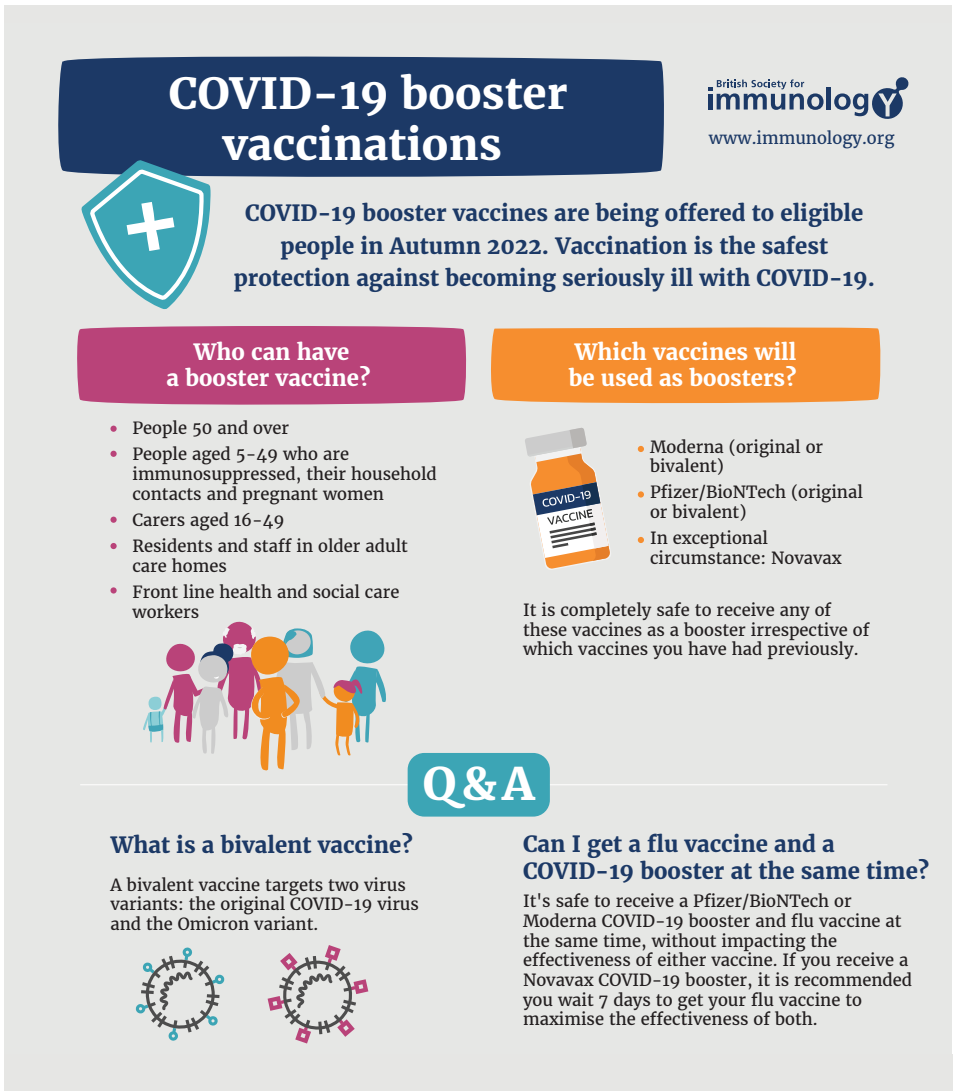
One of the best things about the BSI is the people! I’ve had the chance to interact with members, Trustees and whole BSI team. In particular, Erika, the BSI Public Engagement Manager who has been very supportive and helpful throughout my time here. But the rest of the team have also been incredibly welcoming, helpful, and the breadth of the work they do is amazing. In three months, a new journal has been launched, alongside a new membership system and website, while BSI Congress 2022 is fast approaching, and among the countless other things.

To see all the BSI does has been a great experience. To see the inner workings of a learned society, and yet with a relatively small team running everything, it meant getting an insight into how these different areas function and interact was possible. My previous career experience has been heavily laboratory focused, and this internship has showed me, I can still be involved in science without being the one doing it! I was aware of the wide variety of roles I could go into post-PhD, but this internship has given me an insight as to what those jobs could entail day to day, which has been an invaluable experience. And one I would recommend to anyone!

Holly Acford-Palmer, PhD Student, London School of Hygiene and Tropical Medicine/University College London

“An internship with the BSI can be beneficial for PhD students wanting to explore career options outside of academia and gain experience within a learned society while developing transferable skills, including science communication, public engagement, event management and relationship building with various stakeholders. If you’re keen to learn new skills and want to champion immunology, a BSI internship might be for you! Holly was a pleasure to work with and supported impactful public engagement projects aligned with our aim to help everyone make informed decisions about their health.”

