

EDITO ●●●●●●●●

Simon Legendre
Advisor to the President,
Strategy and Partnerships

When I approach a child, he inspires in me two sentiments; tenderness for what he is, and respect for what he may become. -LOUIS PASTEUR

The Institut Pasteur's education department perfectly illustrates the various priorities of the 2014-2018 strategic plan and the time to implement of these ambitious projects has come. Our new courses fully embody the multidisciplinary aspect of the Institut Pasteur and the variety of our disciplines. The focus on valorization (one of the Institut Pasteur's four core missions) will be encouraged among students and professionals, through a strong partnership with the university course organized by Professor Alain Sezeur at Université Pierre-et-Marie Curie.

The opening to new, younger students will become concrete through ambitious pre-doctoral programs, such as the Amgen scholars initiative and participation in the iGEM challenge. The fortification of the Institut Pasteur international network will also be fulfilled in the field of education, with new courses hosted within the Institut Pasteur international network and a partnership with the Open Medical Institute, in Austria, to welcome young interns within our research units. The

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emphasis on public health, medicine and translational research can be seen through the new "Infectious Disease Outbreak Investigation" course. Finally, bioinformatics is also represented

via the hands-on course on high-throughput sequencing data analysis and new initiatives which will take place in 2015. ●



PPU general assembly. The participants in the 6th Annual PPU retreat (2015) seen in front of the lecture hall of the Westotel of Nantes. [See story page 9.](#)



Educational Offerings from IP-Paris for 2015-2016

by Monica Sala, Executive Director for Education (DDE)

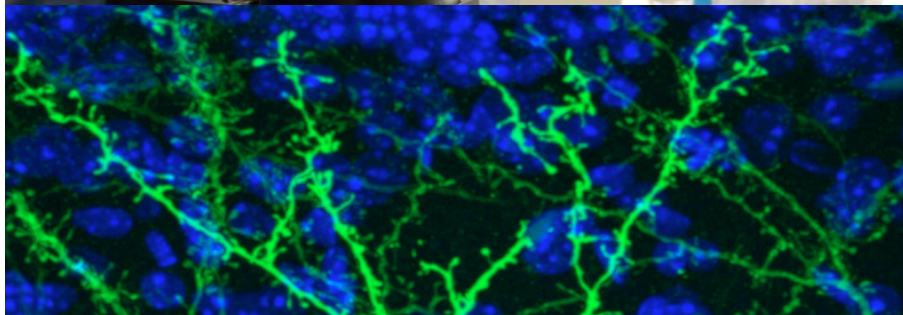
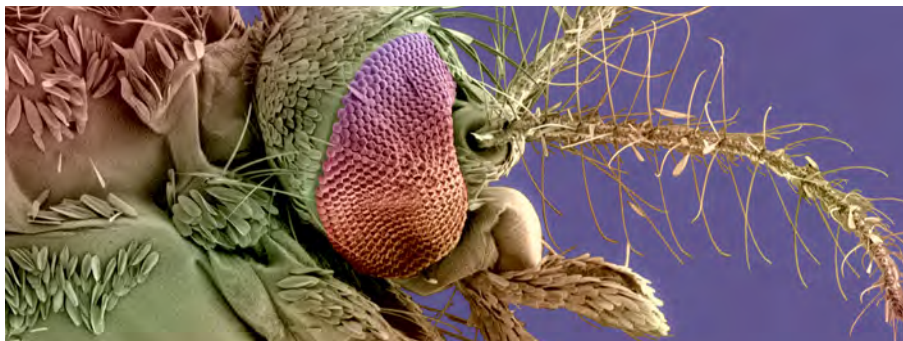


Course and workshop planning is underway at the Education Center for the 2015-2016 academic year. 4 new courses are scheduled and online enrollment is now open [here](#) for all of them. Notably, these new courses are eligible for different diplomas as they are recognized as either an education unit (UE) of a specific French university Master training, or as a PhD training module, or as a continuing education training in prepa-

ration for a French university diploma for professionals (DU). The courses' topics were chosen to address developing educational needs and social relevance.

Climate change and its impact on daily life, economy and health is a major subject of debate in our society. It greatly impacts the worldwide distribution of vectors of major transmissible pathogens and, as a consequence, the geographical area of transmission of these pathogens. Moreover, globalization contributes to the spread of pathogens and their vectors worldwide. It is in this context that we set up 2 of the new courses: "Insect vectors and transmission of pathogens" and "Infectious Disease Outbreak investigation."

The **Insect Vectors and Transmission of Pathogens** course is co-organized by the Institut Pasteur (IP) and the **Research Institute for Development (Institut de recherche pour le développement; IRD)**. This four-week course will train medical entomologists to participate in breaking the pathogen-vector transmission chain. In close collaboration with the International Department of the IP-Paris, the course will be scheduled yearly, alternating locations between the IP-Paris Education Center and one of the IP Network institutes (on even years and on odd years, respectively).





