Immunology News

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Discovery Immunology

introducing our new Open Access journal

BSI Congress: highlights & reflections

COVID vaccine hub: a website about UK research

Diversifying curricula: universities tackling inequalities

British Society for immunology

www.immunology.org

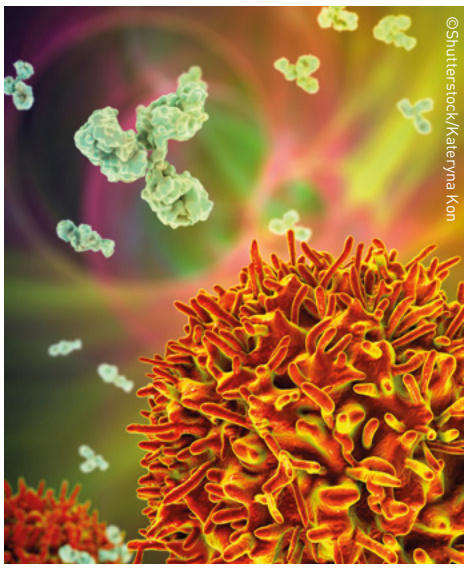
Welcome to the first *Immunology News* edition of the year. We started 2022 with renewed energy after having a fantastic time at BSI Congress in December – it was a pleasure to see so many friendly faces and our members reuniting at last!

This magazine not only highlights how we're supporting our members and representing immunology on a wider stage, but also amplifies the voice of our membership. Particularly in this issue, you can hear about an important project to diversify the immunology curricula at universities, the reflections of our former BSI Congress Secretary, Professor Gary Entrican, and how the BSI East Anglia Regional Group engaged with the public about vaccines at the Norwich Science Festival.

We're always looking to feed the voice of our members into our activities in different ways, including our annual BSI committee elections. Please do turn to page 6 to explore the vacancies available and consider putting yourself forward – we'd love to hear from you!

Another must-read piece about our work can be found on page 11. We're incredibly excited about the new addition to our family of journals, *Discovery Immunology*! Indeed, there are so many more unmissable articles in this edition which I hope you'll enjoy as much as I have.

Teresa Prados
t.prados@immunology.org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VIEW FROM …

THE CHIEF EXECUTIVE

Welcome to this issue of *Immunology News* and what a few months it has been! It was so wonderful to see so many of our members come together at BSI Congress in Edinburgh, and against all odds too – storms, Covid and snow were just some of the hurdles we all faced! It was fantastic to see how determined you all were to get to BSI Congress, and I'm pleased to hear that it was worth the effort for the fantastic science and inspiring networking. I thoroughly enjoyed speaking to so many of you, hearing about what you are doing and how the BSI can support you in your endeavours. It was also great to see many of you joining online!

A huge thanks from me goes to the staff team, our Congress Committee and, of course, Gary Entrican for all of their hard work in making it possible. In particular, thank you to Gary on his last Congress as the BSI Congress Secretary – his four years of leadership in the role have taken the UK's top immunology event from strength to strength. With his departure we officially welcome Mark Coles as our new BSI Congress Secretary, and we are already working with Mark to make BSI Congress 2022 an unforgettable conference in Liverpool later this year. Please do head to p8 to discover some Congress highlights and/or remind yourself of the amazing time we all had.

In other news, we have recently launched the UK COVID Vaccine Research Hub which brings together the major research findings for researchers, policymakers and the public in an accessible website (p20). This valuable resource is open and freely available to the community and is regularly updated with the latest developments – it already contains information on key studies but please do get in touch if you have, or know of any, papers or studies that you think would be relevant.

We have also now officially introduced our newest journal in the BSI journal family – *Discovery Immunology*! It joins our other journals, *Clinical & Experimental Immunology* and *Immunotherapy Advances*, and is looking for submissions on new discoveries in cellular and molecular immunology. Please do consider supporting your Society journals by submitting your papers and turn to p11 to find out more.

With Equality, Diversity and Inclusion (EDI) at the heart of what we do at the BSI, I'm excited to signpost you to p22 which describes what one of our funded EDI activity grants is achieving. This particular grant has started to diversify the immunology curriculum at the University of Bristol and I highly recommend having a read to find out more about the impressive work they're doing.

And finally, I would like to highlight the ongoing BSI committee nominations and elections and encourage all our members to get involved! As you will see (p6) we have a significant number of high-profile roles open to our members to put themselves forward for, including the Presidency. Please do have a read, share with your networks and, if a role appeals to you, throw your hat into the ring! We want to further increase the diversity among our committees and we would love to see a wide range of nominations coming forward. Once the nominations are complete, we will then move to the elections where we will need you to vote!

That leaves me to say another huge thanks to you all for what you do. You are all so incredibly inspiring and BSI Congress in December re-confirmed that. Please do keep up the good work for immunology and, as always, do not hesitate to get in touch if you have any questions, ideas or feedback.

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

SOCIETY NEWS

Give your career a boost with a BSI Career Enhancing Grant

In 2021 the British Society for Immunology launched an exciting pilot scheme, the BSI Career Enhancing Grants, to provide an extra level of careers support to members at different career stages and from different sectors, including beyond academia. In response to feedback from our membership, we invested significant funds in this grant scheme to help our members achieve their full potential.

The next round of the BSI Career Enhancing Grants is currently open. We are looking to provide funding for any type of career-related activity that will help you go a step further in building your skillset and advancing your professional development. The amount you can apply for is variable – we accept applications for any amount from £100 up to £5,000.

There are endless possibilities for this funding and you're in the driver's seat. You can use it to fund a pilot project, purchase equipment, undertake a lab placement, internship or secondment in another sector, or take part in a training course, to name a few. Here you can explore the full list of those awarded funding in the last round, including useful case studies highlighting some of the projects and activities being funded: **www.immunology.org/news/bsi-career-enhancing-grant-winners**.

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Visit the BSI Career Enhancing Grants page for details about what you can use it for and how to apply: **www.immunology.org/bsi-career-enhancing-grants**. The application deadline is **23:59 GMT on Monday 21 March**.

With regret

The BSI was saddened to hear about the death of one of our Honorary Members, Dr Eric Bell, who passed away in February.

He worked at The University of Manchester and was General Secretary of the British Society for Immunology. He carried out important work on lymphocyte recirculation; and was the first person to identify antigen-loaded dendritic cells emanating in the lymph from the intestine. He also was one of the first people to characterise CD45 isoforms as markers of functional subsets of $CD4^+$ T cells, and importantly, showed that these markers were not fully stable, but could revert with time.

We will publish an obituary in his memory shortly. Our condolences to his friends and 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 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 as well as communications. Forum aims to help the Society in implementing its strategic plan by providing a mechanism by which the voice of the membership can be fed into activities.

Forum members came together virtually for the first meeting of 2022 in January. It was a great start to the year, with excellent discussion focused on the opportunities and challenges of team science and the incorporation of patient and public involvement (PPI) into BSI activities. In the dialogue around team science, we acknowledged its benefits as well as the challenges it can present to career progression for early career researchers. Fair author recognition in publications was particularly highlighted but we agreed lessons could be learned from other scientific fields like physics, where team science has been widely used.

Next, members shared their experiences with PPI to help identify areas where the BSI could potentially provide support. There were some great activities suggested that integrate patients across many aspects of research from those who had worked extensively with PPI. However, exposure to PPI isn't common in all areas of immunology research, which led to a discussion of the barriers to PPI for researchers and how we can work to remove them. This feedback will be used to guide the BSI's development work for a future PPI offering. Watch this space!

In the latter part of the meeting Forum heard from the BSI staff team who reported on how they have been raising the voice of the immunology community in the wider world through external affairs and outreach activities in what has been a busy few months at the BSI.

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 do 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**, who can pass the message on.

Find out more:

There are five positions on Forum that will become available this year. Nominations close on **Friday 1 April**. Find out more on page 6.

SOCIETY NEWS

BSI committees: have a say in your Society

A group of BSI committee members networking at BSI Congress 2021

Nominations for upcoming vacancies on the BSI's Board of Trustees, our secretary roles and BSI Forum, are now open. This is a fantastic opportunity for members to have a say and get involved in the work of your Society and make a real difference to immunology in the UK.

Our Trustees have the chance to make an active and dynamic contribution to the Society through their responsibility for setting and overseeing the delivery of our strategy, governance and finances, and by working closely with our Chief Executive and staff to support all our members. Our Secretaries have defined areas of responsibility – they report to the Board, and may be asked on occasion to attend Board meetings to provide activity reports on those areas. Forum is the Society's 'think tank' committee which ensures the views of the membership are fed into Society activities. These activities cover education and careers work, public engagement, media, policy and public affairs, which includes helping to formulate responses to external consultations. The membership of Forum is designed to be representative of the Society's membership, including individuals from all career grades and immunology sectors including industry, academia and clinicians. Learn about what was discussed at the most recent Forum meeting on page 5.

Why should I stand for election?

Joining a committee offers you exciting opportunities beyond your day job including contributing to a community of like-minded people, influencing scientific policy and developing your personal and professional skills. Being part of a BSI committee gives you a front-row seat to all the action, giving you the chance to inform how we support our members and promote and champion immunology and science to all. Ensuring our committees have a diverse membership is important to us and so we encourage nominations from across the spectrum of our membership, from all backgrounds and career grades. For most positions, you don't need to have previous experience of sitting on a committee, but you do need lots of enthusiasm and a willingness to get involved to help formulate our activities and policies! Please check your emails and the BSI website for details on how to nominate yourself. **Nominations will close on Friday 1 April.**

What we look for in our BSI committee members

If you're considering standing for one of the positions available, ask yourself:

- Are you committed to immunology and to the Society and want to help shape our future?
- Are you willing to speak your mind and contribute to the voice of immunology?
- Do you want to get more involved and use your skills and experience to make a difference?
- Are you happy giving your time, thoughts and energy to representing your fellow members?
- Can you work collaboratively to support the BSI in achieving its mission and promote equal opportunities in immunology?

Why should I vote?

If the available positions are not for you, you can encourage others to stand and have your say by voting in the elections. Your vote really does count. Your elected representatives will make numerous decisions on your behalf, such as fees for membership and Congress registration; which issues the BSI focuses on in our policy work; how best to provide career

support to immunologists; which meetings are funded; and many more issues besides, so engaging with the elections genuinely does make a difference. Voting is quick and easy and will be open from **Tuesday 19 April to Friday 6 May** with the election results announced on the BSI website the following week. All current BSI members will receive a voting link so please ensure your membership is up to date and keep an eye on your inbox around this time.*

Vacancies

BOARD OF TRUSTEES

- **President** – The President holds the most senior position within the Society. They are responsible for providing strategic leadership and work with the Board and senior officers to establish long-term goals, plans and policies. The President plays a pivotal role in representing the UK immunology community's interests to a range of external bodies in science and healthcare and is a spokesperson and chief ambassador for the Society. In this four-year role, the President is charged with leading the development of the Society's strategy in close collaboration with the other Trustees to meet its mission and uphold its values. A broad biomedical and scientific vision is essential to the role. The President must be resident in the UK. This role is due to commence at the AGM in December 2022 when Arne Akbar finishes his term.

