

Eugenio Valdano

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Education

- **PhD in Epidemiology and Public Health, 2015**
Sorbonne Université, Paris, France
Final thesis: Computing the vulnerability of time-evolving networks to infections
Defense: Oct 13, 2015
- **MSc in Theoretical physics, 2015**
Università di Torino, Turin, Italy
Mark: 110/110 con lode e menzione (cum laude)
Defense: Oct 2012
- **Diploma of High Qualification, Management & Sciences (Governo e Scienze Naturali), 2015**
Scuola di Studi Superiori F. Rossi, Università di Torino, Turin, Italy
Mark: 70/70 con lode (cum laude)
Defense: Oct 2012
- **BSc in Physics, 2015**
Università di Torino, Turin, Italy
Mark: 110/110 con lode (cum laude)
Defense: July 2010

Academic career

- 2020 – ongoing; **Researcher, MOPGA postdoctoral program**
*UMR-S 1136, Pierre Louis Institute of Epidemiology and Public Health
INSERM & Sorbonne Université, Paris, France*
- 2018 – 2020; **Postdoctoral researcher**
*Semel Inst. for Neuroscience & Human Behavior
David Geffen School of Medicine
University of California Los Angeles (UCLA), Los Angeles, CA, USA*
- 2016 – 2018; **Postdoctoral researcher**
*Dept. of Computer Science and Mathematics
Universitat Rovira i Virgili, Tarragona, Spain*
- 2016 – 2018; **Postdoctoral researcher**
*UMR-S 1136, Pierre Louis Institute of Epidemiology and Public Health
INSERM & Sorbonne Université, Paris, France*

Additional training

- 2016 – workshop: Generalized Network Structures and Dynamics,
Ohio State University, Columbus, Ohio, USA.
- 2014 – workshop: ECCS Warm-up on complex networks, **IMT, Lucca, Italy.**
- 2014 – school: Summer Institute of Statistical Modeling of Infectious Diseases.
University of Washington, Seattle, WA, USA
- 2014 – school: Complex Networks Thematic School.
Les Houches School of physics, Université Grenoble Alpes, Les Houches, France.
- 2014 – workshop: Regression analysis. With Prof. S. Lemeshow.
EHESP School of Public Health, Paris, France.
- 2013 – workshop: Regression analysis. In veterinary PH and Food Safety.
Università di Torino, Turin, Italy.

- 2013 – workshop: Epidemiological surveys and surveillance in cattle holdings. **Istituto Zooprofilattico Sperimentale**, Teramo, Italy.
- 2013 – course: Modeling of Infectious Diseases. **Institut Pasteur**, Paris, France.

Selected *Publications*

full list here: <https://eugenio-valdano.github.io/publications.html>

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ResearcherID (PUBLONS): K-4196-2017

- **E Valdano**, L Ferreri, C Poletto, V Colizza (2015)
Analytical computation of the epidemic threshold on temporal networks
Physical Review X 5, 021005 DOI: 10.1103/PhysRevX.5.021005
- **E Valdano**, S Manrubia, S Gómez, A Arenas (2019)
Endemicity and prevalence of multipartite viruses under heterogeneous between-host transmission
PLOS Computational Biology 15(3): e1006876 DOI: 10.1371/journal.pcbi.1006876
- **E Valdano**, A Arenas (2019)
Exact rank-reduction of network models
Physical Review X 9, 031050 DOI: 10.1103/PhysRevX.9.031050
- **E Valdano**, S Blower (2019)
Universal Testing and Treatment for HIV Infection in Botswana (Letter to the Editor)
New England Journal of Medicine 381(22):2180 DOI: 10.1056/NEJMc1911065
- G Pullano, F Pinotti, **E Valdano**, P-Y Boëlle, C Poletto, V Colizza (2020)
Novel coronavirus (2019-nCoV) early-stage importation risk to Europe, January 2020
Eurosurveillance 25(4):pii=2000057 DOI: 10.2807/1560-7917.ES.2020.25.4.2000057
- M Gilbert, G Pullano, F Pinotti, **E Valdano**, C Poletto, P-Y Boelle, E D'Ortenzio, Y Yazdanpanah, S P Eholie, M Altmann, B Gutierrez, M U G Kraemer, V Colizza (2020)
Preparedness and vulnerability of African countries against importations of COVID-19: a modelling study
The Lancet 395, 10227, 871-877 DOI: 10.1016/S0140-6736(20)30411-6
- F Pinotti, L Di Domenico, E Ortega, M Mancastropa, G Pullano, **E Valdano**, P-Y Boëlle, C Poletto, V Colizza (2020)
Tracing and analysis of 288 early SARS-CoV-2 infections outside China: A modeling study
PLOS Medicine 17(7): e1003193 DOI: 10.1371/journal.pmed.1003193
- G Pullano, **E Valdano***, N Scarpa, S Rubrichi, V Colizza (2020)
Evaluating the effect of demographic factors, socioeconomic factors, and risk aversion on mobility during the COVID-19 epidemic in France under lockdown: a population-based study
The Lancet Digital Health 2, 12, E638-E649 DOI: 10.1016/S2589-7500(20)30243-0
* = co-first author
- G Pullano, L Di Domenico, CE Sabbatini, **E Valdano**, C Turbelin, M Debin, C Guerrisi, C Kengne-Kuetche, C Souty, T Hanslik, T Blanchon, PY Boëlle, J Figoni, S Vaux, C Campese, S Bernard-Stoecklin, V Colizza (2020)
Underdetection of COVID-19 cases in France threatens epidemic control
Nature <https://doi.org/10.1038/s41586-020-03095-6>