This will draw students to the focal point institute of the year as well as make accessible the diverse resources available in the IP international network.

The two-week **Infectious Disease Outbreak Investigation** course will prepare scientists to respond to emerging health threats. It is directed by the Center for Global Health (CGH) at IP-Paris and will provide professionals with a thorough collection of methods for outbreak investigation of emerging and re-emerging pathogens.

The **Principles and Applications of Fluorescence Microscopy** course, organized by IP-Paris, will provide students with state-of-the-art knowledge about, and skills in, advanced live cell fluorescence. This image technology is fundamental in many scientific fields. Hence, an interdisciplinary group of students is expected to attend this

In keeping with the character of Pasteurian teaching, the courses offer a high standard of practical training in addition to theoretical lectures by leading experts in the relevant scientific fields.

course, opening the way to future interdisciplinary collaborations.

In keeping with the character of Pasteurian teaching, the three courses described above offer a high standard of practical training in addition to theoretical lectures by leading experts in the relevant scientific fields.

With the goal of cultivating the entrepreneurial skills of PhDs, post-docs and permanent employees of the IP, and specifically with the aim of educating them to valorize research products, the IP Human Resources Department (DRH-continuing education) and DDE are co-organizing for the first year with UPMC (Pierre-et-Marie Curie University), Medicen and AP-HP (Parisian Public Health and Hospitals) the course **Valorization of Research and Biomedical Innovation**. Each year, 20 fellows will be chosen from among all IP candidates to receive financial support for the course tuition. This choice will be made on merit and IP needs. Notably, associated with this

course is an active Alumni network of around 3,000 participants, among them former students currently in strategic professional positions involving research valorization or entrepreneurship.

Each new course addresses a permanent educational need identified by the Education Center of the DDE in its mission to continually adapt its offerings to the technological and scientific evolution of scientific research. •

Concrete Hope for the Sick



by Professor Alain Sezeur

Le bonheur individuel se doit de produire des retombées collectives faute de quoi la société n'est qu'un rêve de prédateurs. -DANIEL PENNAC

Valorisation of research represents a major economic concern for a country that invests in research. In the biomedical field, this issue has an additional ethical dimension, because in allowing a molecule or a technology to move from the confidentiality of a laboratory to the market, research results become accessible to the greatest number patients. In France, despite research teams' strong ability to innovate, valorization—the process of that allows ideas to reach the market—is still inefficient. The explanations are in large part cultural.

In this part of the world, science as an intellectual pursuit and science for the marketplace tend to be seen as incompatible objectives. Indeed it is astonishing to note that many researchers, academics and doctors are unaware that academic research organizations and universities have a mission to valorize research and that this mission has been enshrined by law since 1982.

Should we be surprised? Researchers and doctors are routinely trained during their studies to meet their research and teaching missions; yet training on

the exploitation of research is not needed to reach a leadership in academic research facilities or academics. We imagine a captain trained in flying an aircraft and in meteorology, but with no notion of air navigation and its rules!

This is happening in research, where we award a “Habilitation à Diriger la Recherche” (HDR) without the researcher having proved competence in research

valorization. Additionally, many researchers neglect to protect their work with a patent. Some do this out of fear of working with industry (fear of the unknown). Others do this out of negligence (not knowing the procedures). Finally, others eschew patents out of allegiance to the idea of universal free access to science.

Nevertheless, several arguments make a strong case for rethinking these practices:

- The patent only limits commercial exploitation of the invention to its owners or licensees but does not prohibit another research team working on the area covered.
- Once the patent is pending, the research team has the option to publish the results contained therein.
- The patent is the first step of an industrial and commercial application. The innovation is then required to pass regulatory constraints in order to be placed on the market as a product accessible to the patient.

In France, despite research teams' strong ability to innovate, valorization—the process of that allows ideas to reach the market—is still inefficient. The explanations are in large part cultural.

• Publications whose results have not been protected are a prime target for enterprises with business intelligence services. Scanning international publications in search of ideas to exploit, they disregard

innovators, develop ideas and bring them to the marketplace (indirectly fueling new foreign companies), without compensation for the researcher, his laboratory, or the state which funded the research.

• As soon as an academic research institute licenses a patent to an industrial development unit, the contract usually specifies the requirement for the industrial exploitation of the innovation. This limits the blocking of patents, a practice used by some companies with no intention of developing the innovation, to obstruct competition and keep a monopoly.

Increasing knowledge and intelligence is not the unique goal of biomedical research. In order to benefit patients, which is the ultimate objective of biomedical research, researchers must be trained in research promotion.