- **Chair of Forum** – The Chair of Forum is responsible for leading the discussions in Forum – this includes working with staff to ensure both that Forum's views are fed into relevant BSI projects and that Forum members proactively bring issues of importance to the membership to be discussed at meetings. The role holder must be based in the UK. They will chair four meetings of Forum per year both in person in London and virtually as well as attending the quarterly Board of Trustees' meetings. This role is due to commence in December 2022 when Ann Ager finishes her term.

- **General Trustee** – Trustees make active and dynamic contributions to the Board, using their wide-ranging skills, knowledge and experience to ensure good governance and the development of strategy for the Society. They feed into wider activities which help enhance the work of immunology. Trustees are appointed for four years. They are expected to attend four Board meetings per year, held both virtually and in-person in London. This role is due to commence in December 2022 when Divya Shah finishes her term.

- **Early Career Trustee** – Early Career Trustees hold the same responsibilities as General Trustees but with a particular focus on championing the priorities and needs of early career immunologists. They provide crucial skills and experiences that ensure BSI activities effectively support this part of our community. Applications are invited from postgraduate and postdoctoral immunologists within 8 years of award of PhD (provided they do not hold a tenured position), clinical immunology trainees up to consultant level (unless within 6 months of CCT) and clinical research fellows. We also welcome applications from immunologists with PhD or doctoral training who work outside academia or the NHS. This role is due to commence in July 2022 when Calum Bain finishes his term.

SECRETARY ROLES

- **Public Engagement Secretary** – This role oversees the delivery and development of the BSI's public engagement initiatives, working with members, trustees and key members of staff. This supports a core priority area in the BSI's new strategy, catalysing change, and expanding our innovative public engagement work to increase public understanding and improve health. This role is due to commence at the start of 2023 when Donald Davidson finishes his term.

FORUM

- **England Representative** – this position is open to any BSI member based in England. Helen McGettrick finishes her term of office in June.
- **Scotland Representative** – this position is open to any BSI member based in Scotland. Megan Macleod finishes her term of office in December.
- **Early Career Representative** – this position is open to any BSI member who is up to three years into their postdoctoral (or equivalent) career. Alice Burton finishes her term of office in June.
- **Clinical Representative** – this position is open to any BSI member who is working in clinical immunology at all levels. Matthew Buckland finishes his term of office in June.
- **Veterinary Representative** – this position is open to any BSI member who is working in veterinary immunology at all levels. Elma Tchilian finishes her term of office in June.

We wish to extend a huge thank you to all of our committee members past and present, in particular to those named above for all their contributions to the BSI.

Dates for your diary

Nominations close:
Friday 1 April 2022

Voting opens:
Tuesday 19 April 2022

Voting closes:
Friday 6 May 2022

Results announced:
Friday 13 May 2022

"During this crucial time for immunology, the BSI committees offer a unique opportunity to represent the voice of your peers in the immunology community, play an active part in guiding the direction of your Society and learn a lot in the process. I highly recommend all interested BSI members to get involved!"

Professor Ann Ager,
BSI Trustee & Chair of Forum

*Voting is open to all paid categories of membership. Please note, this excludes undergraduate members and low-income economy overseas members who do not have to pay a membership fee.

SOCIETY NEWS

Reuniting our immunology community: BSI Congress 2021 highlights

At the end of last year, over 1,600 immunologists came together in Edinburgh and online for our flagship event, BSI Congress 2021. It was an amazing four days of immunology, packed with cutting-edge science, inspiring debates and those much-missed opportunities to connect and start new collaborations.

Winners of our Bright Sparks in Immunology sessions with with our Education & Careers Secretary, Dr Donald Palmer, at BSI Congress 2021.

"To be back talking in-person with such amazing immunologists after two years has been everything and more!"

"BSI Congress 2021 has included such a diverse programme of immunology I think it'll take me weeks to fully digest!"

BSI President Prof Arne Akbar 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.

"The platform has been absolutely brilliant and made attending virtually so interactive."

1,658 delegates from 44 countries

1,503 onsite

155 online

4 days of world class immunology

36 sessions

816 abstracts submitted

94 orals

594 posters

58 invited chairs

74 invited speakers

"Fantastic to get the opportunity to present and have in-person discussions about all things immunology!"

BSI CONGRESS 2022

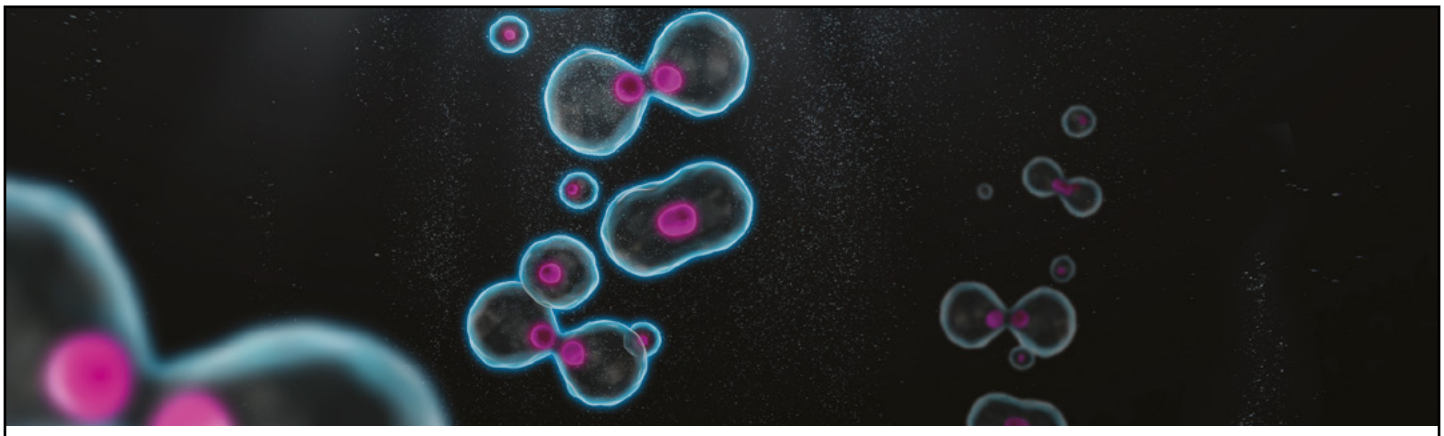
Join us in Liverpool in 2022

Save the date!

BSI CONGRESS 2022
5 – 8 December 2022
Liverpool, UK

Plenary sessions on:
- Tropical diseases
- The brainy immune system
- Immunotherapies come of age
- Beyond blood
- Systems immunology
- Innate inborn immunodeficiencies

Follow #BSI22 for updates!



SOCIETY NEWS

New BSI journal: *Discovery Immunology*

We're delighted to present *Discovery Immunology*, our fully Open Access journal for new discoveries in cellular and molecular immunology. The journal is edited by Professor Simon Milling from the University of Glasgow. Read on to find out more about the journal's scope, mission and world-leading editorial team.

Scope and mission

Discovery Immunology is our first broad-scope Open Access journal aiming to publish high-quality articles describing novel mechanisms controlling the immune response. While these will often describe basic aspects of cellular or molecular immunology, we also welcome articles describing discovery science with relevance to infection biology, inflammation or immune-mediated pathogenesis.

Our aim is for *Discovery Immunology* to become an invaluable resource to the immunology community, providing readers with trusted new insights into the workings of the immune system.

Meet the editorial team

Discovery Immunology is led by Founding Editor-in-Chief Professor Simon Milling with the support of a prestigious team of Senior Editors and a growing Editorial Board from academia and industry.

FOUNDING EDITOR-IN-CHIEF

Professor Simon Milling

University of Glasgow, UK

Keywords: immunology of the intestine, dendritic cells, models of infection, inflammatory disease

SENIOR EDITORS

Professor Awen Gallimore

Cardiff University, UK

Keywords: cancer, cancer-antigens, regulatory T cells, immune-modulation

Dr Florent Ginhoux

*Singapore Immunology Network (SIgN), A*STAR, Singapore*

Keywords: ontogeny, development, differentiation, dendritic cell, monocyte, macrophage

Dr Emily Gwyer Findlay

University of Edinburgh, UK

Keywords: neutrophils, inflammatory diseases, T cells, innate–adaptive interactions

Professor Kathleen McCoy

University of Calgary, Canada

Keywords: microbiome, mucosal immunology, innate immunity, B cells, allergy

Professor Francisco J Quintana

Harvard Medical School, USA

Keywords: immune regulation, T cells, dendritic cells, astrocytes, autoimmunity

Dr Meera Ramanujam

Aro Biotherapeutics, Pennsylvania, USA

Keywords: autoimmunity-RA, SLE, SLE/LN, inflammatory and fibrotic diseases

Discovery IMMUNOLOGY

The road to getting your research published

Publishing your research can be a highly competitive process, so it's important for your manuscript to stand out for the right reasons. Here, Senior Editors from *Discovery Immunology* provide tips on how to approach each stage in the publishing process, from writing your manuscript to peer review through to promoting your published paper.

Preparing your manuscript

Editors look for concisely written, interesting papers that have a clear message. They want to understand what you've done, why, what you found and what it means in the context of other work. They also want to know the weaknesses, future direction and applications of your research.

"Editors like a complete story. Publishing one or two high impact papers is preferable to several lower impact papers so be mindful of trying to publish several papers out of one study. Also, asking your colleagues for feedback before submitting can help to identify aspects that you might have overlooked."
– Professor Kathleen McCoy, Senior Editor

Selecting your journal

Selecting your target journal is an important step; it's a good idea to shortlist candidate journals in the scope of your article. In addition to impact factor, there are many metrics used to assess journal visibility and reputation. Journals indexed in PubMed and listed in Web of Science may have a wider reach but remember that newly launched journals will have to wait a little while before they are eligible for indexing or receive an impact factor. Nonetheless, newer journals can typically provide a more focused review process and faster decision times, and being featured in the first issue gives your paper additional visibility. When submitting to a new journal, check whether it has any associated journals or academic Societies, a well-known publisher and see who is on the editorial board. It's also important to check if the funding body or institution supporting your work has any requirements for where your research is published. Some may require you to publish Open Access or deposit your work in an online repository.

"As an editor, I understand that providing authors with an open, responsive and collaborative environment is incredibly important as that's one of the aspects I really value when I submit my own papers for consideration. When choosing a journal, look for an editorial team of active researchers who can understand that publishing your manuscript can be stressful for authors and will work hard to make decisions fairly and quickly."
– Professor Francisco Quintana, Senior Editor

Submitting your manuscript

Before submitting your manuscript it's important to check the journal guidelines and format the paper correctly. Some journals, including all three BSI journals, offer format-free submission, meaning that, at first submission, it's not necessary to apply formatting to match house style. Instead, simply ask: would I enjoy reading and reviewing a manuscript formatted in this way?

"Use the abstract or summary to sell your paper, but don't oversell your findings. It's usually the only thing that a referee will see when deciding whether to review your paper, so highlight the important and interesting aspects of your work in a clear and concise way." **– Dr Florent Ginhoux, Senior Editor**

Handling revisions and rejection

If you are invited to resubmit your paper following revisions, include a detailed rebuttal letter summarising all the changes suggested by the reviewers. If you don't agree with some of their suggestions, you can use this as an opportunity to explain why. Most journals only give you one chance to make major revisions, so the paper must be in the best shape possible when it is resubmitted. If your paper is rejected, try to revise the paper in line with any appropriate comments before submitting it elsewhere to improve your chances of acceptance. The same referees might be invited to review the paper again by a different journal, so they should see an improvement.

