

ALLEGATO B

UNIVERSITÀ DEGLI STUDI DI MILANO

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[Roberto Pagliarini] CURRICULUM VITAE

INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)

COGNOME	PAGLIARINI
NOME	ROBERTO
DATA DI NASCITA	23 LUGLIO 1981

CAREER AND POSITIONS

• Date • Name of employer • Occupation or position held • Advisor • Research area	- July 2016 – present - Ospedale San Raffaele Srl - Molecular basis of Polycystic Kidney Disease Unit, Genetics and Cell Biology Division - Senior Postdoctoral Fellow - Dr. Alessandra Boletta - Systems and Computational Biology, Mathematical Modelling of Cancer Metabolism
• Date • Name of employer • Occupation or position held • Advisor • Research area	- June 2011 – June 2016 - TeleThon - TeleThon Institute of Genetics and Medicine (TIGEM) - Postdoctoral Fellow - Prof. Diego di Bernardo - Systems and Computational Biology, Model Checking for Biological Networks, Inborn error of Metabolism
• Date • Name of employer • Occupation or position held • Advisor • Research area	- January 2011 – May 2011 - University of Verona - Faculty of Mathematical, Physical, and Natural Science - Postdoctoral Fellow - Prof. Vincenzo Manca - Bioinformatics, Natural Computing, Membrane Computing, Systems Biology
• Date • Name of employer • Occupation or position held • Advisor • Research area	- July 2009 – March 2010 - Cranfield University, Cranfield, U. K. - School of Health - Visiting Scientist - Dott. Conrad Bessant - Membrane Computing, Bioinformatics, Stochastic Computing, Parallel Computing

EDUCATION

• Date • Name and type of organisation providing education and training • Education • Research areas • Thesis • Supervisor	January 2008 – December 2010 University of Verona, Verona, Italy Faculty of Mathematical, Physical, and Natural Science <i>Research Doctorate (PhD), "Doctor Europaeus"</i> <i>Graduate School of Science, Engineering and Medicine</i> PhD program in Computer Science Natural Computing, Membrane Computing, Systems Biology, Bioinformatics Modelling and Reverse-Engineering of Biological Phenomena by means of Metabolic P Systems Prof. Vincenzo Manca
• Date • Name and type of organisation providing education and training • Education • Title of qualification awarded	5th October 2009 – 6th October 2009 European Bioinformatic Institute (EMBL-EBI), Hinxton, Cambridge, U. K. Course: "Biomedical text mining" Certificate of Participation
• Date • Name and type of organisation providing education and training • Education • Title of qualification awarded	9th June 2008 – 12th June 2008 University of Milan, Milan, Italy Department of Biology Course: "From genes to models and return. Systems biology: theory and applications". Certificate of Participation
• Date • Name and type of organisation providing education and training • Education • Title of qualification awarded	5th June 2008 – 6th June 2008 CINECA – Consortium of universities Casalecchio di Reno, Bologna, Italy Course: "Introduction to R-I2R". Certificate of Participation
• Date • Name and type of organisation providing education and training • Title of qualification awarded • Thesis • Supervisor	Academic year 2006/2007 University of Verona, Verona, Italy Faculty of Mathematical, Physical, and Natural Science Master Degree in Computer Science Esperimenti computazionali per la determinazione dei parametri regolativi nei P sistemi metabolici Prof. Tiziano Villa
• Date • Name and type of organisation providing education and training • Title of qualification awarded	Scholastic year 1999/2000 Technical and Commercial Institute "Marco Minghetti", Legnago (Vr), Italy High-school diploma
• Date • Name and type of organisation providing education and training • Education • Title of qualification awarded	May 2000 - June 2000 Technical and Commercial Institute "Marco Minghetti", Legnago (Vr), Italy Course: Networking & E-Commerce Certificate of Participation

