



Welcome to the sixth EVOlUTION newsletter

In this final issue, we report on initiatives and training activities EVOlUTION students have been involved in over the past year.

We open the issue with a piece by Laura Menke who muses on issues of knowledge and technology transfer between the academia and industry. After her PhD, Laura plans to work in this area and her insight is fresh and valuable.

The issue is strong on the secondments experiences of our students. Ploi reports from her industry secondment in Poland that led to published results together with industry and ESRs from INTRICARE ITN. Monika reflects on her experience and the value of secondments as part of a successful research and training programme for the students.

Elsewhere in the issue you can read about the 2019 Annual EVOlUTION network meeting in Coimbra, Portugal and the ESCI 2019 conference that took place in the same location later that week, coverage provided by Tipparat and Silvia. Stavros gives his account of the successful EVOlUTION conference, set in the beautiful Bavarian countryside, that was the last major network event.

Lastly, Mauro reflects on four years as coordinator of EVOlUTION with an inspiring piece of scientific leadership and offers thoughts for the future.

This is the last issue of the newsletter, as EVOlUTION completes in March 2020.

Upcoming project events

- No more EVOlUTION project events are scheduled

London



Laura

Tech transfer

Maastricht



Ploi

Industry secondment

London



Tipparat

Coimbra annual meeting

London



Silvia

Coimbra ESCI 2019 conference

London



Monika

Diary of a secondee

EVOLuTION Update



Consortium News

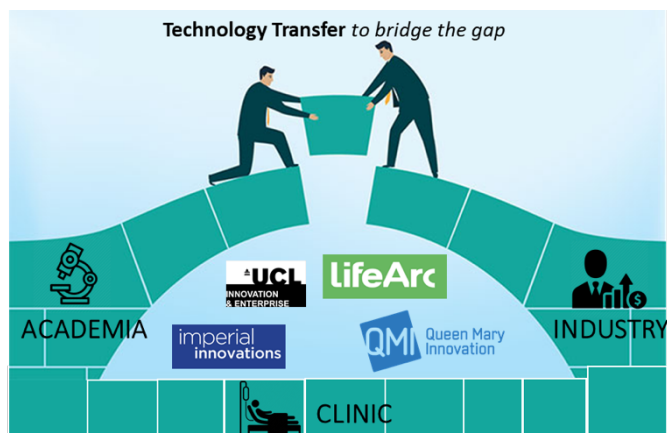
- In March, we welcomed Stavros Fotiadis who took over from Annabelle Scott as the new Project Manager of EVOLuTION. Stavros was introduced to the ESRs and supervisors in Coimbra, in May 2019 and organised the final EVOLuTION conference in Bavaria in September.
- Almost all EVOLuTION student projects have successfully completed. After three year Jan Nagenborg, Angelina Pavlic and Rebecca SieneI finished their projects in September, followed by Silvia Oggero, Chiara Moretti, Monika Maciuszek, Sanne Maas and Ploingarm Petsophonsakul who completed their work on EVOLuTION in October. Antonino and Laura finished theirs in December and Bim will be working until March 2020. All students except three continue working in their current lab as they are finishing their PhDs.
- We are very proud to start referring to Dr Menke, Dr Maciuszek and Dr Oggero! Laura, Monika and Silvia submitted their PhD thesis and have already had their viva at the time of writing.
- A total of 16 project deliverables were submitted to the European Commission in 2019.