preprints (arXiv, medRxiv)

- A Bernini, E Blouzard, A Bracci, P Casanova, I Iacopini, B Steinegger, A S Teixeira, A Antonioni, **E Valdano** (2019)
Evaluating the impact of PrEP on HIV and gonorrhea on a networked population of female sex workers
arXiv e-print 1906.09085

- **E Valdano**, C Poletto, P-Y Boëlle, V Colizza (2019)
Reorganization of nurse scheduling reduces the risk of healthcare associated infections
medRxiv e-print doi: 10.1101/19007724

COVID-19 reports available here: <https://www.epicx-lab.com/covid-19.html>

Software

- **E Valdano**
A Python library to compute the epidemic threshold on temporal networks
Location: <https://github.com/eugenio-valdano/threshold>

Invited & keyonte *talks, seminars, workshops*

conferences

- Open Session of the **European Commission for the control of Foot-and-Mouth Disease, FAO**, virtual (2020). *Plenary keynote on project A.2 of the Past research section of my application.*
- **EPFL** Workshop on Engineering & Network Science, EPFL, Lausanne, Switzerland (2019). *Keynote on network science for epidemic risk assessment.*
- **Pycon Balkan**, Belgrade, Serbia (2018). *Plenary keynote at Python development conference on the software I developed [34].*
- Livestock Movement Networks and Infectious Diseases, **NetSci**, Paris, France (2018). *Keynote on project A.2 of the Past research section of my application.*
- Networks in Disease Ecology, **NetSci**, Paris, France (2018). *Keynote on [9].*
- **ECCMID** (European Congress on Clinical Microbiology & Infectious Diseases), Copenhagen, Denmark (2015). *Plenary keynote on project A.1 of the Past research section of my application.*

seminars

- University of Oklahoma, Norman (virtually), OK, USA (2020)
- University of Oxford, Oxford, UK (2019)
- Pasteur Institute, Paris, France (2019)
- Center for Research & Interdisciplinarity, Paris, France (2019)
- National Research Council (CNR), Rome, Italy (2019)
- Complexity Science Hub, Vienna, Austria (2017)
- Universitat de Barcelona, Barcelona, Spain (2017)
- Universitat Rovira i Virgili, Tarragona, Spain (2015)
- ISI Foundation, Torino, Italy (2014)
- Università di Torino, Torino, Italy (2014)

workshops

- 2020 – EuFMD Virtual Workshop OS2020
Risk Mapping and Forecasting for FAST diseases
- 2017 – Mediterranean School on Complex Networks, Salina, Italy
lecture: *Time-evolving networks and the spread of infectious diseases*

