Eduardo Antonio Cisternas Jiménez

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Education

Doctor of Philosophy: Medical Physics.
Duke University, School of Medicine, USA.
Duration of studies: August 2018 - present.

Master of Science: Clinical Medical Physics.
Heidelberg University, Medical Faculty, Germany.
Duration of studies: March 2013 - August 2015.

Master of Science: Medical Physics
Pontifical Catholic University of Chile, Faculty of Physics.
Duration of studies: March 2013 - August 2015.
Graduated with maximum distinction.

Chilean Professional Licensure (Title): Medical Physicist
Pontifical Catholic University of Chile, Faculty of Physics.
Duration of studies: March 2013 - August 2015.
Graduated with maximum distinction.

Bachelor degree of science (Licenciate): Physics.
Pontifical Catholic University of Chile, Faculty of Physics.
Duration of studies: March 2010 - December 2012.
Graduated with maximum distinction.

Bachelor degree of Science (Licenciate): Natural Sciences and Mathematics.
Major in Economics, Minor: Fundamental Physics
Pontifical Catholic University of Chile.
Duration of studies: March 2009 - December 2012.

Work Experience

LATAM Airlines
Senior Business Data Analyst
Duration: October 2017 - August 2018.

Universidad Mayor, Faculty of Engineer
Part time Lecturer
Courses: Renewable energy, Experimental methods, Heat transfer.
Duration: March 2017 - July 2017.

ECONlink Consulting Firm
Consultant
Data analyst and developer of mathematical optimization models in economic studies for fishery industry sector.
Duration: August 2016 - December 2016.

Pontifical Catholic University of Chile, Faculty of Physics
Part time Lecturer
Course: Physics for scientists.
Duration: August 2016 - December 2016.

DUOC UC community College
Full time Lecturer
Courses: Mathematics and Physics.
Duration: March 2016 - July 2016.

Pontifical Catholic University of Chile

Part time Lecturer

Course: General Physics, The aim of this course is leveling freshman students to acquire the basic knowledge needed to succeed Physics courses at an undergraduate level.
Duration: January 2016.

Grants and Awards

Fulbright scholarship

The Fulbright Scholarship, is a program of competitive, merit-based grants for international educational exchange. Under the Fulbright Program, competitively selected student may become eligible for scholarships to study, conduct research, or exercise their talents abroad. The program was established to increase mutual understanding between the people of the United States and other countries through the exchange of persons, knowledge, and skills.
Duration: August 2018 - present.

Best presentation by the International Organization of Medical Physics (IOMP)

Prize at the best presentation by the International Organization of Medical Physics (IOMP): "matRad: a multimodality open source treatment planning toolkit". World Congress in Medical Physics and Biomedical Engineering 2015 (Toronto, Canada).

Prize J.R. Cunningham for young investigators

Third place over 1600 papers, to the best presentation by the International Organization of Medical Physics (IOMP) and the price Jack Cunningham by the Canadian Organization of Medical Physics (COMP/OCMP) by the work: "matRad: a multimodality open source tratment planning toolkit". World Congress in Medical Physics and Biomedical Engineering 2015 (Toronto, Canada)
`https://goo.gl/6kZmhh`

Baden-Württemberg scholarship

The Baden-Württemberg foundation.
Grant funding for international exchange program for qualified non-German students. Provides specific support to take part in Department of Medical Physics in Radiation Oncology at the German Cancer Research Center (DKFZ) for Master's thesis research.
Duration: August 2014 - February 2015.

Master Clinical Medical Physics Scholarship

DAAD - Heidelberg Universität
Tuition fee of the third semester (summer term 2014) on the Master program "Clinical Medical Physics", offered by the University of Heidelberg and the Pontifical Catholic University of Chile. The scholarship was founded by the Center of Excellence in Research and Teaching financed by the German Academic Exchange Service (DAAD - Deutscher Akademischer Austauschdienst) and awarded to the two top students of the year.
Duration: March 2014 - July 2014.

Faculty of Physics scholarship

Pontifical Catholic University of Chile.
Tuition fee on the Master program "Medical Physics", at the Pontificia Universidad Católica de Chile. The scholarship was financed by "Vicerrectoría Académica UC" and awarded to promising students.
Duration: March 2013 - December 2014.

San Andrés scholarship

Pontifical Catholic University of Chile.
The Interdisciplinary program at the Pontificia Universidad Católica de Chile has created this scholarship with the purpose of supporting the graduates who choose to carry out postgraduate studies in the PUC. The scholarship consists of partial payment of the postgraduate fee. Awarded to the four top students.
Duration: March 2013 - December 2014.