"Manuscripts take a lot of work to prepare and so emotions can run high if reviewer comments are harsher than expected. Avoid responding to reviewer feedback as soon as you get it. Read it, think about it for several days, discuss it with others, and then draft a polite response that sticks to the facts."
– Professor Awen Gallimore, Senior Editor

Promote your article

Getting your manuscript accepted is just the beginning. Promoting your article online is vital if you need to demonstrate the reach and influence of your research, particularly when applying for funding. There's so much that you can do to enhance the visibility of your paper. Twitter is a great outlet for informal updates from labs and individuals, and links to articles carry a strong Altmetric weighting. You could also consider writing a lay summary of your paper and sending it to blogs in your subject area, producing a video abstract or mentioning your publication at conferences. Social media can be daunting but it's a very important tool that can hugely benefit your career. The best way to build your following is to stay active and make it a habit that integrates into your work life. See something interesting in a journal? Post about it. A colleague achieved something wonderful? Share it!

"Twitter is now the single most useful place for me to find papers to read. I follow a large number of immunologists as well as the BSI's journals and Affinity Groups and I get papers straight into my feed as they are published. For me, this is far more rapid and helpful than receiving email roundups. Twitter also allows authors to discuss their papers with others which can spark lots of ideas. I often use Twitter to ask authors about their articles and, unlike email, they almost always reply!" **– Dr Emily Gwyer Findlay, Senior Editor**

The BSI family of journals

Discovery Immunology is the latest addition to the BSI family of journals published in partnership with Oxford University Press and is supported by the in-house publishing team at the BSI, dedicated to delivering excellent author service. Our new launch joins *Clinical & Experimental Immunology*, our established journal founded in 1966, and I*mmunotherapy Advances*, our first fully Open Access journal launched in 2020. In launching our latest Open Access journal, we're ensuring that the BSI publishing portfolio extends across the full spectrum of immunology research to offer a home for papers from the widest range of immunologists, while strengthening our platform to foster innovation for the benefit of society.

"The scopes of the three BSI 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."

Professor Simon Milling, Editor-in-Chief

EDITOR-IN-CHIEF

Professor Simon Milling

New discoveries in cellular and molecular immunology

EDITOR-IN-CHIEF

Professor Tim Elliott

Spanning the translational pipeline for immunotherapy

EDITOR-IN-CHIEF

Professor Leonie Taams

The journal of translational immunology

Are you making the most of your Society's journals?

- **Excellent author service** – Enjoy rapid turnaround times (average of less than 22 days to first decision) expedited by the BSI's dedicated editorial office
- **Publishing discounts** – BSI members can publish in our Open Access journals *Discovery Immunology* and *Immunotherapy Advances* at a discounted fee of £1,680, and we also offer a 30% discount on Open Access charges in our hybrid journal *Clinical & Experimental Immunology*
- **Promoting your article** – The BSI's dedicated marketing team are experts at helping you market your research
- **Special Collections** – Contribute to one of the many ongoing Special Collections on hot topics in immunology
- **Help us help you** – We're always looking for new ideas on how to better serve the immunology community, please send your thoughts and feedback to us at **r.taylor@immunology.org**

Discovery Immunology is open for submissions! We'd like to encourage BSI members to support your Society's first broad-scope Open Access journal and submit your work to *Discovery Immunology*: **https://bit.ly/3HASwgF**

"We are keen to receive submissions from researchers working across the spectrum of immunology, including those in industry or pharmaceutical settings, where immunological mechanisms are increasingly investigated to underpin the development of novel therapeutics."

Dr Meera Ramanujam, Senior Editor

Find out more:

To find out more about the Society's official journals, *Discovery Immunology*, *Immunotherapy Advances* and *Clinical & Experimental Immunology*, please visit: **www.immunology.org/publications/journals**

Follow the journals on Twitter to stay up to date with the latest research in your area:

@discovimmunol
@IMTadvances
@CEIjournal

SOCIETY NEWS

Past BSI President Peter Openshaw recognised in New Year Honours

Earlier this year, we were delighted to see Professor Peter Openshaw, past President of the British Society for Immunology and Professor of Experimental Medicine at Imperial College London, being awarded a CBE in the New Year's Honours list in recognition of his services to Medicine and Immunology. All at the BSI send Peter our warm congratulations.

Professor Openshaw was BSI President from 2013 to 2018, the first clinician to hold this role, having previously served on our Council since 2006. With a hugely successful career spanning several decades, he has made significant contributions to medicine and immunology across clinical practice, research, policy and charitable organisations, such as the BSI. He is an internationally renowned expert on the immune defences of the respiratory mucosa, focusing particularly on viral lung disease and vaccination, and has authored over 200 articles in the field. His impact has been significant, not least during the current pandemic where his visionary approach has delivered life-changing research programmes, his sound advice has informed government policy-making and his strong leadership has inspired researchers and provided reassurance to the public.

"I am so pleased about this award which recognises not just my work, but the fantastic teams with whom I have had the privilege of working over many years," said Professor Openshaw. *"It is wonderful to have recruited a string of brilliant young investigators who are now themselves academic leaders, or have gone on to enjoyable roles in other areas. The five years I spent as President of the British Society for Immunology was one of the most exciting and fulfilling times of my life, promoting collaboration and mutual kindness as a way to advance science and build the field. I hope this award will bring yet more attention to the fascinating and important field of immunology and will be used to celebrate its excitement and many successes."*

At the BSI, his term as President was marked by a transformation in our approach to serving the immunology community, which saw the delivery of an ambitious new strategic plan, a growth in membership of over 50% and the Society building a reputation as a thought-leader and influencer in the policy space. After receiving honorary BSI membership in 2018 in recognition of his contribution, Professor Openshaw remains close to the Society working with us on several projects including as a member of our expert COVID-19 taskforce[1] and as a spokesperson in the media.

Professor Arne Akbar, current President of the British Society for Immunology, commented, *"I would like to offer my heartfelt congratulations to Peter on his well-deserved award of a CBE in the New Year's Honours list. Peter is a fantastic ambassador for immunology, combining a visionary and innovative research mind and portfolio with an astute understanding of the wider societal implications of his work. During his tenure as BSI President, he encouraged an atmosphere of openness, shared commitment and inclusiveness between the BSI Trustees and office staff members that transformed the way the Society supported our members. We look forward to continue working with him for many years to come."*

'At the BSI, his term as President was marked by a transformation in our approach to serving the immunology community, which saw the delivery of an ambitious new strategic plan, a growth in membership of over 50% and the Society building a reputation as a thought-leader and influencer in the policy space.'

Professor Peter Openshaw

In addition to his BSI-related work, Peter is the current vice chair of NERVTAG, the government's advisory committee on new and emerging respiratory virus threats, and was a member of SAGE (Scientific Advisory Group for Emergencies) during the swine flu pandemic of 2009–10. He has also led many major immunology research programmes and consortia, including the Mechanisms of Severe Acute Influenza Consortium (MOSAIC),[2] a major international collaboration which discovered a key gene that makes some people more susceptible to severe illness from flu. In the COVID space, he is co-lead of ISARIC-4C,[3] a ground-breaking study of patients hospitalised with COVID-19. He also co-chairs the UK Coronavirus Immunology Consortium[4] and leads the Human Infection Challenge Vaccine Network (HIC-Vac).[5]

Peter has also made a huge contribution to public understanding of science through his extensive work in the media and at public events. In particular, during the current COVID pandemic, he has gained a reputation as one of the most reliable media commentators, providing accurate, easy-to-understand, and empathetic expert opinion. His dedication to ensuring that complex and fast-moving scientific discovery is accessible and understandable to the public really is an example to us all.

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SOCIETY NEWS

The CARINA Network: a new interdisciplinary research network on the immunology of ageing

The recently launched CARINA Network is an innovative initiative bringing together researchers and experts from different disciplines to tackle key questions on the immunology of ageing. In this article, BSI Research Partnership Manager, Ben Wilcock, tells us about the project and what it hopes to achieve.

The CARINA (CAtalyst Reducing ImmuNe Ageing) Network is a new interdisciplinary research network on the immunology of ageing funded by the Medical Research Council (MRC) and the Biotechnology and Biological Sciences Research Council (BBSRC) and supported by the British Society for Immunology. The initiative has created a UK-wide, inclusive platform to enhance collaboration and foster knowledge exchange. With over 70 researchers from different disciplines and career levels across the UK, it aims to improve our understanding of the immunology of ageing: from preconception to old age.

The importance of the immune system & ageing

Most parts of the immune system change as we get older. Different cells and organs respond to different threats, and the efficacy of these responses varies according to the age of the individual. Studies suggest that immunity declines with age, making it harder to mount an effective immune response to infection. Older people seem more likely to experience severe outcomes upon infection with pathogens that have not been encountered previously, which has become increasingly apparent during the COVID-19 pandemic.

As the population of older age groups rapidly grows, further understanding of the changes to the immune system throughout life could help to identify new routes to support ageing populations to experience healthier lives for longer. The CARINA Network seeks to achieve this by bringing together researchers and experts specialising in a wide range of areas related to ageing and working in a variety of sectors including medical, immunology, nutrition, industry and charity sectors.

What the network will deliver

The network will focus on mapping key research questions in immune ageing and investigating how to address them through an interdisciplinary and holistic approach. By identifying gaps in knowledge and exploring current research in this field, the network aims to expand existing understanding of this topic, identify new research strategies and create a space for further future development.

BSI involvement & management structure

The BSI is excited to have a leading role in supporting the CARINA Network. Our President, Professor Arne Akbar, will chair the CARINA Management Board comprising Dr Ed Chambers (Imperial College London), Professor Deborah Dunn-Walters (University of Surrey), Professor Janet Lord (University of Birmingham) and Professor Neil Mabbott (University of Edinburgh). This Management Board will work with an external Scientific Advisory Board made up of experts from multiple fields and Public and Patient (PPI) representatives, who will guide the network in identifying scientific priorities and ensuring that the network's activity delivers the most benefit to the public.

Professor Arne Akbar, BSI President & Principal Investigator of CARINA Network, commented: *"The CARINA Network will facilitate large-scale collaboration between researchers from multiple disciplines who, for the first time, will work together to identify and better understand patterns and commonalities in the immunology of ageing. I am excited to lead this new network, and the support of the BSI will ensure that CARINA is milestone-driven, inclusive and effective."*

Dr Doug Brown, BSI Chief Executive, shared: *"The BSI is proud to support the management of this exciting new network. The CARINA Network will bring together researchers to map the key research questions in immune ageing and investigate how to address them through a collaborative and interdisciplinary approach, empowering researchers to develop new avenues of innovative research in this increasingly important field."*

By working with the CARINA Network, we aim to bring together the UK ageing research community at a national level to catalyse the important work in this area and shed light on the many different factors that cause immune decline during ageing. Through our support on different fronts, including communications, project management and patient and public involvement, we aim for a sector-wide transformation in our approach to ageing research, creating a holistic framework to address the key research questions in immune ageing as a united community in the years to come.

