

PERSONAL DATA

Date of birth: February 21, 1961
 Place of birth: Santiago, Chile
 Marital status: Married, 2 children
 Position: Full Professor, Physics Institute, U. Diego Portales
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 Academic Degree: Ph.D in Science (Physics), P. Universidad Católica de Chile (1993)
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RELEVANT
NATIONAL
POSITIONS

Vice president of Research and Innovation, U. Diego Portales (2023-2024).
 Director of the Scientific and Technological Research Unit, U. de Santiago de Chile (2018-2020, 2006-2009).
 President of the FONDECYT Council (2016-2017). FONDECYT is the main science funding institution in Chile.
 Member of the FONDECYT Higher Science Council (2015-2016).
 Member of the Presidential Commission for Science Development in Chile (2015).
 Member of the National Accreditation Commission for Higher Education, elected by the Council of Presidents of Chilean Universities (2011-2018).

RELEVANT
NATIONAL
DISTINCTIONS

2^o Vice president of the Chilean Academy of Science (2022-2024).
 Member of the Chilean Academy of Science (2021-for life).
 One of the 100 women inspiring mining, chosen by Women in Mining association (2024).
 One of the 100 leading women of the year, chosen by El Mercurio and Businesswomen associations (2019 and 2021).
 National Award in Sciences for her contribution to the study of magnetism at the nanoscale (2019).
 Presidential recognition at the International Women's Day, for her contribution to break down gender stereotypes and advance equality between women and men (2018).
 Corresponding member of the Chilean Academy of Science (2014-2021).
 Young Member of the Chilean Academy of Science (2004-2006).
 Best Teacher of the Faculty of Science, Universidad de Santiago de Chile (2003).

RELEVANT
INTERNATIONAL
DISTINCTIONS

Affiliated member (by invitation) of the International Institute for Sustainability with Knotted Chiral Meta Matter (WPI-SKCM2) at University of Hiroshima, Japan (2023--).
 Distinguished researcher by The Consultive Association of the Hebrew University of Jerusalem (2023).
 Editor of Journal of Magnetism and Magnetic Materials, Elsevier (2018-2026).
 Selected in the Special Edition "Women in Physics", by Elsevier. This Edition highlights 20 articles in physics authored by women. Selected article: "Phase diagrams of magnetic nanotubes" (2017).
 Director of the Magnetism Chapter of the I. of Electrical and Electronics Engineers, IEEE (2017-2019)
 Associated Editor of the Journal of Magnetism and Magnetic Materials, Elsevier (2015-2017).
 Member of the Joint European Magnetic Symposia (JEMS) (2013-2017).

INTERNATIONAL
COLLABORATION

Massachusetts Institute of Technology; University of California San Diego; University of Texas San Antonio; University of Minnesota, USA
 Instituto Potosino de Investigación Científica y Tecnológica, UNAM; México.
 Universidade Federal Fluminense, Niteroi; Universidade Federal de Rio de Janeiro; Universidade Estadual de Campinas; Universidad Federal de Viçosa, Brazil.
 Universidad de Antioquía, Colombia.
 Hamburg University; Leibniz Institute for Solid State Physics and Materials Dresden, Germany.
 Instituto de Ciencia de Materiales de Madrid, España.
 Luis Néel Institute, Grenoble, France.

MAIN RESEARCH
PROJECTS

Director in Chile of the European Union project Magnamed, Program Horizon 2020, which seeks to develop an early detection system for colorectal cancer using nanoparticles (2017-2020, 2022-2023).

Group Director of the Neuromorphic computing and big data Project, funded by the Office of Scientific Research of the US Air Force, AFOSR, (2016-2017).
 Director of three FONDEF projects for the development of sensitive sensors for various detections in mining (two products have been developed, currently in the market) (2016-2024).
 Director of two projects on magnetic nanostructures, funded by the Office of Scientific Research of the US Air Force, AFOSR (2007-2010), (2011-2014).
 Director of the Center for Nanoscience and Nanotechnology – CEDENNA with more than 70 researchers (2009-2023).
 Director of the Millenium associative project Basic and Applied Magnetism (2008-2014)
 Researcher of the Millenium associative project Physics of Condensed Matter Project (1999-2006).

THESIS ADVISOR

• **PhD in Science specializing in Physics, Universidad de Santiago de Chile**

Javier Rojas (2019), currently postdoc at CEDENNA.

Thesis Title: "Design and properties of Bimetallic Nanostructures: Structural and mechanical properties of stable systems", co-advisor with Dr. Samuel Baltazar.

Sebastián Castillo (2016): Currently in an academic position at Universidad Central, Chile.

Thesis Title: "Fundamental properties of high-symmetry nanometric systems.

Nicolás Vargas (2015): Currently, researcher at General Atomics, a technology company at San Diego, USA.

Thesis Title: "Magneto-electric properties of micro and nanostructures designed by lithography".

Roberto Escobar (2015): Currently in an academic position at INACAP, Chile

Thesis Title: "Magnetic properties of rectangular nanostructures by means of Monte Carlo simulations".

Sebastián Allende (2008): Currently professor at the Physics Department, Universidad de Santiago de Chile and Young member of the Chilean Academy of Science 2016-2018.

Thesis Title: "Magnetic properties of Ni nanowires".

Juan Escrig (2007): Currently full professor at the Physics Department, Universidad de Santiago de Chile and Young member of the Chilean Academy of Science 2012-2015.

Thesis Title: "Dipolar interaction among magnetic micro and nanometric systems".

Pedro Landeros (2007): Currently full professor at the Physics Department, Universidad Santa María.

Thesis Title: "Magnetic properties of nanostructures with cylindrical symmetry".

• **Master of Science in Physics, Universidad de Santiago de Chile**

Milenko Espinosa (2020): Currently working at Universidad Diego Portales as researcher.

