SAMIR SUWEIS BRIEF CURRICULUM VITAE

- **PERSONAL INFORMATION**

Family Name: Suweis; First Name: Samir; Second Name: Simon
Researcher unique identifier ORCID: 0000-0002-1603-8375; SCOPUS ID: 36087945400
Nationality: Italian. Date of birth: 21.02.1984.
Homepage: https://impactstory.org/SamirSuweis

- **EDUCATION**

2008-2011. Ph.D. in Science, Department of Civil and Environmental Engineering, Ecole Polytechnique Fédérale Lausanne (EPFL) – Lausanne (Switzerland). Supervisor: *Andrea Rinaldo*

2003-2008. Bachelor and Master in Physics, Physics Department, University of Padua, Padua, Italy.

- **CURRENT POSITION(S)**

from 04/2016. *Research Scientist (RTDa)*, Physics and Astronomy Department, Padova University, Italy.

- **PREVIOUS POSITIONS**

2013-2016. *Post-Doc Researcher*, Physics and Astronomy Department, Padova University, Italy.

2011-2013. *Post-Doc Researcher* at the LIPh Lab (Laboratory of Interdisciplinary Physics) - Physics and Astronomy Department, Padova University.

- **FELLOWSHIPS**

2013-2015 Young Scholar Grant, Physics & Astronomy Department, University of Padova, Italy (18000 E).

05/2010- 01/2011. *Visiting research student,* Civil and Environmental Engineering Department, Princeton University, NJ (USA).

- **SUPERVISION OF BACHELOR, MASTER AND GRADUATE STUDENTS**

I have co-supervised (research design and mentoring) 5 Graduate, 7 Master and 4 Bachelor students.

Year	Topic / Title	Student	Level
2017	Complexity-Stability Debate: a random matrix approach	Alessandro Spiezia	Master
2017		Niccolo Ancieschi	
2017	Neural networks for discrimination of γ and neutrons	Luca Morselli	Bachelor
Ongoing	Criticality in Neutral Networks	Ileania Apicella	Ph.D.
Ongoing	Food Complexity	Chengyi Tu	Ph.D.
Ongoing	Controllability in Living Network	Daniel M. Busiello	Ph.D.
2016	Emergence of Biodiversity in neutral populations	Davide Biraghi	Master
2016	Network Architecture of Boltzmann Machines	Michele Piccolini	Bachelor
2015	Localization in Bacteria Dynamics	Rodrigo Rocha	Ph.D.

2015	Randomness and Criticality in Biological Interactions	Jacopo Grilli	Ph.D
2015	Validation of Statistical Model of Spatial Flows	Irene Malvestio	Master
2015	Criticality in Living Systems	Marco Faggian	Master
2015	Order statistics of random walks.	Matteo Battilana	Master
2015	Citation dynamics in the network of scientific papers	Fabio Peruzzo	Master
2015	Forma ottimale dei dotti xilematici	Matteo Sireci	Bachelor
2014	Inverse Ising Problem applied to Ecology	Matteo Ardonisio	Master
2014	Ecological networks	Marco Pellizzari	Master
2013	Random Matrix and Ecological System	Eleonora De Lazzari	Master
2013	Stochastic Approach to Soil Moisture Dynamics	Lorenzo Voltolina	Bachelor
2013	Statistical Mechanics of Networks	Fabio Peruzzo	Bachelor
2013	Fragility and Robustness in Complex Networks	Irene Malvestio	Bachelor

- **TEACHING ACTIVITIES**

2016-2017: Lecturer (32 hrs) for the course (MA level) "Modern Physics", Mathematics Department, University of Padova.

2016-2017: Lecturer (36 hrs) for the course (BA level) "Experimental Physics 2", Optic & Optometrics class, Physics and Astronomy Department, University of Padova.

2015-2016: Laboratory Assistant (24 hrs) for the laboratory class (BA level) "Physics 1", Engineering Department, University of Padova.

2015-2016: Lecturer (26 hrs) for the course (BA level) "Physics", Biotechnology class, Biology Department, University of Padova.

2015-2016: Lecturer and class coordinator for the course (graduate level): "Complex System through Basic Examples" Graduate School of Physics, University of Padova.

2013-2014: Lecturer and class coordinator for the course (graduate level): "Introduction to Probability on Graphs" Graduate School of Physics, University of Padova.

2013-2015: Lecturer for the BA class "Model of Natural Forms", the Galilean advanced school of Science, University of Padova. I lectured in succession with Prof. Amos Maritan, and designed the part of the class regarding the topic of Complex Networks (6 out of 15 lectures).

2012-2016: Lecturer for a module on Complex Systems, for the master course "Scientific Communication" organized yearly by the University of Padova, Physics & Astronomy Department.

- **ORGANISATION OF SCIENTIFIC MEETINGS**

20/09/2016 International Conference Satellite: "Robustness, Adaptability and Critical Transitions in Living Systems #2", within the International Conference of Complex System 2016 (CCS16). I have been the leading organizer of this conference satellite.

27-29/06/2016 XXI Italian National Conference of Statistical Physics and Complex Systems (member of the organizing committee).

16-19/09/2015 International Workshop: "Living systems, from interaction patterns to critical behaviour", Venezia, (Italy). 60 participants. I have been the leading organizer of this conference.

24/09/2014 International Conference Satellite: "Robustness, Adaptability and Critical Transitions in Living Systems", within the European Conference of Complex System 2014 (ECCS14). 40 participants. I have been the leading organizer of this conference satellite.

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

Member of, European and American Geophysical Union (2010-2011, 2014), Complex Systems Society (2013-2014, 2014/2015/2016/2017).

- **MAJOR COLLABORATIONS**

Field	Collaborators
Statistical Physics and Complex Systems Modeling	A. Maritan, J. Hidalgo, (IT), J. Grilli, S. Allesina, J.R. Banavar (USA), F. Simini and S. Azaele (UK); Shnerb, N. (IL), Munoz (ES), M. Cosentino-Lagomarsino (FR)
Biological and Ecological Data	T. Bellini, T. Anfodillo. S. Vassanelli, M. Corbetta, D. Iudicone (Italy), C. DeVargas (France).
Eco-Hydrology, Virtual Water Networks and Food Security	A. Rinaldo, (Switzerland), I. Rodriguez-Iturbe, M. Konar, P. D'Odorico, J. Carr and A. Porporato (USA); E. Bertuzzo (IT)

- **PUBLICATION AND CITATION STATISTICS**

Index	Scholar	Scopus
Publications	31	31
Citations	621	422
h-index	14	11

I have 22 publications in refereed journals, including **1 in Nature, 2 in Nature Communications and 4 in PNAS, 1 Review of Modern Physics**. I have disseminated my work internationally through 11 invited talks and more that 14 contributed presentations. Our research has been also mentioned in American Scientist, Nature News & Views PNAS Commentary, European Commission DG Environment and Unesco Global Water Forum.

- **SCIENCE COMMUNICATION AND PUBLIC ENGAGEMENT**

2017. Seminar on Big Data and AI at the refresher course for high School teacher organized by Diesse Lombardia, in Milan, Italy.

2016. Public Seminar at the International cultural festival "Bergamo Scienza"

2015. Public seminar "Cosa centra la Fisica con gli ecosistemi" ("la Scienza in un bicchiere" series), organized by Associazione Quartiere Risorgimento, Padova, February 2015.

2014. Tutor at ESTAGE, internship for high-school students at Department of Physics and

Astronomy, Universita` degli Studi di Padova

2011-2015. Series of lectures on "Networks and its Applications" at the "Romano Bruni" high school in Padova, Dieffe high school in Padova, and Dieffe high school in Spinea (Venice).