Ben Wilcock
Research Partnership Manager, BSI
Email: **CARINA@immunology.org**

'The CARINA Network will facilitate large-scale collaboration between researchers from multiple disciplines who, for the first time, will work together to identify and better understand patterns and commonalities in the immunology of ageing.'

Do you want to know more about CARINA?

- Head to **www.immunology.org/partnerships/carina-network** to find out more
- Join the conversation online by following **@CARINAnetwork** on Twitter
- Sign up to the CARINA mailing list to receive regular updates on the project: **bit.ly/CARINAnews**.

Reflections on my time as BSI Congress Secretary

Former BSI Congress Secretary, Professor Gary Entrican looks back at his time in the role, shares his learnings from leading on two Congresses and one virtual conference during the pandemic and his gratitude for those who've supported him along the way.

BSI Congress is always a special event in the calendar for UK immunologists, not just because the talks, poster sessions and other events are always great, but also because it gives us a chance to meet up and spend time together. The recent in-person Congress in Edinburgh therefore felt very special after enduring almost two years of COVID-19 restrictions. It was especially fitting that the opening ceremony included a special award for the Oxford team in recognition of their outstanding work in developing the AstraZeneca COVID-19 vaccine and the meeting ended with a plenary session including talks by Paul Moss from the UK-CIC and Sarah Gilbert on the vaccine. Congress 2021 was particularly memorable for me as it marked the end of my term as BSI Congress Secretary, somewhat fittingly in Edinburgh. For more highlights of BSI Congress 2021 turn to page 8 or visit: **www.immunology.org/bsi-congress-success.**

My first Congress Committee as Congress Secretary elect was in autumn 2016 in the immediate run-up to the joint BSI/NVVI Congress in Liverpool. I had a year to shadow Leonie Taams before she finished her term as Congress Secretary at the end of 2017. The first thing that struck me was the depth of Leonie's knowledge of all of the sessions and speakers for the upcoming Congress. I also discovered that the planning of the 2017 Congress in Brighton was well underway, which seemed to me to be a lot of things in the air simultaneously. Of course, I then realised that there is a six-month planning and organisational overlap when there are Congresses in consecutive years as it is an 18-month cycle. Quite daunting for my first meeting but I think it goes without saying that Leonie was a fantastic mentor and kept me on track. Under her guidance, and with the support of Congress Committee and the BSI Events Team, by the time Congress 2017 in Brighton came around I was ready to take on my four-year term as BSI Congress Secretary.

At that point I was expecting to lead on the planning of two Congresses (2019 and 2020) and also to begin the planning of the 2022 Congress. The first sign that things might not go according to plan was the unexpected change of location of the 2018 ECI meeting from Istanbul to Amsterdam. So, having just joined Congress Committee, I almost immediately found myself on the Scientific Programme and Planning Committee for ECI 2018. Although unexpected, with the excellent leadership from Marieke van Ham at NVVI/EFIS, we developed a great meeting and I gained invaluable experience.

> 'I learned very early that Congress Committee is truly dynamic in its mode of action and also in its structure. The continuous renewal of the membership ensures fresh ideas, drive and energy and I've loved working with everyone on that Committee during my term.'

The 2018 ECI meeting in Amsterdam is where I met Doug Brown, whose leadership has been key in my BSI work ever since. Other major changes in my early years were the appointment of Jane Sessenwein as Head of the BSI Events Team in 2017 and the appointment of Arne Akbar as BSI President in 2018, taking over from Peter Openshaw who I was working with on the ECI programme. I highlight these because they represent the BSI leadership roles that the Congress Secretary interacts with. I cannot emphasise enough how grateful I am to Doug, Jane and Arne for being great colleagues; their open and honest approach sometimes meant hearing things that I didn't want to hear, but crucially delivered in ways that fostered trust. Little did I know in 2018 how much I would come to draw on their support when the pandemic hit.

I learned very early that Congress Committee is truly dynamic in its mode of action and also in its structure. The continuous renewal of the membership ensures fresh ideas, drive and energy and I've loved working with everyone on that Committee during my term. I also tried to ensure that the culture I created reflected the values of my relationships with Doug, Jane and Arne. I would also like to acknowledge the support of the Board of Trustees for providing valuable feedback to Congress Committee on our suggestions for Keynote Speakers and Plenary Session topics.

The 2019 Congress in Liverpool was the first that I had overseen from start to finish, and I felt very happy with the way it went. At the time of the Congress in Liverpool, Congress Committee had already identified the Keynote Speaker, the Plenary Speakers and the Parallel Session topics for Edinburgh 2020. By then Mark Coles had been appointed as Congress Secretary-elect to shadow me through the planning of Congress 2020. We had no awareness that events would overtake us. Mark agreed at that point to be the BSI representative on the 2021 ECI Scientific Programme and Planning Committee, so with hindsight ended up taking on quite a lot that we didn't foresee.

I will not forget the next Congress Committee meeting. It was in London on 13 March 2020 with the purpose of finalising the invited speakers and programme for the 2020 Congress in Edinburgh. The UK entered lockdown ten days later and it became increasingly clear that a face-to-face conference in December would be problematic. Later in the year we made the decision to postpone BSI Congress until 2021. This created a huge amount of work for the BSI Events Team, and I would like to extend a huge thanks to them, namely Joanne Hemstock (who has a phenomenal memory of past Congress programmes and always keeps us straight), Tracey Sheehan, Tracy Symons and Becks McRobb.

> 'In a very short space of time, we had developed a programme for a two-day virtual conference. Organising a meeting on a virtual platform that would accommodate keynote speakers, parallel sessions, posters and breakout rooms was a huge and unknown challenge, but collectively we delivered a hugely successful meeting.'

In a very short space of time, we had developed a programme for a two-day virtual conference. Organising a meeting on a virtual platform that would accommodate keynote speakers, parallel sessions, posters and breakout rooms was a huge and unknown challenge, but collectively we delivered a hugely successful meeting.

As the vaccine roll-out accelerated in the UK in 2021, we dared to hope that we might be able to host an in-person Congress 2021. Even so, we were aware that not everyone would feel comfortable attending a large meeting, and also that international travel regulations might be prohibitive. We therefore planned for a hybrid event with the support of the Congress venue (the EICC). We expected the unexpected, which allowed us to adapt to the Omicron situation at very short notice and have a great meeting.

Despite positive progress, we cannot change the devastating impact the pandemic has had at personal and professional levels. I do hope that there will be at least one positive that everyone can salvage from such a bad situation. Personally, I would not have been able to perform my last duty as Congress Secretary of closing BSI Congress in my home city of Edinburgh in 2021 had it not been for the pandemic. Additionally, 2021 Congress was also shifted a week earlier due to availability. In a twist of fate, that shift allowed me travel to the USA after Congress to attend a meeting in Chicago where I was honoured to be named as the 2021 Distinguished Veterinary Immunologist by the American Association for Veterinary Immunology. So, in a strange way, the stars aligned for me as a result of the pandemic. On that note, I have loved my time as Congress Secretary, and if anyone reading this thinks that they might want to take over from Mark Coles at the end of 2025, start planning now – it will change your life for the better.

Professor Gary Entrican
Former BSI Congress Secretary
Honorary Professor, College of Medicine and Veterinary Medicine, The Roslin Institute, University of Edinburgh

Professor Gary Entrican receiving the 2021 Distinguished Veterinary Immunologist Award from the American Association for Veterinary Immunology (AAVI).

Thank you and congratulations

All at the BSI would like to thank Professor Gary Entrican for his incredible dedication and inspiring leadership during his time as BSI Congress Secretary. We also send our congratulations for receiving the 2021 Distinguished Veterinary Immunologist Award from the American Association for Veterinary Immunology (AAVI).

Keeping pace in the race for information:

the UK Covid Vaccine Research Hub

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In 2021, we launched a brand new website about research undertaken in the UK on vaccines for COVID-19 (**www.covidvaccineresearch.org**). Funded by UK Research and Innovation via the National Core Studies Immunity Programme, the UK Covid Vaccine Research Hub aims to champion and celebrate the immense contribution of UK researchers to the development and understanding of vaccines for COVID-19, and act as a hub for information and resources about this vital work.

The pace of scientific enquiry has been rapidly increasing for decades, but this acceleration underwent a sudden uptick in March 2020 and has been on a sharp upward trend ever since. Those very first reports of a new coronavirus that was able to infect humans and trigger severe illness marked the beginning of an urgent race to collaborate, innovate, publish and communicate faster and smarter than ever before.

The resourcefulness, diligence and energy displayed by the scientific community since then has been nothing short of extraordinary. New insights about the vaccines are emerging almost daily and their role in tackling the pandemic, helping us to understand precisely how immunity is generated, how long protection lasts, and how to harness the benefits of vaccination safely and effectively. A mind-boggling array of experts are involved, including immunologists, epidemiologists, data scientists, bioinformaticians, statisticians and many others. All of this expertise and knowledge will combine to help us refine and deepen our understanding of the vaccines and how best to use them to protect populations across the globe.

Channelling evidence to those that need it

The pace at which this is all happening presents a challenge in terms of getting new information to those that need it, and doing this responsibly, clearly and promptly. The quick-fire communications habits of the modern world have undeniably played a positive role, with more opportunities for scientists to explain their processes, insights and reservations to the public with little mediation or delay. But this world of instantaneous feedback has a thorny flip-side, and everything from innocent misplaced assumption through to calculated disinformation has been able to sweep online channels more or less unfettered.

Early in 2021, the team behind UKRI's National Core Studies Immunity programme got in touch with the British Society for Immunology with an idea for a new website that would bring together resources, news, publications and other vital information aimed at three distinct audiences – researchers, policymakers and the general public – each of which was under pressure to make informed decisions in response to the pandemic.

"The science was moving forward at such a rate, and we wanted to make sure people had access to the latest, evidence-based information and resources," says Professor Paul Moss, Professor of Haematology at the University of Birmingham and lead for the National Core Studies Immunity Programme. *"The obvious solution was to create an online resource that was freely accessible, and would bring all the latest information together in one place."*

A hub to inform, inspire and celebrate

In response, the BSI team drew up a plan for the UK Covid Vaccine Research Hub, with the objective of keeping pace with the steady stream of enquiry and innovation from UK research teams. They took on the responsibility of designing, building and managing the site, reporting new findings swiftly and objectively, and collating resources that would equip people to make decisions for themselves based on the latest science.

"There is now more appetite than ever before for information about how vaccines work, how they are developed and tested, and about the risks and benefits for individuals. We were excited at the prospect of creating a portal that would meet this demand. At the same time, it was a prime opportunity to promote awareness and support for the work being undertaken by UK research teams, whose explorations

UK Covid Vaccine Research Hub

'The hub aims to provide a fast track to the information scientists need, such as details of upcoming funding calls and awards, advice on how to talk about their work to the public, information about collaborations, new approaches, latest developments in a range of fields, and much more.'

are vital to global efforts to bring us out of the pandemic." says Dr Doug Brown, Chief Executive of the British Society for Immunology.

