

# Melanie Oyarzún W.

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## Personal Information

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**E-mail:** melanie.oyarzun@gmail.com

**Webpage:** Google Scholar

## Research Interest

Computational social science; social networks; cooperation and inequality; education policy and peer effects; applied microeconometrics and experimental methods.

## Current Position

2024–Present **Postdoctoral Research Fellow**, *Corvinus University of Budapest, Hungary*.  
Center for Collective Learning at Corvinus Institute for Advanced Studies.

## Education

2019–2024 **Ph.D. in Social Complexity Sciences**, *Universidad del Desarrollo, Chile*.

Thesis Social Interaction Patterns in Students' Educational Experience: A Computational Social Sciences Approach. Link: <https://doi.org/10.52611/11447/999>

Thesis supervisor: Dr. Cristian Candia, and Dr. Carlos Rodriguez-Sickert

2022–2023 **Visiting PhD Student**, *Center for Collective Learning*, at the Artificial and Natural Intelligence Institute (ANITI), University of Toulouse, Led by César A. Hidalgo.

2021 **M.Sc. in Social Complexity Sciences**, *Universidad del Desarrollo, Chile*.

2018 **M.Sc. in Economics**, *Pontificia Universidad Católica de Chile*.

Thesis Event study to evaluate impact of pedagogical training on college teachers (Spanish). PDF link

2011 **B.Sc. in Business Administration (Commercial Engineering)**, *Pontificia Universidad Católica de Valparaíso, Chile*.

Thesis The effect of longer school days on female labor participation in Chile (Spanish). PDF link

2010 **Student exchange program**, *Millersville University, Pennsylvania, USA*.

## Research

### Peer-reviewed publications

2025 **Autism shapes social integration and reciprocity in elementary classrooms.**

Patricia Soto-Icaza, **Melanie Oyarzun**, Tamara Yaikin, Mirla Arcos, Cristian Candia, Carlos Rodríguez-Sickert and Pablo Billeke.

Scientific Reports. URL: <https://www.nature.com/articles/s41598-025-24190-6>

2023 **School schedules and mothers' employment: evidence from an education reform.**

Matias Berthelon, Diana Kruger and **Melanie Oyarzun**

Review of Economics of the Household.

<https://doi.org/10.1007/s11150-022-09599-6> PDF direct link

2022 **Reciprocity heightens academic performance in elementary school students.**  
Cristian Candia, **Melanie Oyarzun**, Victor Landaeta, Tamara Yaikin, Cecilia Monge, César Hidalgo,  
and Carlos Rodriguez-Sickert.  
Heliyon (Cell Press). <https://doi.org/10.1016/j.heliyon.2022.e11916> - PDF direct link

[Manuscripts under review](#)

**Friendship Modulates Social Hierarchy in Elementary Schools.**

**Melanie Oyarzun**, Carlos Rodriguez-Sickert, and Cristian Candia.

**Cultural Proximity Reveals a Local Premium in Collective Memory.**

Mariana Macedo, **Melanie Oyarzun**, Cristian Candia, and Cesar Hidalgo. (PNAS Nexus)

**Systematic Comparison of Gender Inequality in Scientific Rankings across Disciplines.**

Ana Maria Jaramillo, Mariana Macedo, **Melanie Oyarzun**, Marcos Oliveira, Fariba Karimi and Ronaldo Menezes. (Secodn round of reviews at Nature Human Behaviour)

[Work in progress](#)

**Homophily and heterogeneity of students' increase persistence in STEM.**

**Melanie Oyarzun**, Mariana Macedo, Cristian Candia, and Cesar Hidalgo.

[Project participation](#)

2024–Present **LearnData: ERA Chair for Excellence in Data Science**, *Horizon Europe (European Union, Project 101086712)*, Corvinus University of Budapest.

Role: Postdoctoral Researcher. PI: César A. Hidalgo

2020–2021 **Platform for decision-making in higher education**, *Fund for the Promotion of Scientific and Technological Development (FONDEF)*, Chilean National Agency of Research and Development, **URL: <https://lixandria.cl>**.

Role: Doctoral Researcher. PI: Cristian Candia

2020–2022 **Multilevel study of school coexistence: impact of neurodevelopmental diversity of attention and cognitive control in the formation of social interaction networks in courses with school integration programs**, *Advanced Human Capital Attraction and Insertion Program (PAI)*, Chilean National Agency of Research and Development. .

Role: Research Assistant. PI: Patricia Soto-Icaza

2012–2015 **The Effect of Longer School Day on Household Time Allocation Decisions: Mothers' Labor Supply, Juvenile Crime, and Youth Employment and Schooling in Chile.**, *Fondo Nacional de Desarrollo Científico y Tecnológico (FONDECYT)*, Chilean National Agency of Research and Development.

