



School of Health Sciences

Post-graduation Report Academic Year 2015-2016

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1. Master and PhD programs

The present report includes the information related to the academic year 2015-2016 (September 2015-July 2016). With respect to formal degrees, the School of Health Sciences (ECS) presently offers a Master program in Health Sciences, a PhD program in Health Sciences, a PhD program in Medicine (including a track, the MD/PhD, in which medical students start the PhD before finishing the medical degree) and an interinstitutional PhD program in Aging and Chronic Diseases

Within the PhD programs, the ECS enrolled students on the four specific programs awarded by the Portuguese Science Foundation (FCT) on the 2012 and 2013 calls. Two of the programs launched their third and one of the programs launched the second (out of four) editions in the academic year 2015-2016. Presently students can, therefore, obtain their scholarships by applying to funded FCT-PhD programs or through the general national call for individual scholarships, also by FCT. Occasionally students get scholarships from other programs, such as the Marie Curie training networks or from international funded projects.

The following are the FCT PhD programs currently ongoing:

- FCT MD/PhD program, which provides the PhD in Medicine. -Inter-institutional FCT-PhD program in Aging and Chronic Diseases, together with the Medical School of the University of Coimbra and with the Faculty of Medical Sciences, New University of Lisbon.

-FCT PhD program in Health Sciences (Applied), which awards the degree in health sciences, and is affiliated with companies and spin-offs (BIAL, BNML Enlightenment Eurotrials, iCognitus, iSurgical3D, José de Mello Saúde, Têxtil Manuel Gonçalves and Stematters).

-FCT PhD program in Advanced Therapies for Health, in collaboration with the School of Engineering of the University of Minho.

In 2016 the ECS has been awarded 8 scholarships within a competitive call by the P2020 program, 4 for the PhD program in Health Sciences and another 4 for the MD/PhD program, which represents about 0.5M euros.

In the academic year 2015-2016, 27 students enrolled our PhD programs (10 in Health Sciences, 7 in Aging and Chronic Diseases and 10 in Medicine of which 5 in the MD/PhD track), and 17 enrolled the Master program in Health Sciences (5 of which originating from foreign countries).

In the summer of 2015, 18 medical students participated in the laboratory rotations, which constitute a requirement for formal admission in the MD/PhD program. This is an indication of the engagement and interest of the medical students in research.

From September 1st 2015 until July 31st 2016, 16 PhD students, 4 in Medicine and 12 in Health Sciences, and 14 Master students have successfully defended their theses.

In July 31st 2016, 32 Master and 96 PhD [37 in Health Sciences, 7 in Aging and Chronic diseases and 53 in Medicine (of which 17 in the MD/PhD track) students were enrolled in the ECS.

A final note on the recognition of the training in Neurosciences provided by the ECS, through acceptance of the PhD program in Health Sciences to be part of the Network of European Neuroscience Schools (NENS) (<http://www.fens.org/Training/NENS/>).

2. Advanced courses

The postgraduate offer of ECS continues its mission to provide the scientific community with opportunities for career development and advanced training, by presenting courses and workshops intended for medical doctors and researchers in the biomedical sciences. One of the present challenges is to further announce the courses nationally and internationally. In 2015 a major distribution of information has been made through the Alumni University of Minho that reached over 50000 individuals (<https://alumni-apps.uminho.pt/NewsletterAlumni/webversion/eyJhIjowLCJjIjoyNzMsImx0IjowLCJsayI6MCwicwI6MCwiZCI6IjIwMTYtMDYtMDFUMDk6MzY6MDQuNzk0ODY0NVoifQ2>).

2.1. Courses offered

From September 1st 2015 until July 31st 2016, the international postgraduate program offered 45 courses and workshops (listed below), which were attended by a total of 1003 participants. Some of these courses are part of the formal Master and PhD training programs.

Following is the list of courses offered in the academic year 2015-2016:

FETAL AND NEONATAL ENDOSCOPIC SURGERY

Tiago Henriques-Coelho, Jorge Correia-Pinto
September 7-9, 2015 ::: 7th Edition

PEDIATRIC ENDOSCOPY

Henedina Antunes, Carla Rolanda, Jorge Correia-Pinto
September 10-11, 2015 ::: 5th Edition

FUNDAMENTALS IN NEUROSCIENCE

João Carlos Sousa, João Cerqueira, José Miguel Pêgo
September 14-25, 2015 ::: 8th Edition

ADVANCED ARTHROSCOPIC COURSE

Nuno Sevivas, Hélder Pereira, Vieira da Silva
September 22-23, 2015 ::: 1st Edition

PHARMACOLOGICAL BASIS OF RATIONAL THERAPEUTICS: ANTIBIOTHERAPY

Fátima Baltazar, Hélder Novais e Bastos, Carlos Capela
September 25-26, 2015 ::: 5th Edition

FUNDAMENTALS IN IMMUNOLOGY AND INFECTION

António Gil Castro, Agostinho Carvalho, Egídio Torrado
September 28 - October 9, 2015 ::: 7th Edition

THERAPEUTIC ENDOSCOPY

Carla Rolanda, Jorge Correia-Pinto
October 1-2, 2015 ::: 8th Edition

SURGICAL APPROACHES TO TUMORS AND VASCULAR LESIONS OF THE BRAIN

Nuno Sousa, Carlos Alegria
October 6-10, 2015 ::: 1st Edition

FUNDAMENTALS IN GENETICS, DEVELOPMENT AND NEOPLASIA

Adhemar Longatto, Fátima Baltazar, Sandra Costa
October 12-23, 2015 ::: 7th Edition

BILIARY LAPAROSCOPY

Jaime Vilaça, Daniela Sá Leão, Jorge Correia-Pinto
7th Edition ::: October 19-20, 2015

MEDICAL ACUPUNCTURE

António EncarnaçãO, Armando Almeida
October 24, 2015 - June 5, 2016 ::: 3rd Edition

RESEARCH METHODOLOGIES

Manuel João Costa
October 26 - November 6, 2015 ::: 7th Edition

GYNECOLOGICAL LAPAROSCOPIC SURGERY

Hélder Ferreira, João Bernardes, Jorge Correia-Pinto
October 29-31, 2015 ::: 7th Edition

RESPIRATORY DISEASES

Jaime Correia de Sousa, Ana Quelhas, Pedro Fonte
November 6 - December 19, 2015 ::: 1st Edition

BIOINFORMATICS IN HEALTH SCIENCES

Bruno M. Costa, Nuno Osório, Joana Palha
November 9-20, 2015 ::: 7th Edition

MINIMALLY INVASIVE SPINE SURGERY

Pedro Varanda, Rui Duarte, Vieira da Silva
November 13-14, 2015 ::: 4th Edition

BASIC LAPAROSCOPY FOR RESIDENTS

Paulo Mota, Vera Trocado, Jorge Correia-Pinto
November 16-17, 2015 ::: 9th Edition

ARTERIAL STIFFNESS AND EARLY VASCULAR AGING

Nuno Sousa, Pedro Cunha, Jorge Cotter
November 18-19, 2015 ::: 4th Edition

MICROSURGICAL ANASTOMOSIS

Nuno Sevivas, Pedro Leão, Vieira da Silva
November 19-21, 2015 ::: 7th Edition

WOUNDS AND MINOR SURGERY

Pedro Leão, André Goulart, Hugo Rios
November 28, 2015 ::: 4th Edition

ORTHOPEDIC TRAUMA: HANDS-ON / ADULTS AND PEDIATRICS

Paulo Cibrão Coutinho, Vieira da Silva, Jorge Correia Pinto
December 4-5, 2015 ::: 1st Edition

SONOANATOMY APPLIED TO PERIPHERAL NERVE BLOCK

Duarte Machado, José Miguel Pêgo
December 3-5, 2015 ::: 7th Edition

FOOT AND ANKLE SPORTS MEDICINE

Hélder Pereira, Bruno Pereira, Manuel Vieira da Silva
December 11-12, 2015 ::: 1st Edition