In this sense, the site sets out to champion and celebrate the immense contribution of UK researchers to the development and understanding of vaccines for COVID-19, while also acting as a central hub for information and resources about this vital work.

Resources tailored to need

In order to capture this diverse and fascinating research output, while meeting the needs of the three audiences, the new site is organised into clearly defined sections. A set of pages for the public host an array of accessible, engaging resources on a wide range of topics, including how the immune system responds to COVID-19, how vaccines prevent illness, and information for specific groups such as younger people, pregnant people and people with reduced immunity. These resources are regularly updated as new insights emerge.

"Many of the resources for the public have been created or contributed to by researchers, and we know many scientists have recently been compelled to get involved in public engagement for the first time. The pandemic has really brought home the importance of effective science communication, as well as the imperative to listen to people's questions and concerns, and respond sensitively, clearly and compellingly. We are always keen to hear from researchers interested in engaging with the public and there are so many ways this can be done," said Dr Brown. *"We're also eager to hear any ideas of topics that need addressing, new and inventive ways of presenting evidence, or if there are good resources already out there that we could add to the website."*

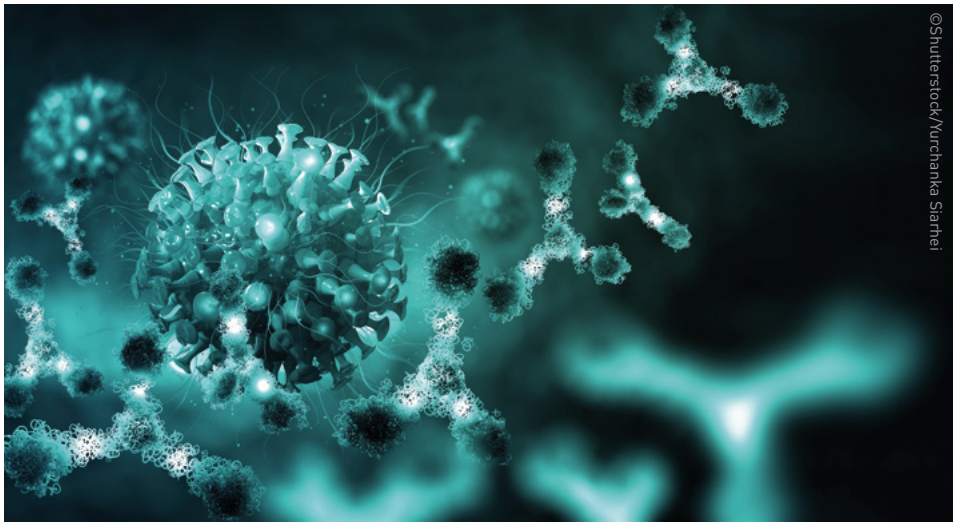
The hub is also designed to provide researchers themselves with tools and information to help them undertake their work. Scientists are under more pressure than ever, and there is little time available for researching funding streams or exploring new collaborations. The hub aims to provide a fast track to the information scientists need, such as details of upcoming funding calls and awards, advice on how to talk about their work to the public, information about collaborations, new approaches, latest developments in a range of fields, and much more. The team hopes that this pool of information will expand fast as researchers feed back to let them know what they need most to support them effectively.

And lastly, the site's section for policymakers showcases reports, briefings and other resources from a range of UK organisations, demonstrating the scale of the contribution of the UK's researchers to global efforts to end the pandemic, and outlining the policy developments needed to ensure they can continue to play this vital role. This section also hosts resources for MPs to help them respond to questions about the vaccines from their constituents.

Alongside this, the site hosts two directories. One keeps track of all the UK research publications (including preprints) relating to vaccines for COVID-19, while the other gives details of clinical trials currently under way in the UK, including how these are funded, what they aim to achieve and how members of the public can become involved.

And the site's news pages translate complex research into digestible updates, bringing new insights to light as they emerge.

"Our hope is that the site will continue to evolve over time to become the most useful and comprehensive tool possible for all three audiences," said Dr Brown. *"We know the BSI community is a source of almost limitless knowledge, expertise and inspiration, so we would encourage anyone to come forward with resources and ideas for content that might make a valuable addition to the hub. If you have a publication out that is relevant to COVID-19 vaccines, a study under way or a development that we should report on our news pages, please do get in touch."*



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Find out more

Let us know about a study, research initiative, publication, resource or funding opportunity using the Contact us page at **www.covidvaccineresearch.org**.

Decolonising the immunology curriculum:

starting to interrogate structural inequalities in science

Conversations about racism and anti-racism have been growing in recent years, amplified by the Black Lives Matter and 'Why is my curriculum white?' movements, the Rhodes Must Fall campaign and the toppling of the Colston statue in Bristol. Universities are responding by committing to decolonising their curricula to address the damaging legacies of colonialism, such as the dominance of White European thought and culture in education. In this article, Dr Bronwen Burton and Dr Caroline McKinnon discuss what they have learnt as they work to diversify the biomedical curricula at the University of Bristol, supported by a BSI Equality, Diversity and Inclusion activity grant.

Do we need to decolonise science?

Science has an ideal of objectivity, and perhaps at first it can be harder to see how to decolonise STEM subjects compared with the arts and social sciences subjects. Surely it is impossible to decolonise objective data? But science is shaped by people. Scientists are influenced by society, culture and politics; therefore, science is not apolitical. It has been used to underpin racist ideologies and to support imperialism.[1] The views and biases of scientists, whether conscious or unconscious, affect the outcome of our work and the generation of knowledge, influencing how accurate or representative our work is.

We can see colonial legacies in contemporary science by observing cultural biases. Universities in the Global North remain dominant in world university rankings[2] and English is the primary language for scientific publications,[3] reinforcing long-held power dynamics.

We see disparity in terms of who is funded, employed, celebrated and who sits on grant panels and editorial boards. The 'gatekeepers of knowledge' who shape the direction of research have arisen from privilege, while others have been marginalised (see 'Examples of cultural bias in science' box).

We also see bias in the knowledge we create. As one example, most people represented in genome-wide association studies (GWAS) are of European ancestry.[11] This has implications for understanding disease risk, the development of targeted therapies and for informing public health policies. True decolonisation requires the removal of the structures on which our education and society are built; with this in mind, the process of diversifying can bring conversations on the impact of coloniality to the fore, highlighting overlooked figures and studies which would benefit our knowledge base. We must question the scientific canon to identify and prevent long-held inequalities so that scientific knowledge can represent and benefit all, equally.

Examples of cultural bias in science

- BAME researchers and women are less likely to receive funding or receive lower awards: data from multiple funding bodies e.g. UKRI,[4] Wellcome,[5] CRUK[6]
- BAME researchers in STEM are more likely to be on a fixed-term contract.[7] They are also less likely to be professors, reflecting wider patterns across all academic disciplines in UK universities[8] where e.g. only 0.6% of UK professors are Black
- Bias towards the Global North and men is seen in the composition of editorial boards in science and medicine e.g. in the field of global health.[9] Women are even under-represented in the editorial boards of women's health journals[10]

> ‘It is vital that we do not perpetuate long-held inequalities in our teaching, and that we empower our students to think critically as they become the next generation of immunologists.’

Diversifying the curriculum

Diversifying our science curricula challenges us to question prioritised Eurocentric narratives, to empower silenced voices and to think about the wider context in which our knowledge has been built. An evidenced degree ‘awarding gap’ exists in the UK; advance HE data for 2019–2020[12] show that while 86% of White students in UK universities were awarded a 2:1/first, only 66.3% of Black students were. This is not due to the academic ability of these students, who enter university with the same grades as their White counterparts.[13] Instead, systemic issues within UK universities, many of which are closely linked with the colonial past, are thought to disadvantage BAME students.[14]

Decolonising and diversifying the curriculum is one way to challenge this; diversifying is not just about what is taught, but also how it is taught, with consideration of who contributed to the work and where it was carried out.

The ‘Decolonising and diversifying the immunology curriculum’ project

In the summer of 2021, supported by a BSI Equality, Diversity and Inclusion activity grant[15] (alongside in-house funding), we ran our first decolonising and diversifying project. Four undergraduate students were employed to review material for four Year 1 and Year 2 units with significant immunology content. Their brief was to identify opportunities to decolonise and diversify unit content and also highlight areas of good practice. Intersectionality is essential: we must consider sexism, ableism, classism, homophobia, and transphobia as well as ethnicity if our teaching is to be truly inclusive.

Students produced detailed reports (summarised in ‘Key themes identified’ box) which were shared with staff and discussed at a teaching committee meeting. Responses from staff have been positive, with thoughtful reflection and discussions leading to constructive changes in our curriculum. Feedback from undergraduates has been mixed, with some questioning the relevance of this work to a science degree, while others were very supportive of the work and sought to take further individual action.

Next steps

We have secured funding to expand this project and recruit more student partners to review further units. Decolonising

Key themes identified

Global North bias

Students identified bias towards White cis men and the Global North in references, even when research subjects were in the Global South, and opportunities were missed to acknowledge overlooked scientists. *“References and reading lists should be diverse, and contributions from minoritised groups or overlooked figures should be acknowledged.”*

The use of language and images

A lack of diversity in skin tone in images (photographs or cartoons) was noted, and some use terminology which supported ideas of superiority/dependency such as ‘developing world’, ‘founding fathers’ or ‘poor countries’. *“Images and language should be chosen with care to avoid perpetuating inequalities/inaccuracies (default white) or negative stereotypes.”*

Data bias

Data often represented White/European/North American populations, e.g. GWAS or statistics about disease incidence. Binary genders were exclusively used e.g. in the context of genetics. *“Research presented should be inclusive and diverse.”*

Discuss problematic figures or practices

Opportunities were missed e.g. for discussion of HeLa cells – taken without consent from Henrietta Lacks, the historical context for the development of anti-malarials, or Biopiracy. *“The wider context of research and problematic figures/practices should be acknowledged.”*

Respect and highlight indigenous knowledge

Greater sensitivity could be shown towards indigenous knowledge and traditional medicine approaches. *“Opportunities should be provided for wider discussion around the effects of colonialism on science and society, encouraging students to think critically to avoid reinforcing colonial or patriarchal narratives.”*

> 'We must question the scientific canon to identify and prevent long-held inequalities so that scientific knowledge can represent and benefit all, equally.'

leads from the three Biomedical Sciences schools are collaborating to study the understanding and attitudes towards decolonising and diversifying the curriculum and how these may change with time. We are in the process of seeking ethical approval for two surveys (staff and students), and for focus groups. University-level commitment to decolonising the curriculum has been important to enable this work (see the University's recent unveiling of a statue of Henrietta Lacks[16]), and we are fortunate to work with Decolonising Mentors – experts in the field who advise us on the direction of our work.

We are committed to maintaining momentum and discussion, aided by our Faculty Decolonising and Diversifying the Curriculum working group, who have since produced a booklet for staff which includes useful resources and tangible steps on how to start making changes to teaching content. Diversifying the curriculum has been embedded into existing academic structures; it is also a standing item on our Student-Staff Liaison Committee meetings, to ensure the open dialogue with students continues, to support what will be an ever-evolving process.