In 2016 Institut Pasteur will join the University Course directed by Professor Alain Sezeur at Université Pierre-et-Marie Curie on Valorization of Research and Biomedical Innovation. •

COURSE DESCRIPTION:

Valorization of Research and Biomedical Innovation



**by Deshmukh Gopaul,
Responsible for pre-doctoral
programs of the Institut Pasteur
(DDE)**

Pre-doctoral programs are a crucial part of research institutions that have education as an integral part of their DNA. The pre-doctoral programs at Institut Pasteur are undergoing a significant makeover.

The tradition has been to welcome students from diverse backgrounds and nationalities from the best undergraduate programs from Europe or the rest of the world, and to provide them with a well-crafted course in state-of-the-art subjects or to host them for a laborato-

ry stay that counts as a requirement for their university curriculum. In the new approach, this core philosophy of excellence and diversity is retained, but with the additional benefit of an innovative and streamlined infrastructure, including welcome and follow-up components.

Currently, five major programs are being launched. The undergraduate/graduate initiatives represent four of them: **AMGEN**, Erasmus+, **iGEM** and Pasteur Foundation summer programs. Each of these programs is now structured with a core team of volunteer researchers and administrative personnel whose mission it is to organize the publication of the program from the immigration and housing paperwork all the way through to ensuring the scientific supervision of students. The programs are explained on the Education website of Institut Pasteur, complete with application procedures,

program directors, and contact information.

This year for the first time Institut Pasteur is hosting the iGEM (International Genetically Engineered Machines) competition on synthetic biology. The iGEM program is aimed at addressing acute scientific/societal issues with cutting edge technology. The Plasticure project developed this year by Pasteur students tackles the plastic waste problem, with the innovative approach of converting biologically degraded polymers into a product with a medical importance. In all of these projects the innovative component is a significant part of the initiative. Thus AMGEN, Erasmus and Pasteur Foundation Programs favor transnational mobility, and financial support from an industrial or philanthropic sponsor. Lab and candidate matching is crucial, and the program owes its success to the dedicated work of the organizing committee. The fifth component, which addresses outreach to high schoolers has gained a new momentum with three programs. The first one includes the centralized week-long hosting of students in a customized set of activities. Secondly the **Apprentis chercheurs** program which

The outreach-school program team (Françoise Ducoté, Deshmukh Gopaul and Marianne Lucas-Hourani). Françoise Ducoté provides the administrative support to all the DDE pre-doctoral programs of the Institut Pasteur.





Deshmukh Gopaul speaks with a student after a seminar.

features a mixed team of a 3rd /7th graders, hosted for a period of seven weeks, and ending in a congress where they present their results. Finally, there is the hosting of a whole class of 3rd graders for three half-day observational Sessions. Altogether, these programs constitute a genuine engagement from Institut Pasteur to foster predoctoral education. It sets the foundation for young people wishing to enter the sciences. •

“Advanced Imaging – From System Biology to Single Cell & Single Molecule Analysis”

The new course co-organized by HKU–Pasteur Research Pole and the Faculty Core Facility of the LKS Faculty of Medicine of the University of Hong Kong

by Roberto Bruzzone, HKU-Pasteur Research Pole, School of Public Health, The University of Hong Kong

The course, sponsored by the Croucher Foundation, will take place at the University of Hong Kong (HKU) on August 2-8, 2015. This is the first of a new series on imaging that will be organized every 2 years, in 2017 and 2019.

Why a course on “Advanced Imaging”?

Imaging refers to the process or act of recording an image. This technology has rapidly advanced and now has wide applications in biomedical research. The integration of advanced imaging platforms with high-throughput tools to analyse biological events is greatly expanding the scope of investigations and the ability to probe into subcellular processes in live cells.

How is imaging pushing the frontiers of biology?

The course is focused on biological processes at the level of single cells and single molecules. These combined approaches offer the unique advantage of observing biological circuits in action, over time, in intact cells, as well as the exciting possibility of quantitatively understanding the deterministic processes that contribute to phenotypic cellular variability.

A new teaching program co-organized by two Centers

The creation of the first Advanced Imaging Course builds on the synergies developed between HKU and Institut Pasteur and highlights the success of



Drosophila brain proboscis. Photograph taken by Zeiss Light Sheet Imaging System.

this collaboration over the years. Eight leading scientists in the field, coming from USA, UK, Germany, France and South Africa, will be present for the entire duration of this first Croucher Summer Course in Advanced Imaging. There will be six parallel practical workshops (including TIRF, STORM and SPIM microscopy) run on afternoons and evenings.

The course is mainly intended for postgraduate students (MPhil and PhD) and postdoctoral fellows. We have received over 80 applications from 12 countries. Only 20 will be selected to attend the course.

What is the purpose of this course?