BEING A RESEARCH INNOVATOR

Bruno M. Costa, Joana Palha
December 14-18, 2015 ::: 2nd Edition

BIostatISTICS IN HEALTH SCIENCES

Patrício Costa
January 11-22, 2016 ::: 6th Edition

PREMIUM CATARACT SURGERY

Fernando Silva
January 16, 2016 ::: 6th Edition

MASSIVE ROTATOR CUFF TEAR: FROM BASIC SCIENCE TO CLINICS

Nuno Sevivas, António Salgado, Vieira da Silva
January 22-23, 2016 ::: 3rd Edition

LABORATORY ANIMAL SCIENCE

Magda Castelhana-Carlos, Margarida Correia-Neves
February 1-12, 2016 ::: 11th Edition

MENTAL HEALTH

Pedro Fonte, Pedro Morgado
February 5-27, 2016 ::: 2nd Edition

SONOANATOMY APPLIED TO PERIPHERAL NERVE BLOCK

Duarte Machado, José Miguel Pêgo
February 25-27, 2016 ::: 8th Edition

STEM CELLS GET PRACTICAL

António Salgado, Luísa Pinto
February 29 - March 10, 2016 ::: 6th Edition

INTRODUCTION TO QUALITATIVE METHODOLOGIES AND DATA ANALYSIS

Manuel João Costa
March 11, 2016 ::: 1st Edition

INTRODUCTION TO COMPUTER-BASED QUALITATIVE DATA ANALYSIS

Manuel João Costa
March 12, 2016 ::: 1st Edition

CELL FUNCTIONAL AND PHENOTYPICAL ANALYSIS

Belém Sampaio-Marques, Cláudia Nóbrega
March 29 - April 8, 2016 ::: 1st Edition

BASIC LAPAROSCOPY FOR RESIDENTS

Paulo Mota, Vera Trocado, Jorge Correia-Pinto
April 1-2, 2016 ::: 10th Edition

VIDEO-ASSISTED EXTRAPERITONEAL RADICAL PROSTATECTOMY

Estêvão Lima, Jorge Correia-Pinto
April 14, 2016 ::: 5th Edition

INNOVATIONS IN MINIMALLY INVASIVE UROLOGIC SURGERY

Estêvão Lima, Riccardo Autorino, Jorge Correia-Pinto
April 15-16, 2016 ::: 1st Edition

EPIGENETICS - FROM MECHANISMS TO DISEASE

Joana Marques, Luísa Pinto
April 18-22, 2016 ::: 1st Edition

ADVANCED THERAPEUTIC ENDOSCOPY - EMR & ESD

Carla Rolanda, Arjun Koch, Jorge Correia-Pinto
April 28-29, 2016 ::: 6th Edition

SHOULDER AND ELBOW INSTABILITY

Nuno Sevivas, Nuno Ferreira, Vieira da Silva
May 13, 2016 ::: 1st Edition

RESEARCH METHODOLOGIES FOR MEDICAL DOCTORS

Jaime Correia de Sousa, Luís Figueiredo
May 13 - June 18, 2016 ::: 1st Edition

INTRODUCTION TO SYSTEMATIC REVIEW AND META-ANALYSIS

Patrício Costa, Pedro Teixeira, Pedro Moreira
May 18-19, 2016 ::: 1st Edition

INTRODUCTION TO STRUCTURAL EQUATION MODELING WITH AMOS

Patrício Costa
June 8-9, 2016 ::: 3rd Edition

FUNDAMENTALS IN ARTHROSCOPY

Rui Duarte, Nuno Ferreira, Vieira da Silva
June 16-17, 2016 ::: 7th Edition

SULCI, GYRI, VENTRICLES AND DISSECTING FIBERS

Nuno Sousa, Carlos Alegria
June 27 - July 1, 2016 ::: 14th Edition

Detailed information on the courses and workshops is available at www.ecsaude.uminho.pt/en/post-graduation/courses.

2.2. Participants

Figure 1 presents the professional background distribution of the 1003 participants. The vast majority of the participants continue to be medical doctors (80%) which clearly is within the mission of the ECS. The participation of medical doctors reflects the commitment of ECS in continuous medical education, which is being well received by the medical community, not only in the country but also abroad.