For science to attain the ideal of objectivity, we need to address the biases in contemporary science to make sure that knowledge represents all. It is vital that we do not perpetuate long-held inequalities in our teaching, and that we empower our students to think critically as they become the next generation of immunologists.

Dr Bronwen Burton, School of Cellular and Molecular Medicine, University of Bristol

Dr Caroline McKinnon, School of Biochemistry, University of Bristol

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Find out more

The BSI Equality, Diversity and Inclusion activity grants are competitive grants designed to help organisations and individuals fund activities and events that promote diversity and inclusion across the immunology community and the wider biomedical sciences. The next round for this grant scheme will open in April 2022. Find out more and watch this space: **www.immunology.org/BSI-EDI-grant**.

Congratulations

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

Bright Sparks set a shining example

The BSI Congress saw the return of our very popular 'Bright Sparks' sessions, highlighting exceptional work from PhD students and postdocs. The judges praised the incredibly high standard of presentations across both sessions.

Dr Johanna Kabbert (Lund University) won the postdoc category for the talk entitled 'High microbiota reactivity of human intestinal IgA requires somatic mutations'. Runners up in this session were **Dr Lucy McShane** (University of Glasgow) and **Dr Andrew McLean** (University of Oxford).

Meanwhile, the PhD category was won by **Lucia Labeur-Iurman** (Imperial College London) for the presentation entitled 'An enriched IL-2 environment in early life limits T follicular helper cell development

and protective immunity after respiratory virus infection'. Runners up were **Julie M Mazet** (University of Oxford) and **Harry Horsnell** (University College London). Our congratulations to all the finalists.

New Honorary Members

At the BSI Congress, we were delighted to award Lifetime Honorary Membership of our Society to six members in recognition of their outstanding contribution to immunology and to the Society:

- **Prof Fiona Powrie**, Director of the Kennedy Institute of Rheumatology and Principal Investigator in the Translational Gastroenterology Unit at the University of Oxford
- **Prof Danny Altmann**, Professor of Immunology at Imperial College London
- **Prof Paul Moss**, Professor of Haematology and Deputy Head of College of Medical and Dental Sciences at the University of Birmingham
- **Prof Dame Sarah Gilbert**, Saïd Professor of Vaccinology at the University of Oxford and co-founder of Vaccitech
- **Prof Teresa Lambe OBE**, Associate Professor and Principal Investigator at Oxford University's Jenner Institute
- **Prof Sir Andrew Pollard**, Professor of Paediatric Infection and Immunology at Oxford University and an honorary consultant paediatrician at Oxford Children's Hospital

Dr Bnar Talabani appointed MBE in New Year Honours

Dr Bnar Talabani, who has been actively involved in the BSI's public engagement work throughout the pandemic has been awarded an MBE for services to the NHS and to the Ethnic Minority Communities in Wales in the 2022 New Year's Honours list. The warmest congratulations from all at the BSI on her well-deserved achievement.

New Deputy Chair of Wellcome Trust's Board of Governors

Prof Fiona Powrie, who was recently awarded a BSI Honorary Membership has been appointed as the next Deputy Chair of Governors at the Wellcome Trust. Julia Gillard, the current Chair of Governors said: "Fiona's new role will allow us to benefit even more from her experience in science and research. I look forward to working with her to drive forward Wellcome's mission to solve the urgent health challenges facing everyone."

BSI Congress poster prizes

Our congratulations to the following winners of the BSI Congress poster prizes: **Dr Toshiyasu Suzuki** (Cancer Research UK Beatson Institute), **Dr Gareth Purvis** (University of Oxford), **Dr Thomas Fenton** (University of Edinburgh), **David Lecky** (University of Birmingham), **Ashna Patel** (University of Oxford), **Lucy Curham** (Trinity College Dublin) and **Ali Amini** (University of Oxford). This year's winner in our Education and Public Engagement category was **Prof Matthias Eberl** (Cardiff University).

Travel grant success

Congratulations to the 144 Congress travel grant recipients, and to those who were recently awarded BSI Regional and Affinity Groups Conference Travel Grants.

More information at **www.immunology.org/grants-and-prizes**.

BSI President Prof Arne Akbar 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.

Global Impact & Innovation Award

During the opening ceremony of BSI Congress 2021 we awarded a special Global Impact & Innovation Award to all those involved in the design and development of the Oxford/AstraZeneca COVID-19 vaccine for their outstanding contributions to UK immunology research during the pandemic.

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**.

Women and Girls in Science Day

We are passionate about raising diverse voices in immunology. For many years we have supported initiatives that recognise the critical role that women play in science and beyond, such as International Women's Day. Here, we highlight how we marked an important world day – the International Day of Women and Girls in Science on Friday 11 February. We celebrated women's contributions to the field of immunology by shining a spotlight on some of the brilliant women immunologists of our official journals. You can read a selection of interviews and visit **www.immunology.org/news/bsi-celebrates-women-and-girls-in-science-day** for more inspiring women in immunology.

Professor Marianne Boes

Regional Editor for Europe, *Immunotherapy Advances*

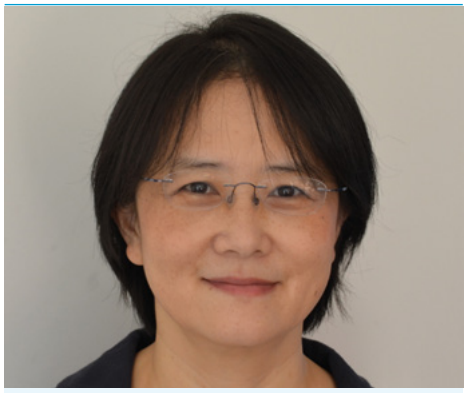
Professor Boes is Associate Professor at the University Medical Center Utrecht, Netherlands, and heads up the Pediatric Immunology Laboratory in the Pediatrics Department and the Center for Translational Immunology.

What's your current research focus?
My current research focus is translational immunology: I think a lot of great science is being done that could be applied to patient use, and I try to improve the benefit to patients of new research findings (from us or from others).

What's your favourite part of your job?
My favourite part is to assist talented and driven MSc and PhD level students in their development to become fully-fledged researchers who recognise the importance and fun in doing science and become critical thinkers along the way.

Why is gender equity in science important to you?
Any endeavour, also science, works better when gender (and all factors that make us whole humans) is considered, as people who can truly be themselves perform better, as individuals and as a group. You simply miss out on a better scientific endeavour when you exclude talent based on gender etc.

What would you say to women and girls who are looking to have a career in science?
Go for it! Believe in yourself, look for role models, and ask for mentorship.



Professor Tao Dong

Regional Editor for Asia, *Immunotherapy Advances*

Professor Dong is a Professor of Immunology in the MRC Human Immunology Unit, and Founding Director of Chinese Academy for Medical Sciences Oxford Institute at the University of Oxford, UK.

What's your current research focus?
I study a type of immune cells called T-killer cells, which are an important defence mechanism of the body against viral and cancer cells. In the past 12 months, most of my attention has been focused on understanding the role of SARS-CoV-2 specific T cell responses and how this correlates with disease outcome in COVID-19 patients.

What's your favourite part of your job?
I love interacting with students and postdocs in the lab; discussing their data and planning new experiments. Each day brings new challenges and opportunities! Although I don't have much time to conduct my own experiments, the lab has been so busy the past 12 months I have been helping out as much as I can, and I loved it!

Why is gender equity in science important to you?
In China, we were told girls hold up half of the sky. This is true! I have never seen myself differently from my colleagues who are men when it comes to science.

What would you say to women and girls who are looking to have a career in science?
Find a good mentor for each stage of your career. There are going to be set-backs and it is important to be resilient and not give up easily. But most importantly; believe in yourself!

Dr Cindy Ma

Immunodeficiency Section Editor, *Clinical & Experimental Immunology*

Dr Ma co-heads the Immunology and Immunodeficiency Laboratory at the Garvan Institute of Medical Research, Sydney, Australia.

What's your current research focus?
My current research focus is on primary immunodeficiencies and determining how different gene defects compromise the

immune system resulting in increased susceptibility to disease.

What's your favourite part of your job?
My favourite part of my job is the different places and countries science takes you to and the amazing people you meet along the way – clearly this was pre-COVID-19!

Why is gender equity in science important to you?
Gender equity in science is important to me as women should have the same opportunities as men no matter what profession they choose. A career in science offers a lot of flexibility, which is especially important if you have a young family.

What would you say to women and girls who are looking to have a career in science?
Go for it! You never know what is on the other side and where a career in science will take you!

Professor Kathleen McCoy
Senior Editor, *Discovery Immunology*

Professor McCoy is a professor in the Department of Pharmacology and Physiology at the University of Calgary, Canada, and Scientific Director of the International Microbiome Centre.

What's your current research focus?
My research focuses on the dynamic interplay between the gut microbiota and the immune system. I try to elucidate how the intestinal microbiome educates and regulates the immune system, especially during early life, and how this keeps us healthy or can drive disease.

What's your favourite part of your job?
I love being able to continually ask new questions, to follow the science and discover new mechanisms. I also really love the ability to interact and collaborate with researchers all over the world.

Why is gender equity in science important to you?
Gender equity in science is essential to reach the full potential of scientific discovery. Gender equity and diversity promotes excellence and will benefit all aspects of society.

What would you say to women and girls who are looking to have a career in science?
I would encourage them! I would also stress the importance of seeking out strong mentors, scientific advisors and role models and to build a supportive network.

Dr Meera Ramanujam
Senior Editor, *Discovery Immunology*

Dr Ramanujam is Executive Director of Immunology and Translational Research at Aro Biotherapeutics based in Philadelphia, USA.

What's your current research focus?
Together with the Aro team, I work to develop new treatment options for patients with immunological diseases.

What's your favourite part of your job?
Understanding disease mechanisms and seeing the effect of drugs we develop improving patients' lives.

Why is gender equity in science important to you?
Gender equity is not uniform across all scientific disciplines. We need this for women to shine and be in the forefront and not be the workforce who do things in the background.

What would you say to women and girls who are looking to have a career in science?
Science provides a huge opportunity to reveal your innovative thinking, push your limits and make a difference to humankind.

Professor Leonie Taams
Editor-in-Chief, *Clinical & Experimental Immunology*

Professor Taams is Professor of Immune Regulation and Inflammation, Head of the Department of Inflammation Biology and Director of the Centre for Inflammation Biology and Cancer Immunology in the School of Immunology & Microbial Sciences at King's College London, UK.

What's your current research focus?
My lab aims to identify cellular and molecular mechanisms that initiate, perpetuate and regulate inflammation in chronic immune-mediated inflammatory diseases. We have a particular focus on the immunopathology of rheumatoid and psoriatic arthritis.

What's your favourite part of your job?
My job is so multi-faceted that it is difficult to choose a favourite part! Having said that, a particularly rewarding aspect of my work is to see the students and staff around me develop and progress.

Why is gender equity in science important to you?
Because science should reflect everyone, both in terms of the people who conduct science, and those who benefit from science – which is everyone.

What would you say to women and girls who are looking to have a career in science?
Go for it: as long as you are curious and are not afraid to experiment and ask questions, there is a place and need for you in science.

Get involved!

Head to our website: **www.immunology.org** to discover other initiatives and ways in which we're championing different communities working in immunology and check out our social media channels to engage and support them.

