INNATE IMMUNITY: FROM INSECT TO HUMANS
Jules Hoffmann (France)
Nobel Prize for Medicine

Jules Hoffmann is Professor at the University of Strasbourg and senior researcher at CNRS. He dedicated his work to the study of the genetic and molecular mechanisms responsible for innate immunity in insects. The work of Hoffman and his associates has provided new insights into the defense mechanisms that organisms, from the most primitive up to humans, employ against infectious agents. By demonstrating the marked conservation of innate defense mechanisms between insects and humans, the work initiated by Hoffmann and his collaborators has led to a re-evaluation of the role of innate immunity in mammals. More generally, the Drosophila model has enabled biologists throughout the world to make considerable progress, not only in developmental genetics and innate immunity but also in the study of certain human pathologies and in the understanding of memory, behavior, sleep and nutrition phenomena. With Bruce A. Beutler and Ralph M. Steinman, Hoffmann was awarded the Nobel Prize for Medicine in 2011.

Hoffmann set up and headed the CNRS laboratory “Endocrinology and Immunology of Insects” within the CNRS Institut de Biologie Moléculaire et Cellulaire in Strasbourg, which he also directed from 1994 to 2006 and where he still works with his collaborators. He was President of the French Académie des Sciences in 2007 and 2008, and is a member of the Academy of Sciences of the United States of America, Germany and Russia. He has been awarded numerous prestigious prizes, such as, in recent years, the Rosenstiel Award (with Ruslan Medzhitov) for his work on immunity (2010), the Keio Medical Science Prize (with Shizuo Akira) (2011), the 2011 Gairdner Award for medical research (with Shizuo Akira) and the 2011 Shaw Prize in Life Science and Medicine (with Bruce Beutler and Ruslan Medzhitov). He also received the CNRS Gold Medal. Hoffmann is Officier de la Légion d’Honneur in France and is an Immortel at the Académie Française (2012).
Session highlights - 1

Engaging Patients with Laboratory Medicine - Monday, 22 June 2015 - 9:00-11:00
There is increasing emphasis on empowering patients with regard to healthcare. In 2015 in the UK, all patients will have direct access to their NHS healthcare records, which will include access to laboratory test results. In a survey undertaken by LabTestsOnline UK, almost 90% of users of the website would like to see their laboratory test results at the same time as the healthcare professional sees them. However, at the time of the survey, only 20% had direct access to their laboratory test results. Evidence from the US shows that there is improved patient satisfaction and also empowerment to help the patient communicate more effectively. Dr. Amir Hanan, a GP who is speaking, has actively pioneered patient access to records in his practice in Greater Manchester in order to be completely open and transparent with his patients. In a survey of his patients, those who looked at their results and their health records, 95% felt reassured. Dr. Oosterhuis will relate to the experiences in the Netherlands of patients engaging with laboratory medicine in his session. And, finally, we will hear probably the most important point of view, which is that of the patient themselves, from our final speaker, Mr. Eric Low OBE, Founder Member and Chief Executive of Myeloma UK.

Diagnostic errors: a challenge for Laboratory Medicine - Tuesday, 23 June 2015 - 9:00-11:00
Diagnostic errors have been defined as “errors in which diagnosis was unintentionally delayed (while sufficient information was available earlier), wrong (another diagnosis made before the correct one), or missed (no diagnosis made) as judged from the eventual appreciation of more definitive information (e.g., autopsy studies)”. The evidence on the importance and direct link between diagnostic errors and errors in laboratory medicine derives from a series of recent studies. In particular, studies performed on the pre-pre analytical phase (initial procedures performed outside clinical laboratory or, at least in part, beyond the control of laboratory personnel) confirm that failure to order appropriate diagnostic tests (laboratory tests included) makes up 55% of observed breakdowns in missed and delayed diagnosis in the ambulatory setting (17-19) and 58% of errors in emergency departments. In the end stages of the testing process, incorrect interpretation of diagnostic or laboratory tests was found to underlie a large percentage of errors in the ambulatory setting and in emergency departments. Analogously, failure to inform patients of clinically significant abnormal test results or to record the delivery of relevant information is a relatively common finding. Overall, data reported demonstrate that the initial and final steps of the TTP process, above all test requesting and reaction to laboratory results, are not only more error-prone than all the other steps, but are also the most important causes of potential adverse outcomes for patients. Moreover, the data confirm that a relevant number of failures occur in the interface between clinicians’ clinics and laboratories, thus emphasizing the need for laboratory professionals and physicians to “understand their mutual ownership and work together to ensure that patients are more safe”.