Outreach and Dissemination

Silvia Oggero gave an oral presentation at the *William Harvey Research Institute New Year Celebration: PhD symposium* in London on 23rd January 2019 while Monika Maciuszek won a prize for best poster at the same event. Laura Menke gave an oral presentation at the *Cell Biology of Megakaryocytes and Platelets (Gordon Research Seminar and Conference)* in Galveston, Texas, USA held from February 23rd – March 1st 2019. Congratulations to Laura for winning two travel awards to attend this prestigious event! Angelina Pavlic presented a poster at the *NVTH (Nederlandse Vereniging voor Trombose en Hemostase) Symposium* in Koudekerke, Netherlands on 10th April 2019. Laura Menke gave an oral presentation at the *Annual Blizzard Institute Graduate Studies Day* in London, UK where she won best prize. Jan Nagenborg won a prize for his poster presentation at the *3rd ESM-EVBO Conference* in Maastricht, Netherlands from 15th-18th April 2019. Silvia Oggero, Laura Menke, Antonino Cacace, Sanne Maas and Chiara Moretti presented posters at the *53rd Annual Scientific Meeting of the European Society for Clinical Investigation (ESCI)* in Coimbra, Portugal on 22nd-24th May 2019 while Jan Nagenborg gave an oral presentation at the same event; Silvia, Chiara and Sanne won travel awards to attend the conference. Jan Nagenborg presented an e-poster and Ploingarm Petsophonsakul presented a poster at the *87th EAS Conference* in Maastricht, Netherlands on 26th-29th May 2019. Monika Maciuszek won best poster prize at the *EFMC-ACSMEDI Medicinal Chemistry Frontiers 2019* in Krakow, Poland from 10th-13th June 2019. Silvia Oggero gave an oral presentation at the *31st UK Cell Adhesion Society Meeting* in Birmingham, UK on 1st-2nd July 2019. Rebecca SieneI presented a poster at the *Brain & Brain PET 2019 Conference* in Yokohama, Japan on 4th-7th July 2019. Chiara Moretti presented a poster at the *Scandinavian Physiological Society SPS 2019 meeting* in Reykjavik, Iceland from 9th-11th August 2019. Laura Menke was invited by the Platelet Society to talk at the *European Congress On Thrombosis and Haemostasis ECTH 2019* in Glasgow, Scotland on 2nd-4th October 2019. Laura Menke won a travel award to attend the *16th International Bioactive Lipids* conference in St Petersburg, Florida on 20th-23rd October 2019.

Bridging the gap of the life science 'triangle'

Tech transfer for collaboration and innovation



On the website of EVOLuTION, it says that the aim of this PhD network is the discovery of innovative therapeutic strategies targeting the body's own protective mechanisms to heal itself. What makes our programme so special is that we understand that there is much more needed than just scientific research to achieve this goal.

Bringing science from the 'bench to bedside' is a complex process that can take years and involves several key partners that are generally part of a collaborative triangle consisting of academia, industry and the clinic. Over the last couple of years, we have been exposed to those areas via transferable skill workshops organized by our industrial partners, including UCB, LifeArc, IQVIA, NattoPharma and many more. A major problem is that each sector, even though all follow the ultimate goal to bring scientific opportunities to the patients, still has its own priorities e.g. for academics it is to publish in high impact journals while the industry aims for high revenues. After being part of this network for nearly 3 years, I strongly believe that transparent communication and commitment from all sites are essential to remove barriers and move ideas and solutions forward. To understand how we can bridge this gap despite different mindsets, especially between academics and the industry, I joined the introduction week for the LifeArc Technology Transfer fellowship.

Technology Transfer (TT) does exactly that, helping academics who think they might have an exciting, new technology to translate their research outcome

into a commercial product or application that can benefit both the patients and the economy.

LifeArc, a leading UK medical research charity, in collaboration with Imperial Innovations, Queen Mary Innovation (QMI) and UCL Business (UCLB), the TT offices for UK universities, launched a fellowship programme in which 4 PhD graduates will be trained in identifying, protecting and commercializing scientific technologies. A big thank you to Andy Merritt and Georgia Glicki from LifeArc who arranged for me to join the first week where the fellows received an introduction in all important aspects of TT.

We spend our first day at QMI, where we learned about the initiation of the TT process by talking to scientists and how to identify potential exploitable findings. A very important step is due diligence (a term I had never heard before) which refers to market research to investigate if there are already similar products or applications out there that could interfere with intellectual property (IP) protection. IP protection is important to ensure that your invention is protected from people stealing or copying it and you can grant licences to other parties for further development and commercialization in return for revenue. At UCLB, Sean and Daniel from Mewburn Ellis (a company specialised in IP) gave us a short introduction into the complex system of IP law including copy right, trademark and more. To make it even more complicated, also universities have IP policies that need to be followed to ensure full protection, so I am very thankful for patent attorneys that offer guidance through this process. In the evening, we had the great pleasure to meet Malcom Weir, the Executive Vice President and Chief R&D Officer of Sosei Heptares who told us the story of how a small scientific discovery lead to the development of a billion-dollar company.