@britsocimm, @discovimmunol, @IMTadvances, @CEIjournal

@britsocimm

british-society-for-immunology

britsocimm

BSI East Anglia Regional Group at the Norwich Science Festival

The BSI East Anglia Regional Group was established in 2009 to create a forum for scientists from Norwich and beyond with an interest in immunology to come together and enhance collaborations. More recently, it has focused on increasing awareness of immunology and the work of the Society through public engagement. Here, the Group shares their recent experience engaging with the public about vaccines at the Norwich Science Festival.

The annual Norwich Science Festival (NSF) takes place in October half-term with a week of exhibitions, shows, talks and hands-on activities for all ages and is an ideal opportunity to showcase immunology and our research to the public. This year, it was delivered in a hybrid format using a wide range of historical and modern city-wide venues including the Norwich Cathedral, theatres and the multi-space Forum. Following its online format in 2020, the eight-day celebration of science was welcomed back by partners, contributors and visitors with great enthusiasm.

After a challenging eighteen months, the sixth Norwich Science Festival was an opportunity to showcase the ground-breaking ways that scientists and innovators are tackling challenges that society faces and helping us to embrace the future. Its engaging programme included zoology and nature; climate change; life sciences; digital technology; engineering; chemistry; astronomy; space and physics; and cutting-edge research from across the Norwich Research Park and beyond. Headline events included our very own Ben Garrod dissecting an ostrich (no animals were harmed – it was donated after a natural death!).

We ran an activity stand on vaccines. The BSI supported our participation in this event with a Communicating Immunology grant (**www.immunology.org/communicating-immunology**) to fund reusable resources for the activities. The stand included a wide range of information and hands-on activities on Covid-19, including: make your own coronavirus paper plate; origami mice and syringes of different vaccines; viewing lung tissue; and posters displaying the history of vaccines and myths surrounding Covid vaccines. Many of the activities were from the BSI's immunology activities and resources (**https://bit.ly/3fHXlIH**) including Antibody Challenge, Herd Immunity Bowling and some printed infographics. We were unsure how many would attend the festival. Over the eight days (23–30 October 2021), more than 180 events took place, with 47 organisations and more than 64,000 visitors. On the day we participated, there were over 7,000 visitors.

The festival was delivered in line with current guidelines to keep visitors and contributors safe. For Covid safety, we had pre-prepared activity packs with paper/pens and resources to reduce multi-use items (which were sanitised between users). However, due to such a high interest in the stand, we ran out of packs within a couple of hours and had a team making extra activity packs to keep up with demand. The origami mice and vaccines were a definite hit, along with making pipe cleaner antibodies and the Antibody Challenge game. These also engaged participants for an optimum amount of time, enabling conversation about the function of antibodies. The Herd Immunity Bowling activity worked well at the start of the day but by the afternoon, the skittles did not stick as well to the floor. However, it was a big hit with the children and gave a good discussion opportunity.

The public asked lots of questions about vaccines, the impact of vaccination and the effectiveness of face masks. Having open and honest discussion was appreciated. We learned how important it was for the public to have the opportunity to talk to scientists about this topical issue, to dispel the myths about vaccines and talk through what we know and what we don't know. The event also had a big impact on our students helping out, who gained valuable skills in science communication. One reflected on being asked 'what is science?' it was a question they weren't expecting and initially found difficult to answer! We thank the BSI for supporting this event and look forward to running further events communicating immunology in the future.

The BSI East Anglia Regional Group

Find out more

Are you interested in joining the BSI East Anglia Regional Group? Visit the Group's webpage at **https://bit.ly/3GRhLuv.**

Professor Jacob B Natvig
1934–2021

The BSI was saddened to learn about the recent death of Professor Jacob B Natvig. He was President of the International Union of Immunological Societies (IUIS) from 1989 to 1992 and one of the founders of *Scandinavian Journal of Immunology*, making significant contributions to the field over decades.

Jacob B Natvig, leading Scandinavian immunologist and major figure in the International Union of Immunological Societies, died peacefully in 2021. In 1971 he published, in *Nature New Biology*, the first paper showing that surface-bound immunoglobulin was a marker for B lymphocytes in humans. He went on to publish over 400 publications and influenced many Norwegian medical students through his textbook *Medisinsk immunologi* which he wrote with Morton Harboe, who coincidentally died the day before Natvig. An enthusiastic and popular teacher, Natvig was also welcoming and encouraging to young scientists. I still remember with pleasure, as a new postdoc in the 1970s, meeting Jacob at a remote conference hotel in the snowy wilds of Norway and being warmly welcomed to the scientific community and introduced to the strenuous exercise of cross-country skiing by Jacob and his wife Harriet.

Jacob had lived through interesting times; he later recalled his wartime experience, as a five-year-old child, of walking in a column of refugees, fleeing the German soldiers. He trained in medicine at the Oslo University Hospital – the Rikshospitalet – where he also worked as a porter while pursuing his studies. He was later to muse on what a useful experience this had been when he became the director of the hospital. Qualifying in 1959 he did his national service as a doctor in the Norwegian Navy reflecting his strong maritime family background.

Research for his doctorate was at the Broegelmann Research Laboratory at the University of Bergen. This was pivotal in setting him on the pathway for his lifetime of research. Eric Waaler, the discoverer of rheumatoid factor – anti-IgG autoantibodies, was the first dean of the Faculty of Medicine at Bergen and later the rector of the university. He was instrumental in setting up the research laboratory following a generous legacy from a merchant, Johan Broegelmann, and setting the research focus on immunology and particularly anti-γ-globulins. Natvig was the second person to gain his doctorate at the laboratory, in 1966, on 'Studies on the specificities of γ-globulin and anti-globulin factors in human sera'.

Henry Kunkel, at the Rockefeller University in New York, was carrying out detailed ultracentrifugal studies on the interaction of rheumatoid factors with IgG, finding high sedimentation immune complexes in patient sera. Following completion of his thesis Natvig set off for a year's postdoc in Kunkel's laboratory. This widened his horizons and on his return to Norway in 1967, at the age of 32, he became the first head of the Institute of Immunology and Rheumatology at the Rikshospitalet. This was to become a major international centre for basic and clinical immunology. For much of the time Natvig was the most cited Norwegian author in biomedicine. In 1972 he founded, with Morten Harboe, the *Scandinavian Journal of Immunology* and he remained principal editor until 2001. The inaugural paper in the first issue being Froland and Natvig's 'Surface-bound immunoglobulin from normal and immunodeficient humans', their seminal follow up to their *Nature* paper.

In 1978 he moved on to become the director of the Rikshospitalet. He had clear objectives: to improve financial controls, to rebuild the hospital on a new site, and a more secret objective – to introduce heart transplantation to the hospital. He succeeded in all his targets but not without some descension leading to the board asking him to consider resigning his post. Administration's loss was immunology's gain and he returned to active research in 1986, continuing until 2005, and going back to his first love of anti-globulins and rheumatoid factors, but now exploiting the advances of patient-derived monoclonal autoantibodies.

Natvig was a passionate internationalist for immunology. He was involved in the setting up of the International Union of Immunological Societies – Councillor 1971–77, Secretary General 1977–83, Treasurer 1983–86, Vice-President 1986–89, President 1989-92 and President of the 8th International Congress of Immunology in Budapest. He played a key role in the establishment of the Federation of Immunological Societies of Asia-Oceania and was very concerned

Jonsson, R, Ljunggren, H-G, Wigzell, H, *et al.* Jacob B. Natvig (1934-2021), one of the founders of *Scandinavian Journal of Immunology*. Scand J Immunol. 2021; 94:e13053. **https://doi.org/10.1111/sji.13053**

to help develop immunological societies in Africa – editing the *Proceedings of the First IUIS African Immunology Meeting*. He was unhappy with the unequal access to science careers in developing countries compared with more wealthy countries.

Upon his retirement he took up another career in the history of medicine, becoming chairman of the Board for the National Medical Museum Foundation from 2002 to 2014 and actively organising workshops, exhibitions and successfully saving the old maternity clinic from redevelopment.

Natvig will be remembered as an extremely hard working and intensely active collaborator. He seemed to be everywhere at scientific meetings, and he somehow knew just when to telephone to ask how our experiments were performing – usually when we were behind or having a problem. But overwhelmingly a terrific enthusiast for immunology. Always keen to discuss research and full of more questions to answer. A giant of the subject but someone who it was a great pleasure to have known and with whom to work.

Frank C Hay
Emeritus Professor of Immunology
St George's, University of London

Immune Update

The BSI journals

A round-up of new research published in two of the British Society for Immunology's official journals, *Clinical & Experimental Immunology* and *Immunotherapy Advances*. Members can access these journals free of charge at **www.immunology.org/journals**. Take a look at our recently launched Open Access immunology journal, *Discovery Immunology*!

Clinical & Experimental Immunology

Improved function and balance in T cell modulation by endothelial cells in young people

The immune system undergoes progressive functional decline with age and there's evidence that the adaptive immune system is more susceptible to this dysfunction than the innate immune system. Previous studies have revealed an unbalanced differentiation of T cell subsets in older adults, who have lower levels of bone marrow lymphoid progenitor cells and naive T cells compared to younger adults, but higher levels of memory T cells, T helper cells and T cytotoxic 1 cells.

In this study, Tang *et al.* focused on the function of bone marrow endothelial cells (ECs) among 45 healthy adults divided into <30 years, 30–45 years and >45 years groups. They measured the frequency and reactive oxygen species (ROS) levels of bone marrow ECs in samples from each of these groups, finding comparable frequencies but significantly lower ROS levels in the younger group. Bone marrow ECs in the younger group also had better migratory and tube-forming abilities. Moreover, when T cells were co-cultured with ECs from each group, those cultured with the younger group produced fewer proinflammatory cytokines. Accordingly, the >45y EC group showed up-regulated genes related to the cytokine-mediated signalling pathway and regulation of T cell activation.

Considering these results together with previous studies, the authors hypothesise that the different immunomodulatory effects of ECs from younger and older individuals may lead to T cell subset alterations with ageing.

Tang *et al.* 2021 *Clinical & Experimental Immunology* **206** 196–207 **https://bit.ly/3rvOS0E**

Immunotherapy Advances

A phase 1b open-label dose-finding study of ustekinumab in young adults with type 1 diabetes

Type 1 diabetes (T1D) is an autoimmune disease caused by T cell-mediated destruction of pancreatic β-cells. T1D pathogenesis involves defects in immune tolerance, particularly in regulatory T cells, permitting the expansion of $CD4^+$ and $CD8^+$ T cells, some of which secrete IL-17A and are known as Th17 cells. IL-17A production acts in concert with IFN-γ, an inflammatory and cytotoxic cytokine produced by Th1 cells, to induce β-cell destruction.

As both Th1 and Th17 differentiation is controlled by cytokines containing a p40 subunit, this study hypothesised that inhibition of the IL-17A and IFN-γ axes through p40 blockade would delay β-cell destruction. Since the pathogenesis of psoriasis similarly involves IL-17A production controlled by a p40-containing cytokine, repurposing psoriasis therapies for T1D may be a promising strategy.