This “Croucher Summer Course” is intended to provide a conceptual and hands-on training in high-resolution microscopy. It will highlight the power of single-molecule and single-cell approaches combined with quantitative analysis and light microscopy methods. Trainees should leave the course with a grasp of how single cell and single molecule biology can be investigated using imaging and integrating “omic” and high throughput techniques. •

Visit these links for more information:

- [The Croucher Foundation](#)
- [Advanced Imaging course description](#)

The Open Medical Institute

An original initiative in Education at the American-Austrian Foundation



by Professor Dominique Franco

The American Austrian Foundation (AAF) was founded in 1984 in order to strengthen ties between Austria and the United States. It is funded by private and public sponsorship. In 1990, after the fall of the Iron Curtain, AAF decided to organize a sort of Marshall Plan to help the development of medical knowledge in Eastern Europe. This initiative became the Open

Medical Institute (OMI). OMI is directed by Professor Wolfgang Aulitzky who is a urologist in Vienna.

The idea was to identify bright and determined young doctors from these Eastern European countries and to give them high-level education in their area of specialty through week-long seminars in Salzburg and month-long training courses in affiliated hospitals. To this end AAF bought a 18th century castle looking down on Salzburg and fit it out with a convenient conference hall and housing for students and faculty.

The objective was not to relocate Eastern European doctors to Western universities and hospitals but return them to their original countries,

so that they develop clusters of excellence. This initiative aims at contributing to lasting medical capacity-built-



Professor Wolfgang Aulitzky, Director of the Open Medical Institute.

ding in these countries. Seminars and training sessions are organized by faculty members from leading American and Austrian institutions such as Weill Cornell Medical College and its affiliated hospitals in New York, Philadelphia, Cleveland and Houston, as well as medical universities and hospitals in Vienna, Graz, Innsbruck and Salzburg.

Initially seminars addressed the most important topics such as heart diseases, stroke and infectious diseases. They now cover the whole field of medicine. Students who apply to participate in these seminars are selected by local recruiters. After the trainings a network of OMI alumni then maintains a spirit of excellence in their country.

The OMI is expanding its reach beyond Eastern Europe and is now recruiting students from new regions of the world, including the Persian Gulf and Eastern Africa. There are about 50 students in each session. During seminars, students receive theoretical courses, practical training and are invited to bring clinical cases to discuss. This makes the sessions quite interactive and conversations among students of quite different countries and cultures are stimulating. These seminars also contribute to the creation of personal links between students and a lasting network of alumni. Students and faculty members are evaluated at the end of the week.

Photos of the OMI. From top: A view of Schloss Arenberg where OMI courses are given and in which students and teachers are housed for the week. The classroom of Schloss Arenberg. 3. Despite the many varied origins of the students, courses are quite interactive.



With the progression of the Institute, Professor Wolfgang Aulitzky explored the idea that Institut Pasteur could become a member of OMI and contribute to the organization of seminars and of training courses in fields such as microbiology, immunology, vaccinology or else epidemiology. Practical training at Institut Pasteur Paris or in the international Pasteur network might be very attractive for students of OMI. This matter is now being discussed. Are we going to dance the waltz soon in Salzburg?

To go further, the IP and the Open Medical Institute could establish a formal partnership, which would start with these two concrete actions:

- Researchers from the IP could participate, as faculty staff, in Salzburg seminars. As these seminars are aimed at young medical doctors, translational topics would be targeted first. Over the next few years, the IP could create week-long training seminars.
- Young interns from the Open Medical institute could be invited for one to three-month training sessions at the Institut Pasteur and within the Institut Pasteur international network. •

The 2015 PPU Retreat

An Annual Event Brings a 6th Year of Success

by Giulia Oliva, Silvia Menegatti, Chiara De Pascalis & Caitlin Gillis

The Pasteur-Paris University International Doctoral program (PPU) organises a yearly retreat for all the students, their supervisors, the members of the PPU office and some invited speakers. This year's 6th PPU retreat took place in Nantes from the 20th to the 22nd of April and was organised by the Jacob class.

Each year one session is dedicated to the patron of the class that was just enrolled. This year the famous Pasteurian honoured at the retreat was Alexandre Yersin, the all-round scientist who discovered the plague agent, *Yersinia Pestis*. We had the pleasure to have two distinguished speakers, Prof. Maxime Schwartz (former President of the Institut Pasteur and co-author of 'Pasteur et ses Lieutenants. Roux, Yersin et les autres') and Mr. Daniel Minssen, a great-nephew of Yersin. Through these talks, we obtained a comprehensive



Gift from Yersin family. This rare photo of Alexandre Yersin was a generous gift to the PPU program from Daniel Minssen, grand-nephew of Yersin.



