



# Newsletter



## Report on the 36<sup>th</sup> EFI Conference in Nantes

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### European Technical H&I Qualification

ETHIQ is an online training course for technologists working in EFI accredited labs to enable demonstration of knowledge and competence.

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### EFI Annual meeting in Nantes

The 2023 EFI Conference marked a noteworthy return to France, following a gap of nearly 15 years since the meeting held in Toulouse in 2008.

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### EFI member survey 2023

EFI continuously seeks feedback on what aspects of EFI membership work well, and where you would like us to invest further.

**This edition of the EFI Newsletter contains a lot of information on the very successful 2023 annual meeting held in Nantes, France in April this year, both in text and in pictures. We hope you enjoy reading!**



## Dear EFI members,

I had quite a surprise when Sebastiaan requested my contribution for this newsletter. The summer has passed by so quickly. I hope that everyone has had enjoyable holidays and that you have not been overly affected by the dramatic wildfires and floods that we have been hearing about on the news. Congratulations to Pierre-Antoine Gourraud, Sonia Bourguiba-Hachemi, the local organising team and Guarant our Professional Conference Organisers for the successful and stimulating conference in Nantes. Thank you also to the corporate sponsors for your continued support.

There were several excellent special

sessions held during this conference; EFI's first session with the Society for Immune Polymorphism and a session with the European Society for Organ Transplantation with whom we have shared sessions previously. Having shared sessions with other organisations fulfils one of EFI's goals, "To develop relations with organisations with similar aims", and I hope we will continue these special sessions at future conferences. My personal highlight of the conference was the outstanding Ceppellini Award Lecture, delivered by Professor Ronald Bontrop. Congratulations to Ron for

*continue on page 5*

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# From the editor's desk

Firstly, a message on behalf of the EFI Executive Committee: This EFI newsletter was prepared for publication prior to the appalling terrorist attacks in Israel and aftermath. Our thoughts are with all people affected, especially our EFI colleagues. We wish a speedy peaceful solution.

I hope you all have had a great summer with friends and family. As you may know, the Newsletter is going through a transition phase. Firstly, a new layout was introduced for the 100<sup>th</sup> edition of the Newsletter, which I hope you liked. Furthermore, as was clear from the survey sent out earlier this year, the vast majority of EFI members prefer to only receive the Newsletter in a digital format. We will therefore stop distributing the paper copy of the Newsletter next year. Also, to make sure all relevant content ends up in the Newsletter, an Editorial Board will be formed with representatives from all EFI committees. Besides this, we found a deputy editor in Gurvinder Kaur, who kindly indicated to help out with to make the EFI Newsletter future-proof.

In this edition of the Newsletter we look back to a very successful EFI meeting, organised by Pierre-Antoine Gourraud, Sonia Bourguiba-Hachemi, and their team. The program was excellent, the venue was extremely convenient, and the social program exceeded all expectations. Reports from the bursary awardees accompanied by pictures of the event can be found in this Newsletter. Also, the minutes from the General Assembly, and the reports on the prize winners of this 36<sup>th</sup> EFI meeting are included.

For now, I hope you enjoy reading the Newsletter, and look forward to your contributions to the next Newsletter.

*Sebastiaan Heidt*

*Deadline for contributions to EFI Newsletter 102 is December 15, 2023.*

*Please send your contributions by e-mail to: [efioffice@lumc.nl](mailto:efioffice@lumc.nl)*

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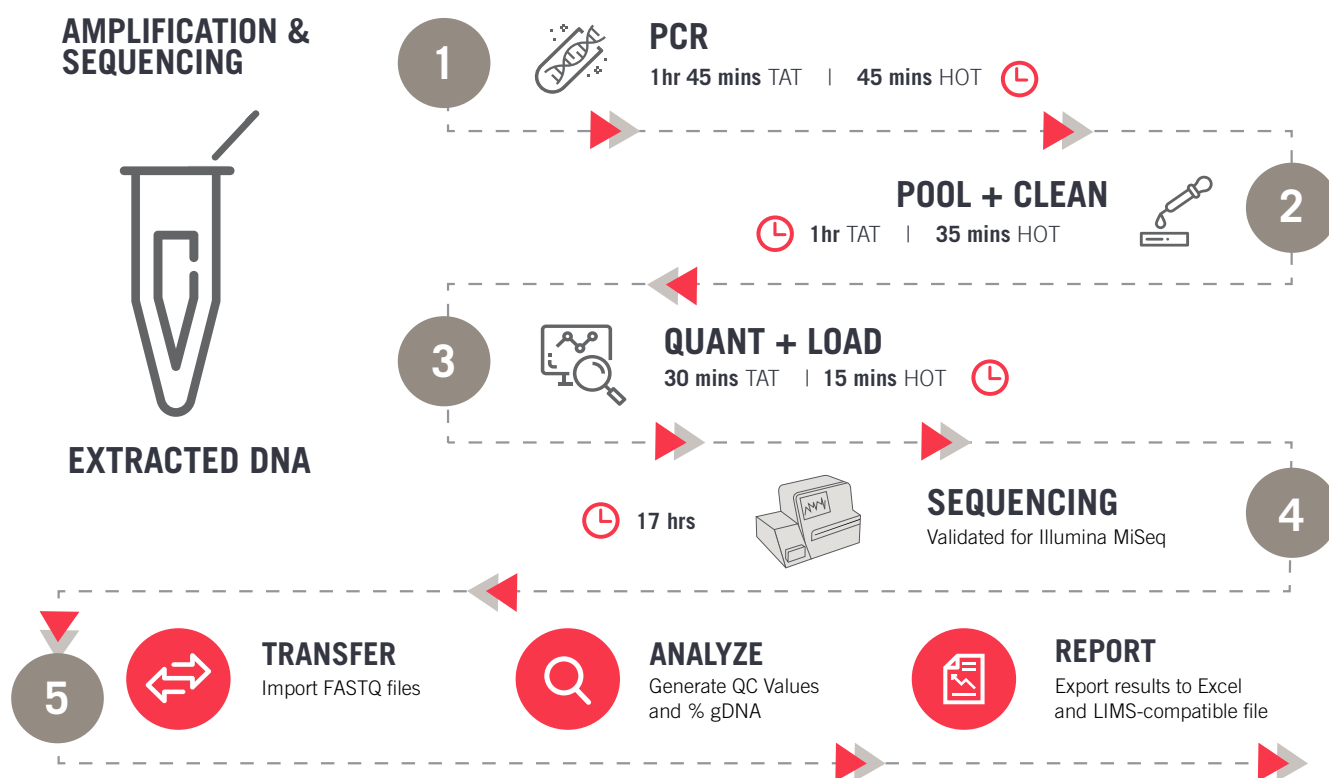
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\*References for early rejection • Rashef et al BBMT 2014;20:1758-66 • Tang et al BBMT 2014;20:1139:1144  
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## from the EFI President (continued)



this well-deserved award.

Perhaps this is not very scientific, but my second highlight from the conference was the entrance to the conference dinner made by the Executive Committee on Le Grand Elephant at Les Machines de l'île. Congratulations to the recipients of the EFI awards received during the Nantes conference; the EFI medals, the Julia Bodmer Award, Jon van Rood Award, and all the other best oral abstracts and best poster awards. A review of these is presented elsewhere in this newsletter. At the end of the conference, as is the tradition, the EFI flag was passed to Ron Loewenthal and his team in Jerusalem. We wish you all the best for the organisation of the next EFI conference. Save the dates: May 20-23<sup>rd</sup> 2024.

Prior to and during the conference in Nantes the various EFI committees held meetings and their activities were presented during our General Assembly meeting – a report of which is available in this newsletter. EFI is only functional due to the activity of the Committee Chairs and members, who spend much time and energy

on their work which is very much appreciated. My thanks are given to Paul Rouzaire, who stepped down as our Deputy Treasurer and to Esteban Arrieta-Bolaños and Marie Schaffer whose terms as Councillors have come to an end. Thank you for your contributions to the work of EFI. In return, we welcome four new members to the Executive Committee: Nicolas Vince takes over as Deputy Treasurer, Sebastiaan Heidt and Falko Heinemann join as Councillors and Marco Andreani is our President Elect. Congratulations to all of you – I look forward to working with you. Since the Nantes conference, the Executive Committee has met virtually and a face to face business meeting is planned for the end of October. The Executive Committee will also meet with the chairs of the other EFI committees to discuss their activity. If any members would like to make any suggestions for the EFI committees, please do so by contacting the EFI Secretary.

I write this letter to you having just delivered a virtual presentation at a transplantation workshop held in Kiev, Ukraine. The workshop was

orchestrated by the ASHI President Dr Robert Liwski, a familiar face at EFI conferences. It was very stimulating to hear the enthusiasm from the attendees for developing their transplant programme despite the challenging situation they are living in. By the time this newsletter reaches you, it is likely that the International Summerschool, this year hosted by APHIA, in Perth Australia, will be underway. I wish all the attendees and fellow faculty a successful and enjoyable event.

The Annual EFI Region 8 Balkan EPT meeting will also be taking place in early November. This is always a very informative and interactive meeting and I am sure that the hosts in Sofia, Bulgaria will ensure another fruitful gathering.

I have previously reported to you, within the newsletter and at the General Assembly, work that the Executive Committee has undertaken with regards to Equality, Diversity and Inclusivity (EDI). EFI's EDI policy is now available on the EFI website (under 'About EFI') and I encourage you to read this. We are now in the process of enacting our EDI action plan, which includes having EDI as a regular item on our committee meetings' agendas, and to include EDI statements in our bursary application procedures. Of course all of this is only relevant if our members agree and comply with our actions. I welcome any comments and suggestions, regarding our EDI policy, from you, the EFI members.

Elsewhere in this newsletter, you will find a report from Neema Mayor (Councillor) describing the findings from the membership survey that was undertaken at the beginning of this year. It is important that we get feedback from our members to ensure that EFI is appropriately supporting our goals. We will undertake another survey next year, so please take the time to let us know your thoughts.

*With best wishes  
Ann-Margaret Little*

# HistoTrac Software

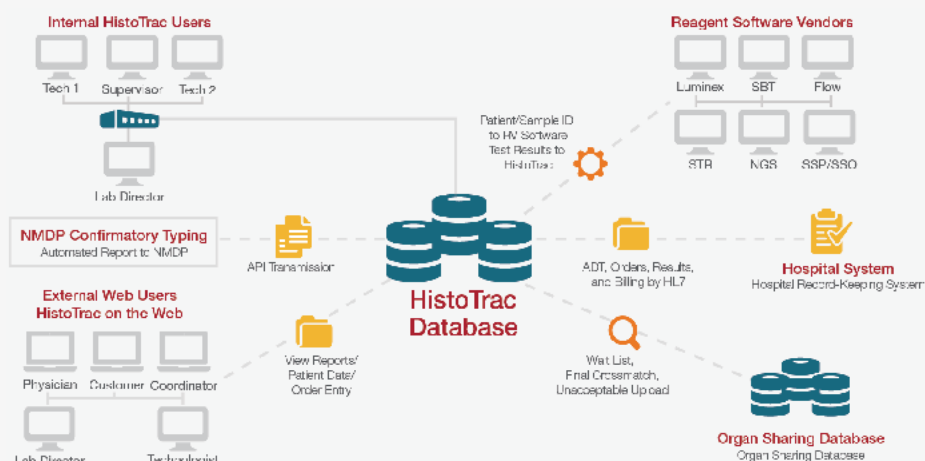
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# Membership update

**Since the last issue of the EFI Newsletter we received a lot of applications forms from new members. Hereby we would like to welcome the following new EFI members:**

P.E. Galarza, Buenos Aires, Argentina	M. Grubač, Podgorica, Montenegro
M.T. Martinex de Saavedra Alvarez, Las Palmas de Gran Canaria, Spain	E. Lekic, Podgorica, Montenegro
S. Muriana, Ragusa, Italy	P. Lutsenko, Kyiv, Ukraine
R.K. Bola, Southall, United Kingdom	Y. Hrohul, Kyiv, Ukraine
J. Brookes, Bristol, United Kingdom	D. Koval, Kyiv, Ukraine
S. Peacock, Cambridge, United Kingdom	I. Bobach, Højbjerg, Denmark
S. Gras, Bundoora, Australia	T. Pajot, Lille, France
M. Duclaut, Bordeaux, France	M. Tonye Libyh, Reims, France
H. Schennach, Jenbach, Austria	D. Badaro, Bury st Edmunds, United Kingdom
P. Mausberg, Hannover, Germany	R. Laguna Goya, Leiden, the Netherlands
L. Meštrović, Split, Croatia	R. Chidichimo, Torino, Italy
A. Mancarella, Lausanne, Switzerland	P. Yankova, Sofia, Bulgaria
S. Simon, Marseille, France	M. Elsherif, Aachen, Germany
C. Pierides, Nicosia, Cyprus	S. Janz, Aachen, Germany
E. Alanis, Geneva, Switzerland	S. Clement, Vandoeuvre, France
D. Carli, Torino, Italy	D. Bouman, Leiden, the Netherlands
B. Vignolo, Munich, Germany	E. Gall, Hannover, Germany
M. Visser, Leiden, the Netherlands	Z. Hartmann, Hannover, Germany
E. Ratiani, Tbilisi, Georgia	R. van der Willik, Leiden, the Netherlands
G. Metskhvarishvili, Tbilisi, Georgia	D. Kriks, Vienna, Austria
B. Passey, St Asaph, United Kingdom	E. Maxymovitz, Vienna, Austria
Z. Edwards, Watford, United Kingdom	J. Kalser, Vienna, Austria
R. Liwski, Halifax, Canada	C. Hobel-Kleisch, Vienna, Austria
S. Amankulova, Almaty, Kazakhstan	J. Kunde, Lindlar, Germany
V. Žėkas, Vilnius, Lithuania	J. Misenka, Kürten-Bechen, Germany
I. Kaplan, Baltimore, USA	B. Speringo, San Giuliano Milanese, Italy
	S. Sinopoli, Rome, Italy





# Report from the General Assembly meeting April 28<sup>th</sup> 2023, Kay Poulton, Dave Roelen

## 1. Opening

The EFI president Ann-Margaret Little opened the General Assembly and welcomed all 135 EFI members present.

