



NANODRUG

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news letter

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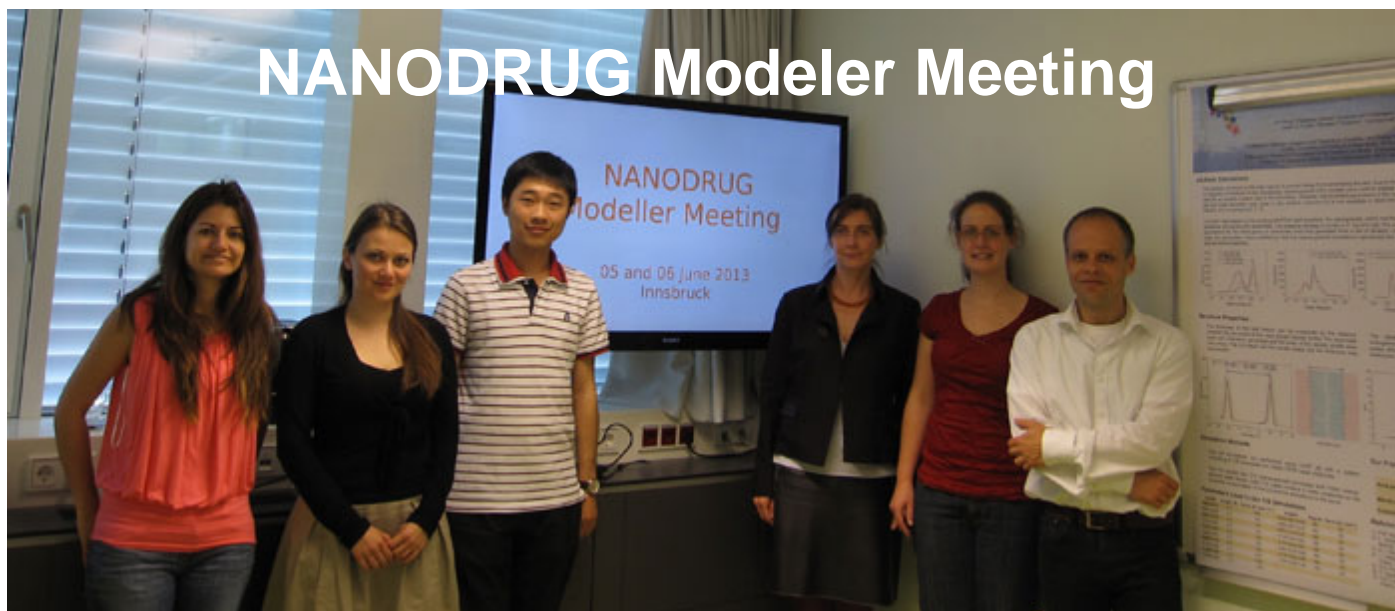
It has been long time since the summer school here in London at Queen Mary University, but finally we all met again in Cranfield University for an intense and interesting NANODRUG workshop on 25th and 26th of April 2013. The location was ideal for the workshop as the campus was a long way from any towns and cities. This way we had the opportunity to focus on networking between ourselves. Some of the professors gave talks, we shared and discussed our work, relaxed and spent some good times together. Even if we had just two days we were able to optimise and maximise the amount of time we had. Dr Huijun Zhu and Claudia Moia were marvellous hosts and we really want to thank them for organizing such a well done workshop. Now we are really looking forward to be all together again in Biarritz in September.

Giorgio

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NANODRUG Modeler Meeting



In order to strengthen the cooperation between the modeling groups in NANODRUG, Prof. Klaus Liedl group hosted a modeler meeting from 4th to 6th June 2013 at Innsbruck University. Luckily for us we managed to secure a room for the meeting because there was only one hotel available during those days even though we booked the rooms very early. We were also very glad that our external collaborator Dr. Zoe Cournia and Dr. Paraskevi Gkeka from the Biomedical Research Foundation at the Academy of Athens joined us.