Ustekinumab is an antibody with this specificity used to treat psoriasis and inflammatory bowel disease in adults and children. Here, Marwaha *et al.* conducted a pilot open-label dose-finding study to assess the safety and biological activity of ustekinumab in patients with new-onset T1D. Twenty participants aged 18–35 who had received a T1D diagnosis within the last 100 days were divided into groups and given 45mg or 90mg doses of ustekinumab at different intervals over one year.

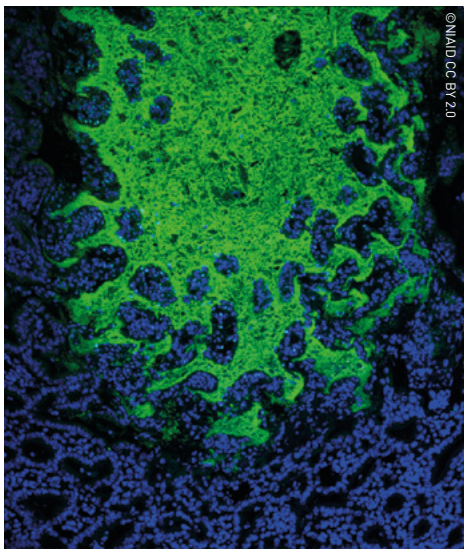
The study demonstrated that ustekinumab given to the adult T1D population at a maximum dose of 90mg every 12 weeks did not result in any serious adverse events attributed to the drug and was deemed safe to progress to efficacy studies. As this was a phase 1b study, the study was not sized with sufficient power to determine efficacy, however participants receiving 90mg ustekinumab every 12 weeks showed a reduction in circulating proinsulin-specific IFN-γ and IL-17A-producing T cells.

Marwaha *et al.* 2022 *Immunotherapy Advances* **2** ltab022 **https://bit.ly/3fHZKTJ**

Around the journals

A summary of some of the latest papers from the world of immunology.
Written by Edd James, Louisa James, Donald Palmer and Laura Anderson.

Regulation of peripheral inflammation by EDP1867



The gastrointestinal tract is crucial in immune homeostasis. It simultaneously recognises and defends against pathogens, while allowing for the uptake of nutrients. This local sensing system relays messages from the gut contents to peripheral tissues, based on what it sees passing through.

In this paper, the authors describe the ability of the intestinal mucosa to act as a central controller of systemic inflammation. Its response to substances passing through the gut can result in a broad-based resolution of inflammation.

They demonstrate how the development of EDP1867, an orally administered strain of non-viable bacteria that does not colonise the gut, can mediate this peripheral anti-inflammatory effect. EDP1867 was seen to reduce inflammation and immunopathology in mouse models of inflammatory disease, including delayed-type hypersensitivity (DTH), atopic dermatitis, psoriasis, and experimental autoimmune encephalomyelitis (EAE). It also reduced production of pro-inflammatory cytokines involved in inflammatory cascades.

This study highlights that non-absorbed oral agents could represent a safe and effective therapeutic approach for common inflammatory diseases.

Ramani *et al.* 2022 *Frontiers in Immunology* doi: 10.3389/fimmu.2022.768076

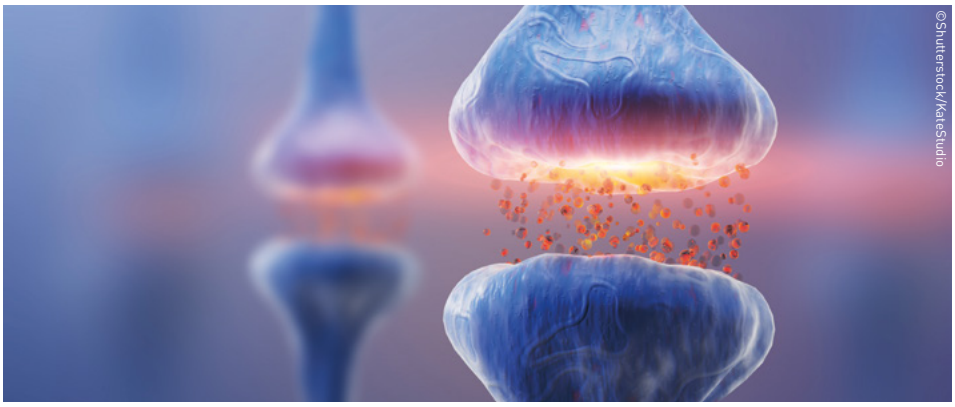
Hematopoietic stem cell requirement for macrophage regeneration is tissue-specific

The origin of tissue macrophages is coming under increasing scrutiny with studies revealing that these cells are highly heterogeneous, exhibiting different kinetic and development properties.

Using transplantation studies and *in vivo* lineage tracing Eddins and colleagues showed small and large peritoneal macrophages are initially derived from yolk sac, but require haematopoietic stem cells (HSCs) for regeneration in the adult. In contrast, microglia did not require HSC for regeneration.

These studies highlight the diverse nature of tissue macrophages development and regeneration.

Eddins *et al.* 2021 *The Journal of Immunology* **207** 3028–3037



Insular cortex neurons encode and retrieve specific immune responses

There is growing evidence that peripheral immunity is affected by the brain. How immune-related information is stored in the brain and regulates immune responses is not clear. Here, Koren and colleagues show, using activity-dependent cell labelling, that the neurons within the insular cortex of the brain are activated during inflammation. This was demonstrated using two different models of inflammation – dextran sulfate sodium-induced colitis and zymosan-induced peritonitis. Moreover, subsequent chemogenetic reactivation of the insular cortex of neurons in mice following recovery of colitis or peritonitis showed that many of the key elements observed during inflammation could be repeated. These results indicate that the brain can store immunological representations suggesting that memory of inflammation does not only reside in the immune system.

Koren *et al.* 2021 *Cell* **184** 5902–5915

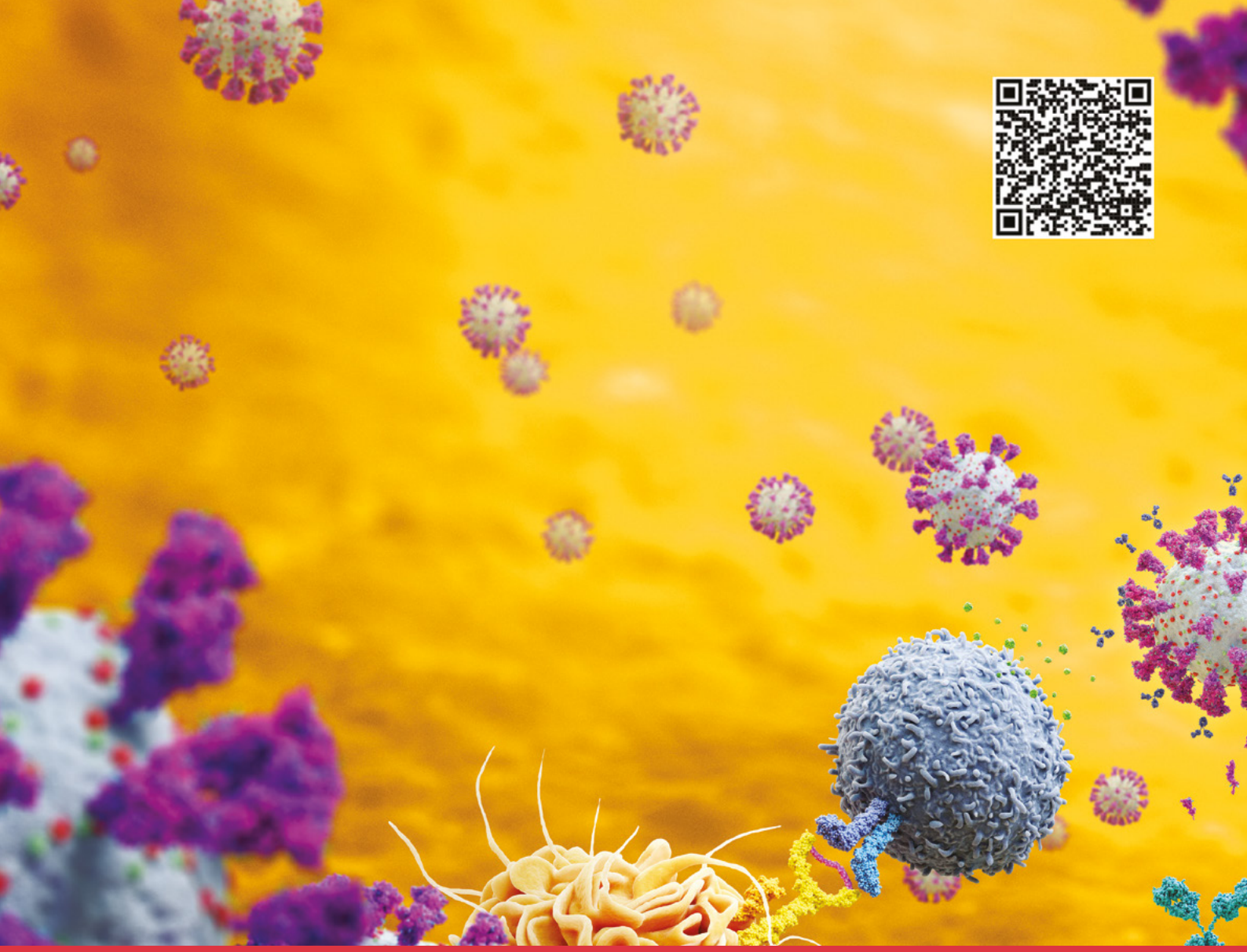
Clonally expanded B cells in multiple sclerosis bind EBV EBNA1 and GlialCAM

Accumulating evidence supports that Epstein Barr Virus (EBV) is the causal trigger of multiple sclerosis (MS) in susceptible individuals. Although several hypotheses have been proposed, the mechanism by which EBV infection drives autoimmunity remains unproven. The 'molecular mimicry' theory proposes that viral antigens share structural homology with self-antigens, and that cross-recognition by viral-specific B cells drives pathology.

To test this hypothesis, Lanz and co-authors characterised antibodies derived from the cerebrospinal fluid of patients with MS. They found that a high proportion of B cells and plasmablasts in the CNS are EBV-specific and have evidence of clonal expansion. Detailed characterisation of one antibody revealed cross-reactivity between an EBV antigen and the self-antigen GlialCAM, an adhesion molecule expressed by CNS-resident cells.

Analysis of further cohorts showed that this cross-reactivity is prevalent in a significant proportion of MS patients, supporting the role of molecular mimicry as a mechanism that links EBV and MS.

Lanz *et al.* 2022 *Nature* doi: 10.1038/s41586-022-04432-7



Study the T cell response to the Omicron variant

Culture is key for assessing mutation-specific T cell responses

The B.1.1.529 lineage (Omicron variant) raises concerns again: How does the immune system respond to the variant? Do SARS-CoV-2–specific T cells from previous infections recognize this lineage? And what about the T cell memory after vaccination?

Our new PepTivator® Mutation Pool covers the mutated regions in the spike protein of the Omicron variant to help assess mutation-specific T cell responses. Combine it with our ready-to-use SARS-CoV-2 T Cell Analysis Kits for a standardized set-up. Learn more by scanning the QR code above.

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