## 2. Minutes of General Meeting on 19<sup>th</sup> May 2022

The minutes of the General Assembly, held on May 19<sup>th</sup> 2022 were published in the EFI newsletter September 2022, Issue 98 were approved.

## 3. Report of the EFI president, Ann-Margaret Little

### *Equality, Diversity and Inclusivity*

The president mentioned that with the help from an expert, EFI has made a policy. The next stage is to work with an action plan to ensure that we adopt this policy.

### *Constitution changes*

The president started this subject by 1) asking for approval to correct Article 24.2 in such a way, that for amendment of articles of the association, also two-thirds majority of the members present at the GA is acceptable (just like electronic voting). The members approved this and therefore other changes in the constitution were proposed. These changes are 2) to remove gender-specific wording; 3) remove "young" from article 3; 4) remove "periodic" from article 6; 5) article 8: remove the fact that 1 member of the Council of Europe is also a member of the EC. *Steven Marsh* confirmed that a member of the C of E has never attended the EC meetings. 6) Article 8: change to "normally five or six officers and six councillors". *Steve Marsh* suggested to use "at least" instead of "normally". Decided to retain "normally" which was approved. 7) Article 21 to be deleted. All the changes were approved by voting: more than 2/3 of members present agreed.

### *GDPR and data retention*

The audit for 2021-22 has been completed and this will be repeated in 2023-24. The data protection policy has yet to be agreed. The conflict of interest form will be adapted to include a GDPR statement.

### *DAkKS/ EFI Accreditation MoU*

The decision has been made not to proceed with joint inspections. The agreement between DAkKS and EFI German commissioners is approved by the Accreditation and Executive Committees.

### *Membership Survey*

A survey has been sent to the members and we received 162 responses of mainly long-serving members of whom >67% spend <26% of their time on research. 85% prefer to access the newsletter digitally. In general the

members were somewhat or totally satisfied regarding the benefits one receive for being an EFI member. The president asked those who are not satisfied to inform the EC what to do differently.

There were no questions arising from President's report.

## 4. Report of the EFI Secretary, Dave Roelen

### *Executive Committee Elections*

EFI sought nominations for vacancies for two councillors, as well as Deputy-Treasurer and President Elect. One nomination for Deputy-Treasurer was received, *Nicolas Vince*. One nomination was received for President Elect: *Marco Andreani*. Since no other nominations were received for those positions there were no elections for these positions. Both candidates were approved by the GA (with applause). For the two positions of Councillors, three nominations were received and in the electronic voting 55% of the 702 eligible voters participated. The new councillors are *Falko Heinemann*, Germany and *Sebastian Heidt*, the Netherlands. The new councillors were approved by the GA.

### *Executive Committee Composition*

The composition of the EC is that from the six councillors, two will have their end of term in 2026 and the other four in 2025. The EC believes that 4 councillors stopping at the same time is not desirable and the constitution doesn't allow councillors to stay on longer than three years. In the constitution it is mentioned that 'normally there are 6 councillors, therefore, the EC has decided to increase to eight councillors for one year only. In 2024 two new councillors will be sought. From 2024 to 2025 we will have eight councillors and in 2025 four will step down and two new councillors will be installed. With this approach we have after 2025 every year two councillors rotating of and on.

*Eric Spierings* asked whether this is in agreement with the Constitution. Dave answered that this is the case as the constitutions mentions "normally" six councillors.

### *Future EFI Conference*

Next year's annual meeting will be in Jerusalem and in 2025 we will go to Prague. Candidates can show their interest in organizing the meeting in 2026 together with EFI's PCO, *Guarant*. As the IHIWS (Workshop) is being organized from 19-24<sup>th</sup> May 2026 the EFI conference ideally would take place mid-April that year. Information will follow via the website.

### *Annual meeting manual*

This manual is being updated by *David Turner* and soon the experiences of the past organisers (*Amsterdam* and



Nantes) will be included as well as the role of Guarant.

#### *EFI newsletter*

From the survey it could be concluded that our members prefer to have a digital newsletter. We will work on this transition during the forthcoming year, and we will also look to install an editorial board. The sponsors also have been informed about the advertisements in the digital newsletter.

The membership approved the activities presented by the Secretary.

5. Report of the EFI Treasurer: presented by the dept Treasurer Paul Rouzaire  
*Balance sheet and profit and loss account*  
 Paul started with the letter of the accountant EY showing that they have approved the accounts. Paul presented the Balance sheet for 2022 which show that we have total of assets of €1.044.279 which is also the total of Liabilities & Equity (€ 69.640 of Liabilities and € 974.639 of Equity). This amount is slightly decreasing. The net result of 2022 was -€ 150.562, where the forecasted deficit was € 158.139. The biggest part of this difference is caused by the amount of € 60.000 which was set as reserve for non-positive conference result. This has not been used as there was a small positive result for the Amsterdam 2022 conference. The income regarding advertising in the Newsletter was 0.

*Eric Spierings* asked why the EFI newsletter advertisement income is 0. The dept treasurer, supported by the president, responded that the invoices for these will be sent and are to be received. Eric mentioned rightly that in case this income is to be expected it should be as a balance post on the balance. The members of the EC responded that they will address this and inform the Treasurer about this.

*Katharina Fleischhauer* asked what intangible Fixed assets are and Paul and Ann-Margaret explained that this is for databases, websites and the office. The depreciation costs have also been explained.

*Gwendaline Guidicelli* mentioned that the deficit is due to reduced income and increase in expenses, which was confirmed by Paul.

The forecasted budget for 2023 is deficit of € 59.705.

The budget from 2022 and the proposed budget for 2023 were approved by the membership but the income relating to advertisements should/ could be placed on the balance.

*Steven Marsh* asked whether there is a planned reduction in the amount of savings. Ann-Margaret passed the

question on to Dave who mentioned that there is not a plan yet but we will come up with an estimate of reserve (e.g. for cancelled annual meetings) which we think we need in the future and he gave a rough estimate of € 800.000.

There will be no change to the membership fees.

The report of the treasurer was accepted by the members.

6. EFI Committee Reports
  - a. Report of the Accreditation Committee, Blanka Vidan-Jeras
    - i. Accredited Labs  
 The number of accredited laboratories slightly decreased to 273 laboratories in 2023 mainly because smaller laboratories in Italy stopped.
    - ii. Changes to the Accreditation Committee Katerina Tarassi is a new commissioner replacing Milena Ivanova.  
 The permanent committee (PC) is approving new laboratory directors since 2021.  
 There are 101 inspectors for EFI. In 2022, 109 inspections took place of which 90 on site.
    - iii. EFI to become a certifying body: the PC and EFI president approached the Dutch National Accreditation Body (Raad voor Accreditatie) in order to get accredited in the Netherlands. The responsive was not very positive as they see EFI as competition. However, EFI can continue working independently and using the name EFI accreditation Programme.
    - iv. A new certificate has been made and shown.
    - v. Members approved the activities presented by the Chair of the Accreditation Committee
  - b. Report of the Education Committee, Deborah Sage
    - i. Overview of Members  
 As David Turner and Tony Slavcev have stepped down 2 new members have been found: Katarzyna Bogunia-Kubik and Natalia Diaz-Burlinson
    - ii. EBTI: David Turner is our representative in the EBTI EC and he attended the UEMS section of Surgery meeting: he wants to encourage all members of the EBTI to get involved.
    - iii. ESHI Diploma: applications go via UEMS sites. There are only 7 examiners. An exam consisting of 2 parts (I: MCQs) and II (oral exam) is being developed.
    - iv. EFI CME-CPD Scheme CPDme: in order to capture CME/CPD activities this soon will be rolled out to a proportion of members to pilot initially.
    - v. International Summer School: ARSHI took place December 2022 in Sharm El-Sheikh: David Turner and Luca Vago attended. APHIA: November 2023 in Western Australia: Ann-Margaret Little and Deborah sage will attend.



- vi. ETHIQ Diploma: (EFI Technical H&I Qualification)  
An online, Moodle based qualification scheme.  
The pilot has finished and the first ETHIQ certificate is presented to Nina Lunden (Stockholm). The official program starts with 20 registrants initially, deadline 1<sup>st</sup> July. Ingrid Abelman was thanked for her help in the organisation of this Diploma.
  - vii. The focus for 2023 was shown
  - viii. Activities presented by the Chair of the Education Committee approved
  - c. Report of the Chair of the External Control Test Committee (EPTC), Helle Bruunsgaard
    - i. Overview of the Committee  
Fatma Oguz has replaced Anastasiya Mihaylova for region 8. Now six providers and three non-providers.
    - ii. The EPT committee is developing a new EPT category for disease associations / pharmacogenetics .
    - iii. EPT Standards for Providers: the EPTC will make a policy for the participation of EPT providers in own EPT schemes. The EPTC is modelling changes to scheme performance for antibody testing and identification.
    - iv. The EPTC has presented at the Inspectors Workshop in Nantes and they have developed a new tool for EPT evaluation for inspectors.
    - v. Members approved the activities presented by the Chair of the EPT Committee
  - d. Report of the Scientific Committee (SC), Luca Vago
    - i. Overview of Committee Members  
Two new members have started: Raphael Carapito and Pietro Crivello. Luca said a thank you to Silvia Gregori, Sebastiaan Heidt and James Robinson who are stepping down after the Nantes meeting. These positions will be filled before the autumn meeting. The SC will implement a "Junior member" in their committee as suggested by the Young EFI group.
    - ii. EFI Conferences  
The SC is actively seeking ways to further improve quality of the presented abstracts. The SC has spoken to the LOC of Jerusalem: more work is needed.
    - iii. The SC is addressing the possibility of new webinars
    - iv. The SC had a constructive opening meeting at this EFI Conference with the Population Genetics Working Group, coordinated by Alicia Sanchez-Mazas.
    - v. The SC will contribute more actively to the EFI Newsletter
    - vi. Members approved the activities presented by the Chair of the Scientific Committee
  - e. Report of the Standards Committee (Stac), Katy Latham
    - i. Overview of Committee Members  
An overview of the committee members was presented. Some members confirmed their 2<sup>nd</sup> or 3<sup>rd</sup> rotation. Katy thanks Urs Wirthmüller and Moshe Israeli who will rotate of in the autumn after nine years. Enhanced representation from transfusion labs is requested.
    - ii. Version 8.1: the comments are being processed.
    - iii. Version 9 with attention to A) the overall structure B) Nucleic Acid and C) Clinical Practise is being updated by the Stac. The Stac is also addressing the Data standards and is in contact with the IT committee
    - iv. Members approved the activities presented by the Chair of the Standards Committee
  - f. Report of the EFI Committee on Bioinformatics and Informatics Service presented by Eric Spierings
    - i. Overview of Committee Members (n=5): looking for new members
    - ii. Data standards: after discussion with ASHI, WMDA, and Stac they will come up with a recommendation for version 9.
    - iii. Abstract Submission Tool: EasyChair: interaction with the SC: to be used in 2024 and feedback is welcome.
    - iv. They also work on the Educational platform and Bioinformatics
    - v. A question come from *Steven Marsh* about the URL of the EFI website: Eric answers that this cannot be solved easily.  
A suggestion of getting female members in the IT & Bio Committee is made by *Anne Cambon-Thomson*. Eric answers that all new members are welcome, also women.
    - vi. Members approved the activities presented by the Chair of the Bioinformatics Committee and the IT Department
- 7. Next EFI Conference Jerusalem 19<sup>th</sup> – 23<sup>rd</sup> May
  - 8. EFI Medals
    - a. The EFI medal was presented to Marie Schaffer who served on the Education and Executive Committee and the laudation was presented by Mats Bengtsson
    - b. An EFI medal was presented to Bjarne Møller, who served as a councillor, EFI inspector and commissioner and the laudation was given by Helle Bruunsgaard in conjunction with P. K. Nielson
    - c. The 3<sup>rd</sup> EFI medal was presented to Christian Seidl, who served as a EFI inspector and commissioner and the laudation was given by Marco Andreani.
  - 9. Installation of new officers and councillors
    - a. President Elect Marco Andreani
    - b. Deputy Treasurer Nicolas Vince
    - c. Councillors Sebastiaan Heidt, Falko Heinemann

## Ceppellini Lecturer 2023 - Ronald E. Bontrop



During the Opening Ceremony of every annual EFI Conference, a scientist who has made seminal contributions to the field of Histocompatibility and Immunogenetics presents the Ceppellini Lecture, the highest scientific recognition from our Society. The Lecture is named in memoriam of the Italian geneticist Ruggero Ceppellini (1917-1988), one of the most prominent pioneers in H&I research. The first Ceppellini Lecture was delivered in 1988 by the late founder of EFI, Jon van Rood. Over the past five EFI Conferences, this honorific lecture has been given by Peter Doherty (2022), Jacques Neefjes (2021), Pamela Bjorkman (2019), Lorenzo Moretta (2018), and John Kappler (2017). A complete list of Ceppellini Lecture Awardees can be found on the EFI website ([https://efi-web.org/fileadmin/Efi\\_web/About\\_EFI/20210930\\_Ceppellini\\_Lecture.pdf](https://efi-web.org/fileadmin/Efi_web/About_EFI/20210930_Ceppellini_Lecture.pdf)).

