Jole Costanza

Current Position

Post Doc - Computational Biology
h-index: 6

> Center for Genomic Science of IIT@SEMM
> Fondazione Istituto Italiano di Tecnologia (IIT), Via Adamello, 16, 20139 Milan, Italy
> - From 1st Sept. 2015 - to date: Computational Cancer Genomics and Systems Biology
> Leader: Dr. Laura Riva (now at the Wellcome Trust Sanger Institute)
> - From 1st Febr. 2014 to 31st Aug. 2015: Computational Research Unit - Leader: Dr. Heiko Muller

My current research is focused on the computational analysis of next generation sequencing data applied for cancer research. In particular, in a collaboration with the Pelicci's group at IEO, I'm involved in two projects to study the genomics of acute myeloid leukemia in chemoresistant patients and in cancer stem cells. My main interest is developing bioinformatics pipelines for ngs data and novel computational tools for integrating and interpreting omics data, such as TCGA data.

Fields of Interest Research

Bioinformatics, Computational Biology, Genomics, Modeling, Systems & Synthetic Biology, Cancer Genome Research, next generation sequencing data analysis.

Employment

1. University of Catania, Department of Mathematics and Computer Science, November 2010 - February 2014
   PhD in Computer Science, Project: Biological Circuit Design via BioCAD Tools.

2. BioMolecular research Genomics SRL, Padova (PD), October 2009 - September 2010
   Development of a new software for the analysis and troubleshooting of Sanger DNA sequencing data.

Education

1. **Ph.D. in Computer Science**, 1 November 2010 - 26 February 2014
   Department of Mathematics and Computer Science, University of Catania, Italy.

Thesis Title: *Biological Circuit Design via BioCAD Tools*
Advisor: Prof. Giuseppe Nicosia.
External advisor: Prof. Pietro Lió (Computer Laboratory, University of Cambridge, UK)

Research interests:

Programming, Optimization algorithms, Gene Regulatory Networks and Reverse Engineering, Metabolism, Systems & Synthetic Biology, BioCAD, Modeling, Biological Networks, ODEs, Flux Balance Analysis

2. **Master's Degree in Bioengineering**, October 2007 - 20 April 2010
Department of Information Engineering, University of Padua, Italy.
Thesis Title: *Algorithms for the analysis and troubleshooting of Sanger DNA sequencing data*
Advisor: Dr. Barbara Di Camillo.

3. **Bachelor's Degree** in Biomedical Engineering, October 2004 - 17 July 2007
Department of Information Engineering, University of Padua, Italy.
Thesis Title: *Automatic methods for human chromosome segmentation in images*
Advisor: Prof. Alfredo Ruggeri.

Basis engineering studies:

Mathematical analysis, Geometry, Probability theory, Physics, Computer Science, Chemistry, Electrical and Electronics, Mechanics, Signals and Systems Theory, Digital electronics, Automatic Control

Specialist studies:

Biology, Physiology, Computational Biomechanics, Biomaterials and Biocompatibility, Artificial organs and Prothesis, Control theory and design of Biomedical Devices, Modeling and Controlling of Biological Systems, Pharmacokinetics, Neuroengineering, Analysis and Elaboration of Biological Data and Images, Biosensors, Biomechatronics, Biomedical Robotics, Telemedicine, Bioinformatics, Computational Biology, Calculus and numerical methods

Technical Skills

1. *Technical and Scientific skills*: Next generation sequencing data analysis, Duplex sequencing, Whole exome sequencing, variants calling methods, annotation (GATK, picard, MuTect, Pindel, SomaticSeq, D-ToxoG, etc...), RNA-sequencing, clonal tracking, shRNA-screening. Modeling and simulations of biological systems (Cobra Matlab Toolbox, linear programming, glpk, TomLab, SBML, Flux Balance Analysis, etc...).

2. *Data integration from Data bases*: UniProt, dbSNP, TCGA, cBioPortal, COSMIC, ExAC, 1000Genomes, Esp6500.

3. *Operating Systems*: Linux (excellent), Unix (excellent), Windows (excellent)

4. *Programming Languages*: R statistics (excellent), shell scripting (excellent), Python (excellent), MatLab (excellent), Java (good), Perl (good).

5. *Other programming skills*: SBML (excellent), SQL databases (good), SAAM II (good).