What was essential for a successful meeting? Of course fresh fruits and snacks! After everything was ready for the meeting, Zoe and Evi arrived on Tuesday afternoon. We discussed the schedule for the following two days and a brief discussion about my work. Then, we had dinner at Anich a very traditional restaurant.

Finally on Wednesday, Anke Steinmetz, from Sanofi R&D, arrived and I reported our current status. We discussed every detail in our work such as the lipid composition, different kinds of nanoparticle models, method to measure the barrier energy and also looked back to the big picture why we had this two groups' setup in the first place. We, at Innsbruck University, simulate the nanoparticle going through the membrane and they, at SANOFI, work on the drug load into the nanoparticle. During lunch we visited the Bergisel Ski Jump Stadium designed by Zaha Hadid, a top architect. It was incredible that the city of Innsbruck hosted two Olympics.

Evi gave us an impressive presentation in the afternoon about the influence of cholesterol on nanoparti-

cle partitioning into lipid membranes. As an experienced researcher whose doctoral dissertation was about nanoparticle and membrane, she shared with us new ideas of designing nanoparticles and a new method of monitoring the membrane behavior. We also talked about my first possible paper and I got really important information from this discussion such as additional comparison with more experimental as well as other simulation results. The evening meal was at an even more traditional restaurant the Weisses Roessl. This restaurant had a history of several hundred years and it was said that they still prepare the food using the same method as they did decades ago.

Thursday morning other people in our group presented their own expertise. That was also a busy morning with lots of information in various areas. We had a quick lunch at the cafeteria. Afterwards we were very happy to give a little tour of our new office building to our guests. We have large computers in our server room, benefiting from Moore's Law, the computers today are much more powerful than yesterdays. Also thanks to the gaming industry, we can get a cheaper one because in our server room we had a GPU cluster. The gaming industry invested in the development of this calculation tool and we used this for research. Doesn't this sound nice?

We discussed the future research strategy in the afternoon. Secondment date was set. More importantly, we tried to find a working strategy to further intensify the collaboration between Athens and Innsbruck.

Time has passed by so fast. The meeting finished and we all looked forward to another meeting in the near future.

Yin Wang



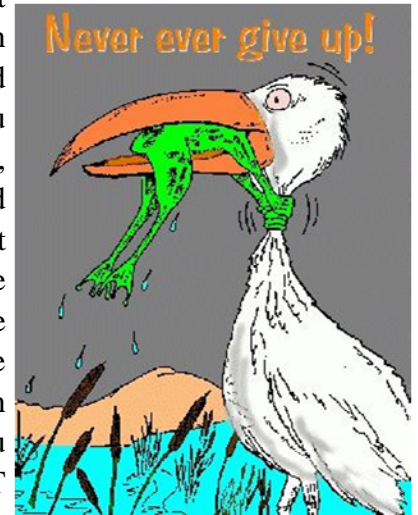
He llo everyone;

Today I suddenly realized that I have already completed half of my time on the Nanodrug project. It is really hard to believe but time is RUNNING. When I look at myself, I can easily see the differ-

ences in me from the first month to now. I think I can say that I was like a fish out of water in my daily life during the first months of my stay in Germany. At the beginning, everything was a big issue for me even casual daily activities such as shopping, travelling by bus and train, especially the “garbage waste” separation. (*In Germany, it is common to divide garbage into different groups instead of throwing everything into the same bin*). You know what they say: “When in Rome, do as the Romans do” then I did. I started to enjoy German food, beer even German weather. I learned to do the garbage waste separation, bought a bicycle and started practicing sports despite my hate for any kind of sport. This individual society teaches me a lot about myself, my limitations, life, being human, human races, perception of morality and living together with people who come from different countries and cultures even from different religions. I realized how important to show respect toward other lives by protecting our own rights. But I believe the most important thing that I have learned from this country is that there is no limit if you are brave enough to try. I am grateful for being here in Germany and part of the NANODRUG project.

