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123 QUESTIONS TO...



Charlotte Robert,
Senior Lecturer in
Medical Physics at
Gustave Roussy

Why develop medical physics research activities at Gustave Roussy?

It's important to create a link between academic research labs and clinical applications. The ultimate goal is to improve patient care.

What does your research project consist of?

The objective is to optimise the use of anatomical and functional imaging so that we can offer patients personalised radiotherapy. Current treatment plans can be fine-tuned thanks to the introduction of functional imaging methods, such as perfusion imaging, a technique used to visualise highly vascularised zones, where tumours may potentially recur. We perform MRIs and Positron Emission Tomography (PET) scans here at Gustave Roussy and in the Joliot-Curie Hospital Department, and in 2015, we will be able to use simultaneous multimodal imaging, thanks to a machine combining both MRI and PET, which will be installed at Orsay. Our studies will initially focus on gliomas and glioblastomas - fast-growing brain tumours - and we will then extend them to include other types of cancers.

You also dedicate half your time to teaching?

That's right. I am a Senior Lecturer at Paris-Sud University. There are only a few of us in France in the field of medical physics. This teaching is crucial to train medical physicists, who are responsible for patient safety, and also to encourage careers with a focus on research or industry. ■

NEWS

GUSTAVE ROUSSY PROMOTES INNOVATIVE THERAPIES AT THE ASCO ANNUAL MEETING

The Institute confirmed its role at the cutting edge of global oncology research at the 50th ASCO (American Society of Clinical Oncology) annual meeting, held in Chicago from 30 May to 3 June.



France was the best represented European country at this international event, the biggest in the oncology calendar. With 18 oral papers, including 10 presented by research physicians from the Institute, and 37 posters, Gustave Roussy played a prominent role.

Precision medicine is gaining ground

«Precision medicine, based on the concept of a molecular portrait of tumours, is now being implemented», says Prof. Gilles Vassal, Clinical Research Director at Gustave Roussy. The Institute is a pioneer in this field. For example, in the area of urology, Dr Bernard Escudier has demonstrated that the risk of a kidney cancer relapse can be predicted based on the molecular portrait of tumours. In the field of gynaecology, Dr Catherine Lhommé has characterised genetic defects carried by aggressive endometrial cancers, which could be targeted using drug substances currently in development. In paediatrics, the Moscato 01 study (Dr Birgit Georger) lays the foundations for personalised medicine for children.

Advances in the field of melanoma and rare cancers

In the treatment of melanoma, new hopes are being pinned on immunotherapy (which stimulates the immune defences of patients), particularly anti PD-1 antibodies

(study presented by Dr Caroline Robert, Head of the Dermatology Department at Gustave Roussy), or another antibody, ipilimumab (Prof. Alexander Eggermont, the Institute's Director General).

Cited during the press conference, the Select study presented by Prof. Martin Schlumberger, Head of the Nuclear Medicine Department at Gustave Roussy, also highlights the interest of a new targeted therapy - lenvatinib - in thyroid cancers resistant to conventional treatment with iodine 131. And Dr Christelle Dufour demonstrated the benefits of a highly innovative treatment strategy in certain childhood brain cancers

Improving treatments

The Institute, which, in addition, announced the results of three innovative early trials, is also seeking to improve known treatments. The Getug 12 multicentre study, led by Prof. Karim Fizazi, thus suggests a benefit of using chemotherapy in addition to the reference treatment (radiotherapy and hormone therapy) in certain types of prostate cancer. ■



Charles Ferté,
medical oncologist
and researcher at
Gustave Roussy

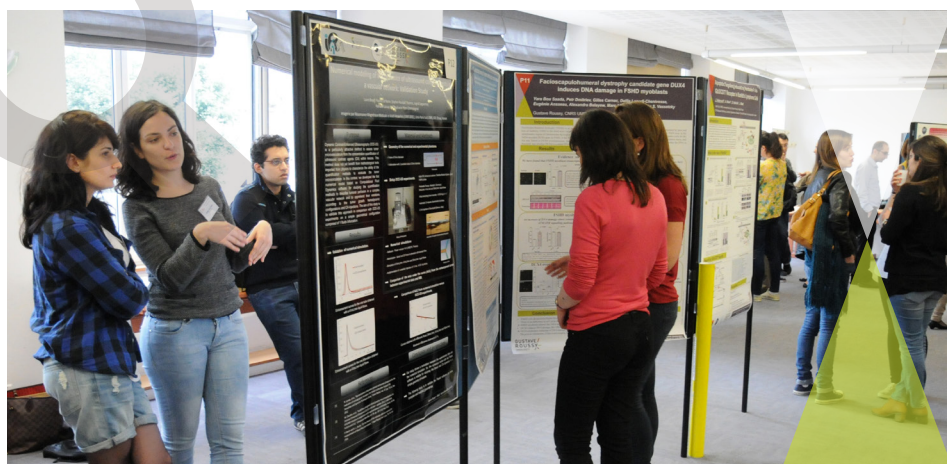
«Despite the progress made in recent years, patients with metastatic cancer are too often in a situation of treatment failure. And targeted treatments are still ineffective in numerous types of tumours», explains Charles Ferté. «It is therefore a matter of urgency that we find treatment response biomarkers, which will help us substantially improve the effectiveness of treatments.»