The IFCC e-Academy - Tuesday 23 June - 09:00-11:00
The session will describe the collaborative project between the IFCC Committees on Distance Learning (C- DL) and the Internet and e-Learning (CIeL) to establish an e-academy linking subject areas of the IFCC curriculum for clinical chemistry and laboratory medicine to relevant IFCC approved on-line educational material.

Glomerular filtration rate - linking clinical chemistry and nephrology - Wednesday, 24 June 2015 - 9:00-11:00
Kidney insufficiency remains a growing issue in our society, partly explained by the lifespan improvement, but also by the increased incidence of hypertension, obesity, diabetes… This symposium will focus on the glomerular filtration rate, involving opinion leaders expertise from both the clinical and the laboratory sides. The first lecture will review the equations able to estimate the GFR in specific situations (elderly, paediatric, obese, etc…). The second lecture will provide a global overview of the current recommendations and guidelines in nephrology, and the third lecture will be focused on the need for standardization as well as on small emerging biomarkers.

Autoimmune diseases - Wednesday, 24 June 2015 - 9:00-11:00
Pitfalls in testing for anti-nuclear antibodies, L. Andrade (Brazil)
The impact of autoimmune rheumatic diseases, Y. Shoenfeld (Israel)
The autoimmune basis of endocrine diseases, J. Sheldon (United Kingdom)
There are over 100 diseases that are result from a person’s immune system becoming overactive. Instead of the immune system destroying invading pathogens, it targets the subjects own tissues. Autoimmune diseases can affect any or many parts of the body. The autoimmune process can cause diverse symptoms that range in severity from mild to severe and the autoimmune disease itself or the treatment can have further clinical consequences. The exact trigger of autoimmune diseases is not clear but there are many factors that contribute to an individual’s risk of getting an autoimmune disease. These include genetic predisposition, immunomodulation, infections, pollutants, hormones and stress. Type 1 diabetes is caused by autoimmune destruction of the pancreas and data on the prevalence of diabetes across the world is shocking. The International Diabetes Federation estimate that world-wide, in 2014, there are 387 million people living with diabetes giving a prevalence of 8.3%. This number is estimated to increase to 593 million by the year 2035. Information on autoimmune rheumatic diseases is not so well developed and much more variable between populations. For example the prevalence of systemic lupus erythematosus varies from 0.007% for white subjects in the USA to 0.159% for Afro-Caribbean subjects in the UK. Laboratories have a fundamental role in
diagnosis and managing patients with autoimmune diseases. This session aims to demonstrate how autoimmune processes cause disease. It will highlight the importance of robust analytical systems for detecting autoantibodies using the pitfalls in anti-nuclear antibody testing as an example.

Finally, it will put the role of antibody measurements into a clinical context by describing the impact autoimmune rheumatic diseases.

Guidelines – a call for cooperation between laboratory and clinical societies – Wednesday, 24 June 2015 - 15:00-17:00

The EFLM session on Wednesday 24 June is called “Guidelines - a call for cooperation between laboratory and clinical societies”; chaired by Wytze Oosterhuis (Netherlands). The session will address various aspects of guidelines, and the application of guidelines. Represented are the EFLM working groups of guidelines, cardiac markers, preanalytical phase, and the joint EFLM/European Atherosclerosis Society Task and Finish Group (TFG).

In the first session, Julian Barth (UK) will focus on the reasons why clinicians and scientists do not comply with clinical guidelines. Clinical guidelines are written by local, national and international groups with differing degrees of relevance to health care professionals and with varying degrees of engagement by them. Hopefully when they understand why they do not comply, they will feel more empowered to try them out.

Paul Collison (UK) will also address the relevance to health care professionals and groups with differing degrees of engagement by local, national and international guidelines. Clinical guidelines are written by local, national and international groups with differing degrees of relevance to health care professionals and with varying degrees of engagement by them. Hopefully when they understand why they do not comply, they will feel more empowered to try them out.

