Curriculum Vitae
Dr. José Luis Herrera Diestra
ICTP South American Institute for Fundamental Research
IFT-UNESP, São Paulo, SP Brazil

Personal information:

Nationality: Peruvian.
Researcher ID: J-4189-2018
e-mail: diestra@gmail.com ; jdiestra@ictp-saifr.org

Education:

PhD in Fundamental Physics, 2012. Supervisor: Dr. Mario Cosenza.
Universidad de Los Andes. Mérida, Venezuela.
Thesis: "Models of social dynamics on adaptive networks".

Magister Scientiae Physics, 2008. Supervisor: Dr. Mario Cosenza.
Universidad de Los Andes. Mérida, Venezuela.
Thesis: "Model of economic stratified exchange with local interactions".

Licenciado in Physics, 2005. Supervisor: Dr. Mario Cosenza.
Universidad de Los Andes. Mérida, Venezuela.
Thesis: "Model of the influence of the neighborhood in social small-world networks".

Academic positions:

Postdoctoral researcher. ICTP - South American Institute for Fundamental Research. IFT-UNESP, São Paulo - Brasil. June 2017 - present.

Research Scholar. University of Texas at Austin. January 2016–May 2017.

Postdoctoral appointment. University of Texas at Austin. December 2012 – December 2013. Supervisor: Dr. Lauren Meyers.

Group coordinator. Group of Multidisciplinar Mathematics. Engineering department, Universidad de Los Andes. Mérida – Venezuela. January 2014 - January 2016.

Tenured Professor. Engineering department. Universidad de los Andes. Mérida – Venezuela. February 2010 - June 2017.

Assistant professor. Engineering department. Universidad de Los Andes.
Mérida – Venezuela. January 2008 - January 2010.

Publications:

Accepted.

1. *Local versus global interactions in nonequilibrium transitions: A model of social dynamics.*
   J.C. González-Avella, V.M. Eguíluz, M.G. Cosenza, K. Klemm, **J.L. Herrera** and M. San Miguel.
   Physical Review E 73, 046119 (2006).

2. *Economic exchange in a stratified society with local interactions.*
   J. L. Herrera, M. G. Cosenza, K. Tucci.
   Revista Científica UNET 21, 8 (2009).

3. *Stratified economic exchange on networks.*
   J. L. Herrera, M. G. Cosenza, K. Tucci.
   Physica A 390, 1453 (2011).

4. *General coevolution of topology and dynamics in networks.*
   J. L. Herrera, M. G. Cosenza, K. Tucci, J. C. González-Avella.
   European Physics Letters 95, 58006 (2011).

5. *Influence of the local versus global interactions in a model of economic exchange.*
   J. L. Herrera, M. Escalona-Morán, R. Parra, C. Parra, M. G. Cosenza.
   Revista Ciencia e Ingeniería. Special Edition: "Jornada de Modelado y Simulación" pp. 95-100 , Universidad de Los Andes (2011).

6. *Modelado de enfermedades contagiosas mediante una clase de redes sociales dinámicas (Modeling infectious diseases using social dynamic networks).*
   J. L. Herrera, Gilberto González-Parra.
   Revista de la Facultad de Ingeniería – UCV 27.2 (2013). 15-20.

7. *Emergence and persistence of communities in coevolutionary networks.*
   J. C. González-Avella, M. G. Cosenza, **J. L. Herrera**, K. Tucci.
   European Physics Letters 107, 28002 (2014).

8. *Caracterización y análisis de la red de interacción de los estudiantes de la Facultad de Ingeniería en la Universidad de Los Andes (Characterization and analysis of the social network of students of the Engineering department at Universidad de Los Andes), Mérida – Venezuela.*

Idaí Gutiérrez., **J.L. Herrera.** Revista Ciencia e Ingeniería, 36(3), Universidad de Los Andes (2015)

9. *Disease surveillance on complex social networks.*
   J. L. Herrera, Ravi Srinivasan, John S. Brownstein, Alison Galvani, Lauren Ancel Meyers.
   PLoS Comput Biol 12(7): e1004928 (2016).

10. *Optimizing sentinel surveillance in temporal network epidemiology.*
    Yuan Bai, Bo Yang, Lijuan Lin, **J. L. Herrera**, Zhanwei Du, Petter Holme.
    Scientific Reports 7, 4804 (2017).

11. *Evolución de la vulnerabilidad epidemiológica de la red social de estudiantes de Ingeniería de la Universidad de Los Andes: epidemias y estrategias de inmunización (Evolution of the epidemiologic vulnerability in the social network of students in the Engineering department at Universidad de Los Andes).*
    Rodríguez, Armando; Francys Ramírez; Parra, Rafael; **Herrera, José.**
    Accepted for the Revista Ciencia e Ingeniería Edition 39-1 (December - March, 2018).

12. *Damping and clustering into crowded environment of catalytic chemical oscillators*.
    Carlos Echeverria, **Jose L. Herrera**, Kay Tucci, Orlando Alvarez, Miguel Morales.
    Accepted (August 2018) Physica A.