This year's Ceppellini Lecture was delivered by Ronald E. Bontrop, from the Biomedical Primate Research Centre (BPRC) in Rijswijk, the Netherlands. Ronald Bontrop began his biochemistry studies at the University of Leiden, the Netherlands, in 1977, and joined the group lead by Professor Jon van Rood in 1983. His research was aimed at the biochemical and functional characterization of HLA class II molecules. In 1987 he successfully defended his PhD. thesis, and soon moved to the BPRC in Rijswijk, he remained for his entire brilliant career and conducted his landmark studies on the characterization of the MHC of nonhuman primate species such as the chimpanzee, the rhesus macaque, and the common marmoset. In 1998, he was appointed General and Scientific Director of the BPRC. He also has an appointment as Professor of Comparative Immunogenetics at the University of Utrecht. He is active in various international scientific societies, and was, for instance, a member and chairman of the scientific committee of the European Federation of Immunogenetics (EFI) from 2004 until 2015. Since 1997 he is Editor-in-Chief of the "Immunogenetics" journal.

During his Ceppellini Lecture, Professor Bontrop gave a captivating overview of his landmark contributions to human and nonhuman primate immunogenetics, and on how during the evolution different extents of allelic polymorphism and copy number variations in MHC and KIR genes contributed to generate the difference between the immunological repertoire of these species.

## Julia Bodmer Award 2023 - Esteban R. Arrieta-Bolaños

The Julia Bodmer Award (JBA) is presented each year to a young scientist that provided remarkable contributions to the field of H&I, and represents the first lecture during the Opening Ceremony the annual EFI Conference. The Award celebrates the memory of Lady Julia Bodmer (1934-2001), one of the founders of EFI, of which she served as President from 1996 to 1998. Julia passionately encouraged and supported young scientists, and strongly believed in the importance of mentoring the new generations to pass the torch and maintain research alive. The JBA winner is selected by majority voting within the EFI Scientific Committee, in a competitive review process between the applications filed. The first JBA Lecture was delivered in 2002 by Benedicte Lee. Over the last five EFI Conferences, it has been held by Jesse Bruijnesteijn (2022), Cristina

Toffalori (2021), Asbjørn Christophersen (2019), Maxime Rotival (2018), and James Lee (2017). A complete list of JBA winners can be found on the EFI website ([https://efi-web.org/fileadmin/Efi\\_web/About\\_EFI/20210930\\_Julia\\_Bodmer\\_Award.pdf](https://efi-web.org/fileadmin/Efi_web/About_EFI/20210930_Julia_Bodmer_Award.pdf)).

This year, the JBA was awarded to Esteban R. Arrieta-Bolaños from the Institute for Experimental Cellular Therapy, University Hospital Essen, Germany. Originally from Costa Rica, Esteban obtained his Master's degree in Microbiology & Clinical Chemistry in his home country in 2006. After a short period as a visiting scholar, in 2010 he moved to the Anthony Nolan Research Institute in London, where under the supervision of Prof. Bronwen Shaw he achieved his PhD in 2014, discussing his relevant work



on genetics of Latin American populations and on TGFBI polymorphisms. For his post-doctoral studies, he joined the group of Prof. Katharina Fleischhauer at University Hospital Essen, where he gave major contributions to a number of relevant studies published in high-impact journals such as Blood and the Journal of Clinical Oncology. His research focuses on how genetic polymorphism in HLA genes impacts on the T cell receptor repertoire and the immunopeptidome, and in turn how these differences affect the outcome of allogeneic hematopoietic cell transplantation. Moreover, he is extremely active in our Society, where he has just completed his mandate in the Executive Committee. During the EFI Conference, Esteban gave an outstanding talk, presenting his latest research, in particular on the identification of a core group of HLA-DPB1 alleles and on a novel view on HLA matching based on



immunopeptidome similarity, and clearly outlined the clinical relevance of these findings in guiding the selection of better stem cell donors.

## Marie Schaffer - EFI Medal Laureate 2023

If you have ever participated in an EFI meeting, you have, for sure, met Marie. Very few EFI members have participated in as many meetings as Marie. She has participated in most meetings since the first one in Strasbourg in 1983 and has always been a very active participant. She started as a technologist in the H&I laboratory at Huddinge Hospital



in 1980 and joined Erna Möller's lab. After further studies in molecular biology, she joined with Olle Olerup and was one of the pioneers in developing PCR-SSP as the first DNA typing tool that could be routinely used both for low and high res HLA typing, so we could abandon the cumbersome RFLP. Many of our members have been trained by Marie and her colleagues in performing PCR-SSP. I still remember the fascination of being able to subtype HLA-DR4! She received her PhD from Karolinska Institute on KIR and HLA in HSCT in 2006. She has been the Co-Director of the H&I lab since 2006. In 2016 she was one of the chairs for the 28th EFI conference in Stockholm and the one that organized the ABBA opening ceremony.

Marie joined the Education Committee in 2010 and undertook three terms, leaving the committee in 2019. Marie was a committed member of the group and worked with others on helping to develop the syllabus for EFI's European Technical H&I Qualification (ETHIQ). The work of the Education Committee was often focused on the senior ESHI

Diploma qualification, but Marie was a great advocate of the need for a training program aimed at more junior 'at the bench' scientists and championed the development of the ETHIQ course. During her latter time on the committee and since leaving she helped to pilot the scheme with colleagues in Sweden. This was an extremely useful experience that has helped in moving this project forward. As well as the ETHIQ work, Marie was always vocal on the other business of the committee, such as selecting topics for Teaching Sessions and assessing applications for regional meeting endorsement. Finally, she has also served as a Councillor for the EFI Board between 2020 and 2023.

Marie is interested in music and she has been actively playing and singing in various constellations. One other thing is that you will never be bored with Marie's company, you will always have fun! If one looks at the Mission and Goals of EFI one can see that you can check off almost all of the items for Marie. She really deserves the EFI medal.

*Mats Bengtsson*

## Bjarne Møller - EFI Medal Laureate 2023



Bjarne is a trained medical doctor from Denmark. He completed his speciality training in Clinical Immunology in 1999. In Denmark, clinical immunology encompasses transplant immunology, transfusion medicine and immunology. Bjarne first came to the lab at Aarhus University Hospital in 1986, when it was Aarhus Kommune Hospital, and at that time it was the lab of Flemming Kissmeyer-Nielsen, familiar to most of you.

As part of his speciality training, Bjarne worked for a few years at the department of Clinical Immunology in Odense, but returned to Aarhus University Hospital as he took his medical training in both Aarhus and Odense. He came back to Aarhus in 2001 as consultant in the Tissue Typing laboratory. In 2006, Bjarne was appointed as medical director and

chief consultant at the department.

For many years Bjarne has been the EFI director of the Tissue Typing laboratory and has been a driving force in moving the laboratory from a serological lab towards DNA-based methods, which is the main focus area today at the lab. As a senior colleague, Bjarne has always had trust in the younger doctors' abilities to work within H&I. In 2006, I was training to become a nephrologist, but wanted to explore clinical immunology. I went to Bjarne's office to hear if he had a vacant position. Way ahead of time, he said that having a nephrologist in the lab could prove to be very beneficial both in research, clinical counselling and in the bilateral understanding between clinical doctors and the laboratory. I was very inspired by working with Bjarne during my 6 month-position

and ended up doing my speciality training in Clinical Immunology. Thank you Bjarne for believing in me. Today, you still have a huge trust in people and an impressive ability to see the big picture. But besides that, you are also a man who loves to be absorbed in interesting theoretical immunological details, and our young doctors in training always turn to you for advice.

Bjarne has been deeply involved in the EFI community both as a member since 1995, an active EFI inspector since 2003 and finally as the EFI commissioner for Region 1 for 10 years until stepping down last year. At the EFI congresses, Bjarne has always been very social, participating equally in the scientific meetings as well as in the social events.

Besides what has already been mentioned, Bjarne together with me and a third colleague covers the senior on-call H&I service for solid organ transplantation in the Western part of Denmark, a task that he covers thoroughly.

During the last years, Bjarne has dedicated a lot of his time on Center for Gene and Cell Therapy for which he was the instigator. In 2021, he was approved as Qualified Person for ATMP and GMP manufacturing. Bjarne's dedication is also used in scientific work, being scientific advisor for Aarhus University, writing book chapters and other publications on several areas within immunology.

Finally, I want to salute your long-time dedication to H&I and for being an ever-inspiring colleague.

*Pernille Koefoed-Nielsen,  
senior consultant, co-director  
Tissue Typing Laboratory  
Department of Clinical Immunology  
Aarhus University Hospital  
Denmark*





## Christian Seidl - EFI Medal Laureate 2023

It was a great pleasure for me to give a laudation for honoring our distinguished Colleague Professor Doctor Christian Seidl. The fact that he also is a very good friend of mine, indeed only adds pleasure to my task. Christian has a fascinating personality with a large and deep scientific knowledge and expertise, in particular in the field of Blood Transfusion Medicine and in Histocompatibility and Immunogenetics. But he is also known for his creativity, for his fine humor and great class, for his charm, wit and sophistication.

Following graduation from Medical School at the Johann Wolfgang Goethe University of Frankfurt in 1988, Christian became in the same University Professor of Experimental Hematology. He is the Director of the Medical Care and Blood Transfusion Service and of the Department of Transplantation Immunology (H&I) at the University Hospital in Frankfurt, in Germany. He is a specialist in transfusion medicine (by the German Physician Board) and in Immunogenetics (by the German Society of Immunogenetics); has the habilitation in experimental hematology; is an expert of EFI and DakkS, he is a specialist in Public Health Blood and Blood Components and is member of the International Society for Forensic Genetics (ISFG). He is currently the Head of the HLA laboratory in Frankfurt where he installed the newest version for all the relevant laboratory methods.

He was fellow at the Lindsley Kimball Research Institute in New York and spent several years as a clinical scholar fellow at the Memorial Sloan Kettering Cancer Centre, in New York, USA. His research mostly focus on innate immunity mediated by natural killer cells and their interaction with histocompatibility ligands, with special attention on GMP based approaches for cellular therapies. He is author



and co-author of more than 130 publications in peer-reviewed journals including book articles and has more than 200 cited abstracts and more than 170 lectures on National and International scientific meetings.

He was the DGI President and was member of the working group for quality management at DGI. Moreover, since 1999 up to date, Christian is an EFI inspector, but he also served EFI as Commissioner in one of the regions in Germany from 2013 to 2022, and as member of the EPT committee from 2005 until 2007.

All members of our EFI community who have had the fortune to meet and interact with Christian appreciate his scientific knowledge, but also deeply feel his way to enjoy life, that he willingly shares with his friends and with his wonderful family. It was a great privilege for me to have the opportunity to deliver the EFI medal laudation to Professor Seidl, expressing our gratitude for his contribution to our Scientific Society and mostly for recognizing the outstanding work he dedicate every single day to his patients.

*Marco Andreani*





# Celebrating Excellence: The Jon van Rood Award and Best Abstract Session at EFI 2023

The EFI2023 conference brought together the brightest minds in the field of immunogenetics and histocompatibility. Among its many highlights, the Jon van Rood Award and Best Abstract Session stood out as a showcase of the most outstanding abstracts selected by the Scientific Committee.

The Best Abstract Session at EFI2023 showcased eight presentations, covering a wide range of topics within the field of immunogenetics and histocompatibility, these presentations underscored the depth and diversity of research in the field.

Professor Steven Marsh led the distinguished panel of judges of 'Past EFI Presidents' attending EFI2023, and oversaw the assessment and scoring of the presentations. All presentations received positive feedback from the scoring committee. The winners were officially revealed during the closing ceremony, with Philip Mausberg securing the First Prize for his presentation titled "Highly Specific Latent Membrane Protein 2A-Targeting T-Cell Receptor-Engineered T Cells with Inducible Interleukin-18 Expression as a Promising Tool for Epstein-Barr Virus-associated Treatment". Michel Kester received the Second Prize for his presentation titled "Forward or reversed binding of peptides within the HLA-DP peptidome is mainly determined by the HLA-DPB1 allele but with a key role for the HLA-DPA1 chain". Marco Punta held the Third Prize for his presentation "Single-cell transcriptomics to identify leukemia-intrinsic and -extrinsic bone marrow correlates of immune escape and post-transplantation relapse." These researchers not only



demonstrated excellence in their respective fields but also showcased the potential of their work to have a profound impact on medical science and patient care.

The EFI community warmly extends its congratulations to the award recipients and participants for their outstanding achievements during this remarkable event.

# Celebrating Excellence in Immunogenetics: The Best Poster Awards at EFI2023

EFI2023 was a celebration of excellence in the field of immunogenetics and histocompatibility, and one of the highlights of the conference was the Best Poster Awards. Led by Dr. Nicolas Vince, a dedicated team including EFI Scientific, Education Committee members, and Local Organizing Committee (LOC) members accepted the challenging task of assessing and scoring the posters during the wine and cheese poster viewing session. This session, a showcase of 130 exceptional posters, spanned a wide range of topics within the field. These topics included: 1) Autoimmunity, Infection, Reproduction, and Cancer, 2) Bioinformatics and Data Analysis in Immunogenetics, 3) Hematopoietic Stem Cell Transplantation (HSCT), 4) Immunogenetics in Organ Transplantation, 5) MHC Evolution and Population Genetics, 6) NK Cells and KIR, 7) New Technologies and New Approaches in Immunogenetics.

All the presentations in the Wine and Cheese Poster Viewing Session received positive feedback from the assessment committee. However, with such excellence, the competition for the Best Poster Awards was intense. The winners were announced during

the closing ceremony. The first Prize was awarded to Gurvinder Kaur for her poster titled "T cell receptor beta gene diversity identified by Next Generation Sequencing in Chronic Myeloid Leukemia patients". Olivia Rousseau received the Second Prize for her poster titled "Kidney transplantation follow-up: personalized patient contextualization with a nearest neighbors

approach". Sandra Tafulo secured the Third Prize for her poster titled "Adsorption with X-match cells and Elution (AXE) protocol testing to clarify HLA antibody reactivity in a highly sensitized patient". The EFI community extends its heartfelt congratulations to the award winners and participants for their outstanding contributions to this exceptional event.