Wednesday, we spend the day at LifeArc and heard about the steps to validate and further develop a new technology, how to secure additional funding and the importance of business development and marketing for collaborations and more. Finally, we learned how to set up contracts for licencing deals as well as alternatives, such as the formation of spin-out companies, to develop the invention in-house.

During this week, I have learned how complex TT is and how important it is to spread awareness for TT

offices across universities and independent charities such as LifeArc that can draw strengths from all areas through cross-sector partnerships and speed up the process of getting therapeutic discoveries into the clinic.

Article by Laura Menke, ESR3

NattoPharma Industry secondment

[Ploi writes on how her joint secondment with Angelina led to a successful publication](#)

Early this year, our review paper “Vitamin K: double bonds beyond coagulation” was published in The International Journal of Molecular Sciences. This paper is a result of an industrial secondment at NattoPharma of Angelina and Ploi, in collaboration with two other ESRs (Cengiz and Maurice) from MSCA ITN INTRICARE (grant agreement 722609). The paper aims to highlight differences between isoforms vitamin K1 and K2 by means of source, function, and extrahepatic activity.

The industrial secondment at NattoPharma took place during the summer of 2018 in Krakow, Poland. The four of us ESRs were placed together in a large and beautiful downtown apartment accommodated by NattoPharma which makes it convenient for us to work and interact. Apart from the goal which was clearly set for this trip; to produce two review publications about vitamin K, I did not know what to expect and how we are going to accomplish it. The first day of work, we squeezed ourselves in a small Uber heading to the given address which was supposed to be the office of NattoPharma. It turns out that NattoPharma in Krakow is represented by Dr Kate Quackenbush, Director of Communications and a talented graphic designer, Mr Piotr Gromniak. We had a lovely discussion with Dr Kate about our backgrounds and the purpose of this work trip. We came up with strategies and content for the review. Towards the end of the meeting, Dr Kate led us to our potential office surrounded by modern glass wall with four desks facing each other. She suggested that we could either come to the office to write, or work from

distance. It did not take long for us to decide; we will work from distance and report to her at the office every week for updates on progression. We left the office, had lunch together and divided the topics based on our interest. After that, we went our own way to figure out our work. We were not restricted to any rule. Everyone research and write in their own time but at the end of this trip, we were going to have a clean draft which is ready for submission. I felt like it was a perfect work vacation. During the time in Krakow, we set our own schedule to work while sparing some time to explore the charming city and join local activities. I had found my favourite coffee spot that I kept going back to write. We stayed closely in touched with each other, discussed literatures, and made sure that our contents were not overlapping. We also worked closely to Piotr who translated our ideas for figures into beautiful visuals in the paper. We were visited by important officers from NattoPharma, Mr Eric Anderson (Senior Vice President, Global Marketing & Business Development) and Dr Hogne Vik (Chief Medical Officer), who flew from the USA and Norway to meet us in Krakow. They shared incredible insight of business and marketing of the industrial world. How is it to be a scientist within a small and/or big commercial company, at a university or in another working situation? How NattoPharma does marketing for MenaQ7? These were some of the many interesting topics which we discussed. Dr. Kate had not only supported us academically throughout our secondment, she also made sure we were living well and had the best time in Krakow. We visited historically important places around Krakow, including Wieliczka Salt Mine and Auschwitz, and tasted some of the best pierogi (Polish dumpling) in town.

At the end of a three-week secondment, we had presented one complete review paper on vitamin K which was published in The International Journal of Molecular Sciences early this year, and another in-process paper which we aim to publish soon.

Article by Ploingarm Petsophonsakul, ESR11

Cosy meetings in Coimbra

Tipparat reports on the annual EVOLuTION meeting in Portugal in May 2019 while Silvia reflects on the ESCI conference

Our EVOLuTION annual network meeting and transferable skills training returned again in Portugal during 20th-21st May 2019. This time the meeting was held in Coimbra, a beautiful ancient city where charismatic buildings belonged to Coimbra University were built. We enjoyed our stay at Hotel Vila Galé with a good atmosphere and fresh Portuguese food. The first session was started by ESR's presentations reporting our recent works. We had the opportunity to discuss about our interesting results and then gain useful suggestions from the PIs to make our experiments more efficient. When the first session had finished, all ESRs moved from the hotel for our last journal club in the relaxing café nearby. The title of

the paper presented by myself was "Cathelicidins prime platelets to mediate arterial thrombosis and tissue inflammation" which is published in Nature Communication. After the scientific discussion and a nice drink, fancy dinner was served to all of us at local restaurant called Solar do Bacalhau.