6. *Assembly Language Programming*: MIPS.

7. *Office Tools*: word, excel, power point, access, open office, TEX, LATEX , Office, graphical (Gimp, Photoshop, Gnuplot)

Languages

Italian: Mothertongue

English: Fluent

Teaching Activities

1. Co-advising of Master's Thesis on Mathematics, Dept. of Mathematics and Computer Science, University of Catania, Italy

   Thesis Title: *Pareto Ottimalita' in reti metaboliche a scala genomica.* Student: Giogio Jansen (A.A. 2015/2016)

   Thesis Title: *Coevolutionary prediction in biological systems simulation.* Student: Salvatore Mazzola (A.A. 2012/2013)

   Thesis Title: *An artificial swarm for the graph coloring problem.* Student: Piero Andrea Consoli (A.A. 2011/2012)

   Thesis Title: *Coloring a Map by using an artificial ant colony.* Student: Sebastiano Alessio Collera' (A.A. 2011/2012)

2. Co-advising of a Master's Thesis on Information Engineering, Dept. of Information Engineering, University of Padova, Italy

   Thesis Title: *Modello Flux Balance Analysis e modello basato su equazioni differenziali del metabolismo del triptofano.* Student: Chiara Favaretto (A.A. 2013/2014)

3. Teaching assistant of the course *Machine Learning*, for Degree Course in Computer Science (Graduate), Dept. of Mathematics and Computer Science, University of Catania, Italy A.A. 2010/2011 - 2011/2012.

4. Teaching assistant of the course *Computer Science - C/C++ Programming*, for Degree Course in Mathematics (Undergraduate), Dept. of Mathematics and Computer Science, University of Catania, Italy A.A. 2011/2012.

5. Teaching assistant of the course *Scientific Computing*, for Degree Course in Mathematics (Undergraduate), Dept. of Mathematics and Computer Science, University of Catania, Italy A.A. 2010/2011.

6. Teaching assistant of the course *Learn Computer Skills*, for Degree Courses in Mathematics (Graduate), Dept. of Mathematics and Computer Science, University of Catania, Italy A.A. 2010/2011.

Seminars

1. Seminar *Identification of virally encoded somatic missense mutations occurring in human cancer* at Center for Genomic Science of IIT@SEMM, Fondazione Istituto Italiano di Tecnologia, February 5, 2015.

2. Seminar *Metabolic and Genetic Design via BioCAD Tools* at Department of Information Engineering, University of Padua, October 7, 2013.

3. Seminar *Metabolic and Genetic Design via BioCAD Tools* at Center for Genomic Science of IIT@SEMM, Milan, September 30, 2013.

4. Seminar *A new Application in Computational Biology: Pareto Optimality for Microbial Design*, at CNR National Research Council, IFOM, Pisa, October 3, 2012.

5. Seminar *Processing and Analysis of Biological Data* at Dept. of Mathematics and Computer Science, University of Catania, A.A. 2011/2012.

6. Seminar *Troubleshooting of Sanger DNA sequencing data* at Dept. of Mathematics and Computer Science, University of Catania, A.A. 2011/2012.

7. Seminar *Reverse Engineering algorithms for genetic networks* during the courses Machine Learning and Scientific Programming, Dept. of Mathematics and Computer Science, University of Catania, A.A. 2010/2011.

Publications

Journal Articles

1. **LowMACA: exploiting protein family analysis for the identification of rare driver mutations in cancer**
G. Melloni, S. de Pretis, L. Riva, M. Pelizzola, A. Ceol, Jole Costanza, H. Muller and L. Zammataro, *BMC Bioinformatics* 2016 Feb 9;17:80. doi: 10.1186/s12859-016-0935-7.
Impact factor: 2.576

2. **Multi-target analysis and design of mitochondrial metabolism**
Jole Costanza, C. Angione, G. Carapezza, P. Lio' and G. Nicosia, *PloS one* 10 (9), 2015.
featured in Le Scienze - Scientific American
Impact factor: 3.234

3. **Pareto Optimal Design for Synthetic Biology**
A. Patane, A. Santoro, Jole Costanza, G. Carapezza and G. Nicosia, *Biomedical Circuits and Systems, IEEE Transactions on* 9 (4), 555-571, 2015.
Impact factor: 2.482