Double Major scholarship

Pontifical Catholic University of Chile.

Tuition fee for B.Sc. in Physics. This scholarship is awarded to students with academic merit who want to study two majors simultaneously: Physics & Economics.
Duration: March 2010 - December 2012.

Meetings and Workshops

Finalist at the Falling Wall Chile 22th September, 2016.
Valparaíso Cultural Center, Valparaíso, Chile.
Outstanding thinkers and innovators from all disciplines are asked to apply for the Falling Walls Lab in Chile. The Falling Walls Lab Chile is hosted by the Fundación Ciencia Joven in collaboration with the German Academic Exchange Service and supported by the Federal Foreign Office of Germany. Participants will pitch their ideas in front of a distinguished jury in only 3 minutes each. The challenge of the format lies in its brevity.
Participation as speaker.

5th Summer School, Medical Physics in Radiotherapy, 5th - 14th November, 2015.
The Heidelberg Center for Latin America and the Pontifical Catholic University of Chile.
Three-day workshop on Brachytherapy and one-day clinical workshop at Alemana Clinic, Santiago, Chile.
Participation as attendant.

World Congress in Medical Physics and Biomedical Engineering, 7th - 12th June, 2015.
Metro Toronto Convention Center, South Building, Toronto, Ontario, Canada.
Title: matRad - a multimodality open source 3D treatment planning toolkit.
Participation as speaker.

Workshop on the Physics of novel radiotherapy techniques 24th - 25th June.
Pontificia Universidad Católica de Chile and Heidelberg Center for Latin America.
Participation as an attendant.

XIV Chilean national congress of radiation oncology 26th - 29th March, 2014.
National Park Huilo Huilo.
Title: Monte Carlo Simulation: X-ray tube for cone beam computed tomography.
Participation as poster.

Whorkshop: The Physics of advanced radiotherapy techniques: the role of medical images, 28th - 31th January, 2014.
Title: Monte Carlo Simulation: X-ray tube for cone beam computed tomography.
Participation as poster.
Pontifical Catholic University of Chile

VI Congress of Latin American Association of Medical Physics (ALFIM), 24th - 27th August, 2013.
RIU hotel, Guanacaste, Costa Rica.
Participation as speaker.
Title: Monte Carlo Simulation: X-ray tube for cone beam computed tomography.

Summer School in Social Complexity, January 2012.
Institute of Complex Systems, Valparaíso, Chile.
Participation as an attendant.

Research Experience

Master's Thesis, August 2014 - February 2015
Department of Medical Physics in Radiation Oncology, German Cancer Research Center (DKFZ), Heidelberg, Germany.
Investigation work requiered to obtain the Master in Science degree.
Title: Development of a multimodality open source treatment planning system.
Supervisors: PhD. Mark Bangert, group leader optimization algorithms at German Cancer Research Center (DKFZ) and PhD. Edgardo Dörner, assistant professor at Faculty of Physics, Pontifical Catholic University of Chile.

Bachelor's Thesis, June 2012 - January 2013
Department of Physics, Pontifical Catholic University of Chile, Santiago, Chile.
Investigation work requiered to obtain the bachelor's degree.
Title: Monte Carlo simulation of an x-ray volume imaging cone beam CT on Elekta XVI
Supervisor: PhD. Betriz Sanchez Nieto, associate professor at Faculty of Physics, Pontifical Catholic University of Chile.

Summer Work, January 2007
Department of Astronomy, Pontifical Catholic University of Chile, Santiago, Chile.
Investigation summer work for undergraduate students.
Title: Getting observable parameters of RRLyrae stars, QUEST project
Supervisor: PhD. Marcio Catelan, full professor at Pontifical Catholic University of Chile.

Publication

Hans-Peter Wieser, **Eduardo Cisternas**, Niklas Wahl, Silke Ulrich, Alexander Stadler, Henning Mescher, Lucas-Raphael Müller, Thomas Klinge, Hubert Gabrys, Lucas Burigo, Andrea Mairani, Swantje Ecker, Benjamin Ackermann, Malte Ellerbrock, Katia Parodi, Oliver Jäkel and Mark Bangert. Development of the open-source dose calculation and optimization toolkit matRad. Medical Physics, 2017 Apr 1. DOI:10.1002/mp.12251.