I have to thank many people giving support to my scientific and personal progress during that time. First I would like to thank Dr. Marina Resmini, Dr. B. Baumstümmler and E. Türeli for giving me this great opportunity. Additionally I would like to thank especially my supervisor (the German term “Doktorvater”) from Saarland University Pharmaceuticals department Prof. Marc Schneider for my scientific progress. He always asks the right questions

and helps me to move in the right direction. Communication is always easy with him despite the different mother languages that we speak. He inspired me in many ways. The most important one is; he gave me hope in the darkest time of my PhD study by sending a cartoon. As you see, there is a frog in this cartoon and it is still able to say NEVER EVER GIVE UP despite its desperate situation. I believe that, all of us went through hard times in our professional and personal life. If you are lucky enough, someone can send you a cartoon that leads you to realize the fact that struggle carry on and the stork has not been able to swallow you yet. JUST DON'T GIVE UP!



I would like to say couple of words about the NANODRUG Workshop at Cranfield University. Apart from the troublesome visa requirements for non- European countries, I always like to travel to the UK. It is really a great feeling to be able to understand the people who talk around me. After a very long trip we were together again all the Researchers working on the project. We found an opportunity to meet the new ESRs and ER who had started the project very recently and the workshop provided scientific support with intensive programme. It was very nice to be together again and to share the stories about our latest PhD adventures and future plans with friends.

We have the biggest challenge ahead for the coming few months with the mid-term meeting of the Nanodrug project that will be held in September. Besides being together as a Nanodrug family, I believe it will be a big opportunity to show our results, discuss about them and to be informed about the study of the other groups. And now... I have to turn back to my experiments. See you soon on September.

Asli



EMA General Assembly-2013



Awesome weekend in Barcelooooona!

Oooww OooW ooooW!!

It's an official meeting of EU delegates and representatives of Erasmus Mundus programs.

Hello from UCL!! Believe that everybody is busy with their experiments and hope your research is going well.

As an elected representative and alumni of Erasmus Mundus Advanced Spectroscopy in Chemistry master course, I attended EMA General Assembly-Barcelona organised at Catalonia Technical University from 14-15th of June, 2013. Jean Carlos Pelicano and Hady Abi-Nader, the respective President and Vice-President of the Erasmus Mundus Students and Alumni Association (EMA), were the backbones for the entire program. The annual general assembly served to integrate the delegates from European Union, intellectuals from different fields and representatives of the Erasmus Mundus programs to find ways to improve standards of the European higher education, circulation of skilled professionals from third countries and strengthen Europe in sciences and innovation sector. The assembly also featured networks and regional chapters of EMA, voting on amendments to the Statute of the Association and positions of EMA President and Vice-President, as well as a large group dinner and many social activities. I really enjoyed the intercultural social events.

Though the EMA General Assembly is completely

Though the EMA General Assembly is completely out of science, I participated actively in the association events and steps for achieving the goals of EU sponsored programs like Erasmus Mundus, Marie Curies Actions, etc. I felt these types of conferences give a good experience of active and hot debates on



Kiran with Mr. Harald Hartung, Directorate General of Education and Culture, European Commission



At Barceloneta beach

flow of funding, elections and leadership. I learnt how to express my views and support my arguments to convince the people from different fields and corners of the globe. During the assembly sessions, I met Mr. Harald Hartung, Directorate General of Education and Culture, European Commission and shared my views about European higher education and globalization with the introduction of English language system.

To describe Barcelona, words are not enough! Amazing city and very friendly Catalonia people! I had wonderful memories in Barcelona. I visited some touristic places and beautiful beaches like Barceloneta. I really liked the Sagrada Família church and local sea food.

Finally, my earnest thanks to Prof. Véronique for giving me permission and EU for the financial support to attend EMA General Assembly-2013.