What are biomarkers? Biological information - especially genomic - that helps us predict whether a treatment will be effective on a given tumour. To discover them, it is necessary to have a clear vision of all the parameters and their interactions. This is what's known as biology of systems, a new discipline, which the young physician has chosen as the focus for his research.

Mutations, deletions, DNE amplifications, gene expression... Analysis of the genome of a tumour can produce millions of data. New statistical methods will make it possible to analyse these in order to predict the course of a disease. To handle this «Big Data», it is necessary to make use of much more powerful calculation and storage capacities: cloud computing.

After his residency, Charles Ferté spent two years in the USA working in a specialised bioinformatics laboratory before returning to the Institute. Gustave Roussy is continuing its efforts to develop molecular signatures of the response to increasingly effective treatments; and the bioinformatics teams created around Daniel Gautheret and Céline Lefebvre are drawing in physicians, biologists and biostatisticians... ■

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Monthly corporate newsletter of Gustave Roussy,
114, rue Édouard-Vaillant 94805 Villejuif Cedex.
Contact : lalettre@gustaveroussy.fr
Texts : Becom!
Conception/réalisation : Département de
communication Gustave Roussy,
Photographs : Gustave Roussy
Print : Reprography Gustave Roussy



10th Scientific Meeting of the Doctoral School of Oncology in Roscoff, in May 2014.

NEW PROSPECTS FOR THE DOCTORAL SCHOOL

In 2015, it will become part of the new Paris-Saclay University, bringing together some twenty or so top higher education and research establishments, including Paris-XIII University.

The Doctoral School of Oncology was created by Paris-Sud University's Faculty of Medicine, along with the Cachan École Normale Supérieure (ENS) and Gustave Roussy. «The direct involvement of a cancer centre in the creation and management of an initial training programme are what makes the school so original and successful», underlines Prof. Christian Auclair (ENS Cachan), one of the founders of the School along with Thomas Tursz (former Director General at Gustave Roussy) in 2000. In fact, Prof. Auclair took over from the latter at its helm 5 years ago. This themed doctoral school is interdisciplinary (molecular biology,

pharmacology, radiobiology, etc.). It now hosts 215 doctoral researchers, in 76 laboratories within the founding establishments (including 26 at Gustave Roussy), the Institut Curie, Parisian universities... The French Agency for the evaluation of research and higher education (AERES) has just renewed its top-level accreditation in the context of its integration within Paris-Saclay University. This project will be taken through to completion by Prof. Martin Schlumberger, Director of Gustave Roussy's School of Cancer Sciences. He will succeed Prof. Auclair after the summer. «The doctoral school will benefit from greater visibility and be extended to include a dozen new laboratories, emphasises Prof. Auclair. This shared doctoral facility is also likely to promote the pooling of resources.» ■

«TOGETHER AGAINST MELANOMA» CELEBRATES MUSIC AND GENEROSITY!



For the second year running, France's annual national music festival was the opportunity to rally support for and publicise melanoma treatment and research at Gustave Roussy, thanks to a partnership between Radio France, the Crédit Mutuel bank and the «Ensemble contre le mélanome» (Together against melanoma) group. On 20 June, Radio France dedicated the whole day to this serious skin cancer together with the hopes being raised by new treatments. Several practitioners from Gustave Roussy were interviewed on two of France Inter's flagship programmes in particular: 7/9 and «Service public». Then on 21 June, Gustave Roussy was once again in the spotlight at the Olympia stadium for the music festival, as it was in 2013. The programme included a whole host of stars (including Lana Del Rey, Agnes Obel, Jeanne Cherhal, Philippe Katerine) and was a further opportunity to reiterate the «Ensemble contre le mélanome» group's stated objective of ensuring people no longer die from melanoma in the next 5 years. In under 2 years, thanks to their commitment, more than 700,000 euros have been raised for Gustave Roussy. ■
Support the «Ensemble contre le mélanome» group: ensemblecontrelmelanome.fr