EUROPEAN FEDERATION FOR IMMUNOGENETICS

# NEWSLETTER

JANUARI 2019 - ISSUE 87

## .....FROM THE EFI PRESIDENT

# DEAR COLLEAGUES AND FRIENDS,

A new year has started and on behalf of the entire EFI Executive Committee I would like to wish to each one of you, as well as to your families and coworkers a very happy, prosperous and healthy 2019!

In the last couple of years EFI has signed agreements with various international and national H&I societies. As a result of these agreements cooperation projects have emerged which now start to be fruitful. Last autumn EFI carried out a very successful and good visited session on Histocompatibility and Immunogenetics at the Annual Meeting of EFIS, the European Federation of Immunological Societies, in Amsterdam. In order to reciprocate the invitation we had in Amsterdam, EFI has invited EFIS to participate in our annual conference in Lisbon where one of the plenary sessions will be completely covered by speakers selected by EFIS. Last November, EFI was represented at the Indian Society for Histocompatibility and Immunogenetics (ISHI) with two speakers, Sebastiaan Heidt covering the aspects of H&I in solid organ transplantation, and Andrea Harmer, who gave a talk on quality in H&I and also presented our very successful EFI accreditation program. It is planned that we continue to have joint events with the organisations on an annual basis with which agreements were established. In order to coordinate EFI's representation, an ad hoc committee has been created which will ensure that our presence as a society covers all clinical and scientific aspects, and that there is a constant flow of joint events with as little overlap as possible. The next event where EFI will be present is at the EBMT conference in Frankfurt/Germany, where we have been asked to contribute to a training workshop concerning histocompatibility criteria for optimal donor selection. Furthermore, in 2020 we will be present at the ESOT conference in Copenhagen.

As you already know, the International Histocompatibility Workshop and Conference will be carried out in the year 2021 in Amsterdam under the guidance and lead of Eric Spierings and Sebastiaan Heidt. EFI will be supporting this event and indeed the conference will be a joint EFI-annual meeting/IHWC-conference. In fact, cooperation within the H&I field has always been a great goal and advanced the HLA science vastly. Without international cooperation, the characterization of sera and reagents which allowed for the definition of the various HLA Loci and enhancement of the understanding of HLA would not have been possible. Over the years, the way of working has shifted to different levels. With the technology advancements over the last decades we moved from simple serology and reaction patterns to more complex things like sequence analyses and generation of big data, which may help us get more insight and emerge deeper in the details of the genetic code, thus allowing a better understanding of the complex processes of the immune system. Therefore, the international workshop and the international networking it provides continue to be important, though technologically different than in the past – bioinformatics, IT technology and sophisticated statistical tools will be crucial in order to help us analyse the masses of data being generated through NGS and other modern methodologies. We are very much looking forward to this major scientific event and we would like to encourage everyone to participate in the various workshop projects which will be available.

Another project which revived last year was the formalization of the relationship between EFI and national H&I societies within Europe. A series of agreements with the H&I societies of

*continue on page 5*

# All loci. All platforms. All in a single tube.

## AllType™ NGS Assay on the Ion GeneStudio S5™ and Illumina MiSeq® Systems

Next generation sequencing is now more convenient than ever.

One Lambda's AllType NGS assay delivers single tube amplification for all eleven Class I and Class II loci, completely removing the need for amplicon pooling. Samples move directly to library preparation and are prepared for sequencing in a single workday.

**Simple**
One PCR reaction per sample
No amplicon pooling

**Fast**
Sample prep in a single workday
Results in less than 3 days

**Flexible**
Run on your platform of choice

Go from sample to sequencing in a single workday.
Learn more at: **go.1lambda.com/ngslab**

ONE LAMBDA
A Thermo Fisher Scientific Brand

A New Era of Innovation in Transplant Diagnostics

**EFI website**
http://www.efiweb.eu
**Editor-in-chief**
Sebastiaan Heidt
**Editorial address:**
EFI Newsletter
LUMC, Dept. of Immunohematology
and Blood Transfusion, Bldg. 1, E3-Q
P.O. Box 9600
2300 RC Leiden, The Netherlands



ISSN 0962-9521

# ....FROM THE EDITOR'S DESK

First of all, happy new year to all of you from the editor's desk! This year, the annual meeting will take us to beautiful Lisbon, where the 33rd annual EFI conference will be held. The motto of this year's conference is 'Functional Immunogenetics: The Historical Challenge". Both registration and abstract submission are open, so you are all invited! The next edition of the newsletter will contain the scientific program.

Earlier this year I was invited together with Andrea Harmer to represent EFI at the 5th conference of the Indian Society for Histocompatibility and Immunogenetics in Mumbai, India. This was a very exciting meeting, showcasing the potential and quality of research in the H&I field in India. I sincerely thank Narinder Mehra, Uma Kanga and the rest of the organising team for the invitation. A report on the meeting can be found in this newsletter.

This newsletter also contains several reports from EFI members who either received an Education & Training bursary to visit a laboratory abroad, or a personal bursary for attending a conference. Please be aware that you can apply for such a bursary as well. More information on this can be found in this newsletter.

This year, it is time for another round of EFI elections. In this newsletter, the candidates for the three available positions as councillor are presented to you. There are five strong candidates to choose from, with a good geographic diversity, so I urge you to use your right to vote!

As always, I hope that you enjoy reading this newsletter and I am looking forward to your contribution to the next edition.

*Sebastiaan Heidt*

Deadline for contributions to EFI Newsletter 88 is March 4, 2019.
Please send your contributions by e-mail to s.heidt@lumc.nl

# CONTENTS

# HistoTrac

AUTOMATING YOUR LABORATORY

# An Innovative Software System for the Histocompatibility Laboratory

It is offered in modules to facilitate the building of a system that accommodates the testing services provided by your laboratory. The Core Package is the center of the software, providing for all the basic functions of the laboratory. Add modules, now or later, depending on your needs.

## Information

- HistoTrac Laboratory Information System
- Patient/Donor Database
- Workflow Management
- Reporting

## Innovation

- EuroTransplant Data Exchange
- HistoTrac on the Web
- Paired Kidney Exchange
- Platelet Matching

## Integration

- HL7 Interfaces: (ADT, Orders, Results, Billing)
- Reagent Vendor Interfaces (Assign, HLA Fusion, MatchIt!, SBTengine, Score, SureTyper, uTYPE, and NGS by vendor)
- Data Conversion
- Custom Development
- Custom Reporting
- Training and Implementation Support

**For an**
**ON-LINE DEMO**
**Email:**
**HistoTrac@SystemLink-Inc.com**

SystemLink, Inc.

Find more information visit our website at **www.HistoTrac.com** or email **Susan.Metz@SystemLink-Inc.com**.

**SystemLink, Inc.** is a software development company focused on the needs of the histocompatibility community. HistoTrac is a customizable Laboratory Information Management System in use in the United States, Canada, Europe and New Zealand. Since 1999, HistoTrac has become the primary software system for HLA labs in North America.

the major European countries were signed. Most recently an additional agreement was signed between EFI and the Bulgarian Society for Immunology. As in Venice, we also plan to have a meeting between the EFI executive committee and the representatives of the national societies in Lisbon, in order to continue the discussion on issues which are at the focus of interest nationally, however, possibly less focussed by EFI. We want to make sure that EFI provides the maximum of support to the national societies. One of these issues is the accreditation of HLA Laboratories by NAB (National Accreditation Bodies). EFI has for many years provided the expertise and the platform for laboratories to maintain and document a certain level of quality by adhering to the EFI standards and by receiving (after inspection) the "EFI accreditation" which has been recognised by various international and national clinical organizations, like the EBMT, Eurotransplant, ZKRD, etc. Since a couple of years, and through the implementation of the European directive for accreditation, the national accreditation bodies are officially and legally in charge of the laboratory accreditation in European countries. In the past EFI signed a Memorandum of Understanding with EA, the European Cooperation on Accreditation, which is basically the Network organisation of NAB's in Europe. Unfortunately, so far no formal recognition of the EFI accreditation by any of the NAB's was achieved. However, since a couple of years, the German NAB, DAkkS, in cooperation with EFI and the DGI, the German H&I society, offers an EFI accreditation scheme for German HLA laboratories which are involved in solid organ or stem cell transplantation diagnostics. Currently, there is no formal agreement for this cooperation, however, it works quite smoothly despite some practical/logistical details that still need to be optimised. Moreover, the German chamber of physicians (Deutsche Ärztekammer - DÄK) issued in September a "guideline for the allocation of solid organs" according to which HLA laboratories involved in Solid Organ Transplantation must be officially accredited. Since in Germany DÄK guidelines have a law-status, the interpretation of this guideline is such that the accreditation obtained must be the officially recognised accreditation, which legally seen is that through the DAkkS. The overall implications of this decision cannot be fully overlooked yet, but there is certainly a potential for conflicts there since the transplant organisations require EFI accreditation and the DÄK requires a legally recognised accreditation. Within this conflict I feel that it is the time for EFI to take the advantage and legalise the relationship with the DAkkS. Both parties (DAkkS and EFI) are already in contact and a draft agreement is being created. We hope that until the Lisbon meeting this agreement will have reached a final status. We are very confident that if this agreement is signed this would give the accreditation according to the EFI standards for the first time a legally official status and could act as a model to be followed by NAB of other countries in Europe.