Erika Aquino,
BSI Public Engagement Manager



BSI internship scheme

We are looking for graduates with good organisational skills who are willing to undertake a range of diverse tasks. This internship scheme is open to candidates who are BBSRC-funded PhD students looking to undertake a ‘Professional Internship for PhD students (PIPS)’ as part of their Doctoral Training Programme within the life sciences. Find out more: **www.immunology.org/bsi-internship-scheme**.

Public engagement resources

- Guide to COVID-19 vaccinations: www.immunology.org/guide-vaccinations-covid-19
- COVID-19 vaccination in pregnancy infographic: www.immunology.org/covid-19-vaccine-infographic-pregnancy
- Polio booster infographic: www.immunology.org/polio-booster-vaccinations
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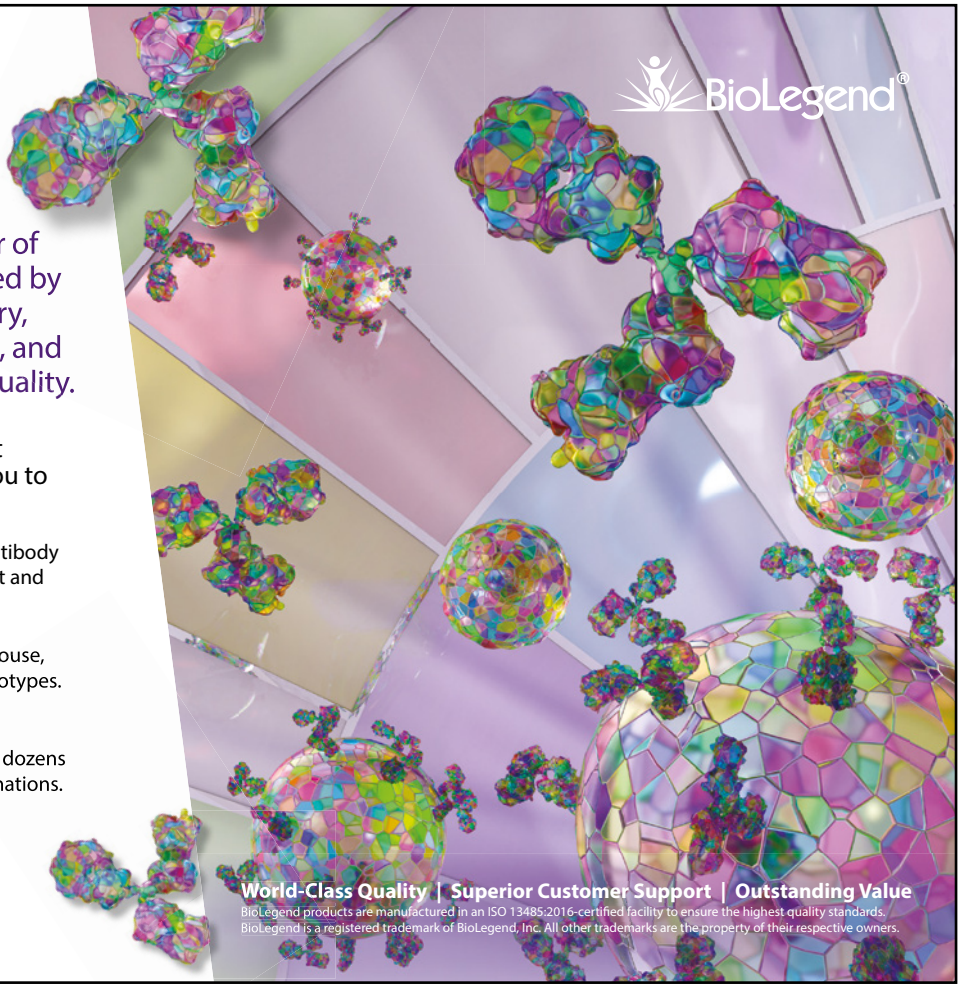

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Congratulations

This is the section of the magazine where we celebrate the achievements of our members. Our congratulations to all who are mentioned here.

BSI Communication & Engagement grant scheme

The BSI is delighted to fund the following projects.

Dr Arjuna Singanayagam, from St George's University of London, has been funded for their project 'Understanding the Immunology of Adult Autoimmune Liver Diseases' to develop and deliver a collaborative University/Hospital Trust in-person event to educate patients diagnosed with an autoimmune liver condition and answer their questions as well as set up a basis for a patient support group.

Dr Rebecca Aicheler, from Cardiff Metropolitan University, will be working directly with primary schools located in deprived areas of South Wales to communicate an understanding of the immune system in a fun and interactive way to children who would not normally have the opportunity. The 'Reach Out! Interactive Immunology for Schools in the Welsh Valleys' project will increase understanding of infectious diseases, the immune system and how vaccines protect from disease.

Dr George Robinson, from University College London, will use the funding to develop a fictional cartoon character-based learning approach to indirectly address the key aspects of the immune system. The 'ImmuNinjas: a new way to make immunology accessible to all' project will provide a metaphorical story-based method to learning how the immune system works.