Guest speaker, Professor Maxime Schwartz. The former President of the Institut Pasteur introduces Yersin's scientific life and accomplishments during the first session.



Yersin family participation. Daniel Minssen, grandnephew of Alexandre Yersin, was a guest speaker at the retreat. Seen here talking about Yersin's relationship with his family.





view of Yersin’s life, both from a scientific and personal point of view. Mr. Minssen kindly donated an original and rare photograph of Yersin to the PPU program. We had the pleasure to welcome also Prof. Alice Dautry, former President of the Institut Pasteur (2005-2013), during which time she established the PPU, who chaired Yersin’s session.

Due to the recent Ebola epidemics, emerging diseases have become a very hot topic, therefore a scientific ses-

sion on the epidemiology of emerging diseases was included and Dr. Jean-Claude Manuguerra kindly accepted our invitation to discuss the Ebola outbreak and measures of safety and containment of infectious diseases.

The schedule was divided into several scientific sessions, in which students from the Jacob, Lwoff and Canetti classes (respectively 2nd, 3rd and 4th year) presented their PhD projects and actively discussed their results. For the

first time, Yersin class students (who are starting their 1st year) were asked to creatively exhibit their PhD project and preliminary results through a poster and teaser session – it was a great success!

The scientific sessions were intermixed with social activities where the students, their supervisors and the PPU office members had the opportunity to spend time in the sun, enjoy Nantes and celebrate all together by dancing and having fun.

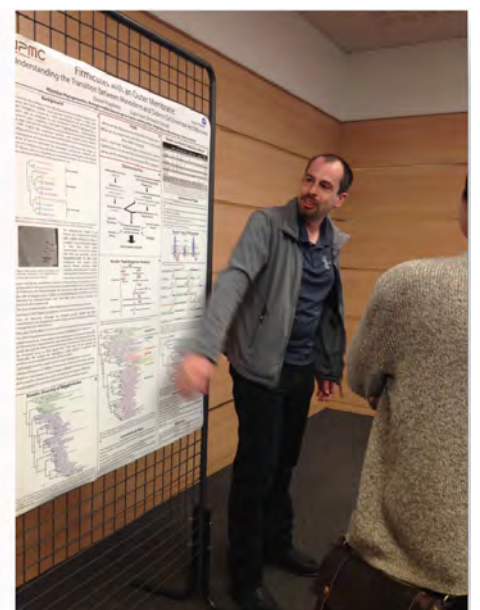
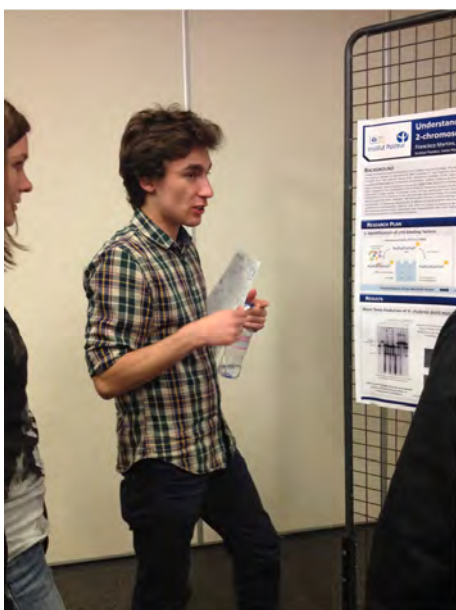
The 2015 Retreat was definitely a success. We are all looking forward to the next one, which will be organised by the Yersin class. ●

6 Years of PPU Retreats

Nantes	2015
Anancy	2014
Avignon	2013
Saint Malo	2012
Trouville	2011
Paris	2010



PPU general assembly. The participants in the 6th Annual PPU retreat (2015) in front of the lecture hall of the Westotel of Nantes.



Successful poster session. This year for the first time there was a poster session for the first year students. Participation was very high.



Invigorating and Unifying Bioinformatics Capacities Across the Network

by Antonio V. Bordería and Magnus Fontes

The Goals

As new technologies develop Biomedicine is becoming more and more dependent on big data. Big data is a very broad term that encloses all data sets too large or complex to be analyzed by traditional methods. In order to cope with this increased complexity, there is a growing need to have dedicated bioinformaticians, biostatisticians and mathematicians as part of regular biology labs, as well as a need to educate biologist to understand and deal with big data themselves. All these different disciplines can enrich one another, and create a multidisciplinary environment of highly specialized individuals. We also need to develop new methods of data handling and visualization to facilitate analysis of big data. Education and development of methods in big data have to be improved in parallel if we are to succeed in the challenges ahead.

