

“Training and research
in *Listeria*
monocytogenes
adaptation through
proteomic and
transcriptome deep
sequencing analysis”

Newsletter n°5

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LIST MAPS

Editorial

This is the 5th issue of the List_MAPS newsletter. At this stage, most ESRs are close to the end of their PhD. This year was once again rich with many events and networking activities. As you will read below, List_MAPS organised a conference in the lovely Irish town of Kinsale. This conference entitled “Foodborne pathogens: from farm to pharmacy!” was a great opportunity to present List_MAPS research advances. Indeed ESRs made major breakthroughs in their individual research projects and it is now time to disseminate results in international peer-reviewed scientific journals.

The last wave of secondments gave ESRs the opportunity to acquire new technical skills while performing experiments required to further characterise mutants and collect phenotypic data.

This year the workshop focussed on entrepreneurship. Attending the online course trained ESRs in entrepreneurship and gave them skills useful to develop a start-up company. As part of this course, they wrote a business plan and presented it during the workshop. Roundtables on job hunting and career opportunities followed. This final workshop ended up with a visit of a food factory and a day tour in the Jura mountains. Indeed, it was a nice way to start summer.

We are now on the way to our final meeting that will be held in Dijon in December. We are looking forward to the ongoing PhD Viva Voce, a major milestone in the career of our ESRs who will move on from Early Stage Researchers to fully qualified Experienced Researchers.

Dr Pascal Piveteau,
Coordinator



RESEARCH

Last step of the 3rd year
[p. 2](#)

EVENTS-MEETINGS

Kinsale’s conferences
3rd workshop
[p. 3-4](#)

SECONDMENTS

ESR4 Amber Dorey
ESR3 Miguel Villoria Recio (1)
ESR7 Patrícia Dos Santos
ESR8 Catarina Marinho
ESR1 Maja Brunhede
ESR5 Tiago Santos
ESR3 Miguel Villoria Recio (2)
[p. 5-7](#)

ESR PORTRAITS

ESR1 Maja Brunhede
ESR6 Natalia Crespo Tapia
ESR9 Ibrahim Sultan
[p. 8-10](#)

WHAT’S NEXT?

Events and meetings
[p. 11](#)

LAST STEP OF THE 3rd YEAR

In their third year of contract, ESRs have completed the experimental part of their PhD. They have accumulated a comprehensive set of data and spent many hours analysing and interpreting these original results. Phenotypic data, mutants' characterisation, transcriptomic and proteomic datasets have been produced from individual projects and collaborations between List_MAPS beneficiaries. All of this hard work feed the overall List_MAPS scientific programme.

From bench to desktop, ESRs have engaged in the process of scientific dissemination. Once duly analysed and interpreted, results are communicated to the scientific community through publication in peer-reviewed journals. This process requires writing a manuscript in which results are presented and discussed in the light of the state-of-the-art. The manuscript is then submitted to the editorial board of a relevant journal. The next step is the critical review of the manuscript by researchers appointed by the editor. According to the anonymous comments of these reviewers, the manuscript is improved before being resubmitted to the editor. At this stage, the editor make the decision to accept the manuscript for publication.

Open access is becoming the standard. It means that scientific results should be readily available, free of charge to the public. The European Commission encourages scientists to actively promote open access to their productions, especially for EU-funded programmes.

Writing the PhD thesis is a major milestone in a scientific career. It requires an accurate knowledge of the area of research. The first part of the thesis is therefore a comprehensive review of the state-of-the-art. After exposing the objectives of the work, results are presented and discussed. This document is very personal as it is the result of three years of hard work and efforts. Once completed, it is submitted to experts in the field of research for peer-review. The final step is the Viva Voce, the oral defence of the work in front of peers. This exercise is the final act of the scientific life of Early Stage Researcher, and the stepping stone to a lifelong scientific career.

KINSALE- CONFERENCE AND SYMPOSIUM

From Monday 23rd to Wednesday 25th April 2018, a conference was organised by the European Federation of Biotechnology (EFB) in Actons Hotel in Kinsale (Ireland) dedicated to the understanding of how microorganisms cope with stress. It was a conference that List_MAPS couldn't miss: 3 ESRs gave a talk and 6 presented a poster.

Right after the EFB conference, List_MAPS organised its symposium on Thursday 26th April 2018. This one-day conference offered the chance to present the results of List_MAPS and was aimed to explore the issues of the foodborne pathogens in general. Besides *Listeria monocytogenes*, the symposium included also *Salmonella enterica*. The symposium gathered about 40 researchers with 12 PhD students recruited in another Marie-Curie ITN ETN project called « PATHSENSE ». It was a great opportunity for the List_MAPS' ESRs to meet 1st year fellows and share with them their experiences!