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Dr Lana Woolford, from Cloud Chamber Studios, has been funded for their project 'Evaluating public understanding and engagement with digital COVID-19 immunology resources' to understand how to create effective animated public resources for communicating immunology. The group will evaluate a three-part animation series designed to provide accurate COVID-19 immunology learning for people exploring the public information gap between policy and research.

We have revamped and updated our public engagement grant scheme to support our members' activities in all formats. The BSI Communication & Engagement grant scheme was previously known as the BSI Communicating Immunology grant scheme. The next deadline is 1 February 2023. Please get in touch with Erika Aquino for guidance or with any questions. For more details, visit www.immunology.org/grants-and-prizes/bsi-communication-engagement-grant.

PhD viva success for BSI Forum representative

Congratulations to BSI member and BSI Forum PhD representative **Dr Niamh Richmond** (Kennedy Institute of Rheumatology) who successful defended her thesis entitled 'Pulmonary cell signals mediating resident memory B cell responses to influenza rechallenge' recently.

Immunology Undergraduate Prizes

Congratulations to the winners of our 2022 undergraduate prizes which recognise excellence in the study of immunology at undergraduate level, and encourage outstanding students to pursue further postgraduate study, or a career in immunology. Each prize winner will be awarded a certificate, £100, and one year's free membership of the British Society for Immunology.

National Teaching Fellowship award

Warm congratulations to previous BSI Teaching Excellence Award winner, **Dr Nigel Francis**, who was the recipient of a National Teaching Fellowship from Advance HE. This scheme celebrates and recognises individuals who have made an outstanding impact on student outcomes and the teaching profession in higher education.

RSB Outreach and Engagement awards

The RSB Outreach and Engagement awards celebrate outreach work carried out by bioscience researchers who inform, enthuse and engage the public. This year, the winner of the Outreach and Engagement Award for Leadership was **Dr Bnar Talabani** who has been actively involved in the BSI's public engagement work on COVID-19 vaccines. The warmest congratulations from all at the BSI on her well-deserved achievement.

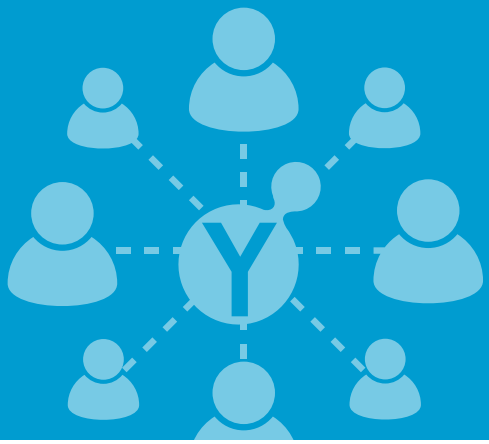
New appointment at Imperial College London

Congratulations to BSI member, **Professor Cecilia Johansson** who was promoted to Professor of Mucosal Immunology at the National Heart & Lung Institute at Imperial College London.

We would love to hear from you about your achievements. Have you or a colleague recently received grant funding, passed your PhD viva or accepted a new appointment? If so, let us know by emailing **media@immunology.org** or tagging **@britsocimm** on Twitter.

Corporate Members

The British Society for Immunology runs a Corporate Membership scheme with the aim of strengthening our relationship with industry and furthering our charitable objectives. We thank our Corporate Members for their support and contribution to scientific and clinical immunology and we are pleased to highlight their activities here. Corporate support is vital to the British Society for Immunology, enabling us to engage with immunologists to support their learning and advancing the science of immunology. For more information on the scheme, visit **www.immunology.org/corporate-members** or contact Jane Sessenwein at **j.sessenwein@immunology.org**.



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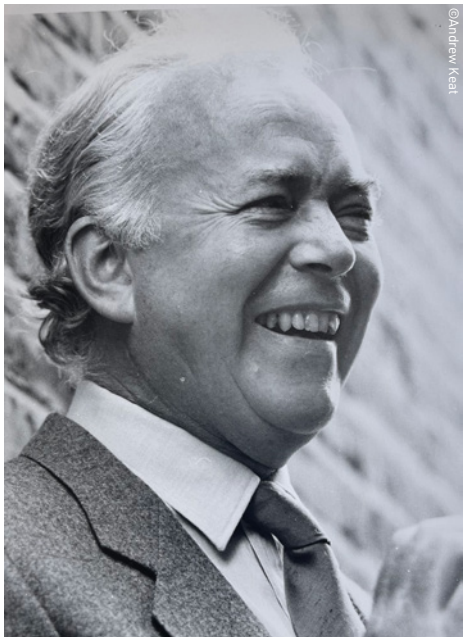
Anthony John Swainson Davies
1932–2022

Anthony (Tony) John Swainson Davies, immunologist and mentor, died on 8 August at the age of 90. He was one of the visionaries that established the foundations of modern cellular immunology as the field developed in the 20-year period from 1960 to 1980. It is no exaggeration to state that once the thymus was identified as being critical for immune function in the mammal, Tony laid the path for discriminating the thymus as the origin of the T cells circulating in the periphery in addition to identifying their essential role providing help for B cell function. He never stopped working, never stopped thinking, about immunology. He continued publishing articles even in 2020 addressing the immune response to SARS-CoV-2, based on his more than 60 years of experience as an immunologist.