## Update from the EFI External Proficiency Testing (EPTC) Committee

**Committee vacancies:** The EPTC has a vacant position for region 7. We encourage all interested members to send an application to the EFI secretary. Deadline: October 15, 2023.

**Meetings:** The External Proficiency Testing Committee met April 26. EPT categories, modelling changes to scheme performance criteria, and tools for EPT evaluation were discussed.

**Activities:** The EPTC arranged a session with presentation

of EPT schemes in all EFI regions during the yearly Inspectors Workshop as a part of continuing education. The session demonstrated the diversity of EPT schemes in Europe and the EPTC found the interaction with inspectors very important and fruitful for future work in the EPTC.

*On behalf of the EFI EPT Committee,  
Helle Bruunsgaard  
Chair EFI External Proficiency Testing Committee*

## Update from the EFI Scientific Committee

As every year, during the Nantes annual EFI conference, the members of the Scientific Committee met to discuss the scientific standing of our Society, and how to preserve and improve it.

One of the main topics touched was rotations in its membership, and in particular the end of mandate of three of its members. We thank James Robinson, Sebastiaan Heidt and Silvia Gregori for the active role they played in our Committee, including precious suggestions for the program of each year Annual Conference. Three positions as Regular members have been advertised, and we encourage applications in particular from candidates with specific expertise in the area of the outgoing

members, i.e. bioinformatics, solid organ transplantation and immunological tolerance, although we welcome applications of all members with recognized scientific standing in H&I research and the desire to put this at the service of our Committee.

In addition, the Committee discussed the Program of the next EFI Conference, the idea of accepting a Junior Member coming from the EFI young professionals working party, and on future initiatives such as round table webinars on themes of interest to the H&I community.

*Luca Vago*  
Chair EFI Scientific Committee

## Update from the EFI Accreditation Committee

This May I received a message from our president Ann-Margaret Little inviting me to include equality, diversity and inclusion (EDI) matters as agenda items for meetings of the Accreditation Committee (AC). Although it has seemed self-evident that the AC follows EFI EDI policy I started to reconsider how much are we aware of the particular issues we deal with. I believe that today's AC members coming from all European regions inherited commitment to EDI from their predecessors.

Open-mindedness of the Accreditation Programme can be noticed on the first sight since EFI accredits laboratories all over Europe and outside it (Israel, South Africa, China, Kuwait, Colombia, India, and Argentina). Many of the laboratories have had long tradition, accumulated knowledge, and ability to successfully perform External Proficiency Testing and comply with the newest version of EFI Standards for numerous technical and clinical

categories. On the other hand, commissioners and inspectors put a lot of effort in helping newcomers, firstly to fulfil minimal criteria for accreditation and later on to improve performance with each next application. Members of the AC have been involved in the organization of workshops in new regions that express interest for EFI accreditation and they regularly participate in the meetings of different H&I societies. Continuing education of the laboratories and inspectors is directed to the goals of the Accreditation Programme to harmonise and standardise H&I testing among participating laboratories and to promote the educational aspects of the accreditation process. In particular, educational orientation towards the laboratories is not very common in other accreditation schemes.

As stated in the EFI Accreditation Programme Procedure Manual,

inspector, as a representative of EFI, behaves in a courteous and professional manner during the inspection and uses discretion in any subsequent discussion about the inspection.

All involved in the programme must assure that the accreditation process is performed in an ethical, objective and timely fashion.

I am certain; this is not all we are doing in the context of EDI, which we already put on the agenda of our next meeting in Leiden on October 27.

Finally, I would like to remind you that while the General Secretary of the Accreditation Committee is from one of the biggest European countries, the Chair is from one of the smallest and the Co-Chair is from somewhere in between, as far as square meters of the land are concerned.

*Blanka Vidan Jeras*  
Chair EFI Accreditation Committee





# Update from the EFI Education Committee

The Education Committee met for an in person meeting at the start of the EFI Conference in Nantes and welcomed Natalia Diaz-Burlinson as the new UK representative (Region 3). During the Conference there was a lunchtime session to launch the new European Technical H&I Qualification (ETHIQ) training programme (further details about the ETHIQ launch are in a separate article in this Newsletter).



*The EFI Education Committee, Nantes, April 2023*

## European Specialisation in H&I (ESHI) Diploma

In person examinations took place in Nantes for the ESHI Diploma, with 8 candidates taking the exam, the highest number to date. Thanks to the EBTI members who checked candidates' suitability for examination and to the examiners themselves. Since the start of the ESHI Diploma examination in 2014, 46 candidates have undertaken the oral exam with a pass rate of 76%. The next round of examinations will be online and scheduled for November 2023. Information on the application process for the ESHI examinations can be accessed via the Section of Surgery Transplant Immunology page of the UEMS website (at: <https://uemssurg.org/divisions/transplant-immunology/>).

## EFI Continued Medical Education (CME) / Continued Professional Development (CPD)

The online system (supported by a UK company called CPDMe) will allow EFI members to record CME/CPD activities. Final preparations are ongoing with members of the Education Committee & CPDMe, with the intention to have the system available for EFI members by the end of the year. The system will be available via a link on the EFI website. Activities can be recorded under 4 different categories (Educational, Clinical, Professional or Academic) and self-reflective notes and other supporting documentation can be linked to each activity. A visual summary allows at a glance oversight of your CME/CPD activities, and an annual statement can be produced when required (further details are included in a separate article in this Newsletter).

## European Technical H&I Qualification (ETHIQ)

This training programme is designed to create a

qualification that gives a measure of both knowledge and technical competence in H&I. The scheme is for technical staff working in EFI accredited laboratories, with supervision given by senior staff in their own lab. The programme was launched at the EFI Conference in Nantes and there is a separate article about the ETHIQ Diploma Launch in this Newsletter.

The portfolio has now been developed for completion online and the next registration Deadline is 1<sup>st</sup> January 2024. Information about the training programme, registration process and deadlines can be accessed on the EFI website:

<https://efi-web.org/e-learning/ethiq-for-technical-staff>

The content of the training programme is in English, although trainees can complete evidence in their own language. Future developments are planned to allow translation into other languages.

## EFI/ASHI/APHIA/ARSHI Summer School 2023

The next ISS is hosted by APHIA and will take place on 8<sup>th</sup>-11<sup>th</sup> November 2023 in Busselton, Western Australia.

The program covers clinical and laboratory aspects of solid organ transplantation, Haematopoietic Stem Cell Transplantation and blood transfusion. The EFI Faculty members are Ann-Margaret Little and Deborah Sage.

## EFI Education and Scientific Bursaries

Two EFI Education and scientific bursaries have been awarded this year (for May 1<sup>st</sup> and August 1<sup>st</sup> deadlines respectively). Once completed, the successful applicants have been asked to write a review of their visit for the EFI Newsletter. Applications for Education and Training Bursaries to promote training in the field of H&I by enabling visits to other laboratories, are now being received four times each year. Details of the closing dates, the process and the online application form are available on the EFI website bursaries page <http://www.efi-web.org/bursaries.html>.

## e-Learning

The 30 minutes presentations on different aspects of H&I including transplant immunology, HSCT, solid organ transplantation, disease association and transfusion are still available to EFI members via the website. Log on to the EFI website and navigate to the e-learning section, then follow the instructions to register and create an account to access the talks. Links to other learning resources are also on the same page of the website. Although progress has not been as fast as we would like, we hope to have other e-learning resource content (e.g. EFI Conference Teaching Sessions and Summer School talks) available via the website very soon.

*Deborah Sage, Chair of the EFI Education Committee*

# European Technical H&I Qualification (ETHIQ) Launch, 27<sup>th</sup> April, EFI Conference, Nantes

During the EFI Conference in Nantes, the Education Committee held a meeting to launch the new ETHIQ training programme.



The ETHIQ is an online, Moodle based training course for technologists working in EFI accredited labs, known as the European Technical H&I Qualification (ETHIQ).

The purpose of the ETHIQ training is to enable technical staff working in H&I to demonstrate knowledge and competence within their workplace. Training is aimed at all technical

staff working in EFI accredited laboratories supporting clinical solid organ and/or haematopoietic stem cell transplantation. It is envisaged that the ETHIQ will be an appropriate training scheme for staff involved in bench work, but who may not have the responsibility for final reporting of results. The training is undertaken within the trainee's laboratory and is delivered under the supervision of a

local training supervisor over the course of 12-36 months.

Applicants must be EFI members and registration for the ETHIQ will cost 200 euros but will include EFI membership for the period while the trainee is undertaking the ETHIQ training. There will be two dates for registration each year, initially with a maximum of 20 registrants at each intake. Registration will be on the basis of the first 20 complete applications received and the first intake in 2023 was with a registration deadline of 1<sup>st</sup> July.

**Future registration deadlines will be 1<sup>st</sup> January and 1<sup>st</sup> July each year**

## Completing the ETHIQ training programme

The training programme requires completion of an online logbook comprising of 3 sections:

Section A: Specialist H&I Knowledge  
Section B: General Competences  
Section C: Specialist H&I Techniques

Sections A and B are mandatory, and applicants can select which aspects of section C they intend to complete. Training is evidenced by completing the appropriate evidence form (written, observed or oral) associated with the activity (an example is shown below):



## ETHIQ Training - Section C - specialist H&I competences

Course	Settings	Participants	Grades	Reports	More
<b>C2.c - Antibody identification and definition by solid phase assays</b>					
<b>Understands:</b> <ul style="list-style-type: none"> <li>the basic principles of antibody detection/definition</li> <li>problems that may be encountered in solid phase assays for antibody detection</li> <li>the need for quality control samples in solid phase assays for antibody detection</li> </ul>					
<b>Competently:</b> <ul style="list-style-type: none"> <li>follows the local procedures for antibody detection/definition using solid phase assays</li> <li>analyses / interprets the results of the assay seeking advice as necessary</li> </ul>					
C2.c - ETHIQ Written evidence form (Appendix C)					
C2.c - ETHIQ Observed Competency evidence form (Appendix D)					



*Nina Lundin receiving her ETHIQ Certificate at the AGM, EFI 2023.*

In addition, each trainee should record evidence of individual learning events e.g. attending a meeting / seminar and complete a case study or validation report. Once complete, the logbook and associated evidence is submitted for final approval to the Education Committee. Once approved, trainees will undertake a short multiple-choice quiz and if 75% is answered correctly,

they will have successfully completed their final assessment and receive their certificate.

#### **ETHIQ Pilot**

In 2019, a pilot of the ETHIQ training programme was launched using a paper-based logbook. The pilot was designed to gather feedback from the trainees to allow improvements

and amendments to the training programme. All the trainees provided constructive and valuable feedback and their contributions were gratefully received.

In total 6 trainees successfully completed their training during the pilot phase. Four from France in 2021: Isabelle Favre Victoire, Sandrine Paul, Claude Vichier and Geraldine Theilliere.

And two in 2023:

Nina Lundin (Sweden), Claudia Ranzijn (Netherlands)

#### **ETHIQ First Intake July 2023**

20 applicants have been successfully registered for the training programme in July 2023 from a variety of countries across Europe including Austria, Germany, Netherlands, Denmark, Italy and France and are starting their training.

#### **The next Registration Deadline is January 2024**

Further information about the ETHIQ programme including guidance for trainees and supervisors, the registration process and slides from the launch meeting can be found on the EFI website:

<https://efi-web.org/e-learning/ethiq-for-technical-staff>

*Deborah Sage, Chair of the EFI Education Committee*







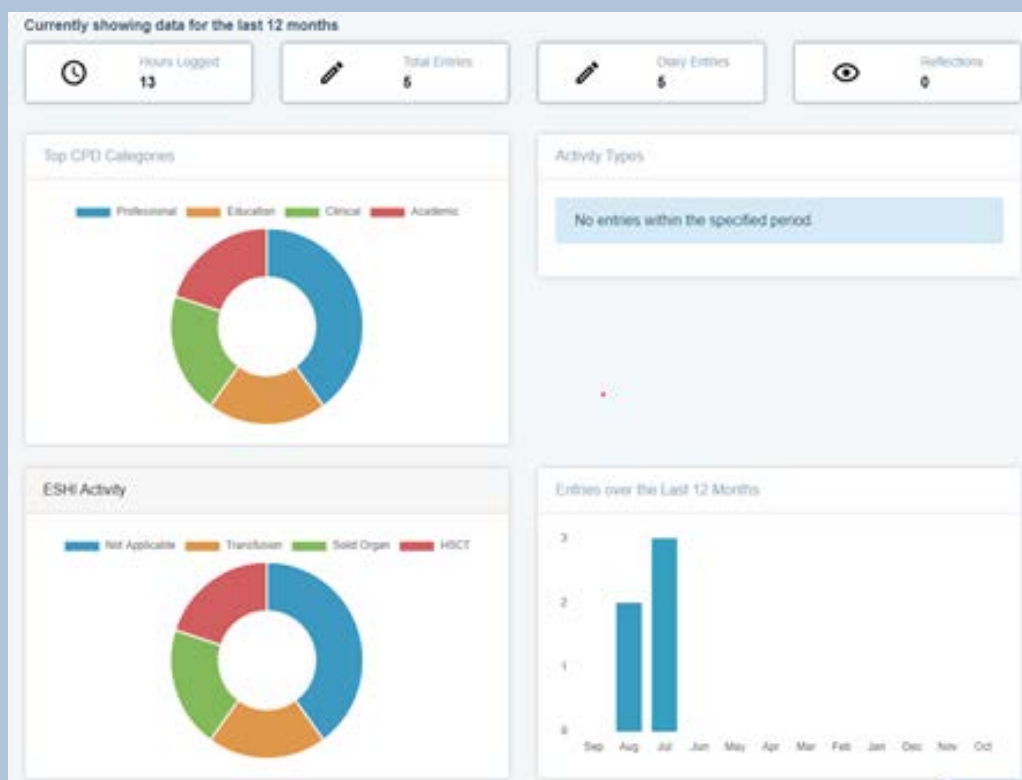
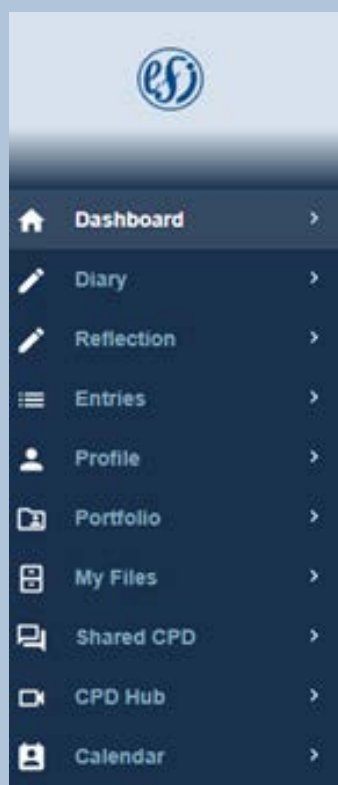
## EFI CME/ CPD is Coming Soon

**EFI has been working with a UK company called CPDMe to develop a platform for EFI members to use to easily capture CME/CPD activities they have attended, save evidence and create reflective notes, if required.**

The login form features the EFI logo at the top. Below it are two input fields: 'Email address' and 'Password'. A 'Login' button is positioned below the password field, and a 'Forgot Password' link is located at the bottom of the form.