Institut Pasteur Paris has started moving forward to address these needs by creating the **Center for Bioinformatics, Biostatistics and Integrative Biology (C3BI)**, but there is also a clear need to invigorate and unify the bioinformatics capabilities in the Institut Pasteur International Network. For that reason, the International Network for Data Analysis (INDA) was created, with a core team in Paris dedicated to managing ongoing projects and providing personnel to international efforts. INDA is composed of a steering committee consisting of one representative from



each Institut Pasteur node in the international network, (who helps coordinate efforts and relays the needs in the RIIP), and is piloted by an executive board, which makes the decisions and organizes all actions. One of the most important goals of INDA is to provide high quality bioinformatics and biostatistics courses to the network, using local expertise and adapting to the needs of each

node.

Education in the network for 2015

There are several educative actions, detailed in the following paragraphs, that will occur regularly in the network. These efforts will directly benefit the host node but they will also be open to the entire network. In addition, we plan to record and keep all the materials of these courses and trainings, with the idea of creating a library of self-produced Institut Pasteur tutorials, available to the entire network through our future e-learning platform.

Hands-on courses

Our trade mark hands-on course,

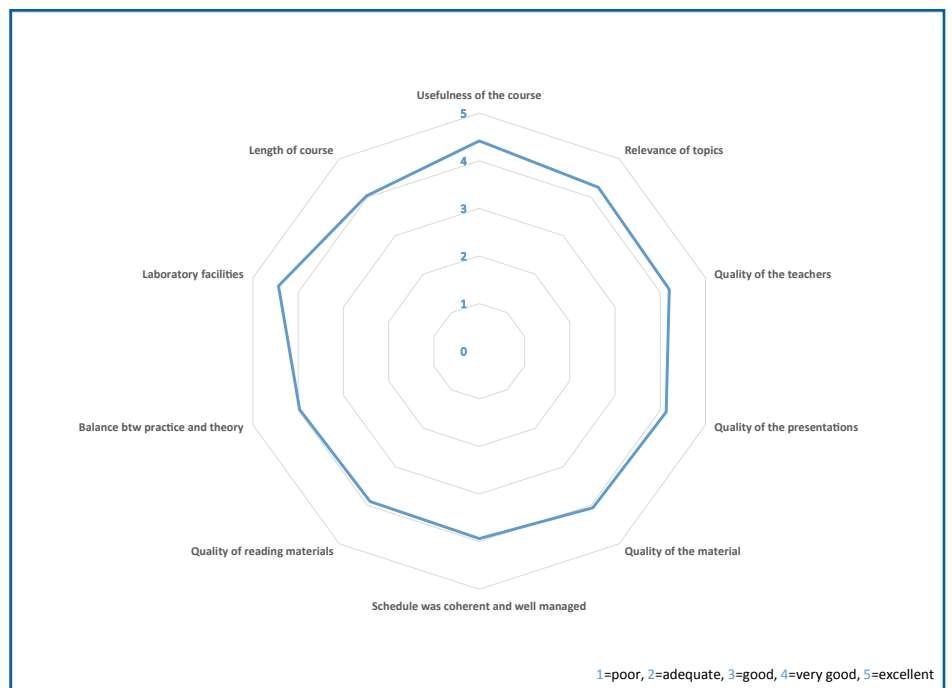


Figure 1: The first INDA hands-on NGS course held in Montevideo, December 2014 received favorable reviews.

Hands-on course on high-throughput sequencing data analysis, is dedicated to Next Generation Sequencing (NGS). Our first NGS course, [found here](#), was run in December 2014 in collaboration with the IP Montevideo and co-organized with Dr. Hugo Naya, principal investigator in the Bioinformatics unit at IP Montevideo. Topics in the course included basic notions on the NGS technologies and statistics, followed by in-depth lessons around mapping, assembly, quality analyses, variant calling, and so on. This first course was a success, obtaining very good reviews from the students who took part in it (See survey results in [Figure 1](#)).

Regarding organization of the INDA hands-on courses, they run for about two weeks. The first week is theory, led by selected teachers who are experts in each topic. The second week is practice, in which the students work in small groups, based on a topic, with a mentor who helps them analyze their own data. We take half the students locally and half internationally from the RIIP, with around 30 students in total. (See [Figure 2](#) for the student distribution of the first INDA hands-on course). The students are selected based on the NGS data they want to analyze and their CV. The data has to be of quality with a good experimental design. Selection based on their NGS data is important because we want the course to be immediately useful to the students. They need to be able to go back to their node and continue working with their data using the knowledge gained during the course.



Figure 2: Student distribution for the first INDA hands-on NGS course held in Montevideo, December 2014.

