

## CURRICULUM VITAE

# Arianna Dal Forno

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**Achievement of the National qualification (ASN) of the Italian University System as Associate Professor in the sector SECS-S/06 Mathematical methods in Economics, Actuarial Sciences and Finance**

05/02/2014

## CURRENT POSITION

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Adjunct Professor at University of Torino (Italy), *Quantitative Methods for Economics and Social Sciences* - in English (Master's Degree) 2011 – present

since 2013 this course is part of the program of the ERASMUS MUNDUS MASTER'S COURSE: Economic Policies in the age of Globalisation (EPOG) – in English,  
<http://www.cepn-paris13.fr/epog/> 2013 - present

## EDUCATION

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Doctoral degree in Mathematics applied to Economic Decisions, University of Trieste, Italy  
Thesis title: “Topics in Equilibrium Dynamics Theory: a) Local Determinacy and Sunspot Equilibria in Arbitrary Dimensions; b) Optimal Necessary Conditions and Bubbles in Sequential Economies”  
Supervisors: a) Jean-Michel Grandmont, CNRS-CREST, Paris, France; b) Luigi Montrucchio, University of Torino, Italy 2001

M.Sc. in Mathematics, University of Torino, Italy 1995

## RESEARCH INTERESTS

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Dynamics Systems and applications to Economical, Social and Psychological models  
Dynamics population games  
Bifurcation theory  
Theoretical and computational mathematical models applied to organizations  
Theoretical and computational mathematical models applied to artificial markets  
General equilibrium

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## PUBLICATIONS

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1. Avrutin V., Dibak C., Dal Forno A., Merlone U. (2015). "Dynamics of a 2D piecewise linear Braess paradox model: effect of the third partition". *International Journal of Bifurcation and Chaos*, **25**, 35 pages.
2. Dal Forno A., Merlone U., Avrutin V. (2014). "Dynamics in Braess paradox with non-impulsive commuters". *Discrete Dynamics in Nature and Society*. Volume 2014, Article ID 345795, 12 pages, <http://dx.doi.org/10.1155/2014/345795>.
3. Dal Forno A., Merlone U. (2014). "Leader emergence in artificial populations: the role of networks", *Quality & Quantity*, DOI 10.1007/s11135-013-9856-y.
4. Dal Forno A., Merlone U. (2013). "Replicating human interaction in Braess Paradox". *Proceedings of the 2013 Winter Simulation Conference*, in C. Laroque, J. Himmelspach, R. Pasupathy, O. Rose, and A. M. Uhrmacher (eds.).
5. Dal Forno A., Merlone U. (2013). "Complex dynamics in supervised work groups". *Communications in Nonlinear Science and Numerical Simulation*, **18**(7), 1805-1821. <http://www.sciencedirect.com/science/article/pii/S100757041200545X>
6. Dal Forno A., Merlone U. (2013). "Border-collision bifurcations in a model of Braess paradox". *Mathematics and Computers in Simulations*, **87**, 1-18.
7. Dal Forno A., Merlone U. (2013). "Nonlinear dynamics in work groups with Bion's basic assumption", *Nonlinear Dynamics, Psychology, and Life Sciences*, **17**(2), 295-315.
8. Dal Forno A., Gardini, L., Merlone U. (2012) "Ternary choices in population games and border collision bifurcations", *Chaos, Solitons & Fractals*, **45**, pp. 294-305.
9. Dal Forno A., Merlone U. (2012). "Grounded theory based agents". *Proceedings of the 2012 Winter Simulation Conference*, in C. Laroque, J. Himmelspach, R. Pasupathy, O. Rose, and A. M. Uhrmacher (eds.), 1250-1260.
10. Dal Forno, A., Merlone, U. (2010) "Dinamiche complesse in un modello di gruppo di lavoro supervisionato", *Sistemi Intelligenti*, **1**, pp.5-22.
11. Dal Forno A., Merlone U. (2010) "Incentives and individual motivation in supervised work groups", *European Journal of Operational Research*, doi: 10.1016/j.ejor.2010.05.023.
12. Dal Forno A., Merlone U. (2010), "Effort dynamics in supervised work groups", *Journal of Economic Behavior & Organization*, doi:10.1016/j.jebo.2010.05.010.
13. Dal Forno, A., Merlone, U., (2009). "Social entrepreneurship effects on the emergence of cooperation in networks", *Emergence: Complexity and Organization*, **11**(4), pp. 48-58.
14. Dal Forno, A., Merlone, U., (2009). "Individual incentives in supervised work groups: from human subjects' experiments to agent based simulation", *International Journal of Internet and Enterprise Management*, **6**(1), pp. 4-22.
15. Dal Forno, A., Merlone, U., (2009). "Optimal efforts in heterogeneous agents population with global and local interactions", *Cubo A Mathematical Journal*, **11**(2), pp. 15-36.
16. Dal Forno, A., Merlone, U., (2007). "Incentives in supervised teams: An experimental and computational approach", *Journal of Social Complexity*, **3**(1), pp.37-52.

17. Pellizzari P., Dal Forno A., (2007). "A comparison of different trading protocols in an agent-based market", *Journal of Economic Interaction and Coordination*, **2**(1), pp. 27-43.
18. Dal Forno A., Merlone U., (2006). "The Emergence of effective Leaders: an Experimental and Computational Approach" *Emergence: Complexity and Organization*, numero speciale: *Complexity & Leadership*, **8**(4).
19. Dal Forno A., Merlone U., (2004). " From classroom experiments to computer code", *Journal of Artificial Societies and Social Simulation*, **7** (3), <http://jasss.soc.surrey.ac.uk/7/3/2.html>
20. Dal Forno A., Merlone U., (2004). "Personnel Turnover in Organizations: an Agent-Based Simulation Model", *Nonlinear Dynamics, Psychology, and Life Sciences*, **8** (2), pp. 205-230 (invited paper for the special issue on Agent-Based Modeling).
21. Dal Forno A., Montrucchio L., (2003). "Optimality Conditions and Bubbles in Sequential Economies and Bounded Relative Risk-Aversion", *Decisions in Economics and Finance*, **26** (1), pp. 53-80.
22. Dal Forno A., Merlone U., (2002). "A multi-agent simulation platform for modeling perfectly rational and bounded-rational agents in organizations", *Journal of Artificial Societies and Social Simulation*, **5** (2), ISSN 1460-7425 <http://jasss.soc.surrey.ac.uk/JASSS.html>
23. Dal Forno A. (2001) "Topics in Equilibrium Dynamics Theory: a) Local Determinacy and Sunspot Equilibria in Arbitrary Dimensions; b) Optimal Necessary Conditions and Bubbles in Sequential Economies", *PhD Dissertation*

## PEER REVIEWED CHAPTERS IN BOOKS

1. Dal Forno A., Mollona E. (2015). "Isomorphism and local interests in the spread of global policies: an enquiry into privatization policy adoption using computer modeling and simulation". In Goddard V., Narotzky S. (eds.), *Industry and Work in Contemporary Capitalism*. Routledge. pp.19-49.
2. Dal Forno A., Merlone U. (2013). "Chaotic dynamics in organization theory", in Bischì, G.I., Chiarella, C., Sushko, I. (Eds.), *Global Analysis of Dynamic Models in Economics and Finance*, Springer Haidelberg, pp. 185-204.
3. Dal Forno A., Merlone U., (2008). "Network dynamics when selecting work team members" in Naimzada, A. K., Stefani, S., Torriero, A. (Eds.), *Networks, Topology and Dynamics Theory and Applications to Economics and Social Systems*, Series: Lecture Notes in Economics and Mathematical Systems , Vol. 613, Springer Verlag, pp. 229-240.
4. Dal Forno, A., Merlone, U., (2007). "The emergence of effective leaders: An experimental and computational approach", in Hazy, J.K., Goldstein, J.A., and Lichtenstein, B.B., (Eds.), *Complex Systems Leadership Theory New Perspectives from Complexity Science on Social and Organizational Effectiveness*, ISCE Publishing, Mansfield, MA, pp. 231-252.
5. Dal Forno, A., Merlone, U., (2007). "The evolution of coworkers networks: An experimental and computational approach", in Edmonds, B., Hernández Iglesias, C., and Troitzsch, K.G., (Eds.), *Social Simulation: Technologies, Advances and New Discoveries*, Information Science Reference, Hershey (PA), pp. 280-293.

## PUBBLICAZIONI PER LA DIDATTICA UNIVERSITARIA

Berardo M.G., Dal Forno A., Tibiletti L. (2010) *Esercizi di Matematica Generale con soluzioni*, ISBN 978•88•3481515•1, pp. 11-45, G. Giappichelli Editore.