4. **Analysis and design of molecular machines**
C. Angione, Jole Costanza, G. Carapezza, P. Lio' and G. Nicosia, *Theoretical Computer Science*, 2015.
ISSN 0304-39710.1016/j.tcs.2015.01.030
Impact factor: 3.234

5. **An Immunological Algorithm for Combinatorial Optimization: the Fuel Distribution Problem as Case Study**
M. Pavone, Jole Costanza, V. Cutello, *Int J Swarm Intel Evol Comput*, 4(118), 2, 2015.
Impact factor: 0.2

6. **Pareto Optimality in Organelle Energy Metabolism Analysis**
C. Angione, G. Carapezza, Jole Costanza, P. Lio' and G. Nicosia, *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 2013.
ISSN: 1545-5963 DOI: 10.1109/TCBB.2013.95
Impact factor: 1.438

7. **Design and strain selection criteria for bacterial communication networks**
C. Angione, G. Carapezza, Jole Costanza, P. Lio', and G. Nicosia, *Nano Communication Networks*, 2013.
DOI: 10.1016/j.nancom.2013.08.001
Impact factor: 2.13

8. **A Design Automation Framework for Computational Bioenergetics in Biological Networks**
C. Angione, Jole Costanza, G. Carapezza, P. Lio' and G. Nicosia, *Molecular BioSystems*, 2013. DOI: 10.1039/C3MB25558A
Impact factor: 0.657

9. **Efficient Behavior of Photosynthetic Organelles via Pareto Optimality, Identifiability and Sensitivity Analysis**
G. Carapezza, R. Umeton, Jole Costanza, C. Angione, G. Stracquadanio, A. Papini, P. Lio' and G. Nicosia, *ACS Synthetic Biology Journal*, 2012. DOI: 10.1021/sb300102k
Impact factor: 4.978

10. **Robust Design of Microbial Strains**
Jole Costanza, G. Carapezza, C. Angione, P. Lio' and G. Nicosia, *Bioinformatics - Oxford Journal* 2012.
DOI: 10.1093/bioinformatics/bts590, Vol. 28, issue 23, pp. 3097-3104.
Impact factor: 5.766

Chapter

1. **Identification of Sensitive Enzymes in the Photosynthetic Carbon Metabolism**
R. Umeton, G. Stracquadanio, A. Papini, Jole Costanza, P. Lio', and G. Nicosia, *Advances in experi-*

mental medicine and biology 2012, 736, 441-59.
DOI: 10.1007/978-1-4419-7210-1_26

Conference proceedings

1. **Multi-Objective Modeling of the Ground Deformation and Gravity Changes of the 1981 Eruption of Mount Etna**
   P. Conca, G. Currenti, G. Carapezza, Jole Costanza, C. Del Negro, G. Nicosia, *The First International Workshop on Machine learning, Optimization and big Data*, MOD 2015, Taormina, Italy, July 21-23, 2015. Springer Lecture Notes in Computer Science.

2. **Programming Living Machines: the case study of Escherichia coli.**
   Jole Costanza, L. Zammataro, G. Nicosia, Biomimetic and Biohybrid Systems, Third International Conference *Living Machines 2014* - Milan, Italy, July 30 - August 1, 2014. Proceedings, Lecture Notes in Computer Science Volume 8608, 2014, pp 377-379.

3. **Identifiability Analysis to Characterize Mitochondrial Diseases**
   C. Angione, Jole Costanza, G. Carapezza, P. Lio', G. Nicosia, in Proceedings of the 5th *International Workshop on Bio-Design Automation* - IWBDA 2013 at Imperial College, London, UK, July 12-13, 2013.

4. **Multi-objective Optimisation of Escherichia coli for Direct Production of 1,4-butanediol**
   Jole Costanza, C. Angione, G. Carapezza, P. Lio', and G. Nicosia, in Proceedings of the 5th *International Workshop on Bio-Design Automation* - IWBDA 2013 at Imperial College, London, UK, July 12-13, 2013.

5. **Multi-Objective Design of Bacterial Communication Networks**
   C. Angione, G. Carapezza, Jole Costanza, P. Lio', G. Nicosia, in Proceedings of the 3rd IEEE Int. *Workshop on Molecular and Nanoscale Communications* - IEEE MoNaCom 2013 held in conjunction with IEEE Int. Conference on Communications 2013 - IEEE ICC 2013, June 9-13, 2013, Budapest, Hungary, IEEE Press.