The next day of the meeting started with the annual EXEC and steering board meeting. ESR representatives were allowed to partake in the board meeting and give our ideas about the next transferable skills training in Munich. We later had a presentation session from high profile scientists which inspired us considerably and further motivated us in our research careers which in turn will hopefully make a meaningful impact to society. In the afternoon, we received a transferable skills training by expert speakers. We learnt



how to improve our soft skills including lessons in leaderships, idea of speeding up the development innovative medicines of European Union and European Pharmaceutical Industries, as well as creativity in scientific research. Thanks to EVOLuTION, all ESRs are able to broaden our intellectual horizon in both scientific and life skills which are increasingly important for succeeding in our future careers after PhD life.

Article by Tipparat Parakaw, ESR2

After the exiting EVOLuTION annual meeting, Laura, Chiara, Jan, Antonino and I stayed in Coimbra and attended the ESCI conference. The conference held in this vibrant University City was a European meeting whose mission is to bridge fundamental research with clinical investigation and technology transfers. Several different symposia were organized uncovering much diversified topics such as mitochondrial biology and circadian rhythm, two of the very "hot themes" in the recent research field. Out of all of them, I enjoyed and attended the phagocyte symposium, organized by one of the professor of our EVOLuTION program, Prof. Oliver Soehnlein. This symposium focused its attention mainly on neutrophils and their role in the inflammatory process including the resolution phase.

The symposium lasted three days and it was nice to see how the organizers gave the possibility not only to known researcher in the field, but also to young PhD to present their main research to this meeting. In light with this, Jan Nagenborg had the wonderful opportunity to present his work in a talk "Re-programming atherosclerotic plaque macrophages towards an anti-atherogenic phenotype" on Thursday. The audience was really intrigued by his research and his results and he received many questions at the end. Furthermore, Laura, Chiara, Sanne, Antonino and I had the chance present a poster during the lunch breaks and the afternoon both Thursday and Friday. This has been a great opportunity for all of us to network with several scientists from all over Europe and to catch up with the research of other groups that have similar interest to ours. Finally, it is important to mention the very interesting plenary talks given by

Andrew Loudon and Angela Religio. Both of them presented their work about circadian rhythm, but while Andrew focused mainly on immune function and immune response, Angela gave a broad image on how the day/night cycle can influence the outcome of the cancer development and can affect the outcome of the treatments and therapies.

Although this conference for sure represented an intense experience full of very interesting talks that helped us to learn a lot, of course, there has been also space to socialize and enjoy our stay. On Thursday night indeed, the ESCI committee organized the congress dinner in Tertulia des eventos. Firstly when we arrived to the location, we were welcomed by local dancers and singer that performed FADO, the typical Portuguese dance, then after the meal all the guest (us as well) have been enjoying the night dancing in the same location. Overall, I think that this conference represented a great experience for all of us of learning and meeting outstanding scientists working on our field and also to travel and discover Portugal and embrace the culture of this country.

Article by Silvia Oggero, ESR1

Going on secondment: The diary of a secondee

Monika gives an account of her life as an ITN ESR through the lens of secondments

There are numerous advantages of being Marie Curie PhD fellowship. One of them is possibility to be temporary transfer to another partnering institution. Last year, I had opportunity to go on two secondments, during which I was exposed to high class expertise in the cardiovascular field. The knowledge and know-how provided me with valuable guidance to achieve objectives and goals which I defined at the beginning.