Role: Undergraduate Thesis Student. PI: Diana Kruger

[Conferences and Seminars \(Selected\)](#)

Sep. 2025 **International Conference on Complex Systems (CCS)**, Siena, Italy.

“Unpacking Local and Global Collective Memory” (presentation), “Friendship Moderates Hierarchy-Based Inequality in Childhood Cooperation” (poster).

Jul. 2025 **Int. Conference on Computational Social Science (IC2S2)**, Norrköping, Sweden,

“Unpacking Local and Global Collective Memory” (presentation).

Jun. 2025 **Conference on Economic Complexity (CEC)**, Toulouse, France.

“Unpacking Local and Global Collective Memory” (presentation).

Nov. 2024 **11th Int. Workshop, Corvinus Institute for Advanced Studies**, Budapest, Hungary.

“Unpacking Local and Global Collective Memory” (presentation).

- Jun. 2024 **Int. School and Conference on Network Science (NetSci)**, Quebec, Canada.  
“Heterogeneity and homophily for academic retention of STEM students” (presentation).
- Apr. 2024 **Int. Conference on Complex Networks (CompleNet)**, Exeter, UK.  
“Heterogeneity and homophily for academic retention of STEM students” (poster).
- Oct. 2023 **Int. Conference on Complex Systems (CCS)**, Salvador, Brazil.  
“Heterogeneity and homophily for academic retention of STEM students” (presentation).
- Jul. 2023 **Int. Conference on Computational Social Science (IC2S2)**, Copenhagen, Denmark.  
“Friendship modulates hierarchical relations in public elementary schools” (presentation).
- Jul. 2023 **Int. School and Conference on Network Science (NetSci)**, Vienna, Austria.  
“Friendship modulates hierarchical relations in public elementary schools” (lightning presentation).
- Jun. 2023 **French Regional Conference on Complex Systems**, Le Havre, France.  
“Unpacking popularity: volume, longevity, connectivity and globality” (presentation).
- Nov. 2022 **Int. Conference on Complex Networks**, Palermo, Italy.  
“Friendship modulates hierarchical relations in public elementary schools” (presentation).
- Oct. 2022 **Int. Conference on Complex Systems (CCS)**, Palma de Mallorca, Spain.  
“Friendship modulates hierarchical relations in public elementary schools” (presentation).
- Sep. 2022 **6th European Conference on Social Networks (EUSN)**, London, UK.  
“Social interactions and school coexistence in elementary schools’ neurodiverse classrooms” (poster).
- Jul. 2022 **Int. School and Conference on Network Science (NetSci)**, Online / Shanghai, China.  
“Friendship modulates hierarchical relations in public elementary schools” (presentation).
- Oct. 2021 **Human Behavior & Evolution Society Conference (HBES)**, Online.  
“Friendship modulates hierarchical relations in public elementary schools” (poster). OSF link
- Oct. 2018 **Int. Meeting of Teaching Support Centers**, Santiago, Chile.  
“Event study to evaluate impact of pedagogical training on college teachers” (presentation). link
- Oct. 2015 **II Int. Workshop-UAI: Statistical Models for Business, Engineering and Sciences**, Viña del Mar, Chile.  
“Divorcio y Maternidad” (Poster)
- Sep. 2015 **Annual Meeting of the Chilean Economic Society (SECHI)**, Talca, Chile.  
“Divorcio y Maternidad” (presentation). link
- Sep. 2014 **Annual Meeting of the Chilean Economic Society (SECHI)**, Chile.  
“Longer School Days and Mothers’ Labor Force Participation” (presentation).
- [Other publications in media \(Selected\)](#)
- Nov. 2018 “Causa y Efecto: un enfoque experimental”, Mercurio de Valparaíso - link
- Apr. 2017 “No crea todo lo que lea”, Mercurio de Valparaíso - Link
- Jun. 2016 “Invertir en educación temprana: ¿Qué nos dice la evidencia?”, Informe de Actualidad Económica PUCV, Año 12, No 1 - [http://bit.ly/IAE\\_2016](http://bit.ly/IAE_2016)

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## Experience

### Teaching Experience

2020–2022 **Universidad del Desarrollo, Chile.**

Lecturer Master in Engineering: *Causal Inference for Data Science*

Master in Data Science: *Workshop in Time Series Analysis, Data analysis*

2014–2019 **Pontificia Universidad Católica de Valparaíso, Chile.**

Lecturer School of Business and Economics: *Introduction to Economics, Microeconomics, Game Theory, Economic Analyses, and Econometrics*

School of Industrial Engineering: *Economic Analyses*

2014–2016 **Universidad Adolfo Ibáñez, Chile.**

Lecturer School of Business and Economics: *Introduction to Economics and Econometrics*