Tony had an intense thirst for knowledge, a profound love of biological mechanism in all its manifestations, an irrepressible love for sharing and exchanging insights, all combined with a responsibility to get the story right while respectfully guiding all those around towards the truths he knew to be so. And all this was coupled with an irrepressible and sometimes edgy sense of humour.

Born in Chesterfield, Derbyshire on 12 March 1932, Tony earned a bachelor's degree in Botany at the University of Manchester in 1952 and, following National Service in the Royal Air Force, returned to Manchester graduating with a PhD in plant cytogenetics in 1958. He was recruited to Prof Peo Koller's Department of Cytogenetics at the Chester Beatty Research Institute in London, a constituent of the Institute of Cancer Research (ICR) with strong ties to the adjacent Royal Marsden Hospital.

At that time, immunology as a discipline was realistically a subsidiary of pathology or clinical microbiology with focus upon viral diseases, vaccines, and antisera, a direct result of the effective poliovirus vaccines developed independently by Salk and Sabin. It was into this environment that Tony entered as postdoctoral researcher. In Koller's department, a PhD student, Jacques Miller, established that the thymus was essential for immunocompetence. There is an apocryphal story about a rail journey to a conference that Tony made with Jacques Miller, during which they argued about how the thymus acted: Miller espoused a humoral role, while Tony was for production of lymphocytes.

In 1963, while still at the Chester Beatty, Jacques Miller published an article in *Nature* entitled 'Evidence for a humoral thymus factor responsible for the maturation of immunological faculty'. A year later, also in *Nature*, Tony published a short report entitled 'A cellular component of thymic function'. In this latter article, the first real evidence for thymic emigrant cells restoring immunocompetency was presented.

In the articles coming from Tony's group from 1964 onwards to 1967, there is often a discussion giving room to the humoral hypothesis despite his results clearly supporting thymic lymphopoiesis. With hindsight, we can imagine that this was a prerequisite for publication, acknowledging the uncertainty in the field but, knowing Tony, one can sense his likely frustration of having to address what to him should now have been a footnote to canon. He was committed to the cellular hypothesis.

Two articles from Tony's group stand out in this period, both in *Transplantation*. The first, in 1966, demonstrates unequivocally that cells from a neonatal thymic graft may form only a minor percentage of cells in the host peripheral immune organs but upon antigenic challenge or attachment of an allogeneic skin graft the cells responding by proliferation in the periphery were of thymic origin with the same observation upon secondary challenge. This report was a robust elaboration of the earlier 1964 article and provided incontrovertible evidence that antigen-responding immune cells were of thymic origin. The second article, published in 1967, was a truly elegant approach designed to differentiate cells of differing origin in an age before monoclonal antibodies, molecularly defined cell surface antigens, FACS cell sorting and genome-encoded fluorescent labels. As Tony relates, "These experiments were first completed and spoken of at an international conference at the Institute of Cancer Research in London in 1965. They were greeted with polite scepticism and had little impact at that time…Formal publication of these experiments was delayed partly, I suspect, because the contemporary referees were unable to deal with something that contradicted the monophyletic notion of lymphocytes in the immune response."

In one fell swoop, Tony and colleagues had demonstrated that lymphocytes of thymic origin (T cells, of course) cannot produce antibody, but they provide