13. *Using network science to analyze football passing networks: dynamics, space, time and the multilayer nature of the game.*
    J. M. Buldú, J. Busquets, J. H. Martínez, **J. L. Herrera-Diestra**, I. Echegoyen, J. Galeano, J. Luque.
    Frontiers in Psychology 9, 1900 (2018).

14. *Detection of time reversibility in time series by ordinal patterns analysis.*
    J. H. Martínez, **J.L. Herrera** and M. Chavez.
    Accepted in Chaos: An interdisciplinary Journal of Nonlinear Science. (October 2018).

Submitted.
1. *Local risk perception enhances epidemic control*.
   J.L. Herrera, Lauren Ancel Meyers.

Submitted to Journal of the Royal Society Interface (October 2018).

Schools attended:

School on Nonlinear Time Series Analysis and Complex Networks in the Big Data Era. ICTP-SAIFR, São Paulo - Brasil, 2018. Duration 2 weeks. School on Complex networks and applications to neuroscience. ICTP-SAIR, São Paulo - Brasil, 2015. Duration: 3 weeks.

Summer School of Statistical Physics of Complex and Small Systems. IFISC, Palma de Mallorca - España, 2011. Duration: 2 weeks.

Oral presentations at conferences:

"Dynamical and topological characterization of the symbolic networks of disease outbreaks". International school and conference on Network Science - NetSci 2018. June 11 - 15, 2018. Paris - France.

"Analyzing disease outbreaks by means of symbolic networks". 15h Experimental Chaos and Complexity Conference. June 4 - 7, 2018. Madrid - Spain.

"Disease surveillance on social complex networks". 1st Latin American Conference on Complex Networks (LANET 2017). September 25-29, 2017, at Benemérita Universidad Autónoma de Puebla, Puebla - México.

"Information-based immunization strategies on complex networks". 1st Latin American Conference on Complex Networks (LANET 2017). September 25-29, 2017, at Benemérita Universidad Autónoma de Puebla, Puebla, México.

"General coevolution of topology and dynamics in networks". Summer School of Statistical Physics of Complex and Small Systems. IFISC, Palma de Mallorca - Spain, 2011.

"Stratified economic exchange in networks". Jornadas de Modelado y Simulación. Mérida - Venezuela, 2011.

Poster presentations at conferences

"Disease surveillance on complex social networks". MIDAS meeting. Washington DC, USA. 2016.

"Disease surveillance on complex social networks – advances". MIDAS meeting. Austin – Texas, USA. Mayo 2013.

"Models of social and economic interactions in coevolving networks". VI Interdisciplinary School and Workshop on Complex Systems. Margarita Island - Venezuela, 2008.

"Dynamical model of the influence of the neighborhood in Small World Networks". V Interdisciplinary School and Workshop on Complex Systems. Margarita Island - Venezuela, 2005.

"Pattern Formation in a model of social networks" IV Jornadas de Estudiantes de Física. Universidad Simón Bolívar. Caracas - Venezuela 2004.

Teaching:

Calculus 10 and 20 for Engineering students (Differential and integral calculus of one variable).
Calculus 30 for Engineering students (Differential and integral calculus of many variables).

Undergraduate thesis supervised:

"Characterization and analysis of the social network of the students of the Engineering department at Universidad de Los Andes, Merida - Venezuela."
Student: Idaí Gutiérrez. 2012.

"Disease spreading in the social network of the students of the Engineering department at Universidad de los Andes, Mérida - Venezuela".
Student: Francys Ramirez. October 2015.

"Target vaccination strategies in the temporal network of students of the Engineering department at Universidad de Los Andes, Mérida - Venezuela.
Student: Eleazar Dugarte. December 2015.

Computational experience:

Linux OS. C Language. Python. Windows OS. Gnuplot. Latex. R.

Research interest:

Chaos and complex systems. Complex networks. Sociophysics. Econophysics. Adaptive dynamics. Formation of community structure. Disease spreading. Vaccination strategies. Temporal networks. Time series. Synchronization.

Collaborators:

Dr. Lauren Meyers (University of Texas at Austin, Texas - USA).
Dr. Mario Cosenza (Universidad de Los Andes, Mérida – Venezuela).
Dr. Kay Tucci (Universidad de Los Andes, Mérida – Venezuela).
Dr. Johann Martínez (CNRS-Hopital Pitie-Salpetriere. Paris - France).
Dr. Javier M. Buldú (Universidad Rey Juan Carlos, Spain)
Dr. Hilda Cerdeira (IFT - UNESP. São Paulo - Brazil).

Google scholar:

https://scholar.google.com/citations?user=yysYgmAAAAAJ&hl=en

References:

Dr. Lauren A. Meyers. University of Texas at Austin.
laurenmeyers@austin.utexas.edu

Dr. Mario Cosenza. Universidad de Los Andes.
mcosenza@ula.ve

Dr. Cosme Duque. Universidad de Los Andes.
duquec@ula.ve

Dr. Kay Tucci. Universidad de Los Andes
kay@ula.ve

Dr. Hilda Cerdeira. IFT - UNESP
hilda.alicia@gmail.com