As you will also see in this issue, this year we will also have elections again. We received several applications for colleagues from the different EFI regions who would like to contribute with their expertise and experience within the EFI board as councillors. Unfortunately, there is only space for three councillors to be elected – so it will be a race among the candidates. Please use your voting right and participate in the elections in order to support the applicants which you feel will represent the interests of our members best! Details about the candidates and about the voting procedure and the deadlines will follow.

I would like to close by thanking again Sandra and Sonja who do an excellent job in the EFI office, but also all the Committee Chairs and the Committee Members for all the hard work they are taking on in order to help EFI and all its members improving the quality and the impact of their work.

Again, a Happy, Healthy and Successful 2019 for everyone!

Yours

Joannis Mytilineos

EFI President

# 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:

M. Gerofalaki, Athens, Greece
M. Kuo, Long Island City, United States
A. Jimenez, Long Island City, United States
A. Erol, Istanbul, Turkey
A. Medhat, Dallas, United States
A. Gymer, London, United Kingdom
S. Mendoza-Ibarra, Monterrey, Mexico
R. Salazar, Monterrey, Mexico
L. Lopez, Monterrey, Mexico
C. Cancela, Monterrey, Mexico
M. Bettinotti, Baltimore, United States
G. Montero Martin, Palo Alto, United States
J. Lucas, London, United Kingdom
C. Tsekoura, Athens, Greece


# LABScreen Single Antigen

## The Gold Standard for the detection of Donor Specific Antibodies

Introducing the latest lot of **LABScreen Single Antigen HLA Class II – Group 1**, the largest we've ever made. With these beads, you'll see targeted improved specificity and resolution, providing superior results. The larger build size means you'll receive the same lot for more consistent DSA monitoring and less frequent validation.

Try the newest lot of the **only** US FDA and CE IVD cleared Single Antigen Bead on the market.

**Quality the transplant world has come to rely on!**

**Targeted** improved specificity and resolution

**Large lot size** for greater continuity in patient tracking

**Access integrated HLAMatchmaker** software to analyze antibody recognized epitopes

To learn more, contact your One Lambda representative or visit us at: **go.1lambda.com/LS2A01-L4**

ONE LAMBDA
A Thermo Fisher Scientific Brand

A New Era of Innovation in Transplant Diagnostics

# The Julia Bodmer Award

Applications are invited for the prestigious Julia Bodmer Award, to be delivered on Wednesday May 8, 2019 during the Opening Session at the 33rd EFI conference in Lisbon, Portugal. The Julia Bodmer Award is given to a young scientist in recognition of their outstanding work within the Immunogenetics field. The Award also acknowledges the laboratory in which the scientist has performed their research.

Any member of EFI can propose a candidate for the Julia Bodmer Award. The application must include the candidate's CV with a list of publications and a letter of support from the head of the candidate's laboratory. Candidates must be an EFI member (or become a member at the time of application) and be no more than 10 years past completion of their doctoral thesis if applicable; candidates who have not undertaken or completed a doctoral thesis are also eligible.

All applications will be reviewed by the Scientific Committee who will make the final decision on who will receive the Award. In addition to the presentation at the Opening Ceremony of the EFI Conference, the Award winner will also be invited to contribute a dedicated "Julia Bodmer Review" to HLA, the official journal of EFI. He/she will receive €1000 in addition to the expenses for registration, travel and lodging for attending the EFI Conference.

Applications must be sent in writing to the EFI Secretary via Sandra van Hensbergen at the EFI Central Office, (ajvanhensbergen@lumc.nl) before March 15, 2019.

# Report of the EFI Executive committee Autumn meeting in Leiden October 14th 2018

As usual, the EFI Executive Committee (EC) had its second annual meeting in Leiden in October. This is the meeting where members of the EC have the best opportunity to discuss EFI business. The EFI EC also meets during the annual conference but then the time for discussions is more limited. Since a couple of years, the EC also meets with all the chairs of the EFI committees the day before the EC meeting. With this arrangement a lot of proposals and ideas can then be further discussed and decisions made during the EC meeting.
The members of the EC and all the committees would collectively like to thank Sandra van Hensbergen and Sonja Geelhoed for the excellent organization of the meeting.

### International collaboration

EFI had for a number of years informal contacts with a lot of other organizations but under the past President E. Naumova, this was started to be formalized with both national and international societies. As a result of our cooperation with EFIS - the European Federation of Immunological Societies- EFI arranged a symposium on September 3rd at the ECI meeting in Amsterdam. The symposium was chaired by E. Naumova and speakers were F. Claas, K. Fleischhauer and L. Sollid. A couple of hundred participants enjoyed the symposium entitled "HLA in transplantation and autoimmunity". At next year's EFI meeting, EFIS will arrange a session about T and B cell memory that we look forward to. The EC also decided to always aim for one joint session at all of our annual meetings. During the meeting, two new agreements on collaboration with the Bulgarian and Japanese were also approved. The agreement with our sister societies on how to arrange the International Summer School (ISS) has also been updated. The ISS will again be an annual event, but included in the arrangements is also a new society - the Arab Society for Histocompatibility& Immunogenomics - ARSHI. The next ISS will be held in Montreal and it will be organised again in Europe in 2020. Our President J. Mytilineos also reported from a recent meeting about an initiative to start a new society - The Society for Immune Polymorphism (SIP). EFI's view has been to not split our forces but rather continue to work within existing organizations.

### EFI elections

Since a number of members of the EC have served their period there will be vacancies next year and elections will be held. The nominations are presented elsewhere in this newsletter. We will again use electronic voting and members are urged to check that their contact details are up to date. If you do not receive the announcement of this newsletter by e-mail, then your details need to be updated!

### Bursaries

EFI has several categories of bursaries that members can apply for. During 2018 until October, 2 personal bursaries of €750 each have been awarded and for the Venice meeting 11 bursaries of €900 each. For education and training, 5 bursaries have been awarded and also support for an international meeting. Until the meeting in Leiden €21.648 have been used for bursaries. The EC also decided to rename the 'educational and training' bursary to 'education and science' and by doing so indicates that it could also be used for scientific purposes/visits. The periods for personal bursaries will also be aligned with the others starting from 2019. In 2019 we will also allocate budget for the ISS and bursaries especially for participants of this event besides the other categories.

### EFI webpage

The new IT & bioinformatics committee chaired by E. Spierings has been very busy in the development of a new webpage. The latest CMS standards will be used and this includes upgrading to TYPO3 for technical and security reasons. A strategy and concept planning have been undertaken and the outcome of this was presented during the ECC meeting. The EC very much

liked the new concepts and approved to continue the development. The plan is to have the new website alive before the Lisbon meeting.

### EFI conferences

V. Miotti reported the result from the Venice meeting. All of us that were lucky to participate know it was a very successful meeting with 883 participants from 62 different countries. The benefit for EFI of the meeting was very good and our President once more congratulated the organizers. Next years meeting will be in Lisbon, and since A. Martinho was unable to come to Leiden he gave an update through Skype. The organization of the scientific program and social activities are well on schedule. In 2020 our meeting will be in Glasgow and D. Turner reported about the organization and their plans. In 2021 we will meet in Amsterdam were E. Spierings will host the meeting together with S. Heidt. This will be a joint meeting with the International HLA and Immunogenetics Workshop (IHIWS) conference and E. Spierings presented the outline of the meeting.

As previously announced, EFI has been working on how to improve the organization of the annual meeting. A working group within the EC have looked at the possibility to work with a PCO that for over a period of time focuses exclusively on the corporate part of the meeting. After asking several PCOs for their interest, four PCOs were invited to Leiden for presentations and discussions. After this it was obvious to the EC that a core PCO - responsible for all aspects of the annual meeting - is preferable. The work of negotiating this is ongoing. We have also asked interested members to host the meeting in 2022 and 2023 to apply for this. In total 4 applications were received and the EC decided to have the meeting in Nantes 2022 and in Madrid 2023.

From the Scientific committee proposals were received to move the "best abstract session" from the morning last day to earlier during the meeting. The EC supported this and also the proposal to separate the fee for technicians and students.

### EFI budget

The EFI budget seems to be in balance and the net result is expected to be around €1000. Our Treasurer G. Guidicelli also suggested that we should present our annual budget as a balance sheet by incorporating all accounts, assets etc. into one balance sheet. It was decided that this needs some more work but the EC liked the idea. We also have some major investments in the future. During the meeting with the chairs of EFI committees, the request for e-learning and more educational activities on the web was mentioned more than once.

The EC also discussed and decided the nominations for the Ceppellini lecture and the EFI medal.

Mats Bengtsson, EFI Secretary

# EFI Annual Conference Bursaries

EFI Personal Bursaries are available for the annual EFI Conference to be held in Lisbon, Portugal on May 8th – 11th 2019. Full details on how to apply for EFI personal bursaries are given on the EFI website in the document entitled "EFI Personal Bursaries". The application form for the EFI Personal Bursaries is also available on the EFI website.

In addition to the deadlines given for personal bursary applications, a deadline of February 20th 2019 has been set for applications for bursaries specifically to support attendance at the annual EFI conference in Lisbon. Preference for these applications will be given to members who have been selected to present an abstract at the EFI conference (either oral or poster presentation). Only one bursary per laboratory will be awarded.

All bursaries are awarded on the strict condition that the recipient submits a report of ~1 page on any scientific session of the conference, which will be published in the EFI newsletter, following the conference.

For all bursary applications, the following are required: completed "EFI Personal Bursary Application Form"; CV of applicant; letter of support from lab director; submitted abstract where appropriate and confirmation of selection for oral or poster presentation as soon as this is available.

These must be sent to the EFI Secretary via Sandra van Hensbergen at the EFI Central Office, (ajvanhensbergen@lumc.nl).

# Bursary deadlines 2019

It is our pleasure inform you about the upcoming deadlines for application for the EFI Personal Bursary, the EFI Education and Scientific Bursary (previously EFI Education and Training Bursary) and the support for EFI 'International Affairs'. During the EFI autumn meetings held in October 2018 in Leiden, the Netherlands it was decided to align the bursary deadlines and the bursary deadlines for 2019 are set as per below:

Next to the dates below, please note an Annual Conference Bursary is made available and more information is to be found elsewhere in this Newsletter. Also a Bursary is allocated to support EFI Members to attend the 2019 International Summer School and more information will be provided at a later time.

Reminders of upcoming Bursary deadlines and information about the application procedure will provided to you by the EFI Office by email. More information on the respective Bursaries is to be found in the Bursaries page on our website www.efi-web.org

| | Deadline 1 | Deadline 2 | Deadline 3 | Deadline 4 |
|---|---|---|---|---|
| **EFI Personal Bursary** | 1 February 2019 | 1 May 2019 | 1 August 2019 | 1 November 2019 |
| **EFI Education and Scientific Bursary** | 1 February 2019 | 1 May 2019 | 1 August 2019 | 1 November 2019 |
| **Support for EFI 'International Affairs'** | 1 February 2019 | 1 May 2019 | 1 August 2019 | 1 November 2019 |

# Amplify the Possibilities with SABR™

## LinkSēq™ SABR HLA Typing Kits

### The Resolution You Need

- Single Antigen Bead Resolution—SABR
- Separates key alleles within serological groups
- Type for allele level differences corresponding to antibodies detected in Single Antigen Bead assays

### Linksēq Confidence

- Greater Clarity with Real-Time PCR
- Greater Contamination Protection

### Linksēq Simplicity

- Same LinkSēq Workflow—90 minutes from DNA to typing results
- Same SureTyper™ Analysis
- One 384 well tray—A, B, C, DRB1, DRB345, DQA1, DQB1, DPA1, and DPB1 typing

Find out more at **onelambda.com**

ONE LAMBDA
A Thermo Fisher Scientific Brand

**For Research Use Only. Not for use in diagnostic procedures.**



PRMO-DS.1-EN Rev03

# Update from the EFI Education Committee December 2018

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

The next oral examination will be held at the EFI meeting in Lisbon on 7th May 2019. Applications for the examination should be made via the Section of Surgery/Transplantation/Transplant Immunology page of the UEMS website (http://www.uemssurg.org/divisions/transplantation/transplant-immunology2). The deadline for applications is 7th February 2019. Payment can be performed via Paypal upon application.

The requirements to apply for the ESHI Diploma oral examination are detailed in the 'Portfolio' document available on the UEMS website. Applicants must demonstrate a period of sustained training (3 years for medics and 5 for scientists) within H&I, undertaken in an EFI accredited lab under appropriate supervision. Since June 2014 a total of 15 candidates have submitted portfolios for consideration to sit the ESHI Diploma exam; 13 candidates have been examined with 11 candidates passing. Please note, as described below, the EFI Education Committee and the European Board for Transplant Immunology (EBTI) have decided that evidence of participation in a CME/CPD scheme will be required in the future to ensure ESHI Diploma Fellows have maintained their H&I knowledge and experience sufficiently to retain certification.

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

The EFI Education Committee established a pilot EFI CME-CPD scheme for 2018 to allow members to record professional activities which help them to retain their knowledge and skills in H&I. The new EFI scheme is aimed at members who have no other formal mechanism for recording CME/CPD events.

For those members who hold the ESHI Diploma (either Honorary or by examination) providing evidence of ongoing CME/CPD, either from a local recognised scheme or via this new EFI scheme, will be a mandatory requirement in the future to retain certification.

Also, the recording of training and development events in this EFI scheme will be accepted for EFI Accreditation purposes. The pilot EFI CME-CPD scheme will be reviewed by the Education Committee in 2019 with an aim to launch a scheme for all members in 2020.

### European Technical H&I Qualification (ETHIQ)

Members of the Education Committee met in London on the 7th December 2018 to finalise a logbook for the ETHIQ and it is hoped that a pilot scheme for a small number of participants can be launched in 2019. The in lab training scheme is aimed at technical staff working at the bench in EFI accredited laboratories who would be supervised during the training by senior staff in their own labs. Once the Training Manual is finally agreed details will be available on the EFI website.

### EFI Education and Training Bursaries

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 application form are available on the EFI website bursaries page http://www.efi-web.org/bursaries.html.

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

The joint International Summer School (ISS), sponsored by EFI, ASHI, APHIA and ARSHI, will be held at the Marriott Springhill Suites, Old Montreal in Montreal, Quebec from Sunday, July 14 – Wednesday, July 17, 2019. The ISS provides a focused course on all aspects of theoretical and applied H&I. The course is limited to a small group (30-40) and participants are invited to present their own research. It represents a great opportunity for those studying towards higher H&I specific qualifications as well as a chance to meet others working in the field in different parts of the world. Keep an eye on the EFI website for more details on registration for this meeting.

# Standards Committee Report

We are preparing the next version of the EFI standards following the same format as current version 7. For the next version we have planned changes to standards concerning haematopoietic stem cell transplantation in order to adapt current developments with mismatched and haploidentical HSCT. For the methodological standards we are introducing standards for real time PCR and for capillary electrophoresis. Another area that will be included in the next version is standards for functions performed in core laboratories, as use of core laboratories has become more common. The next version of the standard is planned to become active from January 1st 2020. Comments to the next version will be asked from the membership early in 2019.

The vacancy that was announced at the Venice meeting has been filled. Pernille Koefoed-Nielsen was appointed as a new member of the committee in October 2018. We have now another vacancy for membership in our committee as Benedetta Mazzi has moved to the Education Committee. I would like to invite members with interest to standards and quality assurance to apply for this position. We are especially interested in candidates with good knowledge about NGS and haematopoietic stem cell transplantation. To apply, please complete the application form that can be found on the EFI website under "EFI Committees" (http://www.efiweb.eu/efi-committees.html). Applications should be sent to the EFI secretary Mats Bengtsson before 25th February 2019.

Juha Peräsaari (Helsinki, Finland)
juha.perasaari@bloodservice.fi
Chair of the EFI Standards and Quality Assurance Committee


# MIA FORA™ NGS

**For high-resolution HLA genotyping, Immucor's MIA FORA NGS* 11 FLEX provides complete coverage of Class I and Class II loci in one pass.**

- Sample to sequencing in <24 hours
- Available as 5, 6, 9 and 11 gene kits
- MIA FORA 3.0 software with Smart Flagging System
- Compatible with both Windows workstations and Linux servers


Discover how MIA FORA NGS 11 FLEX can deliver the confidence in results your patients deserve.

Visit **immucor.com/miaforavideo** to learn more.

IMMUCOR

Transfuse | Transplant | Transform **a life.**

*PRODUCT IN DEVELOPMENT. NOT CURRENTLY COMMERCIALLY AVAILABLE

M409

# Update from the IT and Bioinformatics Committee - December 2018

## The Committee

During the last EFI Assembly in Venice, the IT and Bioinformatics Committee was installed. The Committee aims at supporting informatics related EFI activities in its broadest sense. Installment of the current IT-related committee finds its base in 2012, when the first activities were initiated to completely revise the original EFI website. This website project was supported by a group of IT enthusiasts and led by that time EFI president Gottfried Fischer. The group reported directly to the Executive Committee twice a year, but had no formal status within EFI. As such, this group only provided advice and all decisions were made by the Executive Committee.

The recent installment of the IT and Bioinformatics Committee is a big step forward. The most important benefit is that this committee now fully participates in the bi-annual meetings of the Executive Committee with all of the Committee chairs. Being included in these meetings provides a perfect platform for discussion and bidirectional advice. This new status will certainly enhance the supportive role of the IT and Bioinformatics Committee.

The Committee aims at a total of 4-5 members who are actively participating in these activities. As yet, there are two members, being James Robinson and myself. I herewith call upon all informatics enthusiasts to apply for the open positions in this committee. The application form can be found at the EFI Committees webpage (https://www.efi-web.org/efi-committees.html).

## Website development

The first website revision, launched in 2014, included a complete visual make-over and also a lot of technical aspects under the hood were revised. At that time, the first steps were made to improve the office functionality regarding membership administration and fee payments. Soon it was recognized that all improvements were based upon the old technology and customized modules. This solution led to a lot of work when updating the underlying Content Managing System and when changing EFI policies, for instance regarding the membership fee structure.

The Executive Committee agreed to start a second revision, aiming at building a more future-proof website. In the absence of an official committee, I was supported by Sandra van Hensbergen (EFI Office) and various members from the Executive Committee. The project started with a “Concept and Design” phase. In four half-day sessions with the website designer RedKiwi, we constructed a proposition model, membership profiles, and “customer journeys”, all in the end leading to a new website structure and wireframe designs. The structure and designs were approved by the Executive Committee and the new website is currently under construction.

After launching the new website (anticipated completion spring 2019), we expect a more member-friendly web experience. For instance, EFI key activities will have a more prominent position on the website and navigation is more logical. Moreover, the membership area will get a completely different look-and-feel, including important changes in functionality of the membership payment technology.

Eric Spierings
Chair of the IT and Bioinformatics Committee

# Nominations for the EFI executive committee: vacancies and the electronic election process

This year we will have elections for the EFI Executive Committee. The elections will be electronic as we have had the last two times. All active members (i.e. have paid their membership fees for 2018) will receive notification by email regarding the election procedure. We urge members to check and ensure that the email address EFI holds is up to date. If you for some reason do not want to participate in the electronic election but would like to vote on paper, please contact Sandra van Hensbergen at the EFI Central Office.

Nominations were sought for the positions of Secretary, Deputy Secretary, Treasurer and Deputy Treasurer as well as three positions as Councilors
The current Secretary, Mats Bengtsson and the current Deputy Secretary Dave Roelen were nominated to serve a second term. The current Treasurer, Gwendaline Guidicelli and the current Deputy Treasurer Katia Gagne were nominated to serve a second term. No other nominations for these positions were received so there will not be a voting for those positions. The nominations are subject to approval by the EFI General Assembly at the 33rd European Immunogenetics and Histocompatibility Conference in Lisbon, Portugal.
For the three positions as Councilors five nominations were received and the candidates are presented here. The information will also be available electronically during the voting process.

# Elections 2019

### Marco Andreani, PhD.

I graduated in Biology Science at the University of Urbino, in Italy in 1978 and gained my PhD in 1988 from the University of Camerino. I worked since 1998 in the in H&I Pesaro laboratory, where in 2001 I became Director. From 2004 I was the H&I Laboratory Director at University Policlinic of Tor Vergata, in Rome. From August 2018 I am the Director of the H&I located at the Pediatric Hospital Bambino Gesù, in Rome, where I currently take care of diagnostic and clinical research. Our laboratory provides service for HSCT as well as supporting disease diagnostics. I am member of EFI since 1993. From 2006, up to date, I am an EFI Inspector and member of the EFI Educational Committee from 2010 up to 2018. In the present year I was nominated Commissioner for Region 7c (Italy) and member of EFI Accreditation Committee. I am currently Chair of the European Board of Transplant Immunology (EBTI) starting from 2017 (co-Chair from 2013). From 2015 I am also part of the EFI Genetic Population Working Group. My challenge for the next three years as Councillor would be to help EFI to facilitate education and scientific purposes among the EFI members.

### Katarzyna Bogunia-Kubik

I am a diagnostician and a scientist with professorship in biological sciences. Since the beginning of my career, working in the first EFI accredited laboratory in Poland, I was involved in implementation of molecular biology techniques for HLA typing and donor-recipient matching for hematopoietic stem cell transplantation. More recently, I became a head of the HLA typing laboratory serving for organ transplantation and was granted with the ESHI Honorary Diploma. Since 1999 I have been an organizer of the HLA Proficiency Testing for Central and East Europe. I was a President of the Polish Society for Immunogenetics (2008-2014), now I am a member of the Board. I am also a member of the External Proficiency Testing Committee and a representative of Poland on the European Board of Transplant Immunology (EBTI). My research focuses on transplant immunology/immunogenetics and searching for new markers related to susceptibility and course of disease as well as response to treatment. In 2016, I had a great pleasure of hosting the 10th Jubilee East-West Immunogenetics Conference in Wroclaw. As an EFI Councillor, I would share my knowledge and experience, and strengthen and extend the collaboration between laboratories from Eastern Europe and other countries.

### PD Dr med. T. Hien Tran

After graduating from the Medical School at the University of Muenster, Germany, and during my residency in Internal Medicine in Berlin and Erlangen-Nuremberg, Germany, I performed research at the University of Pennsylvania and Harvard University, USA, from 1994 to 1997. Since then, my main focus has been transplantation immunology. After returning to Germany, I continued my medical training and completed my specialisation in Laboratory Medicine. Since 2003, I have been working in the Department of Transplantation Immunology, Heidelberg University Hospital, Germany. Since 2004, I have been head of the laboratory of molecular immunogenetics and the search unit for unrelated stem cell donors. Apart from supervising the diagnostics as an EFI-lab codirector, on-call for histocompatibility testing in organ allocations, developing reagents, reviewer's activities (including for the ZKRD) and students' teaching, my main interest is the relevance of genetic polymorphisms in transplantation. In 2013 and 2017, I was co-organiser of the meeting of the German Society of Immunogenetics (DGI) and of the Joint EFI/DGI Conference, respectively. With support of the DGI, I would like to serve on the EFI Executive Committee as a Councillor. If elected, I aim to promote clinical research and training of young colleagues in immunogenetics and transplantation immunology.

### Dr Bouke G. Hepkema

In 1991 I started my work in the HLA lab of the University Medical Center Groningen, after graduation in a Master in Medical Biology and a PhD at the faculty of Veterinary Medicine at the University of Utrecht. I have been Co-Director with my former colleague Simon Lems from 1995 and became Director after his retirement in 2013. The Honorary ESHI Diploma was received in 2014. As a representative of the Dutch HLA working group in several committees of the Dutch Transplant Society I am a linking pin between the Dutch clinical transplant physicians and the HLA laboratories. Since 2013 I am the Dutch representative in the Tissue Typing Advisory Committee of Eurotransplant. Starting in 2006, I have performed on average 3 EFI inspections per year and from 2015 I am also an inspector for the Dutch Accreditation Council (medical laboratories, ISO 15189). As a member of the steering committee (treasurer) I participated in the organization of the 2013 EFI conference in Maastricht. In 2017 I participated together with transplanted patients and medical professionals from Groningen in the "Transplantoux"; a cycling event organized by the transplant team from Leuven (Belgium). The aim is to promote a healthy lifestyle and to show that with professional guidance even after a transplantation it is possible to climb the Mont Ventoux (France). I found it extremely motivating to see what we can achieve by a transplantation; as a councillor I hope to pass this motivation to the EFI community.

### Dr Katerina Tarassi, MD, PhD

I was born and educated in Greece. After graduating from the Medical School (1984), I completed my specialization in Medical Biopathology (1990) and my PhD Thesis (1997). My interest in H&I dates back to 1990 when I started working as Registrar in Immunology-Histocompatibility Dept of "Evangelismos" Hospital in Athens. I still work in the same department, being Director since 2010. Additionally, I reinforced my knowledge in molecular techniques, trained in ARC Epidemiology Research Unit, Manchester-UK (1995 & 1996), in Immunology Laboratory of Hospital "Virgen de Rocio", Seville-Spain (1998) and in H&I and Disease profiling Laboratory at Stanford Medical School-USA (2015). I was also involved in research through publications, research projects and active participation in IHIWs since 1991. I was entitled to Honorary ESHI Diploma since July 2014. I have been an EFI member since 1991 and EFI Inspector since 2009. I am member of the National Transplant Organization Board. Throughout the years, I had the pleasure to collaborate with several colleagues, especially from Balkan countries, some of whom became true friends. So, I would be happy to serve as EFI councillor and I will do my best to promote collaboration between different countries and to support young scientists.


# FIRST ANNOUNCEMENT and CALL FOR ABSTRACTS

Dear colleagues,

It is our pleasure to announce the **„13th East-West Immunogenetics Conference 2019"** (EWIC 2019), this time organized in **Zagreb, Croatia, March 14-16, 2019**.

Online **Abstract Submission**, **Registration** and **Accommodation** will open **December 01, 2018**.