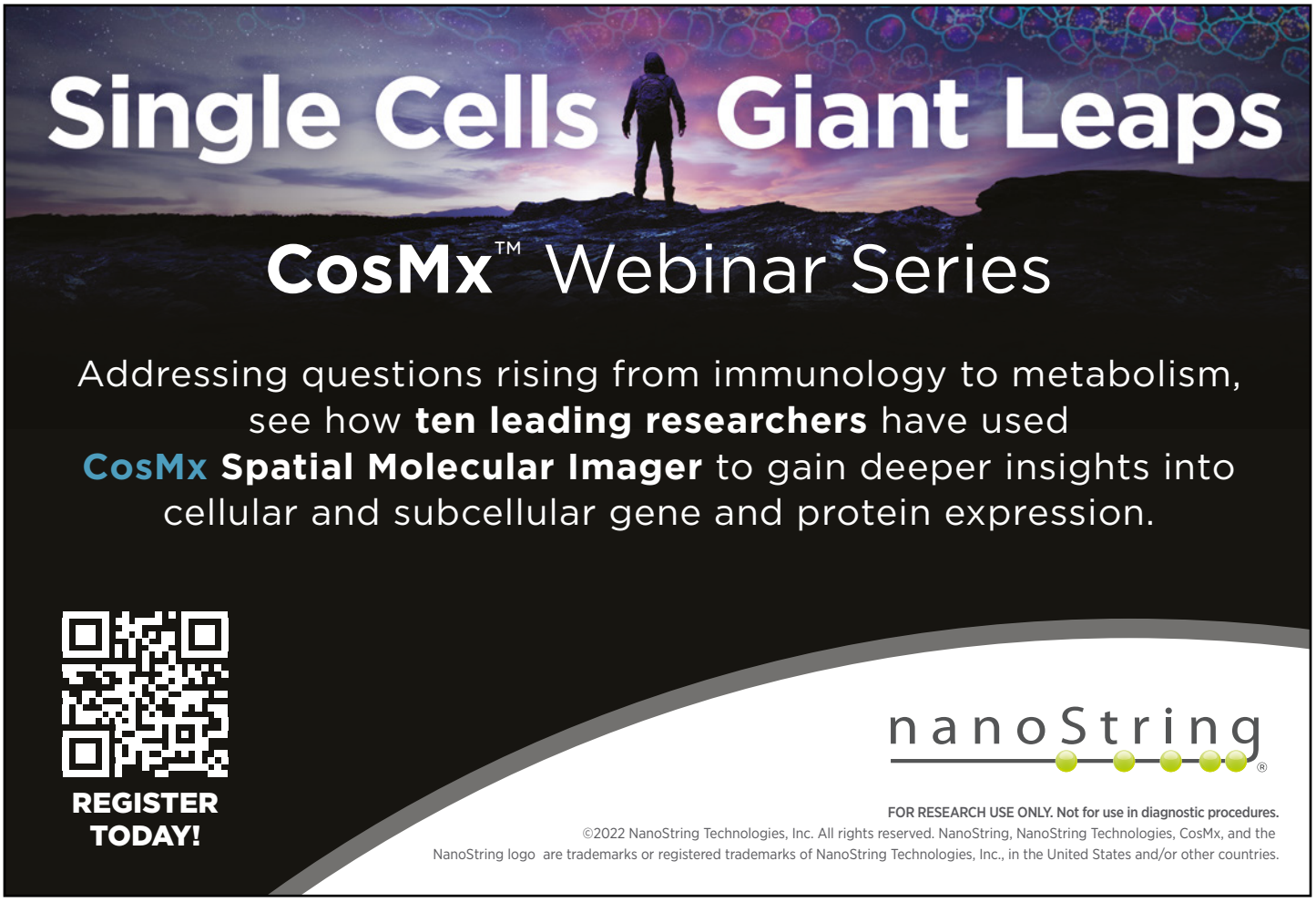
'There is an apocryphal story about a rail journey to a conference that Tony made with Jacques Miller, during which they argued about how the thymus acted: Miller espoused a humoral role, while Tony was for production of lymphocytes.'

help for lymphocytes of bone marrow origin (B cells) thus identifying not only independent lymphocyte functionalities but also their necessary co-operativity. The following year, a series of three consecutive articles in the *Journal of Experimental Medicine* by Graham Mitchell and Jacques Miller demonstrated, using similar techniques, exactly the same phenomena. Remarkably, even in a review by Av Mitchison in 2004, multiple groups are given credit for demonstrating T–B cooperativity, with 1968 being described as the pivotal year for this functionality, but nowhere are the earlier results of Tony and his group given recognition or credit. Between 1967 and 1974, Mike Doenhoff joined Tony's laboratory as a PhD student. Mike was the second student to have his PhD directly supervised by Tony, preceded by Elizabeth Leuchars, though he subsequently mentored many more. In a remarkable series of papers spanning a decade, Mike and Tony exploited the mouse T6/T6 marker chromosomes, and using a lymphocyte *in vitro* culture system developed by Hilliard Festenstein showed that the blood cells responding to phytohaemagglutinin (PHA) were thymus-derived, which in turn provided an opportune and incontrovertible marker for T cell identification prior to the routine use of Thy-1 and subsequent CD markers for cell characterisation. Using the T6/T6 markers and/or ^{3}H-thymidine incorporation together with generation of mitotic T cell populations using PHA, Tony, Mike and colleagues were able to enumerate organ representation and kinetics of T cells during immune responses and during development and ageing. Tony referred to these articles as "the most satisfying of my career".