6. **Pareto epsilon-Dominance and Identifiable Solutions for BioCAD Modeling**
   Jole Costanza, C. Angione, G. Carapezza, P. Lio', G. Nicosia, in Proceedings of the 50th *Design Automation Conference* - DAC 2013, 2-6 June 2013, Austin Texas, ACM Press, 43, 2013.

7. **Rational Design of Organelle Compartments in Cells**
   C. Angione, G. Carapezza, Jole Costanza, P. Lio', and G. Nicosia, in Proceedings of the *Twelth International Workshop on Network Tools and Applications in Biology* - NETTAB 2012 - Focus on Integrated Bio-Search, November 14-16, 2012, Como, Italy. EMBnet Journal Volume 18 Supplement B, pp. 20-22, 2012

8. **Multi-Objective Optimization, Sensitivity and Robustness Analysis in FBA Modeling**
   Jole Costanza, G. Carapezza, C. Angione, P. Lio' and G. Nicosia, in Proceedings of the 10th *Conference on Computational Methods in Systems Biology* - CMSB 2012, October 3-5, 2012 The Royal Society, London, UK, Springer. DOI: 10.1007/978-3-642-33636-2_9; ISBN: 978-3-642-33635-5

9. **The Role of the Genome in the Evolution of the Complexity of Metabolic Machines**
   C. Angione, G. Carapezza, Jole Costanza, P. Lio' and G. Nicosia, in Proceedings of the *European Conference in Complex Systems* - ECCS'12, Brussels, 3-7 September 2012, Springer Complexity.

10. **Computing with Metabolic Machines**
    C. Angione, G. Carapezza, Jole Costanza, P. Lio' and G. Nicosia, in Proceedings of the *Turing100, The Alan Turing Centenary Conference*, University of Manchester, June 22-25, 2012. *Best Paper Award presented by Sir Roger Penrose.*

11. **Are Bacteria Unconventional Computing Architectures?**
    Jole Costanza, C. Angione, P. Lio' and G. Nicosia, in Proceedings of the *Turing Centenary Conference* - CiE 2012 - How the World Computes, University of Cambridge, June 18-23, 2012.

12. **metaDesign: Bacterial Strain Design Automation Software**
    Jole Costanza, G. Carapezza, C. Angione, R. Umeton, P. Lio' and G. Nicosia, in Proceedings of the 4th *International Workshop on Bio-Design Automation* - IWBDA 2012 at the 49th ACM/EDAC/IEEE

Design Automation Conference (DAC), June 3-7, 2012 at the Moscone Center, San Francisco, CA, USA.

13. **Effective Calibration of Artificial Gene Regulatory Networks**
D. Agostini, Jole Costanza, V. Cutello, L. Zammataro, N. Krasnogor, M. Pavone and G. Nicosia, in Proceedings of the 20th *European Conference on Artificial Life* - ECAL 2011, pp. 39-46, MIT Press, Paris, France, August 8-12, 2011.

14. **A Memetic Immunological Algorithm for Resource Allocation Problem**
Jole Costanza, V. Cutello and M. Pavone, in Proceedings of the 10th *International Conference on Artificial Immune Systems* - ICARIS 2011, LNCS 6825, pp. 308-320, Springer-Verlag, Cambridge, UK, July 18-21, 2011.

15. **Large Scale Agent-Based Modeling of the Humoral and Cellular Immune Response**
G. Stracquadanio, R. Umeton, Jole Costanza, V. Annibali, R. Mechelli, M. Pavone, L. Zammataro, and G. Nicosia, in Proceedings of the 10th *International Conference on Artificial Immune Systems* - ICARIS 2011, LNCS 6825, pp. 15-29, Springer-Verlag, Cambridge, UK, July 18-21, 2011.

Other Publications

Refereed conference papers

1. **Identification of virally encoded missense somatic mutations in human cancer**
Jole Costanza, A. Ceol, L. Zammataro, H. Muller, *Viruses and Human Cancer*, Keystone Symposia, Big Sky Resort, Big Sky, Montana, USA. March 29 - April 3, 2015.