TEACHING ACTIVITIES

• Date • Name of employer • Type of business or sector • Occupation or position held	Academic year 2016/2017 Vita-Salute San Raffaele University Private University Teaching assistant for the activities of the course “Molecular Biology”, Master Degree in Medicine and Surgery Teaching assistant
• Main activities and responsibilities	
• Date • Name of employer • Type of business or sector • Occupation or position held	Academic year 2018/2019 Vita-Salute San Raffaele University Private University Teaching assistant for the activities of the course “Molecular Biology”, Master Degree in Medicine and Surgery Teaching assistant
• Main activities and responsibilities	
• Date • Name of employer • Type of business or sector • Occupation or position held	Academic year 2010/2011 University of Verona Faculty of Mathematical, Physical, and Natural Science Public University Teaching assistant for the laboratory activities of the course “Computer Science”, Degree in Biotechnology Teaching assistant
• Main activities and responsibilities	
• Date • Name of employer • Type of business or sector • Occupation or position held	Academic year 2010/2011 University of Verona Faculty of Mathematical, Physical, and Natural Science Public University Teaching assistant for the activities of the course “Numerical Calculus”, Degree in Applied Mathematics Teaching assistant
• Main activities and responsibilities	
• Date • Name of employer • Type of business or sector • Occupation or position held	Academic year 2009/2010 Cranfield University Cranfield Health Public University Teaching assistant for the activities of the module “Systems Biology”, Degree in Applied Bioinformatics Teaching assistant
• Main activities and responsibilities	
• Date • Name of employer • Type of business or sector • Occupation or position held	Academic year 2008/2009 University of Verona Faculty of Mathematical, Physical, and Natural Science Public University Teaching assistant for the laboratory activities of the course “Probability and Statistics”, Degree in Applied Mathematics Teaching assistant
• Main activities and responsibilities	
• Date • Name of employer • Type of business or sector • Occupation or position held	Academic year 2008/2009 University of Verona Faculty of Mathematical, Physical, and Natural Science Public University Teaching assistant for the laboratory activities of the course “Introduction to Computing”. Teaching assistant
• Main activities and responsibilities	

OTHER EXPERIENCES AT UNIVERSITY

• Date	Year 2006
• Name of employer	University of Verona Head office Informatics
• Type of business or sector	Public University, Computer Science Sector
• Occupation or position held	Collaboration
• Main activities and responsibilities	Help Desk
• Date	Year 2005
• Name of employer	University of Verona Head office Informatics
• Type of business or sector	Public University, Computer Science Sector
• Occupation or position held	Collaboration
• Main activities and responsibilities	Help Desk
• Date	Year 2005
• Name of employer	University of Verona Head office Informatics
• Type of business or sector	Public University, Computer Science Sector
• Occupation or position held	Collaboration
• Main activities and responsibilities	Computer Lab Assistant

RESEARCH INTERESTS

- Natural Computing
- Computational Biology
- Reverse Engineering of Biological Networks
- Membrane Computing
- Systems Biology
- Mathematical modelling of biological phenomena
- Inborn Errors of Human Metabolism
- Mathematical modelling of cancer metabolism

PUBLICATIONS

Peer-reviewed Journal Papers

- [1] Podrini C.*, Rowe I.*, Pagliarini R.*, Costa A. S. H., Chiaravalli M., Di Meo I., Kim H., Distefano G., Tiranti V., Qian F., di Bernardo D., Frezza C., Boletta A. Dissection of Metabolic Reprogramming in Polycystic Kidney Disease Reveals a Complex and Coordinated Rewiring of Bioenergetic Pathways. *Communications Biology*, 1:194, 2018.
- [2] L. Drusian., E.A. Nigro, V. Mannella., R. Pagliarini, M. Pema, A.S.H. Costa, F. Benigni.,A. Larcher, M. Chiaravalli, E. Gaude, F. Montorsi, U. Capitanio, G. Musco, C. Frezza, A. Boletta. mTORC1 Upregulation Leads to Accumulation of the Oncometabolite Fumarate in a Mouse Model of Renal Cell Carcinoma *Cell Reports*, 24 (5), pp. 1093-1104, 2018.
- [3] R. Pagliarini, R. Castello, F. Napolitano, R. Borzone, P. Annunziata, G. Mandrile, M. De Marchi, N. Brunetti-Pierri, D. di Bernardo. *In silico modelling of liver metabolism in a human disease reveals a key enzyme for histidine and histamine homeostasis*. *Cell Reports*, 15,. 2292-2300, June, 2016.
- [4] R. Pagliarini, R. Castello, R. Borzone, P. