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Visiting Fellowship Report

Name:	Leonidas Roumeliotis
E-mail address:	leonidasroumeliotis@yahoo.gr
Country of residence:	Greece
Country of visiting fellowship:	Belgium
Host centre:	AZ Turnhout
Name of the host:	Dr Jaak Roos
Dates of visiting fellowship:	01/09/2023 to 13/10/2023

I agree to share this report of EFORT & EFORT Foundation's website and social media channels: Yes No

It is recommended that the report is 3-4 pages including the cover page. The following paragraphs should be addressed:

1. Description of clinical activities during the fellowship
2. Description of scientific activities during the fellowship
3. Description of social aspects of the fellowship
4. Technical skills that I learnt during the fellowship
5. Theoretical knowledge that I learnt during the fellowship
6. New knowledge and skills that I can implement in my own practice
7. Overall reflective statement over how the fellowship contributed to my professional development
8. What are you plans for the future?

Expenses:

Travel: EUR 400 (approx)
Accommodation: EUR 1970
Other expenses: EUR 1000 (approx)



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Topic	Please tick one of the boxes <input checked="" type="checkbox"/> 1 (poor) to 5 (very good)					Your comments, thoughts, recommendations
	1	2	3	4	5	
Education						
Could you improve your knowledge and gain new experiences?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	I had the opportunity to gain surgical experience on the AMIS technique for total hip replacement, but also on open hip preservation surgery as well as robotic knee surgery. I had the opportunity to significantly improve my scientific knowledge on young adult hip pathology and personalised alignment philosophy for total knee replacement.
Host Department						
How was your communication with your host centre (regarding accommodation, programme, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	I was able to establish good communication with the fellowship host early on. We had an initial video conference when we discussed the particulars of the fellowship. Following this meeting both the host and the host centre responded in a very timely fashion to any follow-up e-mails and text messages.
Did they offer you a social programme?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Although there was not an established social program as this was the host's and host centre's first experience with an EFORT fellow, the involved surgeons made their best effort to keep me entertained outside work.



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Report to EFORT:

Text (needs to be minimum of two pages A4 detailed report)

Dear members of the EFORT Fellowship committee,

thank you for the opportunity to participate in this unique training program. Next follows my detailed report on this experience and my recommendations for the future evolution of this post, as this was the first encounter with an EFORT fellow for the host centre.

Personal background and administrative process up to the start date of the fellowship.

I am an Orthopaedic Surgeon currently practicing privately in Greece. I obtained my medical specialty certification in October 2013, and one year later I was awarded the title of the Fellow of the European Board of Orthopaedics and Traumatology (FEBOT). In December of 2021 I have successfully defended my PhD thesis with the School of Medicine of the National and Kapodistrian University of Athens on the development of a feasible trauma registry for the Hellenic healthcare environment.

In April of 2014 I relocated to the United Kingdom where I completed multiple fellowships in hip and knee surgery, predominantly arthroplasty and revision arthroplasty. My surgical training in the UK focused on hip replacement surgery through the posterolateral approach and knee replacement surgery with the mechanical alignment philosophy. I also gained some experience in hip preservation surgery predominantly hip arthroscopy. During the last years in the NHS, I functioned as an independent surgeon, and I felt very confident in my ability to apply the surgical techniques mentioned before.

I have relocated back to my home country in March 2020 just prior to the COVID pandemic and the first lockdown. At that point my plan was to gradually establish a private hip and knee arthroplasty practice in Greece and to continue to do some locum surgical work in the UK. I have always been interested in gaining hands-on experience with anterior hip replacement. My reasons for this were twofold. It is my firm belief that a hip arthroplasty surgeon should be able to approach the hip joint through multiple pathways according to the specific needs of each case. Furthermore, anterior hip replacement has been heavily marketed in the Hellenic private sector, and I needed the specific training to remain professionally competitive. I was aware of the EFORT AMIS



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fellowship for a long time, and at that point I felt it was the perfect opportunity to bridge the time gap until I gained professional momentum in Greece.

I applied for the fellowship in the spring of 2020 and received the acceptance letter in the fall of the same year. At that point I was allocated to a host centre in Switzerland, which suited me at the time as members of my immediate family were living close by. Back then the agreed fellowship duration was 3 months. Unfortunately, due to the COVID pandemic initially and for unclear reasons subsequently the host centre never responded to the fellowship coordinator's queries about potential acceptance. As a result, in January 2023 I was asked to choose another host centre from an updated list, which now included AZ Turnhout. The possibility of participating in open hip preservation surgery parallel to the main surgical focus was very appealing to me. Due to changes in my professional circumstances, I was only able to take 6 weeks off from my private practice.