All the best my friends and eagerly waiting to see you all in Biarritz!!



With Mr. Peter Martey Addo, active member of EMA PhD network

Kiran (UCL)

Toulouse...La ville en rose!!!



Last March I did my first secondment in the Exploratory Unit at SANOFI R&D sited in Toulouse, in southwestern France. For several reasons, it was a unique experience, one of those you are going to remember for all your life.

In fact, it was not only my first secondment but more than that it was the first time of my life in France, so in contact with a new culture, a new language, new habits, different from Italian and Portuguese and I met for the first time French people. Further, it was my first time I had the chance to work in a company and to see in which aspects it is different from a university and a research group. In Toulouse I also celebrated an important and unforgettable date, my 30th birthday!!!

The city was a wonderful surprise, I liked everything I could see while wondering in its streets...the beautiful gardens, the religious and historical buildings, the museums, the pink color of the bricks of the private mansions, the fragrance of the violets, typical flower of Toulouse, the sunset over the Garonne River and the outdoor cafés in a Spanish style. Going on about the french food: fromages, baguettes, chocolates, macarons, foie gras, pain au chocolat and the typical dish originated in the south of France, known as Cas-soulet.

As you can understand, I enjoyed a lot and I spent great time there, the city and the people gave me so positive feelings that I left Toulouse thinking that it is a city where I could live for a long staying really well and maybe spending all my life.

My enthusiasm for this charming city is also related to the special people I met there, especially Jorge...he



was really helpful to explain me everything about the city, the traditions. It was great to work with him, he spent a lot of time with me taking images on the confocal microscopy and transmitting its knowledge about the amazing world of microscopy.

He created all the conditions that permit me to work in SANOFI in the best way I could do and his efficient team was available to help me whenever I needed, starting from the accommodation to the problems I got doing the cells staining. I could learn a lot from Philippe, the microscopy technician, who besides spending hours with me in front of the microscope, gave me a lot of precious advices regarding immunocytochemistry techniques. The training I got in Jorge's group was essential for my professional progress. And then I have to thank Fabienne, Nuria, Christine, Evelyne, Christiane, Mohamed and Francesco for the warm welcome they gave me, their daily smiles, the time they spent chatting with me about Italy and Portugal.



I will not forget my excitement and happiness when I entered in SANOFI laboratories, I really don't remember how many cell culture rooms and biochemical, chemistry labs are there. It's a paradise for PhD students!!!



This period of time abroad made me realize that beside my family and friends in Italy I have another small family in Portugal that I missed a lot.

See you soon in Biarritz...

Michela



The last few months have been quite a busy period here at Cranfield. The workshop on Nanomaterials organisation was pretty smooth, but took quite some time and effort to coordinate every person involved, especially Mitchell Hall event organiser. In the end I was very happy with the result, because the lectures were really interesting, everything else went okay but, most importantly, I was finally able to see again all the NANODRUG family, and getting to know all the latest additions. Welcome to Ben, Josephine and Kiran, as well as Dr. Wanjari! Hopefully they've enjoyed this experience as much as me and the other ESRs.

Apart from the workshop, I've been pretty busy mentoring two MSc students that have started their practical work for September thesis submission. From the beginning of May to the end of August I'll be therefore in charge of teaching them lab work basics in order for them to be able to enter professional world at the end of their academic journey here at Cranfield.

The working collaboration with Dr. Resmini's group is still ongoing, in particular with Judith Ray and Dolca Fabregat on polymer-based nanoparticles. I am hoping to give them full answers on toxicological behaviour of these nanomaterials.