Invited presentations at International Workshops

- *"Quantitative Laws of Genome Evolution"*, Como (IT), September 2013.
- *"Biological Physics Community Day"*, Paris, 07/11/2014
- *"Space, time and socio-ecological transitions*", Université Paris Diderot, France, 13/10/2015.
- *"Bottom-up evolution of cooperation: linking local and global environ-mental commons*", Grantham Research Institute, London School of Economics, UK. 29/10/ 2015.
- *"The effects of international trade and land grabbing on food security*", SESYNC (National Socio-Environmental Synthesis Center), Annapolis, MD (USA), 26-29/01, 4-6/05, 19-21/10 (2015)
- "*Resilience and Reactivity of global food security*". Sustain DTU Conference, Copenhagen, 17.12.2015
- *"Effect of localization on the stability of mutualistic ecological networks*". 3rd Workshop on Complex Systems. University of Milan, Italy – 28.01.2016.
- "Water, a Global Resource", 1st National Workshop on socio-economic and environmental consequence of the global food trade. Turin, Italy - 5-6.05.2016
- "Quantitative Laws II– From physiology to ecology, from interaction structures to collective behavior". International Workshop, June 13-24, 2016, Como, Italy
- "Statistical Physics of Living Systems". International Workshop of young Elite, Guangzhou University, December 18-20, 2016, Guangzhou, China.

Invited Seminars in International Academic Institutes and Universities

- Department of Environmental Engineering, Ecole Polytecnique de Lausanne, September 2013
- Environmental Science Department of the University of Virginia, February 2014
- Department of Applied Mathematics, University of Leeds, November 2014.
- University of Michigan, Center for the Study of Complex Systems, January 2015.
- Masdar Institute, Abu Dhabi, United Arab Emirates, December 2015.
- Imperial College of London, Center of Complex System, October 2015.

- DTU Aqua, Copenhagen, Denmark, December 2015

- Villa del Grumello, Como, Italy, October 2016.

- University of Udine, Italy, January 2017.

- University of California, Berkley, February 2017

Invited presentations at International Schools

- Lecturer at the International School "Physics of Complex Systems"; May 16-17-18, at the SISSA-International School for Advanced Studies, Trieste, Italy.

- Shangai Tech Summer School at University of Padova, August 2016.

- Invited Seminar at Salina Summer School on Complex networks, September 2017

Contributed Talks at international Conferences

- "Upscaling Tropical Forest Biodiversity", International Conference of Complex Systems (CCS) 2016, Amsterdam, Netherlands.

Academic Services & Activities:

Invited Editor: Special issue "water-food nexus" on Advanced Water Resources (forthcoming).

Species Issue "Entropy across Disciplines" on Entropy (forthcoming).

Referee in journals: **Nature,** Proceedings of National Academy of Science, Proceedings of the Royal Society B, Physical Review E, Plos One, Water Resource Research, Geophysical Research Letters, Advances in Water Resource, Journal of Theoretical Biology, Journal of Econometrics, Soil Biology and Biochemistry, Entropy, Ecology, Journal of Animal Ecology, Journal of Hydrology, Communications in Nonlinear Science and Numerical Simulation, Oikos.

Referee for funding project: National Science Foundation. Swiss National Science Foundation.

Member of, European and American Geophysical Union (2010-2011, 2014), European Complex Systems Society (2013-2014, 2014/2015).

- **RESEARCH GRANTS – THIRD-PARTY FUNDING**

As Principal Investigator:

1. Senior Research Grant (2013 - ~ 55.000 Euros) "Statistical Physics of Ecological Networks: from Patterns to Principles" funded by the University of Padova within the Young Scholars Project - aimed at support innovative and excellent research proposed by young scientists. I was the PI and the writer of the project

I have also been involved as a collaborator in

2. PRIN (Research Project of National Interest) Grant 2012 (~ 260.000 Euros): “Statistical Physics of Active Matter: Disentangling Complexity Patterns in Biological Systems”.

3. PRIN (Research Project of National Interest) Grant 2010 (~ 200.000 Euros): “Dynamics of Communities” .

Vincitore del bando "Iniziative di cooperazione universitaria” – 2017