School of Industrial Engineering: *Introduction to Economics*

2007–2010 **Pontificia Universidad Católica de Valparaíso, Chile.**

Teaching School of Business and Economics: *Introduction to Economics, Microeconomics, Game Theory, Assistant Economic Analyses, and Econometrics*

### Thesis Committee Member.

**Master in Data Science**, *Universidad del Desarrollo.*

Julio Sotelo (2023), Rodrigo Manriquez (2023), Felipe Díaz (2022), Sebastián Azocar (2021)

**Bachelor in Business Administration**, *Pontificia Universidad Católica de Valparaíso.*

Fiamma Orlandi Santambrogio (2018) and Vanessa Peña Brito (2017)

### Professional

2021–Present **Universidad del Desarrollo and E-Class, Chile**, *Director*, Diploma in Data Science for Organizational Leadership.

2014–2019 **Pontificia Universidad Católica de Valparaíso, Chile**, *Research Coordinator.*

2010–2013 **Chile's Economics Society (Sociedad de Economía de Chile)**, *Executive Assistant to the Board.*

2010 **Chilean National Congress' Library**, *Parliamentary Technical Advisor in Economics.* (Internship)

### Research Assistant

2021 **Universidad del Desarrollo, Chile**, Dr. Cristian Candia .

2013 **Pontificia Universidad Católica de Chile**, Dr. Jeanne Lafortune .

2010–2013 **Universidad Adolfo Ibáñez, Chile**, Dr. Diana Kruger.

### Academic Service and Community Engagement (Selected)

2025 **Women in Data Science (WiDS) Budapest**, *Organizing Committee Member; Datathon Lead.*

Led the WiDS Datathon, including challenge design, mentor coordination, and participant support.

2024–2026 **International Conferences**, *Volunteer.*

Complenet (2024), WiDS Budapest (2024), Conference on Economic Complexity (2025), GeoInformatics Conference (2026).

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### Languages

Spanish (Native)

English (C1, Advanced)

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## Technical Skills

Advanced R, L<sup>A</sup>T<sub>E</sub>X, STATA, Microsoft Office Suite (Excel, Word, PowerPoint)  
Intermediate Python, Matlab, SPSS

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## Scholarships

- 2023 Scholarship for International Ph.D. Visiting, National Agency of Research and Development (ANID), Chile.
- 2021 Scholarship for Ph.D. Studies, National Agency of Research and Development (ANID), Chile.
- 2019 Scholarship for Ph.D. Studies, Universidad del Desarrollo, Chile.
- 2012 Scholarship for Master studies, National Commission of Science and Technology (CONICYT), Chile.
- 2009 Scholarship for visiting student at the Millersville University, granted by bilateral agreement with Pontificia Universidad Católica de Valparaíso, Chile.
- 2006 Scholarship for Outstanding Undergrad Enrollment, Pontificia Universidad Católica de Valparaíso, Chile.

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## Awards

- 2022 Best Poster Presentation, 6th Annual European Conference on Social Networks (EUSN), London, UK.
- 2021 Best Pitch, selected by Jury – PITCH Challenge, Universidad del Desarrollo, Santiago, Chile.
- 2012 Valedictorian Award, National School of Engineering, Santiago, Chile.
- 2012 Valedictorian, B.Sc. in Commercial Engineering, Pontificia Universidad Católica de Valparaíso, Valparaíso, Chile.
- 2011 Future Leaders, Universia and Santander, Santiago, Chile.
- 2009 Best Speaker and Team First Place, University Level National Debate League, Chilean Debate Association (SOCHIDE), Santiago, Chile.
- 2004 Team First Place, Regional High School Level Debate Championship, Valparaíso, Chile.

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## Recommendations

**Cristian Candia**, Professor at the Data Science Institute at the School of Engineering, Universidad del Desarrollo, Chile. External faculty at the Northwestern Institute on Complex Systems (NICO), Kellogg School of Management, Northwestern University .  
Email: crcandiav@gmail.com; Google Scholar, Personal Website

**Carlos Rodríguez-Sickert**, Professor at the School of Government, Universidad del Desarrollo, Chile. Director, Research Center in Social Complexity Sciences (CICS).  
Email: carodsic@gmail.com; Google Scholar

**Diana Kruger**, Professor at School of Government Universidad Adolfo Ibañez, Chile. Dean School of Government.  
Email: kruger.diana@gmail.com ; Google Scholar

**Alfonso Muga**, Emeritus Professor at School of Industrial Engineering, Pontificia Universidad Católica de Valparaíso, Chile.  
Email: muga.alfonso@gmail.com; Wikipedia