## TOPICS:

- Organ Transplantation
- Hematopoietic Stem Cell Transplantation
- Disease Association Studies
- Population Genetics

## KEY DATES:

**ABSTRACTS:**

- Abstract Submission opens: **December 01, 2018**
- Abstract Submission closes: February 15, 2019
- Abstract Notification: until February 28, 2019

**REGISTRATION:**

| FEE TYPE | EARLY FEE | LATE FEE | ON-SITE |
|---|---|---|---|
| | Dec 01, 2018 – Feb 15, 2019 | Feb 16, 2019 – Mar 13, 2019 | |
| PARTICIPANT | € 150 | € 200 | € 250 |
| STUDENT / TECHNICIAN / NURSE | € 120 | € 150 | € 180 |

## IMPORTANT INFORMATION:

- Meeting Dates: **March 14-16, 2019**
- Venue: Hotel Panorama
- Accommodation: Hotel Panorama
- Official Website: www.ewic2019.com
- Contact: ewic@ewic2019.com or andrea@eventorg.hr

**CONGRESS SECRETARIAT & CONTACT:**

EventOrg - PCO / Managing Agency and Technical Support for EWIC 2019
Contact person: Andrea Grospic | E-mail: andrea@eventorg.hr or ewic@ewic2019.com
Cell Phone: +385 99 4550241 | Web: www.eventorg.hr

# EFI Bursary Reports:
# Education & Training bursary

### Report on educational visit to the Department of Clinical Immunology, University Hospital Aleksandrovska, Sofia, Bulgaria

Recently, I had the pleasure of staying for two weeks in Sofia, at the Department of Clinical Immunology with Stem Cell Bank directed by Prof. Elissaveta Naumova. The laboratory is part of the University Hospital Aleksandrovska, located in the very heart of Sofia, the capital city of Bulgaria. I assisted in the studies of a team led by Prof. Milena Ivanova, who was my main tutor during my training in the lab. Her team routinely employs next generation sequencing (NGS) for HLA typing and other analyses, both for diagnostic and scientific purposes. During the first week of my stay, we performed HLA typing on the MiniSeq Sequencing System by Illumina, using the Holotype HLA Kit by Omixon. The typing was performed on samples from a group of patients awaiting a bone marrow or peripheral blood stem cell transplantation.

The entire procedure of sample preparation was carried out throughout the first week of my stay. We first isolated DNA from peripheral blood, prepared equal dilutions of all samples, and measured DNA concentrations. Afterwards, we amplified fragments of our DNA samples that contain HLA class I and class II loci using specific primers from the Holotype HLA Kit. After the amplification step, we quantified our amplicons to make sure that we have equal DNA concentrations of all samples. We then started library preparation, which consisted of three steps: DNA fragmentation, end repair, and finally, adapter ligation. After the library had been prepared, we moved on to the library size selection. The library was then quantified, and eventually, on the last day of the first week, we started the actual sequencing on Illumina MiniSeq. Following a day-long sequencing, we analysed results using the dedicated Omixon HLA Twin software.

During the second week of my training, we performed HLA typing for a group of patients on the Ion Torrent platform. We used NXType™ NGS Reagents by OneLambda. The general workflow was similar to that of the Omixon Kit, however, there were some major differences. After library preparation, samples were loaded on a chip by a dedicated device, IonChef. As the entire week-long sample preparation procedure included many waiting times, I used them to get acquainted with other studies performed on the Illumina and Ion Torrent platforms in the lab, most importantly analysis of mitochondrial DNA (mtDNA). Mitochondrial DNA was sequenced on MiSeq, and subsequently, a dedicated mtDNA analysis tool was used to characterize disease variants and heteroplasmy in patients.

Additionally, during my stay I assisted in performing three other procedures used routinely in the lab: HLA SSP typing, DNA sequencing by capillary electrophoresis, and chimerism analysis.

HLA typing employing sequence-specific primers (SSP) was used in the lab in emergency situations requiring fast typing results. It is still used as a standard HLA typing method in many labs around the world. It is based on PCR amplification with primers for specific HLA sequences which is followed by gel electrophoresis. This method has lower resolution than NGS-based typing but is faster to perform, and therefore it was used for emergency typing in the Sofia lab.

DNA sequencing by capillary electrophoresis was used during my stay to study *JAK2* and *CALR* genes. The analysis comprised of a PCR reaction, followed by ExoSAP-IT purification, and, ultimately, DNA sequencing. The sequencing was carried out on a 2500xL Dx Genetic Analyzer employing capillary electrophoresis.

Chimerism analysis was performed on blood samples from patients after allogenic bone marrow/mobilized stem cell transplantation to find out their post-transplant chimerism, i.e. whether their own cells exist alongside donor cells in their bone marrow. For this purpose, analysis of short tandem repeats (STR) was performed on blood samples from the donor, patient before transplant and patient after transplant. The analysis was very sensitive and also employed the 2500xL Dx Genetic Analyzer.

In conclusion, my stay in the Department of Clinical Immunology in Sofia allowed me to learn basic rules of HLA and other biomarkers genotyping on two NGS platforms: Illumina and Ion Torrent. Additionally, I learned various other techniques used routinely in the lab. My stay also tightened relations between my lab in Wrocław, Poland, and the lab in Sofia, and helped to foster our future collaboration. I would like to thank the European Federation of Immunogenetics for awarding me bursary for my travel to and accommodation in Sofia. I also would like to thank Prof. Elissaveta Naumova, Prof. Milena Ivanova, and their team for hosting me in their lab and for their warm welcome.

*Piotr Łacina, Hirszfeld Institute of Immunology and Experimental Therapy, Wrocław, Poland*

### Report on an education visit to the Transplantation Laboratory, Manchester University, NHS Foundation Trust, Manchester, UK

At the beginning I would like to thank EFI Education Committee for the bursary, giving me the opportunity for a one week education visit to the Transplantation Laboratory in Manchester. I would like to express my deep gratitude to Dr Kay Poulton, the head of the laboratory for accepting me. I also want to say special thanks to Patrick Flynn and Stephine Jones for sharing their knowledge and experience with me, and many thanks to all generous staff for their kindness and helpfulness.

The aim of my education visit in Manchester Royal Infirmary was to improve my knowledge in the field of Flow Cytometry Crossmatching (FCXM). In our laboratory in Budapest we use FCXM before living kidney transplantation for two years, after

our first device was installed. Since then, the flow cytometry protocol has been established, we have performed our first device setting, and in 2017 we passed FCXM External Proficiency Testing (EPT) for the first time. However, our experience could be improved to solve or interpret some highly complicated cases, like unexpected results or out of ordinary samples.

During a one-week training in April 2018, I saw how they use the Halifax based protocol for FCXM assay. Despite the fact that the Manchester Laboratory uses a different instrument, their vast knowledge and experience helped the Budapest Lab a lot. On my first day after a warm welcome, I got a tour round the laboratory and got introduced to the staff. I spent the rest of that day in the serological lab, got familiar with their CDC crossmatch and FCXM fluorochrome validation processes. We went through their whole FCXM protocol process step by step.

The Laboratory in Manchester is working based on the BSHI (British Society for Histocompatibility and Immunogenetics) manual. In this laboratory FCXM crossmatch is routinely performed in cases of the highly sensitized patients (RF >=50%), all living donor-recipient pairs and the problem cases as identified.

On my second day in Manchester, I had the chance to see a full FCXM procedure, we discussed the differences between our and their protocols, instruments, instrument set up, analyser software, calibration and colour compensation. We had the time to talk about the advantage of new Halifax protocol and their new cell washer and cell washing method, which is a highly important step in constructing a new protocol or modify one. Discussion of some highly complicated cases was really useful, like unexpected results or out of ordinary samples.

On the following 2 days, I attended the UK Clinical Flow Cytometry User Meeting sponsored by Beckman Coulter with colleagues from the staff. The conference included the next topics: newest instruments, future directions of the flow cytometer, and we also heard about the newest fluorochromes, finally we heard a presentation about ISO and QA too.

On the last day in the laboratory we focused again on the routine FCXM, more closely on the result interpretation. During FCXM result interpretation, it is necessary to take into account luminex single antigen bead data and HLA typing result of the donor and the recipient too, since it is vital to see the complete picture and provide a complex crossmatch result.

In conclusion, this education visit was a great opportunity for me to learn a lot in an accredited, well experienced laboratory. The experience gained during my visit helps us to improve the flow cytometry assay for the living kidney transplantation in Transplantation Immunogenetics Laboratory in Budapest.

Once again I would like to thank the whole staff in the Transplantation Laboratory in Manchester for their kindness and hospitality. I got a lot of useful advice and practical knowledge regarding flow cytometry. On the other hand, I also got the possibility to see a beautiful city and countryside surrounding Manchester.

*Ágnes Varga, Transplantion Immungenetics Laboratory, Hungarian National Blood Transfusion Service, Budapest, Hungary*

### Educational visit to the Clinical Transplantation Laboratory, Viapath, at Guy's Hospital, London, UK, under the direction of Dr Olivia Shaw.

I feel very privileged to have been given this opportunity to visit the Clinical Transplant Laboratory at Guy´s Hospital. The Flow Cytometry Crossmatch (FCXM) was introduced to our laboratory a few years ago after the initial training at this same Laboratory. The procedure was then adjusted to fit the requirements of our own laboratory in Cyprus. It should be mentioned that our routine work does not only depend on FCXM, as CDC is widely performed as well. Even though we have performed well in the external proficiency tests, we lack the knowledge and experience of bigger laboratories, which mainly depend on the FCXM methods, especially in the more difficult cases and troubleshooting.

