

Clara Granell Martorell

✉ claragranell@gmail.com

🌐 <http://deim.urv.cat/~clara.granell>

## Current position

Beatriz de Galindo - Junior Researcher  
May 2020— Present  
Department of Computer Engineering and Mathematics.  
Universitat Rovira i Virgili, Tarragona, Spain.

## Previous positions

Juan de la Cierva Postdoctoral Researcher  
July 2019 — May 2020  
Department of Condensed Matter & BIFI.  
Universidad de Zaragoza, Zaragoza, Spain.

Visiting Assistant Professor  
September 2018 — July 2019  
Department of Computer Engineering and Mathematics.  
Universitat Rovira i Virgili, Tarragona, Spain.

Postdoctoral Research Scholar  
April 2017 — August 2018  
Department of Condensed Matter Physics,  
Universitat de Barcelona & UBICS (UB Institute of Complex Systems).  
Principal Investigator: Prof. Albert Díaz-Guilera.  
Funded by the James. S. McDonnell Foundation  
Postdoctoral Fellowship.

Postdoctoral Research Scholar  
March 2016 — March 2017  
Department of Mathematics, University of North Carolina at Chapel Hill.  
Principal Investigator: Prof. Peter Mucha.  
Funded by the James. S. McDonnell Foundation  
Postdoctoral Fellowship.

## Education

Doctor of Philosophy in Computer Science  
2012 — 2016  
PhD Advisors: Prof. Alex Arenas & Prof. Sergio Gómez  
Universitat Rovira i Virgili, Tarragona, Catalunya.

Master of Science in Artificial Intelligence  
2010 — 2012  
Universitat Politècnica de Catalunya, Barcelona, Catalunya.  
Bachelor on Computer Engineering  
2006 — 2010  
Universitat Rovira i Virgili, Tarragona, Catalunya.

## Honors and awards

Beatriz de Galindo Junior Fellowship (2019)  
Competitive call for a four-year fellowship for doing research and teaching at a Spanish University.  
Awarded by: Ministerio de Ciencia, Innovación y Universidades.

Juan de la Cierva-Formación Postdoctoral Fellowship (2017)  
Competitive call for a two-year fellowship for postdoctoral training in Spain. Awarded by: Ministerio de Ciencia, Innovación y Universidades.

Premi DONATIC Revelació (2016)  
Award for women in Information and Communication Technologies.  
Awarded by: Tertulia Digital, SmartCAT and La Generalitat de Catalunya.

Postdoctoral Fellowship Award for Studying Complex Systems (2015)

Awarded by: James S. McDonnell Foundation.

Best Master Thesis (2012)

Title: Exploratory Data Analysis Using Network-Based Techniques. Awarded by: Universitat Rovira i Virgili, Tarragona, Catalunya.

Best Computer Engineering Student (2010)

Awarded by: Universitat Rovira i Virgili, Tarragona, Catalunya.

Award for Best Graduation Project (2010)

Title: Data Clustering Based on Community Detection in Complex Networks. Awarded by: Universitat Rovira i Virgili, Tarragona, Catalunya.

Caixa Manresa University Grant (2006)

Grant for students with the best grades in the Undergraduate Admission Test in Catalonia.

Awarded by: Caixa Manresa.

## Scientific publications

Modeling the Spatiotemporal Epidemic Spreading of COVID-19 and the Impact of Mobility and Social Distancing Interventions.

A. Arenas, W. Cota, J. Gómez-Gardeñes, S. Gómez, C. Granell, J. T. Matamalas, D. Soriano-Paños, B. Steinegger.

Phys. Rev. X 10, 041055 (2020).

Epidemic Spreading: Tailored models for COVID-19.

A. Arenas, J. Gómez-Gardeñes, C. Granell, D. Soriano-Paños.

Europhysics News (2020).

Functional strengthening through synaptic scaling upon connectivity disruption in neuronal cultures.

E. Estévez-Priego, S. Teller, C. Granell, A. Arenas, and J. Soriano.

Network Neuroscience, 1-21 (2020).