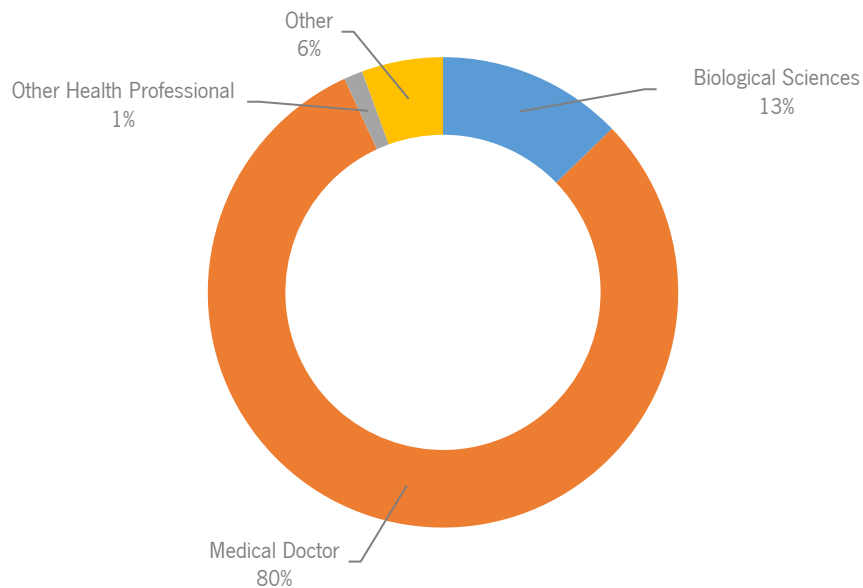


Figure 1 - Background distribution of the participants (“Other Health Professionals” include participants having as background pharmacy, psychology or clinical analysis and public health; “Others” include participants having as background polymer, biotechnological, biological, food technology or chemical engineering).

The participants belong to different national and international institutions as presented in Figure 2.

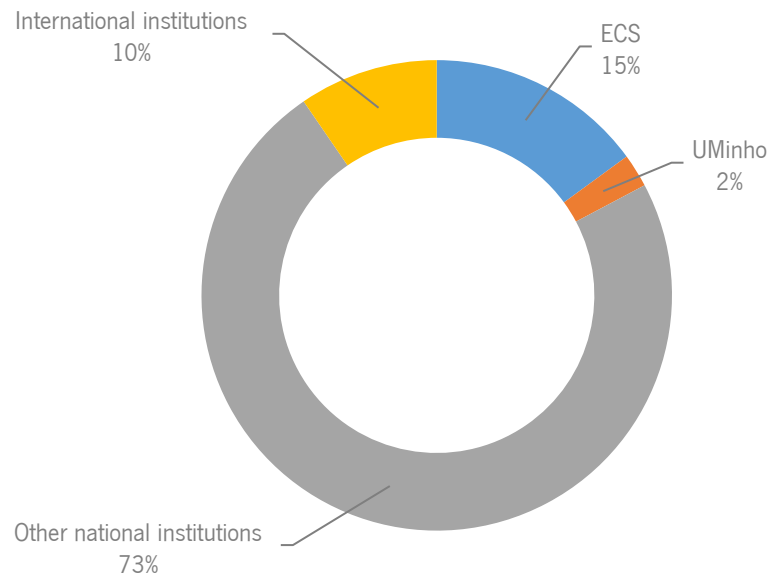


Figure 2 – Participants affiliation.

The great majority of the participants (83%) belong to Institutions other than the University of Minho, of which 10% originate from foreign institutions (Figure 3). This is a fact to mention, as a continued trend of the interest and recognition of the external national and international communities on our training activities. The institutions from where the foreign participants originate are listed in Figure 3.

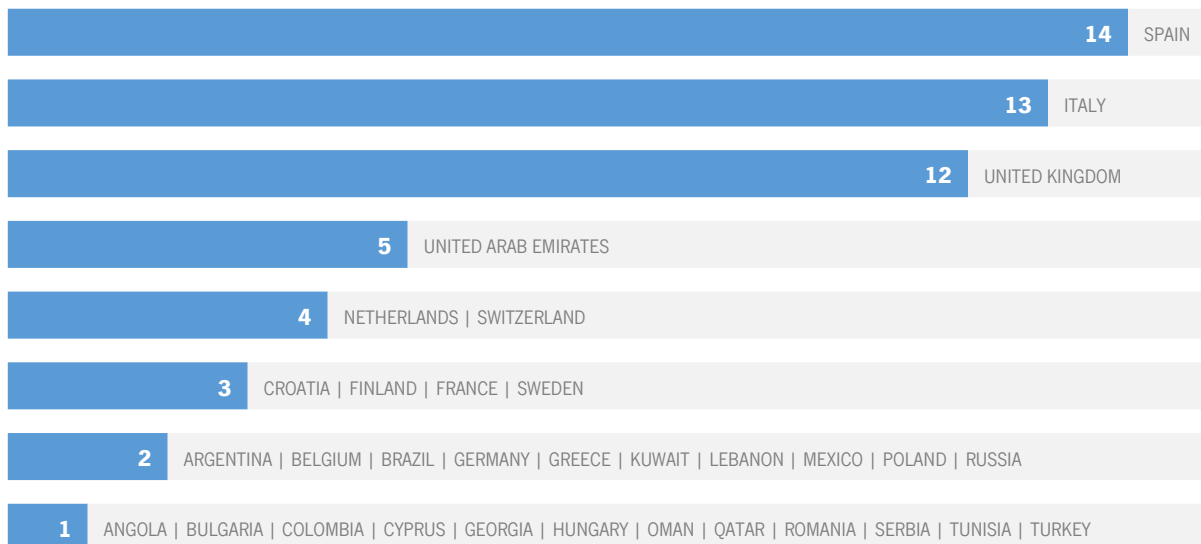


Figure 3 – Distribution of the foreign participants by country.

2.3. Global assessment

A questionnaire was filled by 831 out of the 1003 total participants, to evaluate several aspects of each course. The overall evaluation provided the results presented in Figure 4: Excellent (47%), Very good (40%), Good (9%), Sufficient (3%), Weak/Poor (1%).

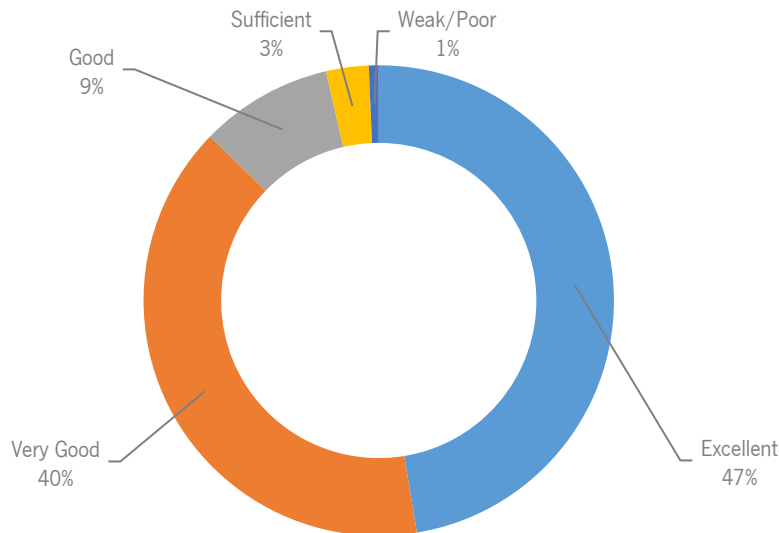


Figure 4 – Evaluation results.

3. Courses for residents

The ECS and in collaboration with the Alumni ECS have also been offering courses addressing specialized training of competences residents from various medical specialities must acquire for clinical practice. For the first time these activities are included in the post-graduation report.

3.1. InAnesthesia

"InAnesthesia" is an intensive training program, nationwide, addressed to all newly admitted residents in anesthesiology. The course is divided in two modules. The first, "InAnesthesia - Introduction to Clinical Anesthesiology" occurs in the first week of the internship work. It consists of five intense days focused on the theoretical basis for clinical practice of Anesthesiology, and on training of specific skills in high-fidelity simulators (monitoring, arterial and venous catheterization, airway manipulation, induction general anesthesia and regional anesthesia). Participants also contact with simulated patients to learn the clinical interview technique and how to handle the patient who will be anesthetized. The second, "InAnesthesia - Advanced Simulation" is a 3-day program, aimed at all Anaesthesiology residents, regardless of the degree of training, where they are exposed to complex situations based on real cases and they are trained in

various techniques and team management as well as communication issues in crisis situations.

In 2015-2016 the InAnesthesia course had its 6th edition, with 63 participants. It has reached a national level in the last edition, being recognized by the Portuguese Medical Association (Ordem dos Médicos), the Portuguese Society of Anaesthesiologists and the European Society of Anaesthesiologists. 98% of the participants rated it as very good (49%) or excellent (49%).

3.2. iPsychiatry

iPsychiatry – Introduction to Psychiatry” is an advanced course addressed for residents beginning their specialization in Psychiatry. The innovative program was designed combining clinical seminars in areas like psychopathology, psychotherapy and psychopharmacology, with practical sessions with standardized patients in our clinical skills laboratory in which the residents have the opportunity to practice and develop skills related with communication, clinical interview and management of psychiatric emergencies. In 2015-2016 the course had its 4th edition, with the participation of 40 residents, which corresponds to 73% of the total national psychiatry residents. Both the clinical seminars and the practical training were highly rated by the participants (clinical seminars: 5% very good, 95% excellent; practical sessions: 2,5% very good, 97,5% excellent).

3.3. iNeurology

iNeurology is an advanced course addressed for first year residents of Neurology in Portugal. The program of this course consists mainly of hands-on workshops and skills labs, complemented with short introductory seminars and a final skills based assessment that is used for constructive feedback and as a stimulus to learning. Importantly, the focus is on competency acquisition and training, with the students rotating in small groups (3 to 4) through the different stations and scenarios, set up with the use of standardized patients and state of the art mannequins and high-fidelity simulators (for coma, seizures and others .. In 2015-2016 the course had its 4th edition with 19 participants from the entire country (from Faro to Viana do Castelo, including the major centres of Lisboa, Coimbra and Porto), corresponding to 80% of the first year Neurology residents in Portugal in 2016.

3.4. TIMI-Invasive Medical Techniques in Internal Medicine

TIMI, “Técnicas Invasivas em Medicina Interna (Invasive Medical Techniques in Internal Medicine) – is a postgraduate course for either residents beginning their specialization or specialists in Internal Medicine focused on the training of core invasive techniques for diagnostic, therapeutic and monitoring purposes. The course is based on the acquisition of technical procedures on the placement of central venous and arterial lines (with and without ultrasound), pleural drains, managing difficult intubation, lumbar puncture, using modern mannequin simulators and animal models. In 2015-2016 the course had its 2nd edition, with 69 participants (12 first year residents, 30 second year, 15 third year, 5 fourth year, 7 fifth year), with all evaluating the course as very good (42,9%) or excellent 42,9%).

4. Courses on clinical communication skills

A novel initiative has been launched in collaboration with the Alumni ECS, specifically addressing communication skills. In the present academic year 13 of these short courses (10-15 h) were offered, of which 4 targeted medical doctors, 4 addressed nurses and 4 focused on pharmacists. A total of 260 professionals participated in the courses which were rated as excellent (96%), very good (2%) and good (2%). Of notice, in these courses participants were recruited through the sponsors.

5. Sponsors

To run the international postgraduate programme, we obtained financial support from several companies: Bene Farmacêutica, Bial, Codman Neuro, DePuy Synthes, Ethicon, Gilead Sciences, Karl Storz, Leica, Medtronic and Teva. We are grateful to our sponsors for the helpful contribution for this international program of courses and workshops in biomedical sciences.