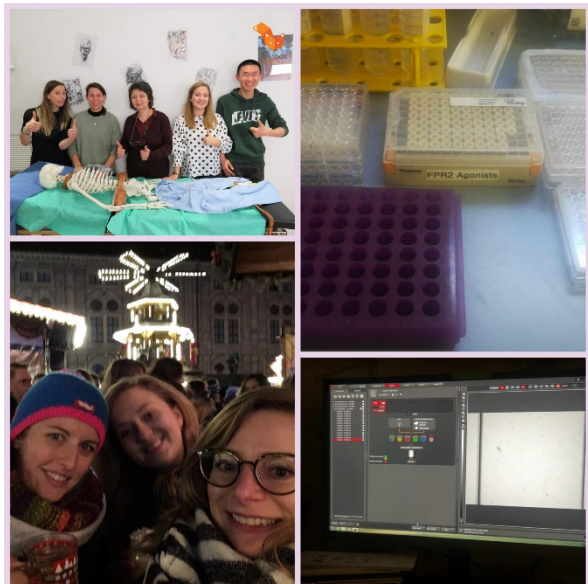
At beginning of 2018 I started my first secondment in the research group of Dr Gerry Nicolaes at the University of Maastricht. The development of protein model structures and work with homology models of

FPR2, was part of my secondment in Maastricht. During these two months, I could learn more about homology modelling, model validation and molecular docking. Based on my work investigating the binding modes and structure-activity relationships of small molecule FPR2 agonists, I presented the results at the American Chemical Society meeting in Boston and the British Pharmacological Society meeting in London last year. I was really lucky because six out of our eleven PhD fellows were in Maastricht as well at that time. I must say that Maastricht has a lot to offer. Thanks to Angelina I discovered Toastmasters and Pecha Kucha 20x20 events which can improve your communication and leadership skills. Moreover, I could learn more about Dutch culture. In February the Maastricht streets were closed and cars were replaced with people, it was time for Dutch Carnival, the exciting and colourful street celebrations which we don't have in London.



In October of that year I packed once again my bags and moved to Munich to start my second secondment in the research group of Prof Oliver at Ludwig Maximilian University of Munich. At the first day in the lab I knew that definitely I am going to step outside of my scientific comfort zone. In Munich I learnt how to work with blood samples and how to isolate cells from blood. I have tested my FPR2 agonists in neutrophil adhesion assays which can give us an idea how to translate this work to potential treatment of cardiovascular diseases. As a chemist by training I have had the opportunity to learn, plan and perform all the biological assays crucial for my

project. Here I would like to thank Almudena, Ari and Sanne for showing me all new techniques. Perhaps I've missed Oktoberfest, but I had chance to enjoy the beginning of Advent in Munich and visit several Weihnachtsmärkten with our two Munich based ESRs, Sanne and Becky.



Thanks to my both secondments, the cross-disciplinary spirit appears in my project: modelling, synthesis, metabolism and toxicity profiling and

biological assays, everything comes together to produce a new innovative generation of tool compounds.

Grow your network! The secondments are not just opportunity to learn new techniques, gain the skills or use the equipment which perhaps you don't have in your lab but also to make professional connections and friendships. Exchanging ideas among your network will help you to broad your perspectives and bring a fresh and new point of view. And remember, in the end the relationships have the greatest value.

Finally, moving to a new country even for few months can be challenging but also exciting. You have an amazing opportunity to learn some simple phrases in the host country language, get know better their history and culture. During weekends you can also explore beautiful cities and countryside. Personally, I can recommend Bavarian Royal Castles in Germany, especially Schloss Neuschwanstein (the Sleeping Beauty Castle was inspired based on this castle). In Netherlands definitely Utrecht, Amsterdam and of course Maastricht.

- Have a chat with your host supervisor. Check what techniques and equipment are available at the host lab.
- Define your objectives and goals which you want to achieve
- Do some research! If your secondment is from a different area (like mine was), I would suggest studying about new techniques. Some basic knowledge will truly help you to start your internship.
- Order all crucial reagents, assay kits etc. before your arrival. Make sure that you won't waste your time, so you can optimize your stay at partnering institution.
- Start to look for the accommodation in advance. It is not easy to find a room/ studio flat in another country for short period of time.
- Check if there are any requirements at the host university which you need to meet e.g. certificate of vaccinations.
- Don't afraid to ask. Better to ask the way than to go astray 😊

Article by Monica Maciuszek, ESR 10

EVOLuTION Conference

Stavros goes behind the scenes of the final conference at Seon Abbey, 9th-11th September 2019

Organising an international scientific conference takes a lot of time and requires excellent planning and communications skills. Starting with a budget and a scientific scope, the first thing to do is draft the programme and book the speakers which can happen two years or more before the conference opens its doors to welcome the delegates. In the case of EVOLuTION, preliminary discussions with key speakers were had since the start of the project and the conference programme had been finalised ten months before we landed in Munich.

