[short] curriculum vitae

Carla Sá Couto | 2021

Name Carla Dolores Rodrigues Carvalho de Sá Couto

Date of birth 30/10/1977

Nationality Portuguese

Contacts (+351) 220 426 940;
csacouto@med.up.pt

Summary

Carla Sá Couto is a clinical simulation educator and researcher with a background in Biomedical Engineering. She is the director of the Biomedical Simulation Center of the Faculty of Medicine of Porto (CSB-FMUP), and senior researcher at the Center for Health Technology and Services Research (CINTESIS). Together with her research and management activities, she is an affiliated professor at CSB-FMUP, being responsible for several simulation-based pre- and post-graduation courses. She is the Portuguese representative of the EuSim Group and coordinator of the Portuguese EuSim simulation instructor course.

She is a founding member and former executive secretary of the board of SPSim - Portuguese Society for Simulation Applied to Health Sciences. Since 2015, she is a member of SESAM (Society in Europe for Simulation Applied to Medicine) Scientific Committee. In 2017, she was appointed chair of SESAM Scientific committee (5-years term), being responsible for re-structuring the committee and provide scientific standards for the annual congress.

She is co-inventor of a high-fidelity obstetric simulator, whose technology was transferred to one of the leading international medical simulators company (Fidelis Lucina, CAE Healthcare). She has coordinated the development of controlled-cost technological applications for biomedical simulation. She has supervised 15 PhD, MSc students and trainees. She has published 1 book, 3 book chapters, 20 publications in international journals with peer review, 48 communications in peer-reviewed proceedings, and 44 oral presentations at scientific meetings, with 19 of those as invited lectures.

In, 2015, she received an Appreciation Award from the National Ministry of Defense for the work on the evaluation and reorganization of the Biomedical Simulation Center of the Portuguese Armed Forces. In 2016, she received SESAM distinction "In recognition of your significant contribution to SESAM missions". In 2017, she was awarded with a Honourable Mention from University of Porto for the pedagogical innovation project "Training communication skills with pediatric simulated scenarios". In 2019, she was awarded by MED.IDEAS (NORTEXCEL - Norte2020) for the project "CPR.PT-CardioPulmonary Resuscitation Personal Trainer". Her current research interests are the development of methodologies and tools applied to biomedical simulation, faculty development strategies, and the impact of non-technical skills training on healthcare provider's attitudes/behaviours.

Work Experience

Period September 2014 - present

Function **Director**

Institution Biomedical Simulation Center of FMUP

Faculty of Medicine of University of Porto

Activities

- Integration of biomedical simulation in undergraduate studies of FMUP;
- Development and implementation of post-graduated and continuous education simulation based courses, for healthcare professionals;
- Research and development of methods and tools for simulation based medical education;
- Organization of national and international Meetings/Seminar/Workshops/Courses in the scope of biomedical simulation;
- Promotion of programs for inter-institutional cooperation;
- Faculty development training in biomedical simulation;
- Collaboration in the implementation of pre- and post-graduate training of clinical communication skills.

Period September 2013 - present

Functions **Affiliated Professor, Assistant Professor, Faculty, Course coordinator**

Institution Faculty of Medicine of University of Porto (FMUP)

Activities Pre-graduated curricular units (Master in Medicine):

- Medical Humanities: Faculty, 1st year
- Biomedical Modeling and Simulation – Applications to Hemodynamics: Regent, 2nd and 3rd year
- Team Communication: Faculty, 2nd and 3rd year
- Crisis Resource Management: Regent, 5th year
- Clinical Communication in Pediatrics: Faculty, 5th year

Post-graduate courses:

- Basic Course of Instructors in Clinical Simulation: Coordinator
- Debriefing Practical Course: Coordinator
- Non-technical Skills for Anesthesiologists: Coordinator
- Delivering Bad-News: Faculty
- Medical Emergencies in the Dental Office: Faculty
- Social Medicine: Faculty
- Faculty Development Programme in Health Sciences Higher Education: Faculty

Period January 2010 - present

Function **Senior researcher**

Institution Center for Research in Health Technologies and Services (CINTESIS)

Activities Main research projects:

- SIMPROVE | Grant ID: NORTE-01-0247-FEDER-017566 | Budget: EUR 1.090.783,31
- CPR Personal Trainer

Period	September 2010 - December 2019
Function	**Co-founder and President of the board** (volunteer work)
Institution	Debra Portugal – Portuguese Association of Epidermolysis Bullosa (EB)
Activities	Management and participation of all Debra Portugal activities, namely: ▪ Implementation and maintenance of a national register on EB; ▪ Create activities and strategies for public awareness on EB; ▪ Provide standards for patient care and best practices in treatment of EB patients; ▪ Provide patient access to clinical counselling and treatment; ▪ Direct patients to specialized consultations on EB; ▪ Raise funds for treatment and research on EB; Most relevant projects: ▪ EB National registry – Study of EB incidence and prevalence ▪ EB Care Project – Provide EB patients specialized integrated care and act as intermediates between patients and health professionals who are not familiarized with EB. ▪ CARE (Pediatric dermatology consultation) – Provide EB children regular appointments with healthcare professionais specialized in EB.

Period	January 2010 - September 2014
Function	**Coordinator**
Institution	Biomedical Simulation Center of FMUP
Activities	▪ Technical – scientific coordination ▪ Organization of Meetings/Seminar/Workshops in Biomedical Simulation;

Period	December 2000 - December 2009
Function	**Research Assistant, Research Fellow, PhD Student**
Institution	Institute for Biomedical Engineering (INEB)
Activities	Research projects: ▪ Educational simulation of materno-fetal hemodynamics ▪ Screen-based model-driven simulator of selected neonatal physiology ▪ Documentation and development of physiologic and pharmacologic models for the Human Patient Simulator (HPSTM) ▪ Simulators for perinatal acute care training: Simulation engine for an Educational neonatal simulator (ENS)

Period	March 2005 – September 2005
Function	**Simulation Technician**
Institution	Biomedical Simulation Center of FMUP
Activities	Technical coordination

Period	May 2000 – November 2000
Function	**Research Fellow**
Institution	Department of Applied Mathematics, Faculty of Sciences of University of Porto
Activities	Research project: Model for the interaction of neuromuscular blockade and reversal

Academic degrees

Year	2009
Academic degree	PhD in Biomedical Engineering
Institution	Faculty of Engineering of the University of Porto
Thesis	*Models for educational simulation of cardiovascular pathophysiology.*

Year	2002
Academic degree	Master Degree in Biomedical Engineering
Institution	Faculty of Engineering of the University of Porto
Thesis	*A model for educational simulation of the neonatal cardiovascular physiology.*

Year	2000
Academic degree	Bachelor in Mathematics Applied to Technology
Institution	Faculty of Sciences of the University of Porto
Thesis	*Modeling the interaction between the neuromuscular blocking agents and the reversal agents for educational simulation.*

Additional Training

Year	2020
Course name	Red-Cross First-Responder Course
Location	Portuguese Red Cross, Porto, Portugal

Year	2012
Course name	Advanced EUSIM Simulation Instructor Course
Location	Clinical Simulation Centre, Barts Health NHS Trust, London, UK

Year	2011
Course name	Training and working sessions of TAG group - Together Against Genodermatoses
Location	Necker – Enfants Malades Hospital, Paris, France

Year	2010
Course name	Summer School - *Biostatistics – level II and III*
Location	Faculdade de Medicina da Universidade do Porto, Portugal

Peer reviewed publications

Mendonça JM, Cruz N, Vasconcelos D, ***Sá-Couto C****, Moreira AP, Costa P, et al. Pneuma: entrepreneurial science in the fight against the COVID-19 pandemic - a tale of industrialisation and international cooperation. Journal of Innovation Management; 2021 Feb 13;8(4):3–25.*

Sa-Couto C*, Nicolau A. How to use telesimulation to reduce COVID-19 training challenges: A recipe with free online tools and a bit of imagination. MedEdPublish. Association for Medical Education in Europe (AMEE); 2020;9(1).*