When the platform is available you will be able to log in from a link on the EFI website:

You will then have access to your dashboard where you can see a visual summary allowing “at a glance oversight” of your CME/CPD activities:





**Title \***  
Clinical Meeting ✓

**Number of Hours**  
2 hours 0 minutes

This activity is more than 24 hours

**Start Date**  
23/08/2023

Select the date that this event took place.

**End Date**  
23/08/2023

Use this option if the event was longer than a 24 hour period, such as a 4 day course.

**Governing Body**  
EFI

**The category this CPD activity relates to**  
Clinical

Select the type of development that this specific learning activity relates to.

**Credits Claimed**  
2

**ESHI Diploma Module**  
Solid Organ

The ESHI Diploma module this activity is most related to - e.g. Solid organ, HSCT, disease association or transfusion. If not possible to characterise into these, please leave blank.

**The nature of the learning activity - what did you do?**  
Review of recent kidney transplants - MDT  
Contribution to discussions regarding sensitization

It is easy to use CPDme, click on the buttons on the left-hand side of the dashboard to add a diary entry:

Activities can be recorded under 4 different categories (Educational, Clinical, Professional or Academic) and self-reflective notes and other supporting documentation can be linked to each activity.

You can also create a portfolio report / annual statement to summarise your activity (suitable for EFI accreditation submissions).

It's hoped the platform will be available for launch by the end of 2023 – look out for more information via the website and emails too.

*Deborah Sage, Chair of the EFI Education Committee*

## Report on a very successful 36<sup>th</sup> EFI Conference in Nantes, France

The 36<sup>th</sup> European Immunogenetics and Histocompatibility Conference was organized from April 26<sup>th</sup> to 29<sup>th</sup> 2023 in the picturesque city of Nantes, France, which inspired Jules Verne's imagination. This significant gathering marked a noteworthy return to France

for the EFI, following a gap of nearly 15 years since the last meeting held in Toulouse back in 2008.

Collaboratively, EFI2023 was brought to life through the shared dedication and effort of multiple stakeholders.

The Local Organizing Committee (LOC), composed of academic researchers from Nantes Université, teamed up with the SFHI (Société Francophone d'Immunogénétique et Histocompatibilité); passionate students and staff members of PA Gourraud's Lab, EFI Executive, Scientific, and Education Committees. EFI meetings are always an adventure in which our collective journey includes esteemed speakers, participants representing a diverse range of worldwide researchers, clinicians, and students, as well as collaboration with scientific societies or initiatives (ASHI, SIP, NAT), industrial sponsors, and GUARANT, the EFI professional conference organizer (PCO).

EFI2023 owed its success to the invaluable assistance provided by the Nantes Exhibition Center, known as the "Cité des Congrès." Situated centrally in Nantes, this contemporary convention center not only boasted state-of-the-art





facilities but also offered multipurpose spaces that seamlessly accommodated the exchange of innovative ideas. The strategic placement of this venue within the lively city of Nantes greatly enhanced accessibility, highlighting its pivotal role in elevating the overall achievements of the conference. EFI2023 was a truly international event, attracting almost 1,000 participants from more than 40 countries spanning 5 continents.

Notably, the conference's scientific contributions revolved around "Big Data at the Crossroads of Immunogenetics Care, Tools, and Research," were published in the prestigious journal *HLA*, the official journal of the European Federation of Immunogenetics (EFI). Under the reign of chief Editor Pr. Steve G. E. Marsh the journal has reached an impressive Impact Factor (IF) of 9.2. This underscores the significance and quality of research presented at EFI2023, further solidifying its reputation as a leading scientific conference in the field.

In keeping with EFI's rich tradition, EFI2023 started with a captivating opening ceremony, presided over by Ann Margaret Little, EFI's President, and Pierre-Antoine Gourraud, Chair of the LOC. Before impressive pieces of

piano by students of the Conservatoire Régionale de Musique, this inaugural event featured lectures from the recipients of EFI awards, including the Julia Bodmer Award, presented to Esteban Arrieta-Bolaños, the HLA Award, bestowed upon Nouredine Berka, and the Ceppellini lecture, delivered by Professor Ronald Bontrop.



Esteban Arrieta-Bolaños wowed the audience with his presentation entitled "Immunopeptidomes and Alloreactivity: Insights Gained from a Unique HLA Locus." Nouredine Berka shared valuable insights derived from his observations, "SARS COV-2 Vaccination Induces De Novo Donor-Specific HLA Antibodies in a Renal Transplant Patient on the Waiting List: A Case Report." Professor Ronald Bontrop's outstanding lecture on "Major Histocompatibility Complex, Evolutionary Biology, and Genetics» left a lasting impression on the audience and a career-long example to all.

The main topics discussed during the following days of the conference around the theme "Big Data at the Crossroads of Care, Tools, and Research in Immunogenetics" were:

- 1 Cell Therapies and Hematopoietic Stem Cell Transplantation: EFI2023 delved into the latest advancements in cell therapies and hematopoietic stem cell transplantation, exploring how these innovative approaches are repositioning immunogenetics in care.
- 2 HLA Immunogenetics, Population Genetics, and Evolution: The conference examined the intricacies of HLA immunogenetics, delving into population genetics and evolutionary aspects, and shedding light on the diversity and adaptation of immune systems.
- 3 HLA in Solid Organ Transplantation: EFI2023 provided insights into the critical role of HLA in solid organ transplantation, emphasizing its importance in donor-specific compatibility and transplant outcomes.
- 4 AI and Big Data Transform Medical Research: A significant focus was on the transformative impact of algorithms and large datasets in advancing medical research, particularly in the field of immunogenetics.





5 Autoimmune Diseases and Infections: The conference addressed autoimmune diseases and infections, exploring their immunogenetic underpinnings and the latest research findings.



The conclusion of EFI2023 reflected the transition to a new generation of immunogeneticists, who inherited the legacy of their mentors. Yet, our field remains as relevant as ever, poised at the intersection of clinical applications in transplantation, the evolution of sophisticated technological tools capable of processing vast datasets,

and foundational scientific research that reshapes our comprehension of the immune system and its genetic foundations. Our discipline exemplifies the "Pasteur quadrant," named after the influential French scientist, Louis Pasteur, where immunogenetics combines fundamental research with practical applications.

The conference theme, "Big Data in Immunogenetics", highlighted the emerging challenges facing immunogenetics. For instance, the integration of population-based

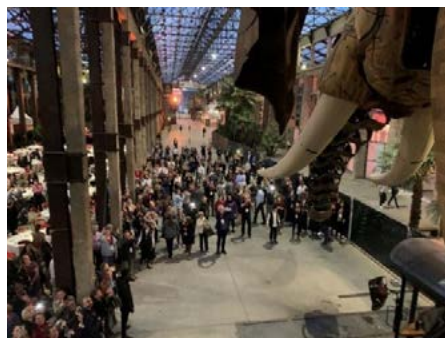
immunogenomic data with cutting-edge machine-learning applications is poised to yield new tools that will inform healthcare decision-making in novel and transformative ways.

The conference stimulated scientists, clinicians, students, and industry from around the world to present innovative and significant research and clinical innovations in the field of immunogenetics and histocompatibility.

The conference's social program at EFI 2023 left an indelible mark, with the standout event being the Networking event "Gala Dinner" held on Friday evening, right after the general assembly.

This extraordinary soirée unfolded in the enchanting setting of "Les Machines de l'île," a venue that seamlessly blended Jules Verne's "Invented Worlds" with Leonardo da Vinci's mechanical marvels, set within the historic former Shipyards.

Attendees were treated to a one-of-a-kind experience as they dined alongside the iconic mechanical elephant. This fusion of cutting-edge discussions and a memorable social gathering added an exceptional dimension to EFI 2023, making it a truly remarkable conference. The evening included a traditional dance party with music, and the festivities carried on late into the night.



Early the following morning, the Tulip Run participants raised funds that were directed to the transplantation cause, benefiting the France ADOT - Fédération des Associations pour le

Don d'Organes et de Tissus humains. The tulip run winners at EFI2023 were: Fridolin Gross (Male category), Ida Schwartz Bobach (Female category), and Katarina Stingl Jankovic (Walking category).



On the concluding day of the meeting, the stage was dedicated to the recipients of the Best Abstract Awards, who had the opportunity to showcase their research and compete for the prestigious Jon van Rood Award.

Philip Mausberg, from Hannover, Germany, received the Jon van Rood Award for his excellent work "Highly Specific Latent Membrane Protein 2A-Targeting T-Cell Receptor-Engineered T Cells with Inducible Interleukin-18 Expression as a Promising Tool for Epstein-Barr Virus-associated Treatment".

Also, recognition was given to the outstanding poster presentations during the wine & cheese session by Guvinder Kaur, Olivia Rousseau, and Sandra Tafulo.

The closing ceremony also featured a philosophical perspective from Fridolin Gross, who delved into the challenges of integrating big data and modeling within the realm of systems immunology.

Additionally, Professor Katsushi Tokunaga announced the upcoming 19<sup>th</sup> International HLA and Immunogenetics Workshop (IHIW), scheduled to be held in Japan from May 19 to 24, 2026.

In closing, our heartfelt appreciation goes out to EFI for entrusting us with the privilege of hosting this event, as

well as to the EFI Executive Committee, EFI Scientific Committee, EFI Education Committee, and Members of the Local Organizing Committee for their invaluable assistance and support in shaping the Scientific Program and teaching sessions. The generosity of our sponsors and the expertise of “Guarant” the professional conference organizer for EFI. A special thanks must go to Sonia Bourguiba-Hachemi who has continuously been instrumental in bringing this conference to life on such a scale, with her smile and positive attitude.

*Pierre-Antoine Gourraud, Chair of the Local Organizing Committee*



## EFI Young professionals session, EFI Meeting Nantes, April 28

On the Friday of the EFI conference, we were happy to host a session in the auditorium in collaboration with the local organizers. During this session, we had the privilege of hosting four esteemed experts in the field of H&I who generously shared their insights

and perspectives on crucial subjects like supervision, mentorship, gender bias, and the pressure of academic publishing.

Through a combination of short presentations and interactive digital

polls, Professors Dominique Charron, Steve Marsh, Katharina Fleischhauer, and Ronald Bontrop engaged in a lively discussion with the audience, delving deep into these pressing issues. The exchange of experiences, valuable tips, and diverse opinions among the attendees was highly beneficial and enriching. It was nice to witness the enthusiastic engagement of numerous EFI members, both newcomers and experienced members, demonstrating their keen interest and active participation in the session.

It was a successful session and we are enthusiastic about its continuation during upcoming EFI events. If you're interested in connecting with EFI young professionals, don't hesitate to get in touch with us and consider joining our LinkedIn page (EFI Young Professionals). We look forward to welcoming your involvement. To provide a glimpse of the event, here are some photos capturing moments from the session.





# Does Your DNA Purification Method for NGS Really Matter?

## Learn about purification methods with Maureen, an NGS Technical Training Specialist



**Maureen Montgomery**

Sr. Technical Training Specialist  
Thermo Fisher Scientific

“ it's imperative to consider all the downstream applications when incorporating a new extraction method ”



[Read more online](#)

### Tell us a bit about your job and journey in the field of HLA?

I am the Sr. Technical Training Specialist for our One Lambda branded NGS products. Before joining Thermo Fisher's Transplant Diagnostics business, I spent 20 years working in the HLA Clinical Laboratories at the University of North Carolina and LabCorp using a variety of One Lambda products. I worked mainly on the molecular side with the validation of NGS assays and some R&D work as well. [Read more online...](#)

### Why is DNA Purification so important?

The quality of your DNA is critical to the results of your assay. If you have genomic DNA that is not intact (has small fragment sizes), it will greatly limit the quality of results and how successful they are. Ensuring a quality starting material is key to obtaining the best results possible. [Read more online...](#)

### Are all DNA extraction methods the same?

No - all DNA extraction methods are not the same. There are several ways to extract DNA, such as magnetic beads, spin columns and filter plates, among several others. It is crucial to the success of molecular assays that the DNA does not contain PCR inhibitors. [Read more online...](#)

*Visit our website to read the rest of Maureen's thoughts on DNA Purification for NGS.*

Read the rest of the article at [go.1lambda.com/MaureenNGS](https://go.1lambda.com/MaureenNGS)

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# Bursary reports from the EFI Annual meeting in Nantes

EFI offers a wide range of bursaries and among those are the bursaries for attending the annual meeting. There is no age restriction but applicants must be EFI members for at least one year at the time of application. In 2023 we received 14 applications from our members. Bursaries are preferentially given to participants with presentations at the conference. All recipients of a bursary were grateful to EFI for receiving the support, which enabled them to attend the meeting. For the meeting in Nantes, 6 bursaries were given and here are their reports.