Tony helped supervise a total of 22 PhD, MPhil, MD, and MS (Surgery) students, was an external examiner for 33 PhD students globally, and was a visiting examiner for BSc degrees at seven University of London Colleges and Medical Schools. Deciding upon retirement in 1991, Tony was appointed Emeritus Professor of the University of London whereupon he continued to challenge himself academically, becoming a consultant especially to groups needing help in navigating grant applications through successive cycles of the massive European Union Framework funding mechanism. He served on Scientific Advisory Committees including the Prostate Cancer Research Centre at King's College (1999–2019) directed by Dr Aamir Ahmed, who became a close friend. He also became highly involved together with Prof Max Murray in ventures aimed at using natural organic preparations designed to promote wellbeing in horses and later extended to other species. Tony's colleagues, students, mentees, and collaborators feel as a group that he probably didn't receive the proper recognition he deserved for his early work on defining the elements of adaptive immunity. He never really talked about it – for several reasons. First, he was generous; this is clear from his recollections of that critical time published in 1993. He respected his colleagues and was appreciative of their science and insight. He could be sharp and incisive with words, but never with malice. Usually, such words were delivered with a twinkle in his eye. He enjoyed life – he had much to do and didn't have the time to mull over the past and harbour grudges. He has left a lasting impression on all who knew him, and he will be sorely missed.

Collated by **Dr Jonathan S. Duke-Cohan** on behalf of his colleagues

An extended version of this article is available online, including the memories and reflections of several of his students, mentees and colleagues, along with footnotes.



Professor Michael Sela
1924–2022

The BSI was saddened to learn about the recent death of Professor Michael Sela. He was President of the International Union of Immunological Societies (IUIS) from 1977 to 1980, making significant contributions to the field over decades.

Professor Michael Sela, 2016

Michael Sela, renowned Israeli immunochemist and major figure in international immunology died at the age of 98 on 27 May 2022, just one month after the death of his colleague Professor Hugh McDevitt (28 April 2022). Together they largely founded the field of the genetic control of the immune response with their seminal *Journal of Experimental Medicine* paper (1965, 122: 517–531) 'Genetic control of the antibody response. I. Demonstration of determinant-specific differences in response to synthetic polypeptide antigens in two strains of inbred mice'.

Sela was born in Poland in 1924 and named Mieczyslaw Salomonowicz, later changing this to Michael Sela. He grew up in the courtyard of his father's textile factory but, as antisemitism worsened, the family moved, first to Romania and finally to Palestine – at the time the British administered League of Nations Mandate for Palestine, in 1941. Following a short period of detention, the young Sela worked as a weaver producing gauze for the British military and then the same year entered the Hebrew University in Jerusalem to study chemistry, obtaining his Master's degree in 1946. Intending to specialise in synthetic polymers and dyes he pursued his doctoral studies in Geneva but, passionate about the formation of the State of Israel, he moved to Italy where he helped European Jews, mostly Holocaust survivors, travel to Israel. Although his immediate family escaped to Israel many of his relatives were killed by the Nazis. When Israel's independence was declared in 1948, he became a commercial secretary in the Israeli legation in Czechoslovakia. When I first met Michael, in the early 1970s at his international course in immunochemistry for young immunologists at the kibbutz Nof Ginnosar, I could not fail to be enthused by his passion for immunology but also by his delight in showing us around the historic and beautiful features of his adopted country.

In 1950 Sela returned to science, and to Israel, enrolling at the Weizmann Institute for his chemistry PhD with the biophysicist Professor Ephraim Katzir, who was later to become President of Israel. Katzir was a pioneer in synthesising defined polypeptides as a means to discovering the properties of proteins. Sela worked on polytyrosine (a chain of phenols) and poly-*p*-aminophenylalanine (a chain of anilines) and reasoned that he would be able to produce polypeptidic azo dyes from them. In his reading he encountered the work of Karl Landsteiner on attaching haptens to proteins via an azo bond. Studying Landsteiner's classic book, *The Specificity of Serological Reactions*, he learned that gelatin was not antigenic and that this was speculated to be due to the lack of tyrosines. Intrigued, Sela and Ruth Arnon showed that coupling tyrosines to gelatin enhanced immunogenicity without altering specificity. This led to a fascination with what constituted an antigen and the concept that immunogen was different from antigen, and immunogenicity was different from antigenicity. From then on Sela was an immunochemist rather than simply a chemist. Much of what we now know about immunogens stems from the work of Sela and his students.

Synthesising defined polypeptides as antigens, in contrast to whole proteins, Sela was able to dissect the immune response. In work with John Humphrey using Sandylop and Himalayan rabbits, and with Hugh McDevitt on inbred strains of mice, Sela established the existence of immune response genes. Although principally a basic scientist Sela made enormous contributions to human health. Working with Ruth Arnon, Sela was able to prevent the induction of experimental autoimmune disease – experimental allergic encephalomyelitis – by administration of a positively charged polypeptide leading to his development of the revolutionary drug Copoxone for the treatment of multiple sclerosis.

Sela published more than 800 articles, chapters and books. He spoke nine languages, was a strong supporter of the arts in Israel and chaired several artistic organisations. His first wife Margalit Liebman who he married in 1948 died in 1975. The following year he married Sara Kika, who survives him, together with his daughters Irit and Orlee from his first marriage, and Tamar from his second.

An inspiring teacher, a recipient of numerous international awards, Michael Sela was fundamental to the development of modern immunology and immunotherapy.

