

## TRAINING & WORKSHOPS 2016

### Methodology

#### Genstat® appreciation course - INTERNAL ONLY

Content: GenStat® is a flexible, powerful and attractively priced statistics package with extremely strong data-manipulation capabilities and excellent integration between menu and command modes of operation. The Competence Centre for Methodology and Statistics (CCMS) has identified this as a suitable package to permit researchers to do their own standard analyses whilst also making it possible to exchange code with the CCMS so that help can be given for more advanced needs. The purpose of the course is to give a brief overview of GenStat® and give interested researchers sufficient understanding so that they start using it for themselves in their own time.

Trainer: Prof Stephen Senn  
Date and time: 29/02/16, 1.30 PM - 4.30 PM  
Location: Edison building, room Joseph Schumpeter

#### Intermediate statistics for life scientists

Content: This two day course will be suitable for life-scientists, in particular PhD candidates, who wish to extend their understanding of statistics. Some basic concepts such as tests of significance and confidence intervals will be revisited but the emphasis will be on using good graphical displays and intelligent models to gain insight into data. Time will be devoted to planning studies also. The examples are all genuine and mainly based on *in vivo* animal and *in vitro* experiments. A few examples will be included from clinical trials. The emphasis will be on using statistics to help understand data rather than as a black box. Mathematical development will be kept to a strict minimum.

Trainer: Prof Stephen Senn  
Date and time: 31/03/16 + 01/04/2016, 9.30 AM - 4.30 PM  
Location: Edison building, room Joseph Schumpeter

#### Project scheduling, planning and scoping - INTERNAL ONLY

Content: Lacking feasibility and/or efficiency of a research project plan has increasingly become a standard argument for project's refusal by national and international funding agencies. This 6-hour training course aims at introducing researchers to project scheduling, planning and scoping in order to provide them with relevant skills. Attendees will learn how to use a tailor-made and easy to handle scheduling tool. Practical exercises will help them to avoid common pitfalls in project scheduling, planning and scoping.

Trainer: Jo Schroeder

Course 1:  
Date and time: 06/06/16, 9.00 AM - 4.00 PM  
Location: Edison building, room Sanger/Snow

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Course 2:

Date and time: 17/10/2016, 9.00 AM - 4.00 PM  
Location: Edison building, room Frederick Sanger

### Clinical research: Efficient start-up and planning to ensure a successful project

In this 3-hour training the experts from the CIEC will share their best practices gained over the last years. The course will cover each step of the starting phase of clinical research projects: from the initial feasibility study to site activation. Attendance is highly recommended for principal investigators, researchers, study nurses and project managers who are involved in the development of research projects with human participants.

Trainer: Dr Manon Gantenbein, Dr Nancy De Bremaeker, Myriam Alexandre  
Date and time: 14/06/16 9.00 AM - 12.00 PM  
Location: Edison building, room Joseph Schumpeter

### Basic statistics for life scientists

Content: This 2-day course will cover basic descriptive statistics including ways of summarising and presenting data and some key topics in statistical inference including elementary probability, significance tests and P-values and confidence intervals. Amongst techniques that will be covered are t-tests, rank tests analysis of variance and regression. Simple considerations in design of experiments and sampling designs will be touched on. Potential pitfalls will be highlighted.

The course will be illustrated using genuine examples, mainly based on *in vivo* and *in vitro* animal experiments analysed with GenStat®, since this is powerful software that is relatively easy to use (available to all LIH employees). However, the emphasis will be on statistical understanding and interpretation and not algorithms. Knowledge of GenStat® is not required.