Claudia



media appearances



Prof. D. Kelsell

A Media Trust documentary for the HI Charity ShHIRT of Prof. David Kelsell's research on Harlequin Ichthyosis gene can be viewed on the following website: <http://www.shhirt.org.uk/2013/05/30/watch-the-shhirt-story-here/>



Prof. K. Haupt

A documentary was made by UTC/CNRS Recherche & Innovation on the work of the Génie Enzymatique et Cellulaire (GEC) - UMR 6022. Prof. Karsten Haupt talks about Biomimetics. This video can be found on the following website: <http://www.utc.fr/recherche-innovation/umr6022-genie-enzymatique-cellulaire.php>



Fun days at QMUL with the annual Outreach Activities



the experiments



6. All the samples have been labelled and classified in order to avoid confusion, as in a chemistry lab happens



7. As true researchers they wrote a scientific report with their findings and conclusions.



5. Following a protocol and divided in teams supervised by one of the assistants, they tested chemical reactions dealing with copper pennies and some ingredients which worked as reagents.



the demonstrations



2. Liquid O_2 production



3. Liquid N_2 and air



4. From silver to gold

The lecture



1. Introduction to chemistry

The Team



In June 90 pupils from a local school came to QMUL to have their first scientific experimental session.



Recruitment



NANODRUG

QMUL 1 has recruited a postdoc starting in September 2013. You will all meet Dr Yolanda Soler in Biarritz as she will attend the 2nd NANODRUG Scientific meeting and summer school.

SA 1 Dr. Piyush Wanjari decided for personal reasons to leave France. Thus **SANOFI (Vitry sur Seine)** is looking for an **Experienced researcher** still in his/her early career. The project of this fellowship is dedicated to molecular modeling studies on the interactions of drugs with nanoparticles used as carriers and of drug-loaded nanoparticles with the pharmacologic compartments during drug delivery, in particular in dermatologic applications.

Thus, molecular modeling will be based on data characterizing physico-chemical properties of and drug release from nanoparticles. Methods will focus on the application of coarse-grain molecular dynamics simulations. The ultimate goal is to develop approaches and methods for prediction and design of optimal polymer/compound or liposome/compound combinations in the development of novel drugs.

Candidates must hold a PhD degree in Material Sciences, Chemistry or related fields. They must have experience documented by peer-refereed publications in the application of computer simulations of large (bio)polymeric systems, ideally by coarse-grain methods. They must have excellent skills in programming/scripting and a strong background in (bio)physics. Outstanding commitment to successfully perform research and meet the project objectives is required as well as capacities in team work and interdisciplinary communication. Mastering scientific English, both written and spoken, is essential; knowledge of French is beneficial although not required. For more information please visit <http://www.nanodrug.qmul.ac.uk/jobs.html>.

OTHER RECRUITMENT WITHIN THE TEAMS



The Resmini Group welcomes a new PhD student: Fosca was born in Catania, Italy, in 1988. She moved to Parma in 2007, she obtained her Bachelor's degree in 2010 and her Master's degree in 2012 from the University of Parma. For three months during her BSc degree, she carried out a project on the development of an electrochemical biosensor for the detection of alpha-feto protein, working with Dr. Giannetto. In 2012, Fosca worked in Dr. Corradini's lab on the synthesis and characterization of PNA derivatives to test for RNase activity in anti-miR strategy for 6 months as part of her Master's degree.

In 2013 she joined Dr Resmini's group as a PhD student working on developing the next generation anti-doping tests using imprinted polymers for fast detection



Forthcoming Events

NETWORK EVENTS

2nd NANODRUG International Scientific Meeting

1-4 September 2013 - Biarritz, France

NANODRUG Mid-Term Review Meeting

4 September 2013 - Biarritz, France

2nd NANODRUG School—Characterisation of nanomaterials and applications in nanomedicine.

5-7 September 2013 - Biarritz, France

CONFERENCES

Irène Joliot-Curie Conference 2013: Establishing an Independent Career in Chemistry

Conference and networking day for early career chemists

11 - 12 September 2013

Imperial College London

Pharmaceutical Nanotechnology Congregation 2013

15th & 16th October 2013

Hilton Hotel, London, UK.

NANODRUG



Cranfield
UNIVERSITY



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