Frank C Hay
Emeritus Professor of Immunology
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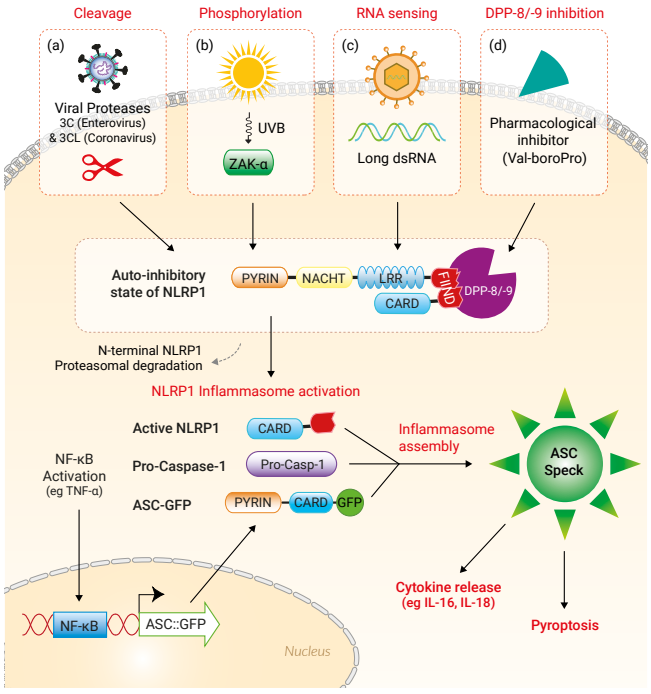

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Immune Update

The BSI journals

A round-up of new research published in the British Society for Immunology's official journals written by ECR board members of *Clinical & Experimental Immunology*. Members can access these journals free of charge at **www.immunology.org/journals** and benefit from discounted publication fees.

Discovery Immunology

IL-33 in fibrosis; the jury is still deciding

Interleukin-33 (IL-33) is one of the most recently described cytokines and its expanding role in various physiological and pathological processes remains an active subject of debate. In this review, Di Carmine *et al.* provide an excellent summary of the literature around the role of IL-33 in fibrosis.

Fibrosis is an aberrant wound healing response caused by proliferation and remodelling of the extracellular matrix (ECM) but also chronic inflammation. Here, the authors describe various studies showing the bivalent role of IL-33 in different organs. Whilst IL-33 can be pro fibrogenic in the lungs and liver, its role during fibrosis is still unclear in the gut, skin and kidney, and IL-33 seems protective in the heart by protecting cardiomyocyte death.

The authors highlight the use of translational models such as human organoids to better understand IL-33 in humans. Finally, they mention the careful use of blocking anti-IL-33 antibodies in clinical trials and how the latter could impact fibrosis.

Di Carmine *et al.* 2022 *Discovery Immunology* **1** kyac006 **https://bit.ly/3CTr0cZ**
Summary by Dr Régis Joulia, Imperial College London

Clinical & Experimental Immunology

Immunopathology of the optic nerve in multiple sclerosis

Optical neuritis (ON), an acute inflammatory condition of the optic nerve leading to visual disturbances and eventually to visual loss, is a common clinical manifestation in multiple sclerosis (MS). ON is thought to occur as a consequence of demyelination of the optic nerve; however, the immunopathology of the optic nerve during MS is not well understood.

In a recent study, Fernández Blanco *et al.* assessed optic nerve pathology in 154 MS cases and characterised marker expression of innate and adaptive immune responses within in the parenchyma, meninges and the perivascular regions in the optic nerve in a sub-cohort of 30 MS and 6 non-neurological control cases.

The study discovered that inflammation is present in the optic nerve lesions in MS while the pathology, as well as microglia/macrophages profiles, is similar to brain and spinal cord lesions. Further, the authors reveal that optic nerve pathology is a frequent phenomenon and optic nerve lesions present in the absence of clinical symptoms.

Fernández Blanco *et al.* 2022 *Clinical & Experimental Immunology* **209** 236–246 **https://bit.ly/3eLSOrT**
Summary by Dr Franze Progatzky, The Francis Crick Institute

Immunotherapy Advances

De-risking clinical trial failure through mechanistic simulation

Around 54% of therapeutic drugs being tested fail in late-stage clinical development, costing the pharmaceutical industry billions each year. One strategy to reduce the risk of drugs trials failing would be through clinical trial simulation, combined with mechanistic modelling, which would allow you to test hypotheses for mechanisms of failure and to improve trial designs.

In this study, Brown *et al.* tested their hypothesized mechanism of action for IMA901, a short-peptide cancer vaccine, using *in silico* models of the vaccine site, lymphatics and the lymph node. They found that the results of their simulation were consistent with the outcomes observed in the clinical data; however, there were limitations in the predicted response due to factors like peptide binding and dendritic cell migration.

The authors showed how mechanistic models can complement clinical, experimental, and data-driven studies to understand, test, and improve trial designs.