For 2015, we are preparing these three hands-on courses in different locations in the RIIP:

- 1. Hands-on NGS-GWAS**
Dakar, Senegal
September 10-19
- 2. Hands-on USP-Fiocruz-IP Statistical (R, Bioconductor and Galaxy)**
Sao Paulo, Brazil
October 19-29
- 3. Hands-on USP-Fiocruz-IP NGS**
Rio de Janeiro, Brazil
November 30 - December 13

Specific calls and a detailed syllabus for each course will be announced during the summer.

Train the trainers

As part of INDA ongoing training courses we will be offering the course "Train the Trainers" in collaboration with the CIB-DSI.

The aim of this course is to train one person per IP in the network in the use of the IP Paris Cluster and Galaxy services. These two services are widely used in IP Paris, but they are still not properly exploited by the RIIP. One cause is the lack of bioinformatics knowledge in the network, which we are improving with our INDA hands-on courses. But, once we start training people there will be an increased need in High Performance Computing (HPC), hence the need to train specific people in the network to cope with the demand in advance. Therefore, the person attending this course will become the trainer to train others in their node of origin, and help us in the support of these services as the main contact for INDA. This course will boost both the bioinformatics knowledge in the network by giving the tools necessary to teach, as well as increase the use of essential bioinformatics tools that we have available in IP Paris. As mentioned before, we are also

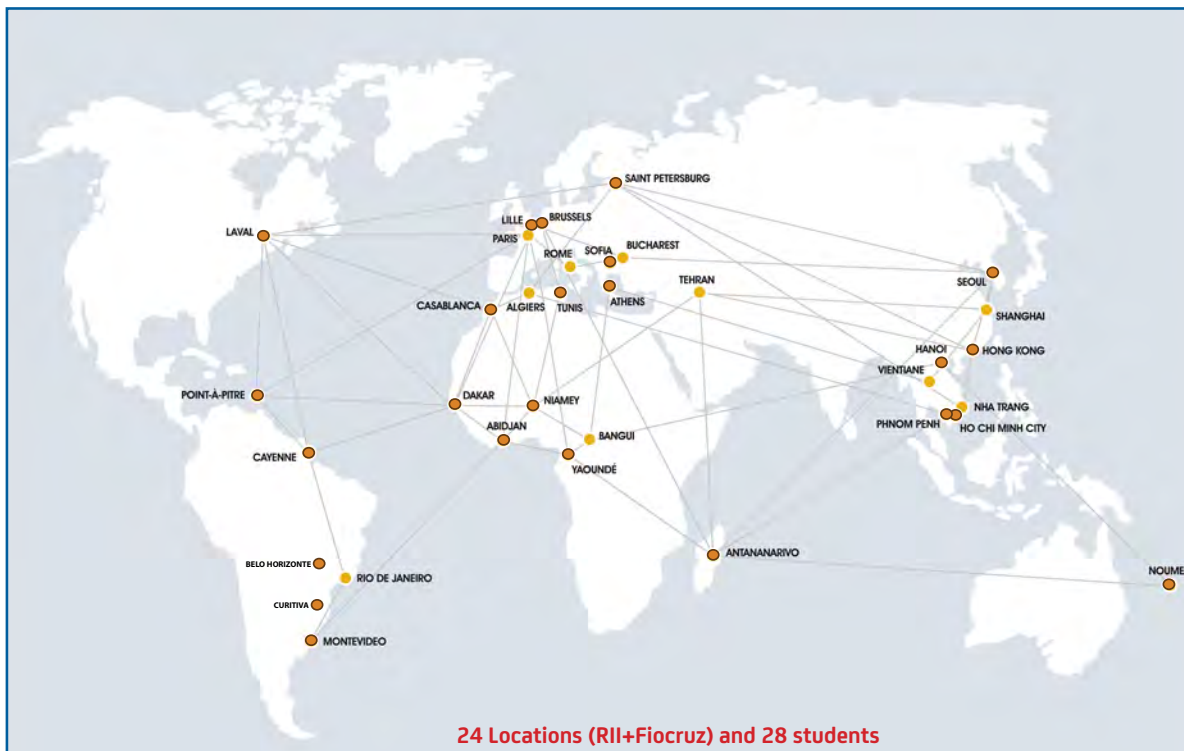


Figure 3. Participation from the RIIP in the “Train the trainers 2015.”

planning to create short video tutorials for easy reference to the trainers and trainees that will be available on the future Education website using modern tools for e-learning and MOOCs.

We have already contacted the INDA representatives and have selected, through an application form, a list of people from most IP in the RIIP to undertake the Paris-based “Train the trainers” course, October 12-13 (See Figure 3).

Research camp in modeling immune system pathogen interactions (MISP)

In this forum held in Uruguay, Punta del Este, December 14-18th we will bring together experts in immunology and modeling to model the immune system and its interaction with infectious diseases (pathogens). The research camp will feature lectures by leading experts in their respective fields, as well as hands-on targeted collaborative modeling sessions building on

open access data from large initiatives. Students from our courses, and from the RIIP, are encouraged to participate. We expect this to be a highly interactive meeting where collaborations are generated and multidisciplinary groups emerge.