Thesis Title: "Spin transfer torque in granular systems". Examination: July, 2020.

Paul Soto (2006): Currently researcher at the Universidad Complutense, Madrid, España.

Thesis Title: "Study of magnetic properties of ferrofluid", co-directed with Dr. José Mejía.

• **Physics Engineering, Universidad de Santiago de Chile**

Advisor of twelve undergraduate theses from 2010 to 2023.

• **Postdocs**

Alejandro León (2018-2019): Currently in an academic position at the Universidad Tecnológica Metropolitana.

Rosa Corona (2017-2023): Currently in an academic position at the Universidad Tecnológica Metropolitana.

Daniela Mancilla (2017-2020): Currently in an academic position in USA.

Vagson Carvalho-Santos (2014-2015): Currently professor at the Physics Department, U. Federal de Viçosa, Brazil.

Nicolás Arancibia (2012-2013): Currently professor at the Chemistry Department, Universidad de Santiago de Chile.

Samuel Baltazar (2010-2012): Currently in professor at the Physics Department, Universidad de Santiago de Chile.

Evy Salcedo (2006-2007): Currently professor at the Physics Department, Universidade Federal de Santa Catarina, Brazil.

CONFERENCES

She has presented more than 120 contributions in national and international conferences and workshops and has given more than 50 seminars in institutions in Chile and abroad.

GENDER ACTIVITIES

Director of the GENCI project: Strengthening capacities for gender equity in R&D (2023-2026)

She has presented more than 35 contributions in national and international gender activities.

Between 2016 and 2019, she coordinates annually, the competition National Videos of Chilean Women in Sciences, receiving around 200 videos coming from public and school students. The winner videos are available at You Tube.

In 2006, she led the efforts to provide coverage and financing support of the pre and post birth periods for female doctoral and postdoctoral fellows in Chile.

OUTREACH ACTIVITIES

During 2024 she is leading the preparation of a course to teach nanoscience to medical doctors.

From 2021 to 2022 she prepares five videos to teach nanoscience for schoolteachers.

In 2019 she organized the Wednesday Cycle at the Chilean Academy of Science, with talks on Nanoscience and Nanotechnology for the community.

In 2016 and 2017 she collaborated with the Congress of Future and with the Future Congress for kids. From 2009 to 2023 she has been editor of a physics/nanoscience Calendar distributed every year in 2000 educational establishments in Chile. The Calendar includes images and explanations of materials and discovers.

From 2012 to 2014, she produced the Scientific Cafe, a space in which science was the protagonists of pleasant conversations with leading scientists. National Science Awards, biologists, physicists, chemists, neurologists, doctors, seismologists and educators were part of the three seasons of this program, calling more than 700 people, live, and more than 25 thousand people each week, through broadcasted programs.

Between 2000 and 2024 she offered more than 220 Talks describing the impact of magnetism and nanoscience in institutions such as Sofofa, IM2 of Codelco, B 'nai B 'rith, Chilean Air Force, Defense Secretary, several Universities, United States Embassy, among others.

In 2012 and 2013 she coordinated, together with Dr. E. Vogel, the development and donation of two new experimental modules for the Interactive Museum of Science. It is the "Magnetic Brake" which consists of tubes of different materials, through which visitors drop magnets and un-magnetized spheres, and "Magnetic Domains", which has two experiment containers inside with small magnets.

During 2011, 2012 and 2014, she coordinated, together with Professor E. Vogel, the staging of the Science/FICTION Theater Play, presented by the theater company of the Catholic University. The initiative sought to awaken the interest of young people and adolescents in science and the environment through a fun play that combines theater, music and science. The work was a success and was presented in the cities of Santiago, Talca, Concepción, Villarrica, Temuco, Valparaíso and Arica, being seen by more than 40 thousand people.

From 2010 to 2019 and from 2022 to 2024 she organized the Schools of Nanoscience and Nanotechnology for teachers of secondary education (PRONANO), aimed at contributing to the understanding of nanoscience with demonstrative talks and guided visits to laboratories. The School has had the participation of teachers from all over Chile.

In 2009 she collaborated with the measurements of magnetic declination in schools in different cities. Through a simple experiment, children learn what magnetic declination means and measure the value associated with the position of their school. With the results, a map of the magnetic declination of Chile is implemented.

In 2005 she directed the Project "100 years 100 schools", in which 100 schools along Chile, from Putre (Chilean north frontier) to Puerto Williams (last city in the south), who measured, using an equipment built at the U. of Santiago de Chile, solar radiation that affects the country in the spring. As a result of these measurements, the book "Map of Solar Radiation in Chile" was published. As a continuation of this successful experience, in 2008 she directed the Project "Measuring Radiation in my Country", in which more than 200 schools carried out radiation measurements between June and December to obtain a map of solar radiation in Chile. The results gave rise to the country's first solar radiation map, and a report showing the country's enormous potential for solar energy.

Between 2002 and 2012 and from 2020-2021 she oversaw communications at PRO-Physics, a virtual initiative to support Physics teachers, which provides, through a website, exercises, test models, and experiments to teachers of all levels of secondary education.

Between 2000 and 2024 she has dictated more than 120 demonstrative and participative talks in schools of basic and secondary education, showing simple live experiments.

Between 2000 and 2024 she has collaborated with various media (Radios Universidad de Chile, Universidad de Santiago de Chile, Rock and Pop, Cooperativa, Futuro, ADN Radio, Teletrece Radio, Pauta; Diarios El Mercurio, La Tercera, Las Últimas Noticias, Financiero, La Hora, Publimetro; Television channels such as Canal 13, CNN Chile, Mega Plus; Columns on Corfo websites; Mining and agronomy magazines, etc.), spreading magnetism and nanoscience.