## SCHOLARSHIPS AND RESEARCH GRANT

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European project MEDEA - Department of Computer Science, University of Bologna, Italy, research grant	09/2010 - 05/2012
Lagrange Project – Fondazione CRT, Fondazione ISI (Institute for Scientific Interchange) research scholarship, Torino, Italy	2006 - 2007
Project: “Artificial Markets: microstructure and simulation”, research grant, Department of Applied Mathematics, University of Ca’ Foscari, Venezia, Italy	2004 - 2005
Economics and Statistics, scholarship, University of Torino, Italy	2003 - 2004

## VISITING POSITIONS

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Visiting Professor at the University of Chile, Department of Economics	03/2013 – 07/2013
Post-Doctoral Fellow, Department of Economics, Harvard University, Cambridge MA, USA	2002 - 2003

## SCHOOLS AND EXTRA-CURRICULAR COURSES

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Bifurcations in piecewise-smooth systems: perspectives, methodologies and open problems, University of Urbino, Italy	2013
Analysis of Complex Networks: Structure and Dynamics, Politecnico di Milano, Italy	2013
Game-theoretic Approach to Multi-Agent Systems (Apt, doctorate-level course), University of Padova, Italy	2005
Game Theory (Fudenberg, doctorate-level course), Harvard University, Cambridge MA, USA	2003
Economic Theory (Postlewaite, Schwarz, doctorate-level course), Harvard University, Cambridge MA, USA	2003
Summer School in “Intertemporal Macroeconomics: Growth, Fluctuations and the Open Economy” 2 <sup>nd</sup> edition, Venice International University, Italy	2002
Microeconomic Theory (Avery, Miller, doctorate-level course), J.F.K. School of Government, Harvard University, Cambridge MA, USA	2002
Summer School in “Economic Theory: Contracts and Markets with Boundedly Rational Agents” (scholarship) - 1 <sup>st</sup> edition, Venice International University, Italy	2001

## REFeree FOR INTERNATIONAL JOURNALS

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Journal of Artificial Societies and Social Simulation  
Mathematical Methods in Economics and Finance  
Applied Mathematics  
American Journal of Mathematics and Statistics

## MEMBERSHIP

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Modelli Dinamici in Economia e Finanza (MDEF – Dynamic Models in Economics and Finance):

<http://www.mdef.it/>

Società Italiana Caos e Complessità (Italian Society of Chaos and Complexity): <http://www.sicc-it.unina.it/>

Society for Chaos Theory in Psychology and Life Sciences: <http://www.societyforchaostheory.org/>

## INVITED SEMINARS

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Department of Economics and Statistics “Cognetti de Martiis”, University of Torino, Italy	2014
Department of Mathematics “G.Peano”, University of Torino, Italy	2014
Department of Economics, ECON-UCHILE Seminars, Universidad de Chile, Santiago de Chile	2013
Department of Economics, ECON-UCHILE Seminars, Universidad de Chile, Santiago de Chile	2011
Reutlingen University, ESB Business School, Reutlingen, Germania	2011
Department of Applied Mathematics, University Ca’ Foscari, Venice, Italy	2005
Department of Statistics and Applied Mathematics, University of Torino, Italy	2001

## ACTIVE PARTICIPATION IN CONFERENCES AND WORKSHOPS

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<i>9th Workshop “Modelli Dinamici in Economia e Finanza” (MDEF2014), Urbino, Italy</i>	2016
<i>8th Workshop “Modelli Dinamici in Economia e Finanza” (MDEF2014), Urbino, Italy</i>	2014
<i>5th Meeting CIPESS2013, “Psicologia ed Economia Sperimentali (Experimental Psychology and Economics)”, Torino, Italy</i>	2013
<i>7th Workshop “Modelli Dinamici in Economia e Finanza” (MDEF2012), Urbino, Italy</i>	2012
<i>MEDEA Steel Project Conference. Seventh Framework Programme FP7-SSH (Area tematica: Scienze Socioeconomiche e Scienze Umane), Barcelona, Spain</i>	2012
<i>21st Annual International Conference for Society for Chaos Theory in Psychology and Life Sciences (SCTPLS2011), Orange CA, USA</i>	2011
<i>6th Workshop “Modelli Dinamici in Economia e Finanza” (MDEF2010), Urbino, Italy</i>	2010
<i>57<sup>th</sup> International Statistical Institute Conference (ISI 2009), Durban, South Africa</i>	2009
<i>5th Workshop “Modelli Dinamici in Economia e Finanza” (MDEF2008), Urbino, Italy</i>	2008
<i>XXXII Convegno AMASES, Trento, Italy</i>	2008
<i>Second World Congress on Social Simulation (WCSS 2008), Fairfax, Washington DC, USA</i>	2008
<i>North American Association for Computational Social and Organization Science Conference (NAACSOS 2007), Emory University, Atlanta, Georgia, USA</i>	2007
<i>First World Congress on Social Simulation (WCSS 2006), Kyoto, Japan</i>	2006
<i>XXIX Convegno AMASES, Palermo, Italy</i>	2005
<i>North American Association for Computational Social and Organization Science Conference (NAACSOS 2005), Notre-Dame University, South Bend, Indiana, USA</i>	2005
<i>Wild@Ace2004 Workshop on Industry and Labor Dynamics, Torino, Italy</i>	2004
<i>XXVIII Convegno AMASES, Modena, Italy</i>	2004
<i>2nd International Conference of the European Social Simulation Association and 2nd Model to Model Workshop (ESSA 2004), Valladolid, Spain</i>	2004
<i>North American Association for Computational Social and Organization Science Conference (NAACSOS 2004), Pittsburgh, Pennsylvania USA</i>	2004
<i>XXVII Convegno AMASES, Cagliari, Italy</i>	2003
<i>XXVI Convegno AMASES, Verona, Italy</i>	2002
<i>First Lake Arrowhead Conference on Computational Social Science Agent-based Modeling in the Social Sciences, Lake Arrowhead, San Bernardino CA, USA</i>	2002
<i>XXV Convegno AMASES, Firenze, Italy</i>	2001