2. **A class of Pareto optimal Escherichia coli strains for production of 1,4-butanediol**
Jole Costanza, L. Zammataro, G. Nicosia, *Precision Genome Engineering and Synthetic Biology*, Keystone Symposia, Big Sky Resort, Big Sky, Montana, USA. January 11-16, 2015.

3. **Pareto Front and Identifiability Analysis to Characterize Mitochondrial Diseases**
C. Angione, G. Carapezza, Jole Costanza, P. Lio' and G. Nicosia, *Mitochondrial Disease: Translating biology into new treatments*, October 2-4, 2013, Wellcome Trust Conference Center, Wellcome Trust Genome Campus, Hinxton, Cambridge, UK.

4. **Organelle as a New Frontier in Computational Medicine**
C. Angione, Jole Costanza, G. Carapezza, P. Lio' and G. Nicosia, the 11th *International Conference on Artificial Immune Systems* - ICARIS 2012, Taormina, Italy, August 28-31, 2012.

5. **Design of Robust Metabolic Machines**
Jole Costanza, G. Carapezza, C. Angione, P. Lio' and G. Nicosia, the *Biological System Design 2012 - BSD at ISMB*, 13 July, 2012 - Long Beach, CA USA.

6. **Pareto Front Sensitivity in Large Scale Biological Networks**
Jole Costanza, G. Carapezza, C. Angione, P. Lio' and G. Nicosia, NetSci, 18-22 June 2012, Evanston, IL

7. **The ATP, NADH and Calcium Trade-offs in the Mitochondrial Bioenergetics**
Jole Costanza, L. Zammataro, P. Lio' and G. Nicosia, the 12th *International Conference on Systems Biology* - ICSB 2011, Heidelberg/Mannheim,Germany August 28 - September 1, 2011

8. **Pareto Fronts in Genetic Design Strategies using Multi-Objective Optimization**
Jole Costanza, L. Zammataro, P. Lio' and G. Nicosia, the 12th *International Conference on Systems Biology* - ICSB 2011, Heidelberg/Mannheim,Germany August 28 - September 1, 2011

9. **High-dimensional Pareto Surfaces in the Genetic Design of Escherichia Coli**
Jole Costanza, L. Zammataro, P. Lio' and G. Nicosia, the 8th *Annual Meeting of the Bioinformatics Italian Society* - BITS 2011, June 20-22, Pisa, Italy.

10. **Multi-objective Optimization for the Mitochondrial Bioenergetics**
Jole Costanza, L. Zammataro, P. Lio' and G. Nicosia, the 8th *Annual Meeting of the Bioinformatics Italian Society* - BITS 2011, June 20-22, Pisa, Italy.

11. **Pareto Optimal Tradeoffs in Genetic Design Strategies using Global Search**
Jole Costanza, L. Zammataro, P. Lio' and G. Nicosia, the 5th *International Meeting on Synthetic Biology - SB5.0 2011*, Stanford University, Stanford, California USA, June 15-17, 2011.

12. **Pareto Optimal Fronts in Bacterial Knockout Strategies**
Jole Costanza, L. Zammataro, P. Lio' and G. Nicosia, the 3rd *International Workshop on Bio-Design Automation - IWBDA 2011* at DAC, San Diego Convention Center, San Diego, California USA, June 6 - 7, 2011.

13. **Optimal Design of the Mitochondrial Bioenergetics**
Jole Costanza, L. Zammataro, P. Lio' and G. Nicosia, the 3rd *International Workshop on Bio-Design Automation - IWBDA 2011* at DAC, San Diego Convention Center, San Diego, California USA, June 6 - 7, 2011.

Tutorial

1. **Cell Pathway Design for Biotechnology and Synthetic Biology**- ECAL 2013, Taormina, Italy, September 2-6, 2013

Contributed Talks

1. **Genomics of chemoresistant acute myeloid leukemia** - SSBSS 2016 - Volterra, July 8-14, 2016.

2. **Multi-objective Optimisation of Escherichia coli for Direct Production of 1,4-butanediol** - IWBDA 2013 at Imperial College, London, UK, July 12-13, 2013.

3. **Are Bacteria Unconventional Computing Architectures?** - CiE 2012 -University of Cambridge, June 18-23, 2012.