We will be sharing more information regarding this research camp during summer.

Summary

Finally, our main final goal is to increase the knowledge in bioinformatics and biostatistics in the RIIP, and help boost collaborations around bioinformatics and modeling in the RIIP. To achieve this goal we approach it from two perspectives. Firstly, by coordinating the bioinformatics and biomedical modeling research in the network. Secondly, by managing the bioinformatics and biostatistics education in the RIIP. In regards to what concerns our educational initiatives, we act in two levels. We first need to give support

and open all the computing resources we have in IP Paris, hence the “Train the trainers” initiative. Most nodes in the RIIP do not have access or enough knowledge about these computing services, which have become crucial in modern research. But, we also act at a more fundamental level by educating through research. This is reflected in our trademark course “Hands-on course on High-Throughput Sequencing data analysis” and our first research camp (MISP). Our NGS course empowers students to analyze their own data, helping them to immediately move forward in their research, while at the same time putting them in contact with other students and mentors with similar datasets or problems. This last point is important since through the course and the research camp, we can nurture collaborations between different nodes in the RIIP. ●

COURSES IN SESSION

Advances in Stem Cell Biology June 29- July 11

IN ENGLISH

This two-week course provides a wide scope of how stem cells have adopted strategies to effect organogenesis and regeneration in different organisms.

[Read full description online](#)

Frontiers in Biological Psychiatry July 6-10

IN ENGLISH

This on-week course presents a combination of lectures and tutorial sessions to guide participants through methodological approaches and most up-to-date openings in psychiatry.

[Read full description online](#)



For more information about courses offered by the Education Department click on links to course descriptions or [click here](#).

Calendar

SAVE
THE
DATE

FRIDAY DECEMBER 11, 2015

The Third Annual Institut Pasteur
Graduation Ceremony ●

Check for updates on the thesis ceremony [website](#) or contact the organizers at ipgraduation@pasteur.fr

COURSES OPEN FOR ENROLLMENT



34 courses are now open for enrollment on the Education Website!

▶ [Go to all courses](#)

NEW COURSES OFFERED

New! Insect Vectors and Transmission of Pathogens March 7- April 1

IN FRENCH

This four-week course aims to train medical entomologists to be actors in breaking the pathogen-vector transmission chain.

[Read full description online](#)

New! Principles and Applications of Fluorescence Microscopy February 22- March 4

IN ENGLISH

This two-week course aims to provide state-of-the-art knowledge on advanced live cell fluorescence.

[Read full description online](#)

New! Valorization of Research and Biomedical Innovation 2x3 days and 5 days, between January 11 and March 26

IN FRENCH

This course aims to develop entrepreneurship skills in PhDs, post-docs and permanent employees, and to educate them to valorize research products.

[Read full description online](#)

New! Infectious Disease Outbreak Investigation April 4-15

IN ENGLISH

This two-week course aims at preparing to respond to an emerging health threat.

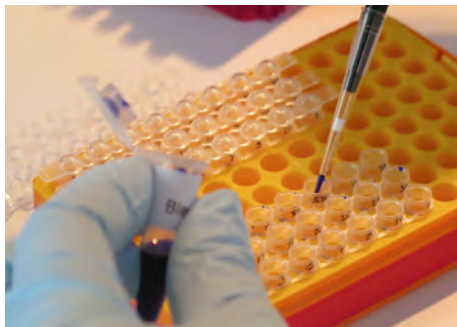
[Read full description online](#)



**Join La Bio au Labo!
Help the Public Understand
What Research is About
Without Leaving the Lab**

La Bio au Labo Initiative is a project in which researchers (from technicians to PIs) share what they do during the day, for one week, and answer questions about it on social networks. There's no need to be tech-savy : emails (or texts) and about 45 minutes a day for 5 days are enough.

Interested? Contact us on Facebook, Twitter, or at labioaulabo@gmail.com



All 34 courses are open for enrollment on the Education website! ▶ [Go to the site.](#)

Cedric Villani's Speech at IP Graduation Ceremony is Now Online

Cedric Villani speaks about his studies and the intellectual choices that brought him to his major discovery of the unexpected links between Boltzmann's famous notion and entropy, in this talk given at the Institut Pasteur on December 12, 2014.

Cedric Villani is the Fields medal award winner 2010. He is very involved in the popularization of mathematics.

If you missed it the first time, it's not too late to watch Cedric Villani addressing the IP graduating class of 2014 on the Education website.



[Watch the video.](#)





For information about The Education Newsletter of Institut Pasteur, please contact Eliza Jones at eliza.jones@pasteur.fr

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