Before the visit, we had prepared a list of questions regarding parts of the crossmatch procedure, the quality controls and standards. The setting up of the flow cytometer, the analysis of the results, the gating etc. was also discussed. Being the observer, I had the chance to note some "steps" that might be considered unimportant, but do play a role in yielding better quality and quantity of cells to achieve better results as a whole. After a detailed explanation of the procedures and protocols, as well as quality controls, a comparison could be made to our own protocols. Some case studies, considered difficult or high risk, were also discussed as well as the actions taken to deal with them. The Deputy Director/Operations Manager went through the data analysis program, designed in the Clinical Transplant Laboratory, explaining the different tables and calculations. Additionally, after a review on the different criteria and reporting of our own Laboratory, he was able to demonstrate how the different parameters could be changed and adjusted to fit our needs. The program was later saved and given to me.

During the visit, I had the opportunity to get acquainted with two piece of equipment that is useful and time saving. One was the Maxwell 16 bench-top DNA extraction system, which enables the extraction of DNA from 16 samples simultane-

ously in a short time period and reduces possibility of human error. The other piece of equipment was the newly launched automated washer Rotolavit II, by Hettich. The cell washer helps reduce reproducibility errors and provide consistent results due to an electronic flow meter, that provides precise saline fills, as the control of saline volumes is easy and accurate due to its digital calibration. There is no need for manual cleaning due to a pre-programmed wash setting that automatically cleans the chamber inlet and outlet. The automatic washer consists of a 7-inch touch screen control panel, which provides updates throughout the entire cell-washing process, using audio and visual signals and therefore increases efficiency.


I am grateful for this week. It has been very useful to me, as my knowledge has broadened and I feel more confident in applying this knowledge in my own Laboratory. All information obtained will be shared with my colleagues as well. A special thanks to all the members of the Clinical Transplant Laboratory at Guy´s Hospital for having me there and sharing their knowledge and experience with me.

*Galatia Stylianou, Nicosia General Hospital, Cyprus, Greece*

### Report on educational visit to the Tissue Typing Laboratory of Maastricht University Hospital, the Netherlands

In our laboratory, we use commercial SBT based kits for HLA high resolution typing. Sanger SBT based technique does not allow to solve the ever-growing amount of ambiguities or to obtain sufficient data about all exons and introns for identifying new alleles.

The awarded EFI bursary gave me the opportunity to visit the Tissue Typing Laboratory of the Maastricht University Hospital and learn NGS techniques performed with MinION by Nanopore Technologies. HLA ultrahigh resolution typing with MinION has been implemented in the Tissue Typing Laboratory of the Maastricht University Hospital and it will be used for routine testing from 2019 on. This method is based on full length gene amplification followed by NGS sequencing with MinION. The method enables immediate detection and unambiguous interpretation of the two alleles; and at the same time, it allows high throughput of samples. In addition to technical work experience, I also obtained extremely useful knowledge and training in the interpretation of NGS results.

During my visit, I sequenced with MinION some new HLA alleles, which we found amongst Estonian potential stem cell donors. These new alleles will be submitted to the IMGT/HLA Database. The practical experience I received about NGS during my visit to Maastricht will help us to introduce this method also in our laboratory in the future. We can consider using MinION for HLA typing in our laboratory, as this method does not require a major investment in instrumentation.

I sincerely thank the EFI educational committee for granting me the bursary. I am also very grateful to prof. Marcel Tilanus, Dr. Christien Voorter and Dr. Lotte Wieten for their kind and very useful mentoring and to all the staff in the laboratory for their professional support.

*Ingrid Tagen, Tartu University Clincs, United Laboratories, Estonia*

### Report on an education visit to the Transplantation Laboratory at the Manchester Royal Infirmary

My educational visit to the Transplantation lab at Manchester Royal Infirmary, Manchester, U.K was a highly resourceful and a memorable experience. I am deeply indebted to the EFI Education Committee for their bursary which enabled me to gain practical experience from this educational visit. At the outset, I would like to thank Dr Kay Poulton for having accepted my candidature for training in her lab. She was instrumental in diligently planning my training schedule so as to enable me to make the best out of my visit. Dr Poulton's generous staff supported me throughout.

The purpose of the visit was to gain knowledge on the state of art platforms which includes Next Generation sequencing (NGS) and luminex. With the inclusion of NGS, the bone marrow transplant programme has become very robust. The technicians who had mastered this complex and challenging technique of performing the experiments elaborated the procedure patiently at each step in a very lucid manner. A highly efficient team of clinical scientists helped me to understand the analysis of the data. I got an opportunity to understand the luminex based assays which included the single antigen bead luminex assay with great clarity. Since the laboratory was performing this luminex assay almost every day, it provided sufficient material to understand and interpret complex cases. The most interesting part of this assay was the clinical correlation. Since the lab actively engages in the follow up of the post-transplant patients and actively discusses the test planned on patients and the outcome with the clinicians and surgeons, it helped me to understand the interpretation better.

My mentor Dr Poulton provided me with the standard operating procedure (SOPs) before hand and would attend to my queries promptly. Dr Poulton would go out of the way to make me feel at home and made sure that I make the most out the visit and help the patients back home. During my stay I got to work meticulously on research project as well as a part of the new initiatives. The visit led to discussion on research projects which we have already started working on jointly.

*Ritu Aggarwal, Postgraduate Institute of Medical Education & Research, Ghanidagarh, India*

# 33rd EUROPEAN IMMUNOGENETICS AND HISTOCOMPATIBILITY CONFERENCE

## FUNCTIONAL IMMUNOGENETICS: THE HISTORICAL CHALLENGE

MAY **8-11**, 2019

**CENTRO CULTURAL DE BELÉM**

**LISBON** PORTUGAL

## HOST ORGANIZERS

António Martinho
Maria do Rosário Sancho
Dário Ligeiro
Paula Xavier
Sandra Tafulo
Domingos Machado
Susana Ramalhete

## SCIENTIFIC TOPICS

Solid Organ Transplantation
New Insights on HSCT
Anthropology and Disease
Tolerance and Immune-Modulation
Cell-Based Therapies and Regenerative Medicine

**www.efi2019.org**

**ORGANIZATION**
EFI - European Federation for Immunogenetics

LUMC Poortgebouw
Noordzijde, Room N00-002 | Rijnsburgerweg 10
2333 ZA Leiden, The Netherlands
**E-mail:** membershipsecretary@efiweb.eu
**Tel:** (+31 71) 526 5111

**JOINT MEETING**
SPT - Portuguese Society of Transplantation
IPST - Instituto Português do Sangue e Transplantação

**CONFERENCE MANAGEMENT**
Mundiconvenius - Congress & Events Organiser

Avenida 5 de Outubro, 53-2
1050-048 Lisboa, Portugal
**E-mail:** efi2019@mundiconvenius.pt
**Tel:** (+351) 213 155 135

### Reports on the 17th Meeting of the Society for Natural Immunity, San Antonio, Texas, USA

Receiving an EFI personal bursary enabled me to attend the 17th Meeting of the Society for Natural Immunity, which was held in San Antonio, Texas, USA from May 28th – June 1st, 2018. This meeting is focussed on Natural Killer (NK) cells. The opening lecture, however, is traditionally held by a speaker from a different immunological field. This year Mark Davis, an expert on T cell recognition from Stanford University, was invited to give this keynote lecture. During the following three and a half days, a wide spectrum of NK cell research was presented and discussed. The first day covered more fundamentally oriented research and focussed on viral immunity and infection as well as autoimmunity of NK cells. This day started with a very interesting talk about HLA-DP molecules as ligands for the NK cell receptor NKp44 (Markus Altfeld, Hamburg). In the following days, topics were ranging from NK development to NK memory to anti-tumour immunity and immunotherapy, including talks about translational research.

One hot topic was the NK cell as a serial killer. NK cells have a great anti-tumour potential but they die after killing a few tumour cells. This raises the questions: How can we make an NK cell kill more target cells? How can we improve the survival of NK cells? Karolin Guldevall (Karolinska Institute, Stockholm) presented a poster about the fate of IL-2 activated NK cells after co-culture with a tumour cell line. She found that the early killer cells killed more targets in total and interestingly these early killers proliferated most after killing. Carsten Watzl (Leibniz Research Centre, Dortmund) gave a presentation about timing of the two cytotoxic mechanisms of NK cells. He showed that killing is first initiated via Granzyme B and Perforin but that these molecules are then lost, while the death receptor Fas is gained on activated NK cells, initiating the NK cells' second way to kill target cells.

These questions of how to make the NK better serial killers are also relevant for my own PhD project, which is focussed on NK cell immunotherapy in breast cancer. In this project, I investigate how we can enhance the NK cell anti-tumour response in a suppressive tumour microenvironment against breast cancer cell lines and primary tissue. During the poster session, I got the chance to present and discuss my project with other scientists. Next to networking, this also gave me some new ideas how to optimize my model and continue with this project.