Poster

1. **Genomics of Chemoresistant acute myeloid leukemia**
Jole Costanza, C. Ronchini, M. Bodini, ..., G. Martinelli, P.G. Pelicci, L. Riva, ECCB 2016 - European Conference on Computational Biology, September 3-8, 2016, The Hague, Netherlands.

2. **Genomics of Chemoresistant acute myeloid leukemia**
Jole Costanza, C. Ronchini, M. Bodini, ..., G. Martinelli, P.G. Pelicci, L. Riva, Applied Bioinformatic in Life Sciences, March 17-18, 2016, Leuven, Belgium.

3. **Genomics of Chemoresistant acute myeloid leukemia**
Jole Costanza, C. Ronchini, M. Bodini, ..., G. Martinelli, P.G. Pelicci, L. Riva, Hematological Malignancies, From Mechanisms to Therapy, March 9-11, 2016, European istitute of oncology (IEO), Milan, Italy.

4. **Minmcell: Designing Minimal Microbial Cells**
A. Patane, A. Santoro, Jole Costanza, G. Nicosia, 2015 Synthetic Biology: Engineering, Evolution & Design (SEED), June 10-13, Boston Park Plaza, Boston, MA, USA.

5. **Identification of virally encoded missense somatic mutations occurring in human cancer**
Jole Costanza, A. Ceol, L. Zammataro, H. Muller, *BITS 2015*, the 12th *Annual Meeting of the Bioinformatics Italian Society*, June 3-5, Milan, Italy.

6. **Identification of virally encoded missense somatic mutations in human cancer**
Jole Costanza, A. Ceol, L. Zammataro, H. Muller, *Viruses and Human Cancer*, Keystone Symposia, Big Sky Resort, Big Sky, Montana, USA. March 29 - April 3, 2015.

7. **A class of Pareto optimal Escherichia coli strains for production of 1,4-butanediol**
Jole Costanza, L. Zammataro, G. Nicosia, *Precision Genome Engineering and Synthetic Biology*, Keystone Symposia, Big Sky Resort, Big Sky, Montana, USA. January 11-16, 2015.

8. **Programming Living Machines: the case study of Escherichia coli.**
   Jole Costanza, L. Zammataro, G. Nicosia, Biomimetic and Biohybrid Systems, Third International Conference *Living Machines 2014* - Milan, Italy, July 30 - August 1, 2014.

9. **Pareto-based Gene and Pathway Sieve for Biofuel Production**
   Jole Costanza, C. Angione, G. Carapezza, P. Lio', G. Nicosia, the 5th *International Workshop on Bio-Design Automation* - IWBDA 2013 at Imperial College, London, UK, July 12-13, 2013.

10. **Reducing atmospheric CO_2 by optimising the consumption from synthetic organisms**
    Jole Costanza, G. Carapezza, C. Angione, P. Lio', G. Nicosia, the 6th *international meeting on Synthetic Biology* - SB6.0 at Imperial College, London, UK, July 9-11, 2013.

11. **Computing with Metabolic Machines**
    C. Angione, G. Carapezza, Jole Costanza, P. Lio' and G. Nicosia, *Turing100, The Alan Turing Centenary Conference*, University of Manchester, June 22-25, 2012. *Best Paper Award presented by Sir Roger Penrose.*

12. **Von Neumann Architectures in Bacteria**
    C. Angione, Jole Costanza, P. Lio' and G. Nicosia, *PhD Summer School* at Microsoft Research, Cambridge, UK, July 2-6, 2012.

Scientific Events

1. *ECCB 2016*, September 2-8, 2016, The Hague, Netherlands.

2. *SSBSS 2016*, July 8-14, 2016, Volterra, Italy.

3. *Applied Bioinformatic in Life Sciences*, March 17-18, 2016, Leuven, Belgium.

4. *Hematological Malignancies, From Mechanisms to Therapy*, March 9-11, 2016, European Institute of Oncology (IEO), Milan, Italy.

5. 2015 Synthetic Biology: Engineering, Evolution & Design (SEED), June 10-13, Boston Park Plaza, Boston, MA, USA.

6. BITS 2015 - the 12th *Annual Meeting of the Bioinformatics Italian Society*, June 3-5, Milan, Italy

7. *Viruses and Human Cancer*, Keystone Symposia, March 29 - April 3, 2015, Big Sky Resort, Big Sky, Montana, USA.