## Nicky Beelen, Maastricht, the Netherlands

I am grateful for the opportunity to join the 36<sup>th</sup> EFI Conference 2023 as an EFI personal bursary recipient and being granted the opportunity to present my abstract in an oral session. With a background in natural killer cell immunotherapy for cancer that has a strong translational focus, I always enjoy participating in the EFI conference to learn more about the genetics underlying immunity. This base helps to put things into perspective.

As someone with a background in cellular therapy, I was particularly captivated by the first plenary session titled "Cell Therapies & Hematopoietic stem-cell transplantation." The session not only expanded my understanding of cellular therapies but also sparked new ideas and considerations for improving and advancing immunotherapeutic approaches. Carole Guillonneau's presentation on CD8<sup>+</sup> T regulatory cells and their potential in solid organ transplantation opened up a fascinating avenue of exploration for me. The function of these cells prompted me to think about their potential as another target to enhance other forms of immunotherapy.

I followed the abstract session on NK cells & KIR. I presented my own research, but also heard interesting talks from my peers. Jesse Bruijnesteijn discussed the identification of novel KIR entities, due to hybrid genes, which may not be detectable by conventional typing techniques. Marit van der Wiel explained how KIR expression on natural killer cells is regulated by multiple and distinct promotor

regions. She observed that, in contrast to the bidirectional switch and the distal promoter, the intermediate promoter, which regulates tissue-specific expression, was less conserved between humans and macaques. This could indicate diverged biological functions for these KIRs. Ticiana Dj Farias provided insights into how HLA and KIR polymorphism may affect the severity of a COVID-19 infection in an Italian population and identified several allotypes that were associated with severe disease. In similar fashion, Jairo Eduardo Niño Ramirez identified KIR and HLA interactions that were associated with the susceptibility or severity to COVID-19 in a Spanish Caucasian population. My colleague Amber Lombardi shared her research findings, which demonstrated the absence of a correlation between the percentage of educated NK cells or CMV infection and the occurrence of repeated pregnancy loss. Leonardo Amorim demonstrated how KIR gene variations were associated with breast cancer risk and severity, posing as new candidates for immunotherapies.

I enjoyed participating in the interactive teaching session led by Christelle Retière and Eric Spierings, focusing on KIR immunogenetics and HLA epitopes. This session was particularly enjoyable, as it directly related to one of my projects centered around KIR and HLA immunogenetics, and NK cell education in Multiple Myeloma. As I near the completion of my manuscript, I was keen to ensure that I had not overlooked any pertinent topics during my literature research. Notably, I observed that the majority of seminal publications in this field date back to the early 2000s, which prompted my curiosity about the lack of recent publications. However, the teaching sessions provided a comprehensive overview based on this foundation, suggesting that there is still untapped potential in the NK cell education field.





By partaking in the plenary session “AI & Big data transforming medical research”, I stepped out of my comfort zone regarding my current scientific knowledge. After listening to the talks, I noticed that I was able to bridge parts of my pre-existing knowledge on the topic, improving my understanding of AI and Big Data in a more applied way. The presentations delivered by Prof. Marta Alarcón-Riquelme and Prof. Patrick Deelen were especially relevant to me. Prof. Alarcón-Riquelme discussed the utilization of omics data to predict treatment responses, while Prof. Deelen focused on the use of tissue and cell type-specific gene regulatory networks to predict disease driver genes. After these talks, I looked up their published work to see whether I could apply their approaches to my research questions and this gave me new ideas about how big data could advance my future projects. Therefore, reflecting on this year’s theme: “Big Data In Immunogenetics: At The Crossroad Of Care, Tools, And Research”, I feel that I gained valuable knowledge and insights.

Being a recent EFI member, I had the opportunity to participate in the session organized specifically for the Young EFI group, skilfully chaired by Timo Olieslagers and Arianne Brandsma. This session proved to be immensely valuable as it provided a platform for engaging discussions with (what was determined during the session) ‘wise’-experts in the field. Divided into three relevant and personalized topics, the session catered to the diverse challenges young scientists across various disciplines may encounter. The experts generously shared their experiences, offering valuable insights that have already assisted me in making informed decisions regarding my future in academia upon completing my PhD.

In addition to the enriching scientific content, I thoroughly enjoyed the social aspect of the conference and the multitude of networking opportunities

it provided. During the wine and cheese poster sessions, I was able to talk to other scientist and learn from their research in a relaxed and interactive setting.

In closing, I would like to express my appreciation to the organizing committee for their efforts in orchestrating this event. I am grateful for the opportunity to participate in the conference, made possible through a personal EFI bursary. Through this experience, I not only created new connections but also deepened my passion for scientific research.

#### **Charlotte Cambridge, London, United Kingdom**

The 36<sup>th</sup> EFI Conference, in Nantes, France, centred around the theme of ‘Big Data In Immunogenetics At The Crossroad Of Care, Tools, And Research’. This was my second in-person EFI conference, where I had the opportunity to establish important connections with colleagues and learn in an interactive and engaging environment.

My favourite parts of the conference are always the Abstract Sessions, where you hear short, snappy presentations on a range of topics relating to a particular theme. I find the bitesize presentations deliver key take-home messages effectively and

encourage me to delve deeper into topics of interest in wider reading. Specifically, I enjoyed the ‘New Technologies and New Approaches in Immunogenetics’ session, where two colleagues from the Anthony Nolan Research Institute, Jonathan Lucas and Matilda Tierney, presented on the impact of HLA-E mismatching in less than 10/10 matched haematopoietic cell transplant settings and the characterisation of HLA-DMA, -DMB, -DOA and -DOB in the IHIW cell line panel. I also enjoyed the talk from Corrine Heijmans on chimpanzee KIR haplotype arrangements, where we heard the complexities of KIR extend into non-human primates with gene duplication and recombination. I was particularly interested to hear about Cas9 enrichment to enhance sequencing of regions of interest without PCR.

Another stand-out presentation was the talk from Effie Petersdorf during the Special Joint EFI-SIP Session. We heard about the role of NKG2D and its ligands, MICA and MICB, in haploidentical haematopoietic cell transplantation settings. We learnt that MICA exon 5 short tandem repeat (STR) mismatching resulted in lower post-transplant mortality, whereas MICB-52Asn is associated with worse patient outcomes versus 52Asp. For the receptor NKG2D, patient relapse was





lower in those who had donors with 72Thr compared to 72Ala. Interestingly, the protective effects of the three favourable features were enhanced when all three were present in the patient or donor: patient MICB-52Asp, donor MICA exon 5 STR mismatching and donor NKG2D-72Thr. Overall, this argues the case for further study into the role of non-HLA genes in transplant outcomes, with investigation of this model in unrelated matched donor settings warranted.

Finally, this year I was pleased to see the introduction of the Young EFI Professionals group, bringing together people who are new to the field. We enjoyed a Meet the Experts session, with great audience participation and interesting discussion on what makes a good PhD supervisor, and the representation of women in science. I'm excited to see the development of this group and to establish a network of familiar faces at the conferences to come!

#### **Kulvara Kittisaes, Essen, Germany**

The 36<sup>th</sup> European Immunogenetics and Histocompatibility Conference was held under the theme 'Big Data in Immunogenetics at the Crossroad of Care, Tools, and Research' at 'La Cité des Congrès de Nantes', a beautiful modern congress venue located in the attractive historic city of Nantes, France. After the warm welcome addressed by the EFI president Ann-Margaret Little and the conference president Pierre-Antoine Gourraud, Esteban Arrieta-Bolaños (Germany), this year's Julia Bodmer awardee, gave us an impressive talk about the breakthroughs in immunopeptidomics and the bioinformatics tools that represent an open field for new discoveries in Immunogenetics. Following this, in the Ceppellini lecture, Ronald Bontrop (the Netherlands) took us back in time for 38 million years to appreciate MHC/KIR polymorphism and its importance using a comparative approach of different primates' sequencing data. We completed the first night of the Conference with



beautiful piano music by Valentin Ackah and Hector Laguette.

The next morning, Florent Malard (France) delivered a comprehensive overview and outlook of CAR-T cell therapy in Europe in the first plenary session. He summarized three decades of CAR-T development, from their initial inception in 1989 to clinical approval in 2017, and presented data on their efficacy from real world data in relapsed/refractory large B-cell lymphoma, safety considerations regarding neurological events and cytokine release syndromes, and information concerning their sustainability in terms of cost and facility requirement. Finally, he showed us new perspectives in CAR technology, for example, dual CD19/CD20 CARs, armored CARs, safety switches, CAR-NK cells, CAR-macrophages, new antigen targets, and advances in the use of CAR therapies in other diseases. Another interesting session was the special joint EFI-NAT session, entitled Control of the Immune System in Transplantation. There, Alberto Sanchez-Fueyo (UK) explained the role of CD4<sup>+</sup> Treg as master controllers in immune responses in several pre-clinical studies and in the ARTEMIS clinical trial, in which adoptive transfer of autologous donor alloantigen-reactive Treg was conducted to discontinue immunosuppression after liver transplantation with two patients

reaching the primary endpoint. In the same session, Mübbeccel Akdis (Switzerland) introduced us to the immune regulatory role of regulatory B (Breg) cells and IgG4 in tolerance and allergen desensitization.

Moving to the HLA Immunogenetics, Population genetics & Evolution session, Julian Knight (UK) presented the results from a GWAS analysis showing HLA region variants associated with critically ill COVID-19 patients. These variants, namely rs9271609, the HLA-DRB1\*04:01 allele, and HLA-DQB1\*06 are associated with higher levels of anti-RBD antibody after vaccination and less breakthrough infection. In the HLA in Solid Organ Transplantation session, Siamak Barham (France) explained the importance of the MICA gene and glycoproteins in kidney transplantation. He demonstrated results from the French cohort showing MICA mismatches were associated with decreased graft survival and anti-MICA donor-specific antibodies (DSA) was associated with increased antibody-mediated rejection. Moreover, Anat Tambur (USA) helped us see the importance of HLA-DQ in solid organ transplantation, as HLA-DQ DSA mostly targeted to its alpha-chain were found in the majority of patients with graft loss. She showed us an approach to understand HLA-DQ immunogenicity based on physiochemical differences





and evolution diversity of DSA-eliciting alleles and non-DSA alleles of HLA-DQ. Last in this session, Olga Timofeeva (USA) presented the use of total plasma exchange (TPE) in DSA desensitization and in antibody-mediated rejection treatment in lung transplantation, and how the response to TPE can be predicted using the MFI value of DSA.

In the abstract sessions, there were many interesting abstracts, but I would like to highlight some of the most interesting here. First, Jonathan Lucas (UK) presented the HLA-E genotyping and clinical association data from a UK unrelated-donor HCT cohort, where he found 62% of the patient-donor pairs were HLA-E matched pairs. Interestingly, in <10/10 HLA-matched pairs, HLA-E matched status increased the risk of relapse and conveyed lower overall survival. Next, Matilda Tierney (UK) revealed 13 novel alleles from full-gene sequence characterisation of HLA-DMA, -DMB, -DOA, and -DOB in 49 IHIW cell lines. In the Best Abstract session, Michel Kester (the Netherlands) demonstrated that HLA-DP can present peptides in two orientations, both of which are functional and recognized by CD4+ T cells, and that not only DPB1, but also DPA1 is crucial for this reversed orientation. Marco Punta (Italy) used single-cell RNA sequencing data of bone marrow cells from AML relapse patients to reveal more immature expression profiles in HLA-loss relapses, and more clonal TCR repertoires in class-II down regulation relapses. Using image mass cytometry of term placentas in oocyte donations, Xuezi Tian (the Netherlands) demonstrated the interaction of CD163+DR+ myeloid cells, CD4+ T cells, and trophoblasts in fully fetal-maternal HLA mismatches, which might play role in immune tolerance in this context. In the poster presentations, Gurvinder Kaur (India) presented data of TCR-beta sequencing in chronic myeloid leukemia patients (CML), reporting 23 common CDR3 sequences, three of which not

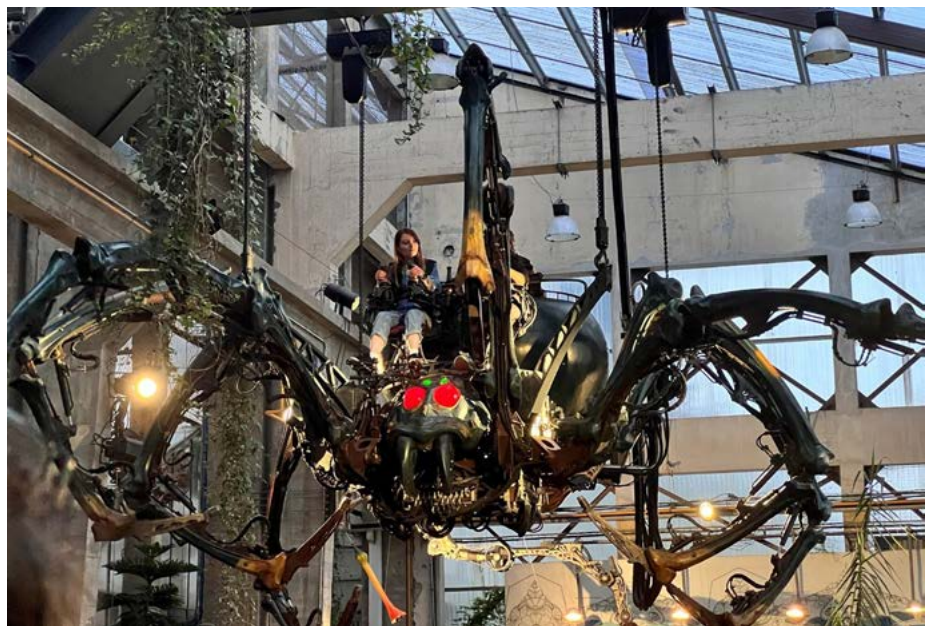
reported in healthy volunteers and hence potentially associated with CML. Lastly, I presented an abstract from our research project at the Immunotherapy, Gene Therapy, Cellular Therapy oral session, showing the substantial contribution of memory CD4+ T cells in recognizing divergent immunopeptidomes from non-permissive HLA-DP mismatches and deregulated mHAg in the absence of HLA-DM, bearing implications for naïve-cell depletion-based acute graft-versus-host disease prevention strategies in hematopoietic cell transplantation.