Overall, it was a great meeting where I gained more knowledge about detailed background information and a good overview of what is going on in the NK cell field. Thank you to the EFI organisation for providing me with this bursary which enabled me to attend this meeting and gain all these experiences.

*Femke Ehlers – Maastricht University, Maastricht, the Netherlands*

Thanks to an EFI personal bursary, I attended the 17th Meeting of the Society for Natural Immunity. The NK2018 meeting covered a lot of topics in many different sessions such as "NK cell immunogenetics and roles in transplant", "NK cell immunotherapy and immunomodulation" and "NK cells and viral immunity".

In particular, one hot topic entitled "Aspects of NK cell biology in Hematopoietic Stem Cell Transplantation" given by Dr Katherine Hsu from Memorial Sloan Kettering Cancer Center, NY, interested me since it is close to my PhD research project. She presented unpublished data showing the impact of both KIR2DL1/2DS1 allele polymorphism and expression level of HLA-Cw molecules belonging to C2 group on the phenotype and function of KIR+ NK cells. KIR2DL1 and KIR2DS1 alleles were assigned using an in house multiplex PCR-SSP method. They investigated the diversity of KIR2DL1+ NK cell expression and function by multiparametric flow cytometry driven by KIR2DL1 and KIR2DS1 alleles in a cohort of 240 healthy donors. Their results showed that the KIR2DL1*004 allele with a Cysteine (C) at position 245 was expressed at a lower frequency and a lower cell surface density compared to KIR2DL1 alleles with an Arginine (R) at the position 245. Furthermore, they found that C2 co-expression diminished KIR2DL1 cell surface expression but not the frequency of KIR2DL1 and KIR2DS1 or the cell surface density of the activating KIR2DS1. In addition, a decreased degranulation of NK cells expressing KIR2DL1- C245 isoforms was observed in comparison to NK cells expressing KIR2DL1-R245 isoforms in accordance to the cell surface density of each isoform.

Beside the impact of KIR2DL1/S1 allele polymorphism on KIR+ NK cells, Dr Katherine Hsu presented the impact of KIR3DL1/HLA-B subtype combinations from 1,328 patients with Acute Myeloid Leukemia who underwent HSCT from 9/10 or 10/10 HLA-matched unrelated donors (Boudreau et al. J Clin Oncol 2017). She showed that some KIR3DL1/HLA-B subtype combinations were predictive of a weak KIR3DL1+ NK cell inhibition associated with significantly lower relapse and overall mortality compared with strong inhibition KIR3DL1/HLA-B combinations. The greatest effects were evident in the high-risk group of patients with all KIR ligands. Beneficial effects of weak and non-inhibiting KIR3DL1 and HLA-B subtype combinations were separate from, and additive to the benefit of donor activating KIR2DS1. Their results suggested that, consideration of KIR3DL1-mediated inhibition in donor selection for HLA-matched HSCT could achieve a strong Graft-versus-Leukaemia effect, a lower risk of relapse, and an increased survival among patients with AML.

On a personal note, attending this NK2018 meeting was very benefit for me to increase my knowledge on NK cell immunogenetics and transplant and on NK cells in general. I shared my experience with other researchers to schedule my postdoc and presented my work aiming to evaluate the impact of KIR2D allele polymorphism on the structuration and the function of KIR+ NK cell repertoire to improve the selection of donors in the context of haploidentical HSCT.

*Bercelin MANIANGOU, PhD student in Immunology, University of Nantes, France*

# 5TH National Conference of the Indian Society for Histocompatibility and Immunogenetics

The Indian Society for Histocompatibility & Immunogenetics is one of many national H&I societies which have a formal link with EFI. As a result of this link two representatives from EFI (Sebastiaan Heidt from the EFI Scientific Committee and Andrea Harmer from the Accreditation Committee) were invited to take part in the 5th Conference of the society ISHI 2018 which was held in Mumbai, India on the 3rd & 4th November.

Prior to the start of the Conference there were 2 parallel workshops, one on antibody testing techniques and one on next generation sequencing. Attending the NGS workshop it was interesting to learn from participants that the high rate of homozygosity in patients and donors in India (up to 20%) is a significant challenge when testing for haematopoietic stem cell transplantation. Discussion focussed on the use of NGS for testing for stem cell transplantation and the importance of having a strategy to confirm homozygosity.


The conference opened on the evening of the 2nd November with welcome addresses from members of the ISHI Board, local organising committee and local dignitaries. Following this we were treated to a performance of traditional Indian dance which highlighted the great storytelling skills of the performers. A welcome reception and dinner followed.

The first full day of the conference had a busy scientific programme. Topics covered were wide ranging and included biomarkers in transplantation, epitope matching, next generation sequencing, renal transplantation, stem cell transplantation and accreditation.

During the first part of the programme the important contribution the international workshops have made over the years to our understanding of HLA and immunogenetics was highlighted by the ISHI President Prof Narinder Mehra. He also payed homage to the late Jon van Rood, who was one of the mentors of Prof Mehra during the 1970's. Following this Dr Sebastiaan Heidt provided an overview of the plans for the next International HLA & Immunogenetics workshop (IHIW18) which will be help in Amsterdam in 2021. It is hoped that the interest shown at the conference will lead to a number of contributions to the workshop projects from labs in India.

A number of presentations covered the topic of assessing alloimmunisation in renal transplantation and this was followed by a panel discussion focussing on how to manage specific cases.

In the afternoon NGS was the focus of attention. Of particular interest was data presented by Dr Dimitri Monos from Philadelphia, USA looking at the use of NGS typing to identify polymorphisms which affect expression of HLA-DP and the potential clinical relevance of expression levels. Dr Andrea Harmer followed by discussing standards in NGS typing, and in a later session, talked about the important role of accreditation for H&I laboratories, more specifically the EFI accreditation scheme.

The first day concluded with a session on stem cell transplantation. This included a presentation by Dr Alejandro Madrigal from Anthony Nolan in London, the very first unrelated marrow donor registry and a presentation on the current state of the bone marrow registry (MDRI) in India by Dr Navi Khattry. The majority of stem cell transplantation in India is from related donors but unrelated donor transplantation is a growing field it was interesting have the contrast of presentations from the oldest registry in World with the relatively newly established MDRI.

The second day started with short presentations of young scientists from India who were selected for the best abstract session, and competed for the prize of best presentation. It was good to see the scientific level and enthusiasm of the young Indian generation of scientists.

This session was followed by a very useful and comprehensive overview on the potential flaws of HLA antibody detection by Dr Gandhi from Mayo Clinic USA, showing several examples of unexpected HLA antibody results in an interactive way. Dr Sebastiaan Heidt thereafter presented novel techniques to detect HLA-specific B cell memory, which may be a novel marker of sensitization. The afternoon session was dedicated to disease association and NK cell biology with several excellent speakers from India.

It is clear that India is a country with a growing HLA community which is very active. Currently, one EFI accredited laboratory is present in India, but it is to be expected that this number will grow in the coming years.

# XXIIth French speaking educational SFHI-EFI meeting, Amiens, France

*By N.Guillaume, HLA Laboratory, Amiens, France.*

The XXII$^{th}$ French speaking educational SFHI-EFI Meeting took place this year in Amiens, under the aegis of the Société Francophone d'Histocompatibilité et d'Immunogénétique (SFHI), on the 4$^{th}$ to 5$^{th}$ of October. The meeting was organized at the "Quai de l'Innovation" of Amiens, and welcomed about 200 persons from all the main French-speaking HLA laboratories.

On Thursday, JP Marolleau (Hematology and cellular therapy, Amiens) and V. Moalic (HLA, Brest) chaired the first session dedicated to hematopoietic stem cell transplantation. During this session, the immunological basis of graft versus host disease and graft versus leukemia effect were recalled by N. Dulphy (Immunology, Paris). A presentation was then given by A. Charbonnier (Hematology and cellular therapy, Amiens), about the choice of the best hematopoietic stem cell donor according recipient clinical data. Then P. Varlet (HLA, Lille) detailed the strengths and weaknesses of the different chimerism assays in HSCT. The second part of the session was chaired by A. Cesbron (HLA, Nantes) and A. Basire (HLA, Marseille). I. Jollet (HLA, Poitiers) focused on SFHI External Proficiency Testing for antibodies (screening and identification by Single Ag Bead assay), HLA typing and chimerism, after which our two commissioners D. Masson (HLA, Grenoble) and S. Tourne (HLA, Strasbourg) focused on the new EFI standards. Afterwards, time was allotted for presentation of 8 selected abstracts. In the afternoon, an educational workshop chaired by V. Dubois (HLA, Lyon) and P. Loiseau (HLA, Paris) was devoted to the choice of hematopoietic stem cell donors. After a methodological presentation, an interactive mobile app was used to answer questions on several clinical cases.

On Friday, M. Carmagnat (HLA, Paris) and C. Manaouil (Public health, Amiens) chaired the session dedicated to solid organ transplantation. During the session, B. Devauchelle (maxillofacial surgery, Amiens) provided a presentation about the face as allograft.