Case studies in network community detection

S. Shai, N. Stanley, C. Granell, D. Taylor and P. J. Mucha.

The Oxford Handbook of Social Networks (2020).

Pulsating-campaigns of human prophylaxis driven by risk perception palliate oscillations of direct contact transmitted diseases.

B. Steinegger, A. Arenas, J. Gómez-Gardeñes and C. Granell.

Phys. Rev. Research 2, 023181 (2020).

Spontaneous functional recovery after focal damage in neuronal cultures.

S. Teller, E. Estévez-Priego, C. Granell, D. Tornero, J. Andilla, O. Olarte, P. Loza-Alvarez, A. Arenas, and J. Soriano.

eNeuro, 7 (1) (2019).

Epidemic Spreading in Localized Environments with Recurrent Mobility Patterns

C. Granell and P. J. Mucha.

Phys. Rev. E 97, 052302 (2018).

Detection of timescales in evolving complex systems

R. K. Darst, C. Granell, A. Arenas, S. Gómez, J. Saramäki, and S. Fortunato.

Scientific Reports, 6, art. no. 39713 (2016).

The physics of spreading processes in multilayer networks

M. De Domenico, C. Granell, M. A. Porter and A. Arenas.

Nature Physics 12, 901–906 (2016).

Information transfer in community structured multiplex networks

A. Solé-Ribalta, C. Granell, S. Gómez and A. Arenas.

Frontiers in Physics, 3:61 (2015)

A benchmark model to assess community structure in evolving networks

C. Granell, R. K. Darst, A. Arenas, S. Fortunato and S. Gómez.

Physical Review E, 92, 012805 (2015)

Emergence of assortative mixing between clusters of cultured neurons

S. Teller, C. Granell, M. De Domenico, J. Soriano, S. Gómez and A. Arenas.

PLOS Computational Biology 10(9): e1003796 (2014)

Competing spreading processes on multiplex networks: awareness and epidemics

C. Granell, S. Gómez and A. Arenas.

Physical Review E, 90, 012808 (2014)

Dynamical interplay between awareness and epidemic spreading in multiplex networks

C. Granell, S. Gómez and A. Arenas.

Physical Review Letters, 111, 128701 (2013).

Structural patterns in complex systems using multidendrograms

S. Gómez, A. Fernandez, C. Granell and A. Arenas.

Entropy, 15, 5464-5474 (2013)

Hierarchical multiresolution method to overcome the resolution limit in complex networks

C. Granell, S. Gómez and A. Arenas.

International Journal of Bifurcation and Chaos, 22, 1250171 (2012)

Unsupervised clustering analysis: A multiscale complex networks approach

C. Granell, S. Gómez and A. Arenas.

International Journal of Bifurcation and Chaos, 22, 1230023 (2012)

Mesoscopic analysis of networks: applications to exploratory analysis and data clustering

C. Granell, S. Gómez and A. Arenas.

Chaos: An Interdisciplinary Journal of Nonlinear Science, 21, 016102 (2011)

Data clustering using community detection

C. Granell, S. Gómez and A. Arenas.

International Journal of complex systems in Science, 1, 21-24 (2011)

## Oral contributions

Invited Speaker at the Multilayer and Beyond Satellite of NetSci 2020.

Title: Human response to epidemics: how selective prophylaxis can induce oscillations and how pulsating campaigns can palliate them.  
Rome, Italy (Virtual) (Sept 2020)

Invited Speaker at the 2nd Edition of the Latin American Conference on Complex Networks (LANET).  
Title: Epidemic Spreading modeling on multiplex and bipartite networks.

Cartagena de Indias, Colombia (Ago 2019)

Invited Speaker at the Critical and Collective Effects on Graphs and Networks (CCEGN 2019) Workshop at Les Houches School of Physics.

Title: Microscopic Markov Chain model for epidemics on networks: from multiplex networks to bipartite metapopulations.  
Les Houches, France (May 2019)

Lecture at the V Mediterranean School of Complex Networks.