In the special session hosted by the Young EFI professional working party, Timo Olieslagers and Arianne Brandsma introduced the initiation of the Young EFI. The Young EFI is a platform where newer to EFI can exchange ideas, socialize and initiate

this wonderful EFI2023 Conference and to be a part of the EFI community. This was the first time I have had the chance of attending the meeting, and the scientific and educational programs provided me with a diverse overview of updated knowledge and concepts in immunogenetics and histocompatibility, and inspired me to continue exploring the various areas of this field. I am grateful to the EFI for having provided me with a scholarship to attend this meeting.

#### **Tsvetelin Lukanov, Sofia, Bulgaria**

The 36<sup>th</sup> European Immunogenetics and Histocompatibility Conference was held in Nantes, France from April 26 to 29, 2023. The conference focused on the theme "Big data in immunogenetics at the crossroad of care, tools and research" and brought together experts from the scientific community, academia, and industry worldwide.



networking. The highlights of the session were the inspirational talks and interactive discussions by the expert panellists, Dominique Charron, Katharina Fleischhauer, Steven Marsh, and Ronald Bontrop in the topics of mentoring, gender bias, and publishing pressure.

Overall, as a PhD student and a member of the Young EFI professional working party, I am very delighted to have had the opportunity to attend

The conference featured sessions covering various aspects of histocompatibility, including tolerance in organ and stem cell transplantations, big data, and systems biology. In addition to abstract sessions and poster presentations, the program included plenary sessions on cell therapies and transplantation, immunogenetics, AI and big data research, and autoimmunity and infectious diseases.



Four teaching sessions were also included, addressing innovations in transplantation, anthropology and population genetics, KIR immunogenetics, and bioinformatics.

Among the sessions, the abstract session 3 on "NK cells and KIR" drew particular interest. Chaired by Retiere Christelle and Augusto Danillo, it featured several presentations. Jesse Bruijnesteijn from the Biomedical Primate Research Center (BPRC) in the Netherlands discussed chromosome rearrangements in KIR genes and their role in protecting against pathogens. The authors reported 37 different haplotypes found in a cohort of 4512 individuals, with 14 of them containing fusion KIR genes (overall frequency of about 3%). Additionally, they reported the discovery of 10 new fusion KIR genes and speculated whether these recombination events are an evolutionary strategy to enhance host defense against pathogens.

The next presenter, Marit van der Wiel,

also from the BPRC, discussed the variegated expression of KIR regulated by conserved promoter regions in humans and macaques. The objective was to determine if KIR expression in Rhesus Macaques is regulated by similar promoters as in humans, as these macaques are commonly used as models in preclinical research.

Ticiana Farias from the University of Colorado (USA) gave a presentation on the role of HLA and KIR polymorphism in COVID-19 severity. The researchers performed high-resolution class I and II, as well as KIR genotyping of 403 non-hospitalized and 1575 hospitalized patients with Sars-Cov-2 infection from Italy. The authors reported DPB1\*13:01 as being protective against severe COVID-19, and this association was also observed in haplotypes with DPA1\*02:01. They also found that KIR2DS4\*00101 increases the risk of hospitalization, especially in the presence of its HLA ligands.

A similar topic was presented by Jairo Eduardo Nino Ramirez from Spain, who

aimed to assess the impact of KIR-HLA class I polymorphism on COVID-19 severity in a population of 458 Spanish patients with Sars-Cov-2 infection and 667 controls from the same population. Both HLA and KIR were typed using the SSOP method. The authors reported that the KIR2DL2/C1 combination was associated with an increased risk of mortality in infected patients.

Amber Lombardi from MUMC+ in the Netherlands delivered a presentation on the role of NK cell education in recurrent pregnancy loss (RPL). The study involved 45 women with RPL and 16 women with uncomplicated pregnancies as controls. The researchers assessed KIR/NKG2A expression, CMV status, and performed HLA typing using the SSOP method. The authors did not find any differences in the expression patterns of KIR and NKG2A or in the percentage of educated NK cells between women with RPL and controls. Furthermore, these findings were not influenced





# 20

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**Dr. Paul Terasaki**  
Transplant Pioneer



by the presence of CMV infection in women with RPL.

Kathrin Putke from DKMS in Germany presented the experience of DKMS in high-resolution KIR genotyping. She introduced their well-established dual redundant reference sequencing (DR2S) protocol, which combines short-read Illumina and long-read PacBio sequencing to obtain fully phased sequences. She also shared their experience with ONT technology. Using an ONT/Illumina-based approach, they characterized 653 novel alleles in KIR2DL1, 2DS1, 3DS1, and 2DP1 genes, of which 243 were exon variants with 166 non-synonymous mutations resulting in novel proteins.

Danillo Augusto from the University of North Carolina at Charlotte, USA, gave a presentation on "Natural killer cell receptor variation associated with a more aggressive subtype of breast cancer." Despite the well-known involvement of KIR-HLA in diseases, their specific allele variations have not

been analysed in breast cancer. In the study, a cohort of 550 patients and 747 controls was examined using next-generation sequencing. The authors reported that copy number variation in KIR3DL1S1 and 2DL5 is associated with an increased risk of developing breast cancer. They also found that KIR allelic variation is associated with aggressive subtypes of breast cancer, such as KIR2DL3\*001 (+) HLA-C1 (+), KIR2DS1\*002 (+) HLA-C2 (-), and KIR2DL1\*002 (+) HLA-C1 (+).

The last presentation was given by Nicky Beelen from MUMC+ in the Netherlands and focused on HLA class I and KIR diversity in multiple myeloma. The researchers aimed to characterize potential differences in class I epitopes and KIRs between patients with multiple myeloma (MM) (n=172) and healthy controls (n=196) using SSO genotyping for both genetic systems. They did not find differences among KIR genes or haplotypes but reported that MM patients are more likely to be C1-/C2+/Bw4+ and that MM patients

are more likely to be educated through KIR3DL1/Bw4.

Overall, the conference provided a valuable experience, offering opportunities to network and exchange ideas with professionals in the field of immunology and immunogenetics. The organization and program were highly appreciated, benefiting both the attendee and other participants. I would like to express my gratitude to EFI for their support and for creating such a stimulating and engaging event.

#### **Meenaksi Singh, Mumbai, India**

The 36<sup>th</sup> EFI conference 2023 was held from April 26-29 held at Nantes, France. The theme of the meeting was Big Data in Immunogenetics at the crossroad of Care, Tools and Research. It was an educational feast with scientific sessions to encompass the latest updated training and learning in the field of Histocompatibility and Immunogenetics. The meeting started with Associated EFI



Meeting SOCIÉTÉ FRANCOPHONE D'HISTOCOMPATIBILITÉ ET D'IMMUNOGÉNÉTIQUE (SFHI). The SFHI is professional society of French speaking HLA laboratories. HLA bringing together French-speaking HLA laboratories. The main aim of the society in particular for a better understanding of the compatibility between donor and recipient in organ transplantation and hematopoietic stem cell transplantation. There were other satellite meetings which included executive committee meeting, Proficiency testing committee meeting, IT & Bioinformatics committee meeting, Standards committee meeting and Educational committee meeting Open meeting of the Population genetics working group and Young EFI group.

The evening saw a gala celebration with welcome address by the chairpersons Pierre-Antoine Gourraud and Ann-Margaret Little. The welcome address was followed by Julia Bodmer award, HLA award and Ceppellini lecture. Finally the day closed with music by Conservatoire de Nantes. There were two plenary sessions on April 27<sup>th</sup> widely covering cell therapies and Hematopoietic stem cell transplantation and HLA Immunogenetics, Population genetics & Evolution. The speakers emphasized advancing CAR T cell therapies implementation in Europe. In light of graft versus host disease remaining a major challenge for patients undergoing HSCT, Dr. Robert Zeiser described various novel developments in GVHD therapy. In the population genetics session, the haplotype diversity in the T cell receptor and immunoglobulin loci characterization was emphasized. Apart from plenary talks there as was a Special Joint EFI-NAT Session: Control of The Immune System in Transplantation on regulatory T cells and B cells translation to the clinic and its function and role in transplant as well as autoimmunity.

The two teaching sessions highlighted

innovation in transplantation namely telemedicine in renal transplantation and Population diversity in context of immunogenetics of HLA. The end of the day was marked by poster session by various students, scientists and faculty members covering research across Bioinformatics, Data Analysis in Immunogenetics, HSCT, Immunogenetics in Organ Transplantation, NK cells, KIR and Population genetics and Innovation in Immunogenetics.

Friday April 28<sup>th</sup> was marked by the opening talk on MICA by Prof Seimak Barham, and the talk of Prof Anat Tambur, who emphasized on molecular matching to improve transplant outcomes. The session was closed by Prof Olga Timofeeva who presented on various desensitization strategies and their implications. The highlight of the third day for me was a special joint session of EFI and society for Immune polymorphism: Advances in Clinical Immunogenomics. The session had interesting lectures on microbial genomics its implication in precision medicine and immunogenetics of HSCT. The two-teaching session on this day dwelled on KIR immunogenetics & HLA epitopes: Mapping approaches & prediction methods and Bioinformatics for research Application. The day ended on a nostalgic meeting rather amalgamation of the old and the new that is the meeting between stalwarts in H&I with budding scientist student affiliates of EFI.

The final day saw the best abstract presentations and a session on autoimmune disease and infections. In the last session a highly informative talk on Repertoire profiling of adaptive immune responses against the human malaria parasite *Plasmodium falciparum* was delivered. Immune diversity in health and disease was emphasized in this closing session.

The closing lecture was a philosophical perspective on the challenges of integrating big data and modelling towards unravelling systems

immunology. Katsushi Tokunaga announced the 19<sup>th</sup> IHIWS workshop in Japan and invited the support of H&I community for active participation in the meeting. The valedictory function consisted of Jon Van Rood award, best abstract and poster award.

### **Xuezi Tian, Leiden, the Netherlands**

The 36<sup>th</sup> European Immunogenetics and Histocompatibility Conference was held in Nantes, France from April 26 to 29. The aim of this conference was to bring scientists, clinicians, students, and industries from all over the world to discuss and exchange knowledge on the theme "Big Data In Immunogenetics At The Crossroad Of Care, Tools, And Research".

The congress featured a series of plenary sessions and keynote presentations by leading experts in the field of immunogenetics and histocompatibility. At the start, Dr. Florent Malard gave a nice overview of how cell therapy has been implemented in Europe, where allo-HCT remains well established but starts to be challenged by CAR T cell therapy. The following presentation given by Dr. Robert Zeiser was about the pathophysiology of GVHD, which gave the opportunity for a student like me to gain the latest knowledge about the immune changes in GVHD. Then Dr. Carole Guillonnet gave a therapy-related introduction about a quite interesting population of Treg cells that are CD8 positive. Other plenary sessions provided valuable insights and inspired attendees as well. Dr. Seiamak Barham provided evidence that besides HLA, MICA mismatches are also associated with reduced graft survival. Dr. Anat Tambur pointed out that HLA molecular matching is needed to improve transplant outcomes and we also need to look into the mechanistical level.

EFI also offered several special joint sessions which allowed other communities to exchange information on this platform. For example, in EFI-ESOT Session, Dr. Gabriel Oniscu emphasized how efficient and



beneficial a big network can be to the transplant world. Dr. Sophie Limou showed that the genomics of kidney transplantation has confirmed the importance of non-HLA factors and mismatches, and suggested that novel analytical strategies are needed for decision-making in transplantation. In EFI-NAT Session, Dr. Alberto Sanchez Fueyo brought some exciting news on the Treg translation to the clinic that studies are ongoing to assess the safety and efficacy of CAR-Tregs in transplantation.

As a student, I am really interested in teaching sessions and found them really useful for me. Dr. Erick Castelli not only taught me about the HLA genetic diversity and the challenges

of analyzing highly polymorphic and repetitive genes but also provided us with multiple HLA typing tools and websites for us to try on.

The highlight of this congress for me was the discussion on the use of AI, as this new and explosive area is now wildly used and has shown its power in various fields. Dr. Jasper Callemeyn convinced me that current methods for diagnosis of rejection are flawed, and novel multimodal tools would be better to identify patients at high risk of rejection. Dr. Marta Alarcón-Riquelme and Dr. Patrick Deelen both showed the power of big data in understanding the mechanism of diseases and therefore, to better predict the patient response towards treatment

in different diseases. I was honored to participate in the best abstract session. I really appreciated that I got the opportunity to present our work to a big audience, as this was a plenary session. The discussion atmosphere was enthusiastic and inspiring, from where I got quite nice questions and suggestions, and the chance to talk with other participants later on.

In conclusion, the 36<sup>th</sup> European Immunogenetics and Histocompatibility Conference served as a dynamic platform for scientific exchange and collaboration among various participants and definitely advantage the immunogenetics and histocompatibility field.

## European Federation for Immunogenetics Education and Scientific Bursary Report

This July, thanks to the Education and Scientific Bursary obtained from the European Federation for Immunogenetics, I had the opportunity to visit the Translational & Clinical Research Institute in Medical School of the Newcastle University, UK. I was supervised by Dr Rachel Crossland, whose team is highly specialized in extracellular vesicles (EVs) and their role in pathophysiology of immunological disorders. During this training I learned the data analysis and I was introduced to various laboratory methods and techniques, including NanoString nCounter molecular barcoding technology, microRNA isolation and concentration, CellStream, Transmission Electron Microscopy and 10x technology. Data analysis requires a dedicated software for micro RNA expression profiles, the nSolver, which allows data normalization and background subtraction.