8. Third International Conference *Living Machines 2014*, July 30 - August 1, 2014, Milan, Italy.

9. The *European Conference on Artificial Life*, ECAL 2013, September 2-6, 2012, Taormina, Italy.

10. The 6th *International meeting on Synthetic Biology*, SB6.0 2013, July 9-11, 2013, Imperial College, London, UK.

11. The 5th *International Workshop on Bio-Design Automation*, IWBDA 2013, July 12-13, 2013, Imperial College, London, UK.

12. LISM–day, *Laboratory of Integrative Systems Medicine*, July 3, 2013, Pisa, Italy.

13. The 12th *International Conference on Parallel Problem Solving From Nature*, PPSN 2012, September 1-5, 2012, Taormina, Italy.

14. The 11th *International Conference on Artificial Immune Systems*, ICARIS 2012, August 28-31, 2012, Taormina, Italy.

15. PhD Summer School, Microsoft Research, Cambridge, UK, July 2-6, 2012.

16. The *Turing Centenary Conference*, CiE 2012 - Computation in Europe, How the world computes. June 18-23, 2012, University of Cambridge, Cambridge, UK.

17. The *Alan Turing Centenary Conference*, Turing 100, June 22-25, 2012, University of Manchester, UK.

18. The 10th *Workshop on Process Algebra and Stochastically Timed Activities*, PASTA 2011, September 19-20, 2011, Ragusa Ibla, Italy.

19. The 10th *International Conference on Artificial Immune Systems*, ICARIS 2011, July 18-21, 2011, Cambridge, UK.

20. *Primo Congresso Nazionale di Bioingegneria*, July 2008, Pisa, Italy.
21. *Primo Corso nazionale Tecnologia, sicurezza e prevenzione negli ospedali*, October 25-26, 2010, Riccione, Italy.
22. *Non Linear Optimization, Variational, inequalities and equilibrium problems* workshop, Ettore Majorana foundation and centre for Scientific Culture, July 2-10, 2010, Erice, Italy.

Organizing committee member

ECAL 2013, LION 2013, PPSN 2012, ICARIS 2012, ICARIS 2011

Programme and Scientific committee member

SSBSS 2016, SSBSS 2015, ICSI[3] 2015, SSBSS 2014, PPSN 2014, ECAL 2013

Reviewer

Computers in Biology and Medicine - International Journal - Elsevier

Awards

1. "BITS Travel Grants", the 12th *Annual Meeting of the Bioinformatics Italian Society* - BITS 2015, June 3-5, Milan, Italy.
2. "Young Researcher Travel Award", the 5th *International Workshop on Bio-Design Automation* -IWBDA 2013 at Imperial College, London, UK, July 12-13, 2013.
3. "Best Paper Award" presented by Sir Roger Penrose, *Computing with Metabolic Machine at Turing100*, The Alan Turing Centenary Conference, University of Manchester - UK, June 22-25, 2012.
4. "Young Researcher Travel Award", the 4th *International Workshop on Bio-Design Automation* - IWBDA 2012 at the 49th ACM/EDAC/IEEE Design Automation Conference (DAC), June 3-7, 2012 at the Moscone Center, San Francisco, CA, USA.
5. "Young Researcher Travel Award", the 8th *Annual Meeting of the Bioinformatics Italian Society* - BITS 2011, June 20-22, Pisa, Italy.
6. "BioBricks Foundation SB5.0 Young Researcher Travel Award", the 5th *International Meeting on Synthetic Biology* - SB5.0 2011, Stanford University, Stanford, California USA, June 15-17, 2011.
7. "Scholarship", University of Padova - every year from 2004 until 2010.
8. "Bachelor's Degree grant", Biomedical Engineering University of Padova - 2007.

Other Information

Chair at ECAL 2013, SSBSS 2016.

Member of *Italian Society of Bioengineering* from 2010.

Member of *Bioinformatics italian Society* from 2011.

Member of *TaoSciences – International Scientific Events* from 2012.

Autorizzo al trattamento dei dati e alla pubblicazione sul sito web della Fondazione, ai sensi della normativa vigente ed in particolare dell'art. 15 del d.lgs. n. 33 del 14 marzo 2013.

Last updated: November 9, 2017

MILANO, 9 NOVEMBRE 2017