Our host was LMU Professor Oliver Söhnlein and his team comprising Brigitte Stöger, Megan Schwartz and ESR7 Sanne Maas. Before EVOLuTION even started, Oliver has in his sights for the conference setting a superb location at a secluded lakeside 10th century Benedictine monastery in Bavaria. Oliver's team took care of local organisation and their excellent planning ensured a smooth conference, including the transfer of conference speakers and delegates to and from the Abbey. There was a brief moment when the organisers became concerned that we would consume more beer than our budget allowed! To our enormous relief, it soon became apparent that this was a very remote possibility indeed.

The conference was attended by all EVOLuTION network partners as well as external participants. In total 56 delegates arrived from 8 European countries and the United States, representing 17 nationalities between them. Our keynote speakers included Charles Serhan (h-index: 154) and Filip Swirski (h-index: 72) both from Harvard Medical School and Eicke Latz (h-index: 86) from the University of Bonn. Amongst the delegates we welcomed representatives from EVOLuTION network industry partners Mosamedix, William Harvey Research Limited and NattoPharma, two EVOLuTION Expert Advisory Board members and also 12 external PhD students.

The conference programme was a mix of presentations by ESRs and established scientists and each session saw a supervisor and ESR co-chairing, to give additional exposure and experience to the students.



The conference was an opportunity for the ESRs to participate in a real international conference setting where they took centre stage, presenting their results after nearly three years of work to the scientific community and improving their conference presentation and networking skills. The conference delegates, spearheaded by Professor Serhan, did not miss an opportunity to ask questions at the end of each presentation, keeping ESRs on their toes and making sure they earned their drink afterwards. The conference was also the last network opportunity for ESRs to meet under the auspices of EVOLuTION.

Before the conference opening on Monday afternoon, the student posters for the poster competition were put up on display in the break-out area outside the main conference room. Four independent judges studied the 20 posters on the second day of the conference and their decision was announced at the official conference dinner, in the Abbey's gothic cellar. LMU students Fitsumbirhan Mehari and Selin Gencer received two joint best poster awards each, which came with cash prizes.

The conference concluded with a lunch and brewery tour that was a short walk from the Abbey over a lake and a Bavarian village, a delightful walk in early autumn before returning to Munich, where ESRs stayed for two more days of Transferable Skills training.

A coordinator's perspective

(farewell notes)



Mauro Perretti reflects on four years at the helm of EVOLuTION

Incredible but true! We are near the end of EVOLuTION, the European Vascular Intervention and Therapeutic Innovation Network, which has trained 11 ESRs in endogenous mechanisms of tissue protection, harnessing the vasculature as the common conduit with an impact on a variety of diseases, from hypertension to vascular calcification, from atherosclerosis to myocardial infarction and kidney disease. For me, being the coordinator of EVOLuTION; it has been i) a great honour, ii) pleasure and iii) highly-productive experience.

I was flabbergasted when in May 2015 I received a cryptic email where it seemed that our application was awarded. With a light head, I contacted the then manager Xavier Sandin and asked that he entered the EU portal to double check: it was awarded! This success was down to the collegiate effort of the principal investigators from all beneficiaries, who worked with me to resubmit the programme after a first submission in 2014. EVOLuTION started in April 2016. Thus, reflecting back now, I can say that it has been a great honour to have worked with top class academics and scientists from HEI and companies across Europe, both for the preparation stage and the actual delivery of the programme, from 2016 to 2020.