DIJON- WORKSHOP

This year 2018 is characterized by a lot of endings: the end of the ESRs employment contracts and the last events and meetings. **From Monday 2nd to Tuesday 3rd of July, List_MAPS organised its last training event in Dijon in France** at the coordinator's premises. This workshop was focused on the career and job opportunities for PhD students to help them for their future career. **On Monday** ESRs presented the business plans they built last year with the online courses of the joint syllabus. Then, professionals from private and public/academic sectors presented their background and gave a testimony of their **professional career with advices and tips**. On the afternoon ESRs attended a presentation about Intellectual Property Rights and the Horizon 2020 funding programme with a focus on the Individual Fellowships. **On Tuesday** everybody went to Plasne a city in the Jura region **to visit a cheese cooperative "Les Délices du Plateau"**. After lunch break it was time to do some hiking and discover the waterfalls of "Les cascades du Hérisson".



SECONDMENTS

ESR4 Amber DOREY

From: National University of Ireland, Galway (NUIG)
To: University of Burgundy (UB)
Dates: 08/01/18 to 26/01/18



“ The secondment experience was a fantastic opportunity to practice my very limited and rusty French, and also to experience the French culture in a way that you cannot during a holiday. I enjoyed the city of Dijon itself, the architecture, the shops, the scenery and the variety of cuisines offered in local restaurants. The secondment was beneficial for both my work and for myself, as it helped to improve my confidence speaking French and to experience how another lab operates. I learned some lab techniques and practices which have been useful in taking back to Galway. I had expected to find the language barrier much greater than I did, as I had been warned that few people in Dijon speak English, but I think I struck lucky as nearly everywhere I went there was someone who spoke at least a little bit of English. Overall, it was a very enjoyable experience and I would have no hesitation in returning in the future if a similar opportunity arose. ”



ESR3 Miguel VILLORIA RECIO

From: University of Copenhagen (UCPH)
To: University College Cork (UCC)
Dates: 14/01/18 to 18/03/18

“ Ireland is a very welcoming country. I have always found Irish people very extrovert and alike to me, so coming to the country to do some research was of great pleasure. Cork is an accessible city via bus/taxi from the airport and its walkable distances can easily allow you to reach any place in town. It has a lovely atmosphere, full of pubs with vibrant live music. Besides the city, the entire country offers green fields to look at and astonishing cliffs, lakes and hills, so the countryside is never to be missed! The campus of UCC is a 20 minutes' walk from the city centre and it's embedded in a green area, with some historic architecture and lays next to the river side. I found it very convenient to perform some experiments here, as their research focus was somewhat related to my studies and I could hold nice discussions with the people in my office and my hosting supervisor. I think that changing research environment was a very good thing since it allows you to discover other people's research interests, points of view and way of living. I am very happy overall with my secondment and I would not think it twice if I was to come back. Thank you! ”

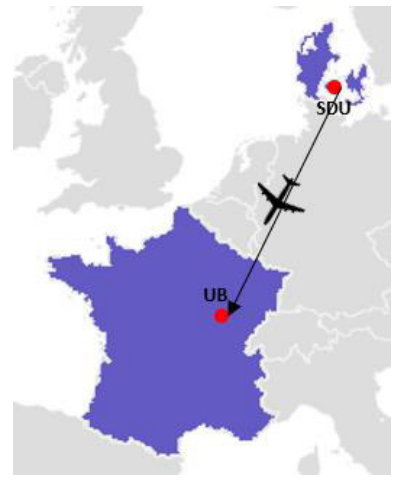
ESR7 Patricia DOS SANTOS

From: University of Southern Denmark (SDU)

To: University of Burgundy (UB)

Dates: 15/01/18 to 02/02/18

“ This experience of going to UB was quite exciting because I had the chance to get to know another lab and learn new techniques. Going to a French-speaking country made me feel a bit anxious in the beginning, but actually I did not have any problems communicating with anyone. Even when I found people who were not so comfortable with speaking English, we always found a way to understand each other!



Dijon is a really nice city and walking around gave rise to really pleasant moments. Also, the tram lines in the city made it very easy to go to the main places. Regarding the work performed, I definitely gained with this chance of learning and applying new methods. I could perform experiments that otherwise I wouldn't be able to do in my lab, and therefore I obtained some exciting results. Even though it was quite a short stay, I found it very productive and I came home feeling accomplished. The experience was positive, I learned, I got some new results, and I had the chance to collaborate with other members of List_MAPS.