Title: Community detection: a primer  
Salina, Italy (September 2018)

Invited Oral Presentation at the NetSci 2017 Satellite ISODS III.

Satellite name: Information, Self-Organizing Dynamics and Synchronization in Networks.  
Indianapolis, IN, USA (June 2017)

Contributed Oral Presentation at NetSciX 2017 conference.

Parallel session: Epidemics and spreading processes. Tel Aviv, Israel (January 2017)

Lecture at the III Mediterranean School of Complex Networks.

Title: Epidemics on Networks  
Salina, Italy (August 2016)

Contributed Oral Presentation at SIAM Network Science Workshop.  
Boston, USA (July 2016)

Oral Presentation at NetSci 2016.

Parallel session: multiplex.  
Seoul, Korea (June 2016)

Lecture at the II Mediterranean School of Complex Networks.

Title: Introduction to Community Detection in Complex Networks.  
Salina, Italy (June 2015)

Oral Presentation at CompleNet 2015.

Queens, NY, USA (March 2015)

Oral Presentation at the European Conference on Complex Systems (ECCS) 2014  
Lucca, Italy (September 2014)

Lecture at the I Mediterranean School of Complex Networks.

Title: Introduction to Community Detection in Complex Networks.  
Salina, Italy (June 2014)

Oral Presentation at NetSci 2014

Satellite: Physics of multilayered interconnected networks

Berkeley, CA, USA (May 2014)

Oral Presentation at the School on Biological Complex Networks

Natal, Brazil (July 2013)

Seminar at the Oxford Center for Industrial and Applied Mathematics

Oxford, United Kingdom (July 2012)

Oral Presentation at the conference Net-Works 2010: From theory to Applications of Complex Networked Systems.

Zaragoza, Spain (June 2010)

## Posters

Poster at the III Conference of Complexitat.cat  
Barcelona, Catalunya (2014)

Poster at the Network Frontier Workshop  
Evanston, IL, USA (2013)

Poster at CompleNet 2013  
Berlin, Germany (2013)

Poster at FISES 2012: XVIII Conference on Statistical Physics

Palma de Mallorca, Spain (2012)

Poster at the II Conference of Complexitat.cat  
Barcelona, Catalunya (2012)

Poster at the European Conference on Complex Systems (ECCS) 2011

Vienna, Austria (2011)

## Teaching

	Bachelor in Computer Engineering
	Estructura de dades ( <i>Data structures</i> ) (#17234115)
Year	Master in Security and Artificial Intelligence
2020	Data Visualization (#17685206)
2021	Bachelor in Journalism
	Research and Professional workshops (#12244117)

Previous  
Years

Estructura de dades (*Data structures*)(URV #17234115)  
Metodologies de la programació (*Programming methods*) (URV #17234116)  
Data Visualization (URV #17685206)  
Complex Networks (URV #17685208)

### Organization of conferences & workshops

Local Organizer of the 10th International Conference on Complex Networks “Complenet 2019”  
Tarragona (March 2019)

Member of the scientific committee of:  
Complenet 2016  
Complenet 2018  
Netsci 2019  
NetsciX 2019  
Complenet 2019  
IC2S2 2019  
Complenet 2020

### Editorial activity

Regular referee of:  
Physical Review E  
Physical Review Letters  
New Journal of Physics  
PLOS One  
Physical D: Nonlinear Phenomena  
Journal of Statistical Mechanics  
Science Advances

### Dissemination

Participant in Girl’s Day 2019 at the Technical School of Engineering, Universitat Rovira i Virgili.

Tarragona (January 2019)

Invited Lecture at the Closing Ceremony of the URV Talent Jove 2016-2017 program.

Tarragona (July 2017)

Transiciones de fase en epidemias

C. Granell, S. Gómez and A. Arenas

Revista Española de Física, 28 (3), 49-52 (2014)

### Languages

Catalan	Native Speaker
Spanish	Native Speaker
English	Fluent
German	Intermediate

### Programming skills

Ada, R, C, Matlab, Python, Java