Brown *et al.* 2022 *Immunotherapy Advances* **2** ltac017 **http://bit.ly/3THIfV8**
Summary by Robyn Taylor, BSI Journals Manager

Around the journals

A summary of some of the latest papers from the world of immunology.

Written by Edd James, Louisa James and Holly Acford-Palmer.

Primary immunity modulates naïve B cells recruitment in secondary responses

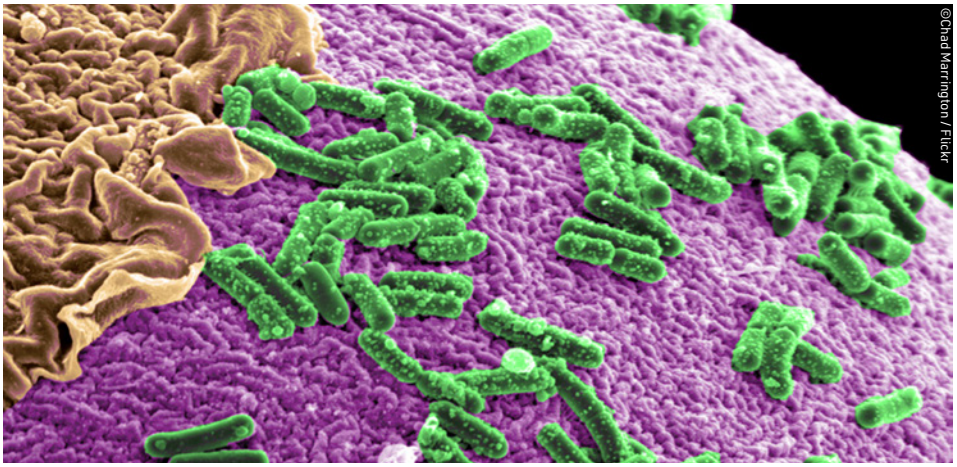
Repeated exposure to an antigen, through infection or booster vaccination, can induce secondary germinal centre (GC) responses, which are largely seeded by naïve B cells. To investigate how primary responses influence secondary GCs, Tas *et al*. immunised mice following the passive transfer of B cells or serum from mice that were either primed (i.e. previously immunised) or unprimed (i.e. naïve).

Depending on the affinity, abundance and epitope specificity of pre-existing antibodies, primary immunisation resulted in either restricted or enhanced recruitment of naïve B cells to secondary GCs. For example, serum containing low-affinity immunoglobulin enhanced secondary GCs whereas the reverse was true for high-affinity immunoglobulin. Importantly immunisation with excess antigen abrogated the inhibitory effects of high-affinity antibody on GC responses.

Understanding how circulating antibodies influence secondary immune responses will aid in the design of booster vaccination regimes that enhance secondary immunity.

Tas *et al*. 2022 *Immunity* **55** 1876–1871

ILC3s select microbiota-specific Tregs to establish tolerance in the gut



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The breakdown of immune tolerance for microbiota is involved in inflammatory bowel disease (IBD) flare ups. Immune cells expressing transcription factor RORγt$^+$ are often a key contributor in the maintenance of this tolerance, or the breakdown into inflammation.

In this study, Lyu *et al*. show in mouse models, group 3 innate lymphoid cells (ILC3s) are key to establishing tolerance to gut microbiota through interactions with RORγt$^+$ regulatory T cells (Tregs) and T helper 17 cells (Th17). By selecting for RORγt$^+$ Tregs and against Th17 cells, ILC3s help maintain tolerance.

In human IBD inflamed tissue samples, interactions between ILC3 and RORγt$^+$ Tregs were altered compared with non-inflamed samples. Quantities of both cells were reduced in areas of inflammation compared with non-inflamed regions.

These results could potentially explain the breakdown of immune tolerance in IBD patients and could identify new therapies, which redirect the immune system to prevent chronic inflammatory responses to gut microbiota.

Lyu *et al*. 2022 *Nature* **610** 744–751

Microbiota-induced Th17 cells protect from metabolic disease

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Metabolic syndrome leads to many pathologies such as cardiovascular disease and type 2 diabetes. Diet is a major factor in the development of metabolic syndrome with a western-style diet (high in fat and sugar) important in its initiation.

Here, Kawano *et al*. show that sugar, but not fat, mediated a change in the gut microbiota which led to the loss of protective Th17 cells. A high-fat, high-sugar diet resulted in the loss of segmented filamentous bacteria (SFB), which induced Th17 cells, leading to protection through the regulation of lipid absorption dependent on IL-17. Interestingly, it was sugar together with ILC3, and not fat, that was shown to promote growth of Erysipelotrichaceae leading to the displacement of Th17-inducing commensal SFB.

These findings provide valuable insights into the factors important in the development of metabolic syndrome and for future therapeutic approaches.

Kawano *et al*. 2022 *Cell* **185** 3501–3519

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