E. Cisternas Jiménez, B. Sánchez Nieto, E. Dörner Yaksic. Simulación Monte Carlo de un Sistema de Rayos-X para tomografía computarizada de haces cónicos (CBCT). Latin American Journal of Medical Physics, [S.l.], v. 2, n. 2, p. 05, apr. 2016. ISSN 2413-9904.
http://revistaalfim.org/index.php/revistaalfim/article/view/43

E. Cisternas, A. Mairani, P. Ziegenhein, O Jäkel, and M. Bangert. matRad - a multi-modality open source a 3D treatment planning toolkit. pages 1608-1611, 2015. Proceedings of the IUPESM World Congress on Medical Physics and Biomedical Engineering in Toronto. DOI:10.1007/978-3-319-19387-8_391

On press

Software helps to calculate dose on radiotherapy treatments
El Mercurio newspapper, 28th November 2018.

Two Chilean rewarded for technologies to fight against cancer
El Mercurio newspapper, 3th July 2015. `http://goo.gl/P5tikx`

Teaching Assistant

At the Pontifical Catholic University of Chile

- **2015-2, 2015-1, 2012-2** Thermodynamics (Laboratory assistant).
- **2015-2, 2013-1** Electricity and Magnetism for Engineering (Laboratory assistant).
- **2015-2, 2011-2** Physics I (Kinematics and Dynamics) (Laboratory assistant).
- **2015-1** Monte Carlo techniques for radiotherapy (Teacher Assistant).
- **2015-1** Physics for Medicine (Teacher Assistant).
- **2015-1** Thermodynamics (Teacher Assistant).
- **2014-1, 2013-2** Leveling in Physics for Engineers (Teaching assistant).
- **2014-1, 2012-1, 2008-2, 2007-2** Physics for scientists (Laboratory assistant).
- **2014-1, 2013-1** Calculus I for economists (Teaching assistant).
- **2013-2** Static and dynamic (Laboratory assistant).
- **2013-1, 2012-1** Algebra (Teaching assistant).
- **2012-2, 2010-1** Introduction to Calculus (Teaching assistant).
- **2011-2, 2011-1** Algebra and Introduction to Calculus (Teaching assistant).
- **2011-Summer term** Calculus I (Teaching assistant).
- **2010-2** Algebra (Teaching assistant).
- **2010-2** Physics for scientists (Teaching assistant).
- **2010-1** Physics II (Electricity and Magnetism) (Laboratory assistant).

At the Universidad Adolfo Ibáñez

- **2013-1** Classical mechanics (Laboratory assistant).
- **2012-2** Electromagnetism (Laboratory assistant).

At the Universidad de Los Lagos

- **2009-1, 2008-2, 2008-1, 2007-1, 2006-2** Calculus I (Teaching assistant).
- **2009-1, 2008-2** Algebra (Teaching assistant).
- **2009-1, 2007-1** Calculus II (Teaching assistant).
- **2008-1** Geometry (Teaching assistant).
- **2007-1** Linear Algebra (Teaching assistant).

Languages

Spanish: Native speaker.

Ensligh Advance. TOEFL test: Score: 100/120. 3th December, 2017.

Computer skills

Operating Systems
Unix (Linux), Windows, Mac OSX.

Scientific Software
Maple, Matlab, Mathematica, Stata, Origin, Qtiplot, Beam NRC.

Computer Administration and Productivity Software
LaTeX, Office, Joomla, Wordpress, Apache server, MySQL, SAP, Elasticsearch, Kibana.

Scripting/Programming
C, C++, Java, Python, Shell, Html.

Volunteer

Teacher March - December 2006
Volunteered at *Belén UC Preuniversitario*: Lecturer to prepare entrance exams to chilean's Universities.
Duration: March - December 2006.

References

PhD. Rafael Benguria, full professor at Faculty of Physics, Pontifical Catholic University of Chile
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Phone number: +56-2-23547072
Webpage: `http://www.fis.puc.cl/~rbenguri/`

PhD. Mark Bangert, group leader of Optimization algorithms in the division of Medical Physics in Radiation Oncology at the German Cancer Research Center DKFZ in Heidelberg.
Address: Im Neuenheimer Feld 280, 69120 Heidelberg, Germany.
E-Mail: m.bangert@dkfz.de
Phone number: + 49 6221 42 2418
Webpage: `https://www.dkfz.de/en/medphys/optimization_algorithms/optimization_algorithms.html`

PhD. Alejandro Cabrera, full professor at Faculty of Physics, Pontifical Catholic University of Chile
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Webpage: `http://www.fis.puc.cl/~acabrera/doku.php`

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PhD. Fang-Fang Yin, Professor in Radiation Oncology at Duke University, Professor of Medical Physics at Duke Kunshan University, Member of the Duke Cancer Institute.
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