Being the coordinator of such a complex training network has also been a pleasure. As one may guess, it has not always been easy in the sense that the I had to rapidly understand the multiple tasks we had to deliver, and for which I was the sole responsible to the eyes of the EU and the EU Officer! However, I have been supported extremely well by Dr Annabelle Scott first and then Mr Stavros Fotiadis, who managed the programme for 2.5 and 1.5 years more or less, respectively. Moreover, it has been a pleasure to work closely with colleagues and friends I knew already as well as with new colleagues: all have contributed to the deployment of such a brilliant programme. Nonetheless, a 'large slice' of this

pleasure derives also from getting to know 11 talented Early Stage Researchers, top class young students, with a drive and an enthusiasm which has no rival. We recruited from 6 distinct countries and - since day 1 - I have been genuinely impressed by the high quality, broad interests, motivation and keen participation that all ESRs have demonstrated over the three years of employment through EVOLuTION: I am confident they have appreciated the depth, diversity and quality of the training received.

Finally, but not least, I feel a sense of pride. It seemed a daunting task to deliver all these scientific workshops, transferable skill training sessions, network meetings, summer schools and other training activities, but I am pleased that we have collectively delivered on all our commitments with the EU: I consider this a high productive deliverable of EVOLuTION. Equally important, is the scientific training we have given to our ESRs – they have been fantastic and in many cases harnessed the opportunity that derived from secondments, new experience, broadening the technical skill set, brainstorm with top scientists from top Institutions in Europe. In a way, these are intangible benefits of our network programme, but this sense of gratification for productivity and pride is substantiated by tangible facts like the number of conference presentations (35), the number of travel awards won by EVOLuTION ESRs (7), the number of prizes won for poster and/or oral presentations (10), and finally the publications produced (13 so far, a few reviews but also original studies are now being published). In addition, three ESRs have now defended their post-doctoral thesis with success.

It is important to emphasise also the quality of the science produced with this programme: from the unveiling of mechanisms underpinning the efficacy of dietary approaches to the genesis of extracellular vesicles and their bioactions, from focusing on receptor-mediated resolution to the design and validation of novel therapeutics, from the characterization of the signature in the arterial wall to the phenotype of the plaque and its components. In all cases, observing at some distance the flourishing of these young scientists and their progress on several

aspects of their training has been truly amazing and a true privilege.

I share this sense of gratification and job-satisfaction with all EVOLuTION PIs and other colleagues at beneficiary institutions who have been fantastic team players, making my job very easy. Similarly, our partners have made fundamental contribution to deliver the complex yet high quality training of the programme. I am grateful to our Advisors who attended EVOLuTION events (Prof Resmini and Papapetropoulos attended the Annual Network event in Dublin, May 2017; Prof Papapetropoulos and Jonassen attended the Final Conference in Munich, September 2019) and provided high quality advice on career intention and progression, new science in academia and in the commercial sector.

What next? Well not too much I am afraid. I hope and am pretty sure that we will stay in touch with our academic colleagues on other adventures and scientific collaborations. Equally important is that the ESRs maintain their network and I would be extremely happy to keep tab on their progression and provide advice and mentorship for the future, if requested and deemed helpful. The legacy of EVOLuTION will be long-lived and at multiple levels. New projects, new science and publications will be captured well beyond the end date of the network. However, the ESRs career progression and satisfaction will be the main legacy of this network and indeed the main reason why we did it in the first place! Having touched first-hand the quality of our ESRs soon to be doctors makes me stating that I have high expectations and no doubts for several satisfactory outcomes.

Thank you all for your great effort over the past 4 years and ... good luck to our EVOLuTION fellows!

Mauro Perretti, PhD
Co-ordinator



LATEST EVOLUTION PUBLICATIONS

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Vitamin K: Double Bonds beyond Coagulation Insights into Differences between Vitamin K1 and K2 in Health and Disease. Halder M, **Petsophonsakul P**, Akbulut AC, **Pavlic A**, Bohan F, Anderson E, Maresz K, Kramann R, **Schurgers L**. Int. J. Mol. Sci. 2019, 20(4):896

AMP-activated protein kinase activation and NADPH oxidase inhibition by inorganic nitrate and nitrite prevent liver steatosis. Cordero-Herrera I, Kozyra M, Zhuge Z, McCann Haworth Z, **Moretti C**, Peleli M, Caldeira-Dias M, Jahandideh A, Huirong H, de Campos Cruz J, Kleschyov AL, Montenegro MF, Ingelman-Sundberg M, Weitzberg E, **Lundberg JO**, and Carlstrom M. PNAS January 2, 2019 116 (1) 217-226.

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