Trainer: Prof Stephen Senn  
Date and time: 20/09/16 + 21/09/2016, 9.30 AM - 4.30 PM  
Location: BAM, room Barbara McClintock

### Evidence synthesis and meta-analysis

Content: Meta-analysis may be defined as the statistical analysis of data from multiple studies for the purpose of synthesising and summarising results, as well as for quantitatively evaluating sources of heterogeneity and bias. Evidence synthesis often includes meta-analysis and involves an explicit, detailed description of how a review was conducted. This course highlights and focuses upon four key areas: 1) impetus for meta-analysis and systematic reviews; 2) basic steps to perform a quantitative systematic review; 3) statistical methods of combining data, and 4) an introduction to advances in evidence synthesis (indirect comparisons etc). The material includes practical examples from the published literature relevant to public health research. This course is designed for those having little experience with meta-analysis but a good understanding of research methodologies. It includes interactive exercises.

Trainer: Prof Ngianga-Bakwin Kandala  
Date and time: 25/10/16 10.00 AM - 3.00 PM  
Location: BAM, room Barbara McClintock

## Scientific skills

### Principles of observational epidemiology

Content:

Part 1 - Observational epidemiological study designs (2 ½ h)

Part 2 - Principles of causality (2 h)

This course, divided into two parts, will cover the basic principles of observational epidemiological studies. It will discuss strengths and weaknesses of different types of studies as well as the role of different study designs in terms of scientific evidence. The first part will include an exercise session of ½ h on the identification of appropriate study designs in relation to specific research questions.

Trainer: Prof Saverio Stranges

Date and time: 11/04/16 + 19/04/2016, 2.00 PM - 4.00 PM

Location: Edison building, room Sanger/Snow

### Preventive medicine and public health

Content:

Part 1 - Basics for preventive medicine and health promotion (2 h)

Part 2 - Global public health (2 h)

This course, divided into two parts, will revise the broad principles of prevention, both in the general population and in high-risk subgroups. Regarding global public health, it will discuss the main patterns of health and disease across different populations worldwide as well as a range of public health indicators and the main risk factors of disease.

Trainer: Prof Saverio Stranges

Date and time: 24/05/16 + 31/05/2016, 2.00 PM - 4.00 PM

Location: Edison building, room Sanger/Snow

### Introduction to clinical research

Content: Clinical research trials are conducted after the experimental pharmacology studies, which take place in the laboratory (preclinical stage). The human studies need to comply with technical, regulatory and ethical requirements. This course is aiming to provide an overview of the different phases of clinical research and the practical aspects of conducting a clinical study, and to explore the new challenges and opportunities of clinical research within a fast moving medical landscape.

Trainer: Dr Anna Chiotti

Date and time: 25/05/16, 1.00 PM - 3.00 PM

Location: Edison building, room Sanger/Snow

### Epigenetics and DNA methylation

Content: Epigenetic modifications are the principal link between the external environment and our genome. The recent increase in epigenetic research has highlighted the role of epigenetic modifications in all the major public health diseases including cardiovascular disease, chronic inflammatory diseases, mental health and obesity. In this course we will go through the basic epigenetic principals, laboratory techniques available, the initial evidence available on epigenetic study design, statistical power, and the preliminary guidelines for epigenome-wide association studies (EWAS).

Trainer: Dr Jonathan Turner  
Date and time: 20/06/16, 1.00 PM - 5.00 PM + 22/06/2016, 9.00 AM - 1.00 PM  
Location: House of BioHealth, room Françoise Barré-Sinoussi

### **Natural killer cells and other innate lymphoid cells**

Content: Natural Killer (NK) cells have been discovered in 1975 and have since then been continuously in the focus of interest in immunology. Initially considered as simple killers, they are now known to be highly sophisticated cells implicated in many levels of the immune response in health and disease. They are also increasingly used in cancer immunotherapy. In the past few years, new family members, namely innate lymphoid cells (ILC) of types 1, 2 and 3 have joined them. This course will summarise our current knowledge on NK cells and ILC with a focus on the most recent discoveries.

Trainer: Dr Jacques Zimmer  
Date and time: postponed to 2017  
Location: tbd

### **Introduction to translational research**

Content: Translational research includes two areas of translation. One is the process of applying discoveries generated during research in the laboratory, and in preclinical studies, to the development of trials and studies in humans. The second area of translation concerns research aimed at enhancing the adoption of best practices in the community. Cost-effectiveness of prevention and treatment strategies is also an important part of translational science (NIH definition). This course will be based on practical examples of achievements in translational medicine and will provide the basics for identifying the needs and understanding the challenges and opportunities of translational research.