Michel Langlois (Belgium) will present the results of the cooperation between EFLM and the European Atherosclerosis Society (EAS) in issuing guidelines. The treatment of dyslipidemia is most important and well accepted in the cardiovascular disease prevention strategies. The guidelines published jointly by European Atherosclerosis Society and European Society of Cardiology in 2011 (2011 ESC/EAS Guidelines for the management of dyslipidaemias) have been well received and widely accepted. The EAS and EFLM have agreed to work together to raise awareness of the impact that discrepancies in laboratory testing can have on patient treatment, and subsequently to recommend standards for laboratory testing related to the treatment of dyslipidemia. For this purpose, the EAS-EFLM Task and Finish Group was established.

Biomarkers – key to personalized medicine - Thursday, 25 June 2015 - 9:00-11:00

Technological advances in the use of novel molecular biomarkers have paved the way for personalized diagnostics. Transplantation biomarkers have especially attracted attention because of the still unresolved problems that limit long-term outcome. Biomarkers are needed that can be used to facilitate personalized immunosuppression. A particularly promising new approach for early detection of graft rejection which is based on the determination of graft-derived circulating cell-free DNA, using droplet digital PCR will be discussed. This assay is like a “liquid biopsy” that non-invasively and directly interrogates the health of the donor organ. In addition, the clinical utility of other methods such as miRNA for diagnosis and assessing prognosis will also be discussed. New diagnostic platforms used for high-quality genomic analysis will also be critical for a personalized medicine approach for oncology where genome sequencing can potentially allow early detection and can identify the molecular abnormalities that predict either good or poor outcomes and to identify new targets for therapy. In the future, such personalized medicine approaches will shift emphasis from reaction to prevention and could improve outcomes at lower healthcare costs.

Harmonisation of clinical laboratory practices: a need for Reference Intervals utilization - Thursday, 25 June 2015 - 9:00-11:00

Medical biologist must provide to the patients and physicians informative laboratory reports to facilitate clinical interpretation. Reference Intervals (RIs) are one of the tools for assisting the interpretation of laboratory tests. They should be printed on laboratory reports to meet various national and European regulations (Directive 98/79 EC).

From a technical and medical point of view, medical biologists must ensure that the reference intervals are adapted to their analytical platforms and to the population of their laboratory. It is an heavy responsibility for the biologist. Producing reference intervals is a long, expensive task: it is no longer within the reach of every laboratory. In recent years practical solutions have been proposed to solve these issues. The harmonization of laboratory practices, including traceability to a reference system makes easier the transfer of RIs between different laboratories, different analytical platforms. Manufacturers must also mention reference intervals for each of their reagents kits; but, are these RIs still usable worldwide? The role of manufacturers is central. It is therefore important to know their views on this subject.

Transfer the reference RIs is one of the solutions proposed by the IFCC to simplify the work of biologists. However, RIs transfer from one laboratory to another or from an analytical platform to another is it still possible? The large Canadian CALIPER study largely answers to this issue. Most of the time, it is quite feasible; in some cases it is worth avoiding. During the symposium the strengths and limitations of the transfer of RIs will be presented.

On the other hand, one always ensures that the RIs are well suited to the population of the laboratory. In this symposium, issues on the role of the RIs in the process of medical decision will be presented. May RIs really considered in all cases as medical decision limits? The biologist must be able to appreciate their contribution to the medical practice and to measure their weaknesses. Faced with clinicians who do not always understand what are the RIs, the biologist must be able to explain what the RIs can provide. This will be the subject of the third lecture.
Congress delegates are cordially invited to submit abstracts of their scientific work for presentation as a free communication at Euromedlab Paris 2015.

An unlimited number of abstracts may be submitted provided the presenting author applies for “full registration”.

1 February 2015
Poster abstract deadline

How to submit your abstract

- Connect to the abstract page
  www.paris2015.org/go/abstract
- Read carefully the instructions and prepare the abstract offline
- Fill the on-line form, save and proceed
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Receipt of the abstract will be acknowledged by e-mail immediately after submission.
Authors will be notified of acceptance or rejection before 31 March 2015

How to register online

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...a night at Musée d’Orsay

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Last update: December 2014
The Congress Organising Committee and the International Scientific Committee together with the Organising Secretariat wish you a Merry Christmas!