## TEACHING EXPERIENCE

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### UNDERGRADUATE COURSES IN FOREIGN UNIVERSITIES

Visiting Professor, Department of Economics, University of Chile (Cile):  
*Microeconomia 2 – Teoria de precios 2* (in lingua inglese) 2013

### UNDERGRADUATE COURSES IN ITALIAN UNIVERSITIES

Adjunct Professor, Department of Economics & Statistics “Cognetti de Martiis”, University of Torino (Italy):  
*Quantitative Methods for Economics and Social Sciences* (Master's Degree – in English) 2013 - present

Adjunct Professor, Department of Economics, Social Studies, Applied Mathematics and Statistics,  
University of Torino (Italy):  
*Mathematics* (First level's Degree) 2014 – 2015

Adjunct Professor, Department of Psychology, University of Torino (Italy):  
*Psychometrics* (First level's Degree) 2014 – 2015

Adjunct Professor, Department of Economics, Social Studies, Applied Mathematics and Statistics,  
University of Torino (Italy):  
*Applied Mathematics* (Master's Degree – in English) 2014 – 2015

Adjunct Professor, Political Science, University of Torino (Italy):  
*Quantitative Methods for Social Sciences* (Master's Degree – in English) 2011 - 2013

Adjunct Professor, Political Science, University of Torino (Italy):  
*Probability* (First level's Degree) 2011 – 2012

Adjunct Professor, Economics, University of Torino (Italy):  
*Mathematics* (First level's Degree) 2009 – 2010

Adjunct Professor, Political Science, University of Torino (Italy):  
*Mathematics for Statistics* (First level's Degree) 2007 - 2011

Adjunct Professor, Economics, University of Torino (Italy):  
*Mathematics Applied to Economics and Finance* (First level's Degree) 2005 – 2010

Adjunct Professor, Political Sciences, University of Torino (Italy):  
*Mathematics Applied to Economics 1* (First level's Degree) 2006 - 2007

Adjunct Professor, Political Sciences, University of Torino (Italy):  
*Mathematics Applied to Economics 2* (First level's Degree) 2006 - 2007

## GRADUATE COURSES

Professor, SIS (Scuola Interateneo Specializzante) Torino, Italy: <i>Application of Mathematics to Economics</i> (Qualifying Special Course for High School Teachers)	2006 - 2007
Professor, Venice International University, Italy: <i>Mathematics</i> (Master in Economics and Finance, in English)	2005 - 2006
Tutorships, CORIPE Piemonte, Torino, Italy: <i>Microeconomics 2</i> (Master in Economics, in English)	2005 – 2009
Tutorships CORIPE Piemonte, Italy: <i>Quantitative Methods for Economics</i> (Master in Economics, in English)	2001 – 2009

## OTHER

Professor, Fondazione Feyles, Corso di Tecnico Marketing e Comunicazione (center studies and vocational training), Torino (Italy): <i>Elements of Applied Statistics</i>	2014 - 2015
<i>Elements of Statistics</i>	2012 - 2014
<i>Applied Statistics</i>	2012 - 2014

## ADDITIONAL INFORMATION

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Languages: Italian (first language), English (advanced), Spanish (intermediate)

Statistical Software: R