Trainer: Dr Anna Chioti  
Date and time: 16/09/16, 1.00 PM - 3.00 PM  
Location: Edison building, room Sanger/Snow

### **Getting started with transcriptome analysis**

Content: Transcriptome analysis has become an integral part of many biomedical research projects. This workshop, organised in two 3 h-sessions, will provide you with the basic principles of the high throughput techniques used to profile RNAs (namely microarrays and Next Generation Sequencing), and will cover the main aspects of a transcriptome analysis, from sample preparation to data analysis. Some important theoretical and practical considerations when designing a transcriptome study, as well as analysing transcriptome data will be presented. The workshop will include an on-site visit of the Genomics Research laboratory at LIH.

Trainer: Dr Laurent Vallar  
Date and time: 03/10/16 + 10/10/2016, 2.00 PM - 5.00 PM  
Location: BAM, room Barbara McClintock

## Transferable skills

### Writing a scientific publication

Content: This is an interactive 4-hour course about how to write a good scientific paper. What do you have to keep in mind when writing a paper? What are frequent mistakes and how can you avoid them? Where to begin and which part should be written last? How can you make a text more concise? All these topics will be discussed during the course and illustrated with real life examples.

Trainer: Prof Claude Muller  
Date and time: 14/09/16, 10.00 AM - 3.00 PM  
Location: House of BioHealth, room Françoise Barré-Sinoussi

### Efficiently using MS PowerPoint: LIH templates, animations and smart arts - INTERNAL ONLY

Content: TBA

Trainer: Juliette Pertuy, Sara Giubelli  
Date and time: 27/09/16, 10 9.00 AM - 11.00 AM  
Location: Edison building, room Frederick Sanger

### Boosting your conference presentations

Content:  
Part 1 - Creating slides with impact - tips, tricks and pitfalls (2 h)  
Part 2 - From laser pointers to body language (2 h)  
To make a good scientific presentation, it is not enough to show good data. Poor slides can blur the message and reduce the impact that excellent scientific results deserve. The first part of this workshop discusses common pitfalls to avoid when preparing slides for an oral presentation and to provide some basic tips to make sure that the message gets the attention it really deserves. The best slides will however be of little use if the presenter is a poor performer. Verbal and behavioural ticks are only some of the aspects that can spoil the 'show'. The second part of this workshop will address issues from laser pointers to body language and provide some guidelines to be optimally tuned for a perfect oral presentation.

Trainer: Prof Daniel Theisen, Dr Brice Appenzeller  
Date and time: 08/11/16, 1.30 PM - 6.00 PM  
Location: Edison building, room Joseph Schumpeter

### Communication: Are you press fluent? - INTERNAL ONLY

Content: TBA

Trainer: Juliette Pertuy  
Date and time: 11/11/16, 8.30 AM - 12.30 PM  
Location: Edison building, room Sanger/Snow

## Technology transfer

### Introduction to Intellectual Property management tools and rights - INTERNAL ONLY

Content:

- IP management tools for better public or private collaborations: CDAs, MTAs, MoUs...
- Benefits of agreements and demystification of their content
- IP rights: patents, trademarks and copyright
- Life of a patent application, notions on how to evaluate the patentability of an invention
- Practical exercises and interactive case studies

Trainer: Dr Fabienne Roussel

Course 1:

Date and time: 14/11/16, 2.00 PM - 5.30PM + 21/11/2016 9.30 AM - 1.00 PM

Location: House of BioHealth, room Françoise Barré-Sinoussi

Course 2:

Date and time: 28/11/16, 2.00 PM - 5.30PM + 05/12/2016 9.30 AM - 1.00 PM

Location: Edison building, room Joseph Schumpeter

Note: Intended especially for senior researchers