Dr Jaak Roos, the fellowship host, gave an initial positive response in March 2023, and by July 2023 the host centre has completed all necessary administrative arrangements. I contacted Dr Roos through a video conference at the end of July during which we have clarified the practicalities of my visit. We have agreed that the best time to attend would be the beginning of September and we both felt that at my level of surgical expertise 6 weeks of hands-on experience at the host centre's usual caseload would suffice. I have signed a Contract of Observational Internship with the Hospital administration, submitted the necessary paperwork to EFORT, and flew into Belgium on the 31st of August. The final administrative steps were straight-forward, the required documentation was not too exhausting but ensured the safety of all involved parties, and the transfer of funds was done in a timely manner.

Clinical activities during the fellowship

As a result of the language barrier which precluded an active involvement in outpatient clinics, we have decided that I would remain predominantly in the operating theatres. The Belgian healthcare system follows an exclusive surgical subspecialty system. Arthroplasty surgery was performed in the main site Campus St.Elizabeth, and arthroscopic and day case surgery in the satellite hospital Campus St.Joseph. Theatre sessions were arranged as follows: Dr Roos operates every Monday and Friday and theatre sessions usually included one case of open joint preservation surgery (Dr Roos is



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a referral surgeon for this type of surgery) followed by a few cases of AMIS THRs; Dr Kathleen Pittoors, the department's second hip surgeon, operates every Tuesday and every second Wednesday performing predominantly AMIS THRs, hip revision surgery and hip arthroscopy; the remaining operating sessions are covered by the department's knee surgeons, Dr Erik Vanlommel and Dr William Colyn, who undertake partial and total knee arthroplasty with the Smith & Nephew CORI robotic platform employing a personalized alignment concept. Dr Colyn also has extensive academic involvement on the subject of constitutional alignment of native knees and its implication for knee replacement surgery.

The first week started with a surgical hip dislocation for a circumferential CAM deformity and open repair of the labrum. This was my first ever hands-on experience with this procedure. I then went on to assist in a significant number of AMIS THRs, was introduced to the AMIS positioning table and the sequential surgical steps and witnessed the implantation of both cemented and uncemented femoral components. With regards to knee replacements, I was exposed to the midvastus approach, the CORI robotic system and the philosophy behind the personalized positioning of components utilizing the soft tissue graph produced by the robotic software.

Week 2 started with my first ever exposure to a Bernese Periacetabular Osteotomy performed through a minimally invasive approach and ended with one similar case and one case where this was combined with a surgical hip dislocation for a complex deformity in a young female patient with arthrogryposis. In between I was again exposed to a high number of AMIS THRs with one case done through the Bikini incision, a case of revision of a loose femoral component to a long cemented stem again through the AMIS approach, and a single stage revision total knee replacement for PE wear and aseptic loosening. At the end of the second week Dr Roos was kind enough to share his Powerpoint presentations from cadaveric workshops on the technique.

Week 3 again started and finished with two cases of PAO. During the week Dr Roos allowed me to do the AMIS approach under supervision in three cases. This week involved again a high number of primary AMIS THRs, robotic knee replacement performed this time through the subvastus approach, and ended with a very interesting case of acetabular revision. A periprosthetic acetabular fracture post fall around a fresh AMIS THR for an intraarticular hip fracture, treated with bone allograft, insertion of a Kerboul type ring and a cemented cup with retention of the femoral component.



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Week 4 was the most interesting week of my fellowship as on the last day Dr Roos took me through the entire procedure of a hybrid AMIS THR under his supervision. This allowed me to experience in person the process of reaming the acetabulum in a supine position under fluoroscopy and preparing the femur from the opposite site compared to traditional approaches. Leading up to this, I had performed the approach three more times under supervision both by Dr Roos and by Dr Pittoors, while Dr VanLommel took me through his modified subvastus approach with closure of the deep dissection in two superimposing layers. With regards to hip preservation surgery this week included one case of PAO and one case of surgical hip dislocation.

During weeks 5 and 6 I was able to perform the AMIS approach under supervision on several cases, I assisted in a large number of primary AMIS THRs and robotic TKRs, and I have been involved in three more cases of PAO. From an educational perspective the most interesting operation was a first stage revision of a hybrid THR for low grade infection. During this case I was familiarized with the MEDACTA rotational blade system for removal of a well-fixed acetabular component and the Zarack Nissek approach for distal exposure of the femur, which is important to know in case of an intraoperative periprosthetic fracture.

In summary during my six weeks fellowship I have participated in:

- 75 Primary AMIS THRs, performing the approach in 11 cases, full procedure in 1
- 3 Revision THRs through the AMIS approach
- 9 Bernese Periacetabular Ostetotomies
- 3 Surgical Hip Dislocations
- 27 primary Robotic TKRs, performing the subvastus approach in 4 cases
- 2 Robotic partial Knee Replacements
- 2 Revision TKRs

Scientific activities during the fellowship

No specific research activity has been undertaken during the fellowship due to its short duration. The host surgeon's large pool of patients who have undergone joint preservation surgery can generate compelling research ideas. The language barrier might create difficulties for international fellows in the interaction with patients and the utilization of medical records and this needs to be considered.



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Following the due date of the program I was invited to attend a very interesting scientific meeting with prominent international speakers in Herentals Belgium, the "Joint Preservation in Orthopaedics", hosted by two very well-known surgeons both locally and internationally, knee expert Dr Toon Claes and hip expert Dr Filiep Bataillie.

Social aspects of the fellowship

On the day of my arrival in Turnhout Dr Roos has kindly invited me to his house for dinner with his family. During my 6 weeks stay we had a social drink after work on a few occasions. Dr Colyn has also very kindly arranged dinner in his hometown of Hoogstraten during the third week of my stay. The scientific meeting mentioned before was a nice opportunity to have a farewell drink with both Dr Roos and Dr Pittoors. Overall the theatre staff in Campus St.Elizabeth was very kind and welcoming, and everyone that I came in contact with made certain to give me inside tips on tourist attractions and Belgian delicacies.

Turnhout was a good starting base to visit Flanders, an area filled with tourist highlights. The train schedules during the weekend are scarcer and I needed to make an early start if I wanted to visit major cities that were further away. In any case I was able to visit Antwerp twice, Brussels twice, Ghent and Lueven once, while during my last weekend I undertook a long road trip through Brugge, the Belgian coast and returned through the World War I memorials road from Newport to Ypers. Turnhout itself has historical interest hosting a large museum on the craft of printing (Playing Cards Museum) and one on the life of the Beguines order.

Technical skills learned through the fellowship

The main technical skill acquired through the fellowship was obviously the AMIS approach for total hip replacement. This was achieved though theoretical lessons by the host surgeon who has kindly provided me with his presentations from cadaveric workshops, but mainly through the high number of cases for which I scrubbed in. This allowed me to obtain hands-on experience on a wide variety of different hip anatomy and body habitus profiles, and to watch first-hand how experienced surgeons approach these different scenarios. Furthermore, I was given the opportunity to perform parts of the procedure myself and experience the practical differences with the posterior approach.



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Other practical skills that I picked up during this time were my interaction with the burr-based CORI robotic system, as well as the utilization of alternative approaches for total knee replacement (subvastus-midavastus).

Theoretical knowledge learned through the fellowship

The main theoretical benefit through this fellowship was as expected the thorough understanding of anterior hip anatomy and its implications for surgery in general and for THR in more detail. On this note, Dr Roos's special interest in Periacetabular Osteotomy has enabled me to dive deeper into the subject of acetabular dysplasia, the correct interpretation of the radiological parameters, and the technical aspects that determine an adequate correction during surgery. Finally, my interaction with the department's knee surgeons has introduced me to the concept of personalized alignment for total knee replacement, the particulars of pre-operative planning, and the philosophy behind using the soft tissue tension real-time data as provided by the robotic platform to guide the bone cuts.

New knowledge and skills that I can implement in my own practice

From a technical skills perspective, the AMIS approach, some of the hip preservation procedures, and the robotic system for knee replacement are novelties that I am planning to transfer into my own clinical practice. The deeper understanding of hip dysplasia and my introduction to the personalized knee alignment concept is the new knowledge that I have acquired from which I feel my patients will benefit in the future.

Overall reflective statement over how the fellowship contributed to my professional development and my plans for the future

Overall, this has been a potentially career changing educational experience for me. The primary goal of the fellowship has been achieved, in the sense that I now understand the value of anterior hip replacement and how it can improve patient's early recovery. I have decided that I will implement this approach in a stepwise manner through careful patient selection. I believe that over time I will probably end up with a 70%-30% case mix of anterior to posterior hip replacements. The AMIS approach and leg positioning system will be my initial choice, as they facilitate femoral exposure and allow for a less stressful learning curve period.



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I have gained enough experience with the Periacetabular Osteotomies to understand that this is not a procedure to undertake myself until I receive further extensive training. The surgical hip dislocation on the other hand is a surgical option that I would consider offering for the right indications, as I feel that I have mastered all the important surgical steps.

Finally, although I remain an advocate against the routine use of robotic surgery for mechanically aligned TKRs, as there is ample scientific data on its non cost-effectiveness, I understand now the ability of robotic systems to achieve personalised alignment, which could improve patient outcomes. The scientific data on this surgical philosophy is still pending with two ongoing RCTs on the subject being delayed due to the pandemic, but my gut feeling during surgery is leading me to believe that it can make a difference especially for highly active patients.

My plans for the future remain the same, to become a leading hip and knee arthroplasty and revision surgeon within my home country's healthcare environment applying various different techniques according to the patient's specific needs. Furthermore, having experienced the effect of this educational activity on my personal evolution, I am very keen to be involved in the EFORT educational activities as a trainer in the future, once I have an established a high volume practice.

Recommendations for the fellowship program in the specific host centre

In summary, I think that there are two types of fellows that can benefit from the fellowship program in AZ Turnhout. First, a Dutch speaking fellow with an active licence to practice in Belgium would have the most to gain from a 6 month visit. This fellow would be able to assume a full clinical role, progress to independent operating with regards to hip replacement surgery, gain more experience in hip preservation surgery, and be involved in worthwhile research projects. International fellows can benefit from a 4 to 8 weeks visitation according to their experience level, during which time they will be exposed to high volume AMIS hip replacement surgery, they will learn the surgical steps and important tips and tricks, and at the end of the program will feel safe to undertake this procedure in their own practice employing careful patient selection.

The main practical issue that I faced during my visit was the absence of accommodation provided by the host centre. This resulted in approximately two thirds of the grant been utilized to cover the cost of an AirBnB apartment. The hospital does rent a few



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apartments in the city for the local trainee doctors but unfortunately none of them was available at the time. I appreciate that the final arrangements for my visit were completed within 30 days prior to my arrival and as such I did not expect a vacancy. I believe that over time, as this fellowship becomes more sought after, arrangements will be made so that there is secured accommodation for the EFORT fellow. In the meantime, it is advisable that future fellows get in touch with the host centre in a timely manner to ensure a reservation if possible.

Acknowledgments

This unique educational experience would not have been made possible without the contribution of certain people, and I would like to take this opportunity to thank them individually. First and foremost, the EFFORT Fellowship Committee and especially the Educational Coordinator, Mrs Sabrina Marchal. Mrs Marchal persevered with my application despite the hurdles posed by the COVID pandemic and the absence of communication by the initially allocated host centre, she endured my occasional outbursts of frustration, and in the end she turned this opportunity on paper into reality. For all the above I am in her debt, and I hope to meet and thank her in person one day.

Next, I would like to thank the hip and knee surgeons in AZ Turnhout, Dr Pittoors, Dr VanLommel and Dr Colyn. Although not officially part of the EFORT fellowship program, they kindly accepted me in their operating theatres, shared their theoretical knowledge and surgical tips and tricks, and as a result multiplied the educational benefit of my presence there. On this note, I would like to thank the entire theatre staff of Campus St.Elizabeth and the company representatives of MEDACTA and Smith & Nephew for their hospitality and making me feel as part of the team.

Finally, I would like to say a few words about Dr Roos, my fellowship host. Dr Roos took an almost lost case and turned into a potentially life changing professional experience for me. He is a larger-than-life personality both as a surgeon and as a person. Even from our first video conference I felt very reassured that I have made the right choice. As a surgeon he has an unmatched depth of experience in hip and pelvis surgery, but at the same time he is up to date with all the current scientific evidence. This experience he gladly passes over to the newer generation of surgeons. Furthermore, he assumed responsibility as a trainer, he made sure that I had enough hands-on exposure to be able to safely perform the procedure on my own and has left open communication



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channels for any potential issues that I might face during my learning curve period back home. As a person he has welcomed me in his home, introduced me to his family, and made sure that I remained socially busy when not within the hospital grounds. His kindness and his hospitality are unmatched. I can safely say that I consider him as one of my mentors, and I hope to maintain contact on a personal level in the future.

This concludes my report of my EFORT AMIS Fellowship, I remain available for any additional information that the Committee might request from me.

Yours sincerely

Leonidas Roumeliotis MD PhD FEBOT

Orthopaedic Surgeon



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Photo Gallery



From top left to bottom right: 1) with Dr Roos and Dr Pittoors in the operating theatres hallway in Campus St.Elizabeth, 2) with Dr Roos in the operating room, 3) with Dr Colyn on evening out for dinner, 4) with Dr Roos at the Joint Preservation Meeting in Herentals.