Afterwards, P. De Sousa (urology, Amiens) detailed on the recruitment and the surgery of kidney living donors, and C. Antoine (Nephrology and Agence de Biomédecine, Paris) talked about the Maastricht III donor classification, and F. Delbos (HLA, Nantes) provided a synthesis of pre-transplantation HLA assays to perform, in case of living versus Maastricht III donor. The second part of the session was chaired by S. Ferrari-Lacraz (HLA, Genève) and A. Aarninck (HLA, Nancy). First, S. Bodeau (Pharmacology, Amiens) presented on the use of immunosuppressive medication in organ transplantation. Afterwards, time was allotted presentation of an additional 11 selected abstracts. In the afternoon, a second educational workshop chaired by O. Toutirais (HLA, Caen) and J. Visentin (HLA, Bordeaux) was devoted to HLA antibodies identification, as well as crossmatches and their interpretation in clinical cases. We again used the interactive mobile app to answer questions on clinical cases.

We warmly thank the local organizing committee under supervision of N.Guillaume and all members of the HLA laboratory of Amiens for the great organization and welcome, and we congratulate all speakers for their very interesting presentations, allowing stimulating exchanges between participants. These days can be considered as an efficient continuous education for technicians and biologists alike.

BAG HEALTH CARE



# HISTO SPOT® HLA Antibody Analysis

## Automated screening and identification with single antigens:

- Easy and reproducible – fully automated assay on the MR.SPOT® Processor
- Simplifies your workflows – allows a one-step process for screening and identification
- Flexible throughput and minimal sample volume requirements

**BAG Health Care –**
the experts for HLA and blood group diagnostics

**AVAILABLE FROM JANUARY 2018**

**www.bag-healthcare.com**

# Highlights from the HLA journal

*By Luca Vago, Section Editor HLA journal*

### Identification of trophoblast-specific elements in the HLA-C core promoter

Johnson JK, Wright PW, Li H, Anderson SK.
HLA. 2018 Nov;92(5):288-297. doi: 10.1111/tan.13404.
Highlights: The feto-maternal interface represents a unique immunogenetic environment in which the mother immune cells have to maintain tolerance against the partially HLA-incompatible fetus. Natural Killer cells are known to play a prominent role in these interactions, and HLA-C represents one of the main regulators of their function. In this study, published in the of *HLA* also containing an excellent review on the regulation of HLA-C expression, the Authors dissect the elements that control tissue-specific expression of HLA-C in the extravillous trophoblast. By experiments performed with trophoblast cell lines the authors map the enhanced activity to the central enhanceosome region of the promoter, and identify by mutational analysis a crucial role for the RFX-binding region in determining the tissue-restricted expression. These findings might help clarify the immunogenetic bases of feto-maternal tolerance and how it is impaired in pathological conditions.

### HLA common and well-documented alleles in China

He Y, Li J, Mao W, Zhang D, Liu M, Shan X, Zhang B, Zhu C, Shen J, Deng Z, Wang Z, Yu W, Chen Q, Guo W, Su P, Lv R, Li G, Li G, Pei B, Jiao L, Shen G, Liu Y, Feng Z, Su Y, Xie Y, Di W, Liu X, Yang X, Wang J, Qi J, Liu Q, Han Y, He J, Cai J, Zhang Z, Zhu F, Du D.
HLA. 2018 Oct;92(4):199-205. doi: 10.1111/tan.13358.
Highlights: The ASHI and EFI catalogs of common and well-documented (CWD) alleles represent fundamental tools for the immunogenetics community, helping to resolve ambiguous allele combinations without additional testing and supporting the generation of high-resolution HLA databases for donor registries. In this study, the authors analyzed data collected from 812'211 volunteer donors from China Marrow Donor Program (CMDP) identifying 676 CWD alleles (159 common, 517 well-documented). Of notice, this catalog is largely non-overlapping with its European counterpart, with only 32% of Chinese CWD alleles being also CWD in the EFI catalog. This catalog, that will need constant updates due to the increasing number of new alleles documented, will surely represent an important resource for strategic planning of donor recruitment, for population genetics research and disease association studies in China.

### Multiplex real-time quantitative polymerase chain reaction assay for rapid and sensitive detection of hematopoietic chimerism

Nadvornikova S, Leontovycova M, Pegova K, Hrabakova P, Prerovska R, Cechova H.
HLA. 2018 Oct;92(4):215-223. doi: 10.1111/tan.13383.
The development of assays based on quantitative polymerase chain reaction (qPCR) has significantly improved the sensitivity with which hematopoietic chimerism can be measured, ultimately allowing the earlier detection of impending disease relapse. Still, one of the major drawbacks of current qPCR-based chimerism assays is that the markers of interest and the reference gene have to be analyzed in separate reactions, increasing costs and sample requirements. In this study, the authors develop a multiplex qPCR assay for chimerism analysis based on six biallelic genetic systems and one Y-specific locus, allowing the amplification and detection of target and reference genes in a single microtube. Upon validation of the efficiency, specificity and sensitivity of each of the reactions, they demonstrate that their newly-developed technique provides results comparable to singleplex qPCR- and STR-based assays in chimerism detection and may thus serve as a very sensitive, relatively quick, and inexpensive tool for early detection of host signal reappearance.

### Next-generation sequencing of HLA-G based on long-range polymerase chain reaction.

Nilsson LL, Funck T, Kjersgaard ND, Hviid TVF.
HLA. 2018 Sep;92(3):144-153. doi: 10.1111/tan.13342.
HLA-G is a non-classical class I molecule playing an increasingly recognized role in promoting feto-maternal tolerance, preventing undesired immune reactions and driving cancer immune escape. Still, little is known regarding the extent of inter-individual variability of this gene and of its regulatory regions: this is at least partly due to the homology between HLA-G and other HLA class I genes, that has to date complicated the design of reliable methods for sequencing HLA-G. In this study, the authors develop a robust, reliable and cost-efficient next-generation sequencing (NGS) methodology to provide the full-length sequence of HLA-G, including its 5' upstream regulatory region and 3' untranslated region. Using a single set of primers, the entire gene is amplified by long-range PCR, followed by enzymatic DNA shearing to break the amplicon into shorter fragments that are sequenced by NGS. This practical and straightforward methodology might improve our understanding of HLA-G variability and of its role in physiological and pathological immune reactions.

Finally I would like to point the attention of the EFI newsletter readership to some very interesting reviews published in the latest issues of *HLA,* focused respectively on the pathogenesis of autoimmune diseases associated with 8.1 ancestral haplotype (September issue) and on the evolution of HLA-C regulatory elements to fine-tune its interactions with Natural Killer Cells (November issue).

# Don’t Wonder. Know

## Discover LABScreen™ Autoantibody Detection

Testing for autoantibodies has never been more important as recent studies suggest a potential, long-term detrimental impact.[1,2] Employing single antigen bead technology, the LABScreen Autoantibody assays allow you to detect and monitor a broad range of autoantibody targets in human sera including myosin, vimentin, tubulin, perlecan (LG3), and collagen.

Expand your antibody detection capabilities and get the answers you need.

- Characterize over 30 unique biomarkers in a single run
- Multi-group configuration allows testing flexibility
- Familiar workflow that’s compatible with LABScan analyzers

[1] Zhang X and Reinsmoen NL, Front Immunol, 2017
[2] Cardinal, JASN, 2016

Learn more at **onelambda.com**

Advancing Transplant Diagnostics Since 1984

ONE LAMBDA
A Thermo Fisher Scientific Brand

**For Research Use Only. Not for use in diagnostic procedures.**


European Federation for Immunogenetics

Executive Committee

OLERUP QTYPE®

HLA TYPING IN REAL TIME

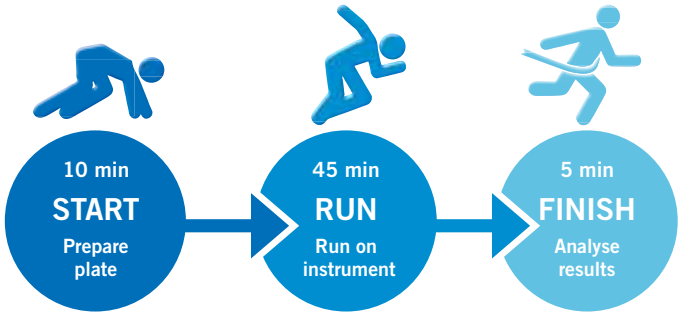
NOW CE/IVD

# Speed and Precision in Real Time

## FEATURES

+ Simple and rapid workflow for low to intermediate HLA typing at 11 loci
+ TaqMan® technology provides flexibility and multiplexing power to enhance resolution
+ All HLA alleles covered by at least two reactions
+ No PCR artefacts

HLA typing in one hour




Roche LightCycler 480 II

NOW ALSO available on
QuantStudio™ Dx, 6, 7 and ViiA™ 7

*Olerup QTYPE is CE/IVD European Union.*
*For research use only – USA and Canada.*

Manufactured by Olerup SSP AB
www.labproducts.caredx.com

Distributed by Olerup
www.labproducts.caredx.com

QTY-181214-2

CareDx®