Organization of *scientific events*

- Together with Dr. A. Antonioni (Carlos III University, Madrid, Spain), I created the workshop Complexity72h (complexity72h.weebly.com). **Complexity72h** is an interdisciplinary workshop whose aim is to bring together young researchers from different fields of complex systems: data science, network science, health, biological sciences, social sciences. Participants form teams and carry out projects in a three days' time - 72 hours. The goal of each team is to upload on the arXiv a report of their work by the end of the event. The 1st and 2nd edition took place at IMT (www.imtlucca.it), Lucca, Italy in 2018 and 2019. They totaled 11 projects, 16 tutors, and 73 participants. By securing funding from IMT and other sources, we could set a low fee, and include participant and tutor accommodation. They were a success: 11 out of 11 projects resulted in a pre-print publication on the arXiv. Many of the collaborations continued spontaneously after the workshop, and one has already resulted in a publication. The workshop was set for a 3rd edition in Rome in 2020, hosted by LUISS University (www.luiss.it), but it was canceled due to COVID-19.
- In 2018 I co-organized **Gamenet** with Dr. A. Antonioni (Carlos III University, Madrid, Spain), a satellite workshop (gamenet2018.weebly.com) at the conference NetSci2018 (Paris, France). Gamenet was a winner of the *Young Initiative for Satellite Award* of the Network Science Society and partly sponsored by that grant. We had four invited speakers, and awarded the best contributed presentation with a 300 Euros award sponsored by the journal *Games*.
- In 2017 I was in the organizing committee of **ICPS2017** (www.icps2017.it). ICPS stands for International Conference of Physics Students and is the main event of IAPS, the International Association of Physics Students. The purpose of the conference was to create an opportunity for physics students from all around the world to come together, talk about science and technology, and present their research. The conference comprised 12 people of the organizing committee (me included), 30 volunteers, and 400 participants from 50 countries worldwide. We had 7 invited speakers, and alongside the scientific agenda we provided for accommodation and leisure. Our budget was 200,000 Euros. We were able to secure funding from academia and institutions (University of Turin, Regional government), two Italian banks, other private sponsors, and crowdfunding. We also set up a partnership with the African Inst. For Mathematical Sciences, and published a call for 4 scholarships (conference fee waiver + coverage of travel expenses) awarded to excellent students from African countries.

additional contributions

- I was a member of the organizing committee of NetSci 2018 (Paris, France), as co-chair of design. NetSci is the flagship conference of the Network Science Society (netscisociety.net). Together with Dr. B Klein (Northeastern U, Boston, MA, USA), I designed the graphics of the event. Specifically, we designed logo, badges, screen backgrounds, handouts, conference bag and accessories.

Grants and projects

- 2020, Grant FSPI - MOPGA – ACCLAIM, **Make Our Planet Great Again Initiative**
funder: French Government (Campusfrance)
duration: 18 months
budget: 75,000 Euros
role: PI, recipient
- 2018, Italian Super Computing Resource Allocation – ISCRA C
funder: CINECA
duration: 6 months
budget (in terms of computing power): 5.000 total node hours on top level high-performance computing (Tier-0)
role: partner, access to 50% of allocated resources over the course of the project

Dissemination

popular science videomaking

In 2019, I realized a short movie on my research activity for the **Pariscience Festival** (<https://pariscience.fr/>) – a yearly festival on scientific documentaries, in Paris, France. I teamed up with director Laura Hennequin and together we created in 48 hours a short movie on my work at Ref. [19], on the circulation of antibiotic-resistant bacterial strains in hospital settings. The short movie is in French, and is titled **Francesco v les supérbacteries**. It can be watched here: <https://vimeo.com/374684938>
 Laura Hennequin and I created the story together, wrote the screenplay. I also played myself as actor. We obtained a collaboration of a team of professionals for music and image editing. We shot most of the scenes within the building of the INSERM unit.

additional dissemination activities

- Dissemination talk at Pint of Science (pintofscience.fr/) 2019, Paris, France.
- Dissemination talk at Databeers (databeerstorino.tumblr.com/), Turin, Italy (2015).
- Dissemination talk at student conference CISF (Conference of the Italian Association of Physics Students), Turin, Italy (2015).
- Dissemination talk in high school (Liceo Classico Cavour, Turin, Italy, 2014).

Awards

- **New Investigator Award**, International Antiviral Society (USA, 2020).
- 2nd place at the award *Oltre "Orizzonte 2020"*, by RéCIF, the **Network of Italian Researchers in France** (2020).
- **New Investigator Award**, International Antiviral Society (USA, 2019).
- **Best Poster Award**, together with Dr. A. Antonioni (Carlos III U, Madrid, Spain), and Dr. M. Re Fiorentin (Polytechnic of Turin, Italy), at the conference NetSci 2018.
- **Optime Award**, Employers' Association (Turin, Italy, 2011)
- **Italian Ministry of Education Award** (Turin, Italy, 2010)