Santos-Sousa I, ***Sa-Couto C*** *, Vieira-Marques P. Gamification in CPR - a review of game dynamics and mechanics. 14th Iberian Conference on Information Systems and Technologies (CISTI); 2019.*

Santos-Sousa I, ***Sa-Couto C*** *, Vieira-Marques P. Gamifying autonomous CPR training. 14th Iberian Conference on Information Systems and Technologies (CISTI); 2019.*

Sá-Couto CD*, Nicolau A. General public knowledge towards Basic Life Support: a pilot study with a Portuguese sample. Acta Med Port. 2019 Feb 28;32(2):111.*

Sá-Couto CD, Diana Almeida, Abel Nicolau, Ana Margarida Ferreira, Pedro Vieira-Marques. *Evaluation of skills acquisition using a new low-cost tool for CPR self-training.* Porto Biomed J 2018: 3(1); e8.

Sá-Couto CD, Vieira-Marques P, Nicolau A, Almeida D, Ferreira A. CPR Personal Trainer: A low-cost tool for CPR self-training. In *Best abstracts of Annual Meeting of the Society in Europe for Simulation Applied to Medicine*. Advances in Simulation; 2017; 2(26).

Loureiro E, **Sá Couto CD**, Henriques-Coelho. *Treino de competências de comunicação clínica em cenários pediátricos simulados*. Revista Referência. Supl12 - Série IV, p. 55.

Sá-Couto C, Patrão L, Maio-Matos F, Pêgo JM: *Biomedical Simulation: Evolution, Concepts, Challenges and Future Trends*. Acta Med Port 2016: 29(12); 860-868.

Bernardes J, **Sá Couto CD**: *Academic or non-academic centers for simulation applied to medical education*. Arq Med; 120-1, 2011.

Sá Couto C. *Modelação e simulação das transições hemodinâmicas durante o nascimento* [invited paper]. Salud(i)Ciencia 2010:17(8);743-744.

Sá Couto CD, Andriessen P, van Meurs WL, Sá Couto PM, Ayres-de-Campos D: *A model for educational simulation of hemodynamic transitions at birth*, Pediatr Res 2010; 67(2): 158-165.

Zijlmans M, **Sá Couto CD**, van Meurs WL, Goodwin JA, Andriessen P. *Corrected and Improved Model for Educational Simulation of Neonatal Cardiovascular Pathophysiology*. Simulation in Healthcare. 2009:4;49-53.

Sá Couto CD, van Meurs WL, Goodwin JA, Andriessen P. *A Model for Educational Simulation of Neonatal Cardiovascular Pathophysiology*. Simulation in Healthcare 2006:1;4-9.

Sá Couto CD, Andriessen P, van Meurs WL, Ayres-de-Campos D, Goodwin JA. Educational Simulation of Hemodynamic Transitions During and Shortly after Birth [abstract]. Simulation in Healthcare. 2006. p. 187.

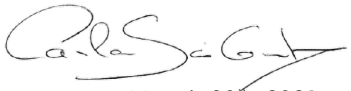
van Meurs WL, Neto P, Azevedo H, **Sá Couto CD**. "Stan Vintage": A Baseline Patient for the Human Patient Simulator with Hemodynamic Parameters from the Scientific Literature [abstract]. Simulation in Healthcare. 2006. p. 183.

Guimarães H, Aparício J, Pereira A, **Sá Couto CD**, Santos L. Undergraduate Medical Training of Neonatal Resuscitation: Scenario Development and Educational Impact Study [abstract]. Simulation in Healthcare. 2006. p. 188.

Goodwin JA, van Meurs WL, **Sá Couto CD**, Beneken JE, Graves SA. A *Model for Educational Simulation of Infant Cardiovascular Physiology*. Anaesthesia and Analgesia 2004:99;1655-1664.

van Meurs WL, Sá Couto PM, **Sá Couto CD**, Bernardes J, Ayres de Campos D. *Development of foetal and neonatal simulators at the University of Porto* [invited paper]. Medical Education 2003:37;29-33.

Sá Couto CD, van Meurs WL, Goodwin JA. *Graphical and mathematical representation of congenital heart disease* [extended abstract]. European Journal of Anaesthesiology 2003:20;841.



March 30th, 2021