The NanoString technology allows to analyse expression of approximately 800 microRNAs in a single sample.

This technology uses a primed codeset for analysis of 12 samples at one time. The first step of this experiment is isolation of microRNA from serum samples. After isolation, the microRNA needs to be concentrated with the use of special columns. Before running the NanoString experiment, samples need to be prepared according to the manufacturer's instructions (briefly, samples are required to undergo an annealing, ligation and purification protocols on thermal cycler), followed by the hybridization step with the capture probes. This hybridization requires an overnight incubation. After hybridization, the nCounter Analysis needs to be performed immediately.

The last part of these experiments is data analysis which is the most time-consuming part of the experiment. Generated expression profiles of recipients of allogeneic hematopoietic stem cell transplantation (HSCT) will then be related to clinical data, allowing to identify the most significant microRNA

and to compare their expression profiles in relation to post-transplant complications. Obtained data will be compared between two groups; recipients who developed cytomegalovirus infection and those, who did not develop this complication after transplantation.

I would like to take this opportunity to thank Dr Rachel Crossland and her team for hosting me during my stay in Newcastle. It was an incredible experience and I am sure that this visit will have a positive impact on future collaboration of our laboratories. I would also like to thank the European Federation of Immunogenetics for giving me a chance to participate in this Education and Scientific Bursary.

*Jagoda Siemaszko, PhD student of the Laboratory of Clinical Immunogenetics and Pharmacogenetics, Hirszfeld Institute of Immunology and Experimental Therapy, Polish Academy of Sciences, Wrocław, Poland*



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## EFI member survey 2023

Earlier this year the EFI Executive Committee sent out a survey to all active members. The survey included questions aimed at understanding who our members are, why you remain EFI members and what benefits you use. We also wanted to get feedback on what aspects of EFI membership work well, and where you would like us to invest further.

Twenty-three percent of members respond to the survey, of which 65% have been an EFI member for more than 10 years. The top three reasons people joined EFI were: access to educational material; reduced fees for the EFI annual meeting and that EFI is a widely recognised professional membership. While length of membership broadly correlated with length of time working in the H&I field, it was wonderful to see many of our experienced colleagues joining EFI more recently. The survey also highlighted the diversity of areas of work of our membership, particularly the number of colleagues working within the Bioinformatics field.

EFI is dedicated to supporting professionals entering the field, so we reviewed responses from those members who have joined EFI in recent years. We noted that access to education materials, including professional qualifications, HLA journal access and help to attend conferences, were key reasons for new members joining the society, and that overall, our members accessed the educational opportunities that EFI offers. We are committed to working

with the EFI committees to increase awareness and opportunities to increase the educational resources for our members.

The EFI event that the majority of responding members reported taken part in, over the last five years, was the EFI annual conference. The opportunity not only to learn from and share our data, but to network with colleagues in the field, remains important to our members. We recognise that attendance at the annual meeting can be challenging due to a number of reasons and worsened in a post-pandemic world. EFI will continue to look at opportunities for members to access the educational material from our annual conferences. Information on how to apply for EFI bursaries that support attendance at conferences, plus other opportunities, can be found on the website: <https://efi-web.org/efi-membership>.

Although the survey is now closed, we are still keen to hear of ideas from our members. Please do get in touch with the EFI office! We will repeat the survey next year, so if you didn't take the opportunity to participate in this year's survey, please take the time and participate in 2024.

The key findings from the survey will be published on the EFI website.

*Neema Mayor, EFI Councillor*

## Report on the 3<sup>rd</sup> Portuguese Histocompatibility and Immunogenetics Workshop, 26 May 2023, Porto, Portugal

The Portuguese Histocompatibility and Immunogenetics (H&I) Workshop is an important educational event organized annually by the Portuguese Histocompatibility and Immunogenetics Group (GHI) within the Portuguese Transplantation Society (SPT) to promote and enhance the knowledge of junior members of our community in the field of H&I.

This year GHI-SPT hosted the event for 1 day at the Institute of Biomedical Sciences Abel Salazar (ICBAS) - Porto, with the support of the Unit for Multidisciplinary Research in Biomedicine (UMIB) and with

sponsorship of Diagnostica Longwood.

The scientific program, developed through a close collaboration between the H&I laboratory professionals and clinicians, was outstanding and covered topics from basic concepts of the HLA system and methods to molecular matching in living donors, HLA epitope analysis, HLA phenotypic assignment, matching criteria in HSCT, chimerism analysis, and ending with clinical/laboratory case discussions. The workshop featured external speakers including Marcelo Fernandez-Viña (Stanford University) and Illias Doxiadis (University

of Leipzig), faculty from several Portuguese Transplant Units including Manuela Almeida (CHUdSA), Jorge Malheiro (CHUdSA), Fernando Caeiro (CHULC), Rita Leal (CHUC) and Ricardo Pinto (CHUSJ), as well as Portuguese H&I Specialists António Martinho, Luís Ramalheite and myself.

I would like to thank all the speakers and the workshop participants for making this important educational event such a tremendous success!

*Sandra Tafalo*  
*Coordinator of the Portuguese Histocompatibility and Immunogenetics Group*



# 19<sup>th</sup> International HLA & Immunogenetics Workshop

We are delighted to officially announce that the 19<sup>th</sup> International HLA & Immunogenetics Workshop (19<sup>th</sup> IHIWS) will be held in Japan after 35 years. The Workshop will be held in Numazu City, Shizuoka Prefecture on May 19-24, 2026. Numazu City, the venue location, is only an hour away from Tokyo by Shinkansen bullet train and offers a perfect spot to catch the most spectacular views of Mt. Fuji.

We are also pleased to announce that the 2026 Asia-Pacific Histocompatibility and Immunogenetics Association Conference (APHIA) will be held on May 26-28 at the same venue consecutively.

It is our pleasure to host IHIWS in this

city which is not only surrounded by abundance of nature of lush green of Senbon Matsubara pine grove, Mt. Kanuki, or River Kano floating through the city, but with rich regional gastronomy from Suruga Bay. While attending the workshop in Numazu, we encourage you to take advantage of enjoying leisurely excursions to local inviting spots which we are planning to cherish your memory.

The organizing committee is preparing with full force to make the workshop a successful one and to that end, we have launched the official website already to inform the schedule progress. And, this fall, we will begin uploading Project details as they

become available on our website: [Home - IHIWS 2026 \(ihiw19.org\)](https://ihiw19.org). Please join the 19<sup>th</sup> IHIWS by clicking <Sign Up> on the top page of the website.

The entire organizing committee covets that 19<sup>th</sup> IHIWS, the first international workshop in Japan after 35 years, will be the workshop not only beneficial to attendees but the one which all members are eager to attend by marking your calendar now.

We look forward to seeing you in Japan in May 2026.

*Katsushi TOKUNAGA and Takashi SHIINA*  
Co-Chairs of 19<sup>th</sup> IHIWS



## Highlights from the HLA journal

By Luca Vago, section editor HLA journal

### **Chimeric HLA antibody receptor T cells to target HLA-specific B cells in solid organ transplantation.**

Ilse Gille, Renate S Hagedoorn, Ellen M W van der Meer-Prins, Mirjam H M Heemskerk, Sebastiaan Heidt.

HLA. 2023 Oct;102(4):436-448. doi: 10.1111/tan.15146. Epub 2023 Jun 27.

A recurring issue encountered in patients that require a solid organ transplantation is the presence of memory B lymphocytes and antibodies directed against allogeneic HLAs. In order to overcome this problem, the Authors constructed Chimeric HLA Antibody Receptor (CHAR) T cells to precisely target and eliminate HLA-directed B cells. T lymphocytes were genetically modified via the use of retroviral vectors encoding for a chimeric receptor made combining the extracellular portion of HLA-A\*02:01 or HLA-A\*03:01 with CD3 signalling domains. They demonstrated the activation of the CHAR T cells and a specific targeted killing of B cell hybridomas responsible for HLA-specific antibody production. Moreover, in order to minimize the interaction between the recipient alloreactive

cytotoxic T cells and the infused CHAR T cells that would result in the death of the CHAR T cells, the latter were mutated in the  $\alpha 3$  domain of the extracellular part of the HLA-A2 CHAR molecule to abrogate CD8 binding leading to a lower affinity for the TCR complex with HLA class I. These promising results may pave the way for clinical studies to improve therapeutic options for highly sensitized patients needing transplantation, representing a potential advantage compared to drugs that non-specifically target B cells.

### **Chimeric HLA antibody receptor T cells for targeted therapy of antibody-mediated rejection in transplantation**

Sergi Betriu, Jordi Rovira, Carol Arana, Ainhoa García-Busquets, Marina Matilla-Martinez, Maria J Ramirez-Bajo, Elisenda Bañon-Maneus, Marta Lazo-Rodriguez, Ariadna Bartoló-Ibars, Frans H J Claas, Arend Mulder, Sebastiaan Heidt, Manel Juan, Beatriu Bayés-Genís, Josep M Campistol, Eduard Palou, Fritz Diekmann.

HLA. 2023 Oct;102(4):449-463. doi: 10.1111/tan.15156. Epub 2023 Jul 28.



Similarly to the work by Gille and colleagues presented above, also the Authors of this study developed CHAR T cells to selectively eliminate B cells that produce donor-specific anti-HLA antibodies. In this study, the CHAR T were engineered with lentiviral vectors and the CHAR was homologous to the extracellular domain of the HLA-A\*02 molecule, frequent in most populations and especially in Caucasians. Since this type of treatment was developed for patients that would have to be treated with an immunosuppressive regimen, it was of central importance to investigate the impact of immunosuppression on the cytotoxic properties of the A2-CHAR-T cells and it was proven to have no significant effect at therapeutic range. Moreover, the Authors provided an *in vivo* proof of concept of the efficacy of CHAR T cells in selectively eradicating HLA-A2 antibody producing B cells in an immunodeficient mouse model. Although further studies are necessary to translate these works in the clinical practice, these innovative strategies represent a valuable new approach towards a targeted therapy that would improve the outcome of both solid and hematopoietic stem cell transplantation.

#### **The humoral and cellular response to mRNA SARS-CoV-2 vaccine is influenced by HLA polymorphisms**

Francesca Eleonora Bertinetto, Paola Magistrini, Gina Adriana Mazzola, Cristina Costa, Garino Elena, Silvia Alizzi, Gitana Scozzari, Enrica Migliore, Claudia Galassi, Giovannino Ciccone, Guido Ricciardelli, Antonio Scarmozzino, Lorenzo Angelone, Paola Cassoni, Rossana Cavallo, Tiziana Vaisitti, Silvia Deaglio, Antonio Amoroso; Collaborative Group.

HLA. 2023 Sep;102(3):301-315. doi: 10.1111/tan.15049. Epub 2023 Apr 3.

Different HLA polymorphisms can influence the response to SARS-CoV-2 in different individuals and they might explain the progression and severity of COVID-19. In order to correlate HLA alleles with response to vaccination against SARS-CoV-2, the Authors focused on the humoral and cellular responses to mRNA-based COVID-19 vaccines by using the LIAISON® SARS-CoV-2 Trimeric IgG assay chemiluminescent immunoassay and the Quantiferon SARS-CoV-2 assay, for the S1 (receptor-binding domain; Ag1) and S1 and S2 (Ag2) subunits of the Spike protein respectively. These two techniques allowed to investigate, in a targeted manner, whether the polymorphism can explain individual response variability to the vaccination. The Authors showed that HLA A\*03:01, B\*40:02 and DPB1\*06:01 correlated

with high antibody concentration and A\*24:02, B\*08:01 and C\*07:01 with low humoral responses. Similarly, the haplotype HLA-A\*01:01-B1\*08:01-C\*07:01-DRB1\*03:01-DQB1\*02:01 was associated to low humoral response.

This results suggest that HLA genes may impact on both individual's vaccine-induced cellular and humoral immunity: this finding may have important implications for future vaccine development and personalized medicine as this knowledge may lead to the development of tailored vaccine strategies for individuals with specific HLA genotypes to enhance vaccine efficacy.

#### **Software update: Interpreting killer-cell immunoglobulin-like receptors from whole genome sequence data with PING**

Wesley M Marin, Jill A Hollenbach.

HLA. 2023 May;101(5):441-448. doi: 10.1111/tan.14949. Epub 2023 Jan 10.

In this work, an improvement of the bioinformatic pipeline PING is provided. This tool provides high-resolution genotyping of killer-cell immunoglobulin-like receptor (KIR) from whole genome sequencing (WGS) data. Taking advantage of synthetic sequence datasets and real world data from the 1000 Genomes Project (1KGP), the pipeline demonstrated high exonic genotyping performance on the synthetic dataset meant to approximate real-world data with 95% of accuracy. The subsequent analysis of the distributions of genotyping errors for the synthetic sequences datasets opened the way for possible further improvements in KIR genotyping accuracy. With the improvement of the bio-informatic PING pipeline presented in this work, this tool may become a key asset for the analysis of KIR variation in different WGS datasets.

In addition, we would like to suggest to the EFI newsletter readership a very comprehensive review published in the February 2023 issue of *HLA* and written by Ji Yeon Kim and colleagues with the title "Validation and application of new NGS-based HLA genotyping to clinical diagnostic practice".

Moreover, we point the attention of our readers to the obituary written by Yasuharu Nishimura in memory of the recently departed Takehiko Sasazuki (1940-2023), published in the issue of May. Finally the April issue of the journal collects the abstracts from the 36<sup>th</sup> European Immunogenetics and Histocompatibility Conference, held in Nantes on that same month.



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