”

ESR8 Catarina MARINHO

From: National University of Ireland, Galway (NUIG)

To: University of Southern Denmark (SDU)

Dates: 19/03/18 to 20/04/18



“ Once more, the accommodation office of the SDU was very helpful by finding me an apartment in such a busy time of the year. It was a great experience going back to SDU to continue the experiments I did last year. Although the set of experiments was completely different from last time, going back to a lab I was before was a major plus since the adaptation period was not a factor. Birgitte constant supervision in the course of my secondment was essential for time and results optimization. At the personal level, it was a very intense month but highly rewarding in scientific matters.

”

ESR1 Maja BRUNHEDE

From: University of Burgundy (UB)

To: University College Cork (UCC)

Dates: 30/04/18 to 18/05/18



“ Doing a secondment at UCC in Cork, Ireland, was very instructive in regards to laboratory techniques and skills. Experiencing how things work and are done in a different lab in a different country is always interesting and puts everything into perspective. The main experiment during my secondment included working with murine cells, something completely new to me, and very exciting. I can now add these new skills to my resume as I have expanded my reservoir of knowledge and practical techniques to extend beyond the small scope of microbiology. Furthermore, I have once again worked with RNA, origin from a difficult environment, making me more of an expert in the field of extracting RNA. On a more personal level, living in Ireland for only a short time, was the first time I really experienced a cultural shock. As they were in the middle of a vote on the rights to abortion, and I realized the differences that could exist between countries even within the EU. Despite this, my experience is that the Irish is a very talkative and pleasant people. Furthermore, the Irish nature is quite beautiful, with the rain a part of its charm. I especially enjoyed the Old Library of Trinity College Dublin, which is an impressive old library.

”



ESR5 Tiago SANTOS

From: National Institute of Agricultural Research, team MEDiS (INRA)

To: University of Burgundy (UB)

Dates: 04/07/18 to 13/07/18

“ My second and last secondment was at the Université de Bourgogne, INRA UMR Agroécologie established in the beautiful Dijon city, France. Even if it was a short stay of 2 weeks, I got a lot from this experience at the work and personal level. Everyone in the institute well welcomed me, and the lab work went smoothly. I got interesting and relevant results that will further complement my thesis work. During this three years of PhD, I have had the chance to visit a couple of cities, and Dijon is one of those that keeps its place as one of the best. A dynamic city with a beautiful and culturally rich centre that offers peace and quiet life as you discover all its streets and rich museums. Plus, the campus in which INRA Dijon is integrated has large open spaces that allowed us, the researchers, to stop for a moment and enjoy lunch outside. Dijon’s Kir lake offered some freshness during a warm month of July. During this time, the ball was rolling in Russia’s World Cup, and it was also unique to witness the whole city celebrating France’s victory.

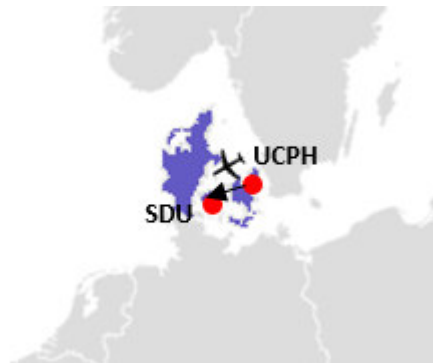
”

ESR3 Miguel VILLORIA RECIO

From: University of Copenhagen (UCPH)

To: University of Southern Denmark (SDU)

Dates: 27/05/18 to 26/06/18



“ SDU has a beautiful off the city campus. It is easy to commute to and the way is amazing if you have a bike. You can arrive to the labs biking through tree tunnels! The laboratories are new, very well equipped and seem to be ready to perform state-of-the-art science. Finding accommodation was easy through internet platforms and I was delighted to spend some of my summer time there - they were running some arty shows and gigs while I was there. I thank the colleagues that provided me with scientific advice and shared their knowledge and time with me. My time in Odense turned to be very efficiently spent and I am happy the experiments I conducted ended up in producing the results that would fit in the story we are building up for a manuscript of my thesis. Thank you !

”

ESR1 Maja BRUNHEDE

How is it to live in Dijon in France?

I love living in Dijon, it has a good size, as it is not so big that you easily get lost, but big enough to have everything you need. The city has a really nice, French atmosphere, with a lot of nice chocolate stores and wine bars. Dijon also has a great location in France, it is close to Paris, Germany and Switzerland, which provides great opportunities for travelling.

One of the more difficult things about living in Dijon is communication, as only few speak English, and I just started learning French. However people are generally really friendly and happy to try the English they know. One of the other things that surprised me was a part of the everyday life, grocery shopping. Here in Dijon, it feels like the cashier is working in slow motion, opposite to Denmark, where everything has to be as fast as possible, as no one wants to spend more time shopping than necessary.

Another surprising thing, was the fact that the movie theatres do not show movies with original audio, but almost only with French audio. I was also quite surprised that English is not an integrated part of the universities at least. I was also surprised by the smoking allowances pretty much everywhere. In Denmark you are not allowed to smoke in public places, restaurants and bars, while France doesn't seem to have any restrictions. That takes some getting used to, as we take it for granted in Denmark that bars and cafes are free of smoke.

Does this research experience abroad help you to know if you would like to pursue a career in a foreign country?

Having worked with research in a foreign country, has been a great experience, and this will, for sure, not be the last time that I do so. Although, I might choose an English speaking country the next time, just to make it all a bit easier. By doing research abroad I am able to combine two things I love, research and travelling. Furthermore, this experience also gives me a stronger and more versatile professional profile.

It has been almost one year you worked on your project, did you learn new techniques?

It has been an instructive year, with lots of new techniques. During the first couple of months I worked with soil, which was completely new to me. I also developed a protocol for RNA extraction and purification from a difficult matrix. During my secondment at UCC I worked with a murine cell line, for the first time in my research career, and I also further developed my skills in RNA purification. The addition of all this new skills, makes me more valuable when moving on from the List_MAPS, as I now have a larger range of technical skills, expanding beyond the scope of microbiology.

You joined the project in October 2017, how did you manage to catch up all the information?

When I joined the project, I knew very little about the List_MAPS from a collaboration during my master thesis with Birgitte Kallipolitis. During my work in her research group I met both Patrícia and Catarina, although only briefly.

I joined the project about halfway through, which both has its advantages and disadvantages. One of the advantages is that everything is already going smoothly and the secondments are ongoing, so all I had to do was to blend in, which makes the start a lot quicker. A disadvantage was that there was a lot to catch up on, from the many summer schools and workshops, along with the general development of both the overall List_MAPS project as well as my own. I managed to spend a few weeks catching up on as much as possible.

I am very pleased that I was given this opportunity and was able to join the List_MAPS project. It gives me priceless experience in research abroad and a possibility to evaluate whether an academic career abroad is the best option for me. I enjoy my work here in Dijon very much, as I also enjoyed working at UCC during my secondment.



ESR6 Natalia CRESPO TAPIA



Now that you live in Wageningen for almost 3 years, how can you describe the city?

When I first moved in Wageningen I had been living in London for a year, so I was used to –and I liked to live in– a huge capital city, so arriving here was quite a big change for me.

Wageningen is a small city, with the university taking up almost half of the space. However, it hosts a really diverse population. Mostly due to the university, it feels as if half of the population is actually students, and students from everywhere in the world. This combination of young and international people in a very small city makes Wageningen a very interesting and unique place to live. I'm not sure yet whether I will stay in the Netherlands after my PhD or go somewhere else, but this year I will take some Dutch lessons just in case!

Working as a PhD student and as an ESR in a European project is not easy. What are the things you like to do to change your mind? Do you miss some things?

When I am out of the lab I try to leave also the work behind me for the day, but of course that's not always easy. Being as a PhD differs from other jobs in the sense that your project is much more personal to you, so it is important to remember to keep things in perspective some times.

When I'm finished in the lab and I go home I usually read (novels, not papers!), listen to some music or just watch some Netflix. Whenever I have more time, I like to travel, to visit some friends in other countries, and especially to go back to Spain and see my family and friends there. That is what I miss the most here.

Even if your research project is not finished yet, do you think you have now gained an expertise in your area?

I think that in the last three years I have improved my research skills. However, it is also true that in science, the more you study something the more you realize there is still so much more to learn!

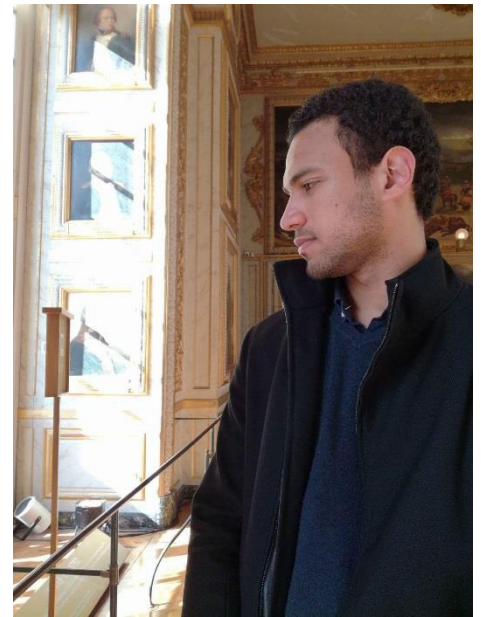
What did List_MAPS bring to you on a personal and professional levels?

On a professional level, thanks to List_MAPS I had the opportunity to follow several courses and workshops designed to improve our skills in certain topics and/or techniques. We have also attended three international conferences, where we were able to discuss some of our work with other colleagues. Another very important advantage of List_MAPS is that it gave us the opportunity to network with a lot of different people from our field, including the other ESRs. In line with that, on a personal level I am really glad that I could form part of this group, and enjoy all these activities and meetings with them. I'm sure we will keep in touch.

ESR9 Ibrahim SULTAN

What did you learn and enjoy living for 3 years in Paris suburbs?

I have been carrying my research over the last three years in a city called Jouy-en-Josas which is located in the south-western suburbs of Paris. It was my first time to be in France when I came to start the PhD position. Over the course of the three years I have learnt many things about France, Paris, and the French culture. One of which was the French language, I got the opportunity to practice and improve my French language skills on a daily basis. The French cuisine was also one of the main and most interesting discoveries for me during this period. I got the chance to discover Paris, deal with the Parisians, and learn a lot about this unique city. On the other hand, I did not like how difficult it was to move from Jouy-en-Josas to Paris by public transportation. I was surprised by how the English language was not common in the Parisian region as I expected it to be.



During your 3 PhD years did you find some time to do your hobbies?

Since the PhD implies a technical work on a specific subject, it was somehow necessary to do other activities outside the lab. I have participated in some of the social events that are organized in INRA (the institute that I am working in). I have as well done some activities outside INRA, I started to practice Tennis during the first year. While after the first year, I would rather do activities with my new friends (e.g. playing football together). I got the opportunity to travel a lot during these three years, either for the meetings and conferences that are organized by List_MAPS, the conferences that my lab decided to participate in, or on my own for the sake of break and discovery. I have been to cities in the north, center, and south of France, but also outside France, I have been to the countries participating in the List_MAPS project and some few other countries. Most importantly, I was visiting my Country, Egypt once every year.

When you look back in 2015, did you expect to do and experience all of what a project such as List_MAPS implies?

It was a great opportunity to make a PhD as a part of a European project like List_MAPS, the fact that we had the chance to travel to many countries, spend a part of the PhD program in a different lab in a different country, work with group of colleagues who later became friends towards the same goal is totally rewarding and made the PhD life easier and without a doubt it made the PhD experience richer. The most difficult part was trying to adapt to the life of a PhD researcher that means being independent in your research and managing your own project over a relatively long period of time. The most challenging part was adapting to a new country with a new culture and learning the language of the country while making the PhD.

You are employed in a Research Institute (INRA) do you want to continue to work in the public and academic sector after your PhD?

One of the advantages about this PhD project was that it had opened my mind toward different areas of interests. When I started the PhD project three years ago I thought that I want to continue my career as a scientific researcher, which is not the case at the moment. Now, I want to discover other areas in the industry. I have three main dimensions to move in after the PhD and the three are away from the technical type of work. My first and favorite one would be starting to work with a startup company and get an experience on how the small companies function and emerge. The second is to work in a company which is not necessarily a startup and get some work experience on how these companies deal with the requirement of the market. The third of which is to try to build a startup, I gained some experience over the last three years that may help me in this direction. This experience is gained through following a 52-hours course which was offered by List_MAPS and it was focusing on how to write a business plan for a startup and the ways by which you can get a funding for your project and which was terminated by presenting our own startup idea.

WHAT'S NEXT ?

EVENTS AND MEETINGS

28 September: European Researchers Night (with the participation of Ibrahim in the events organized in Paris)

4-5 December: Final meeting of List_MAPS, Dijon, France

PhD defence

23 November: Patricia Dos Santos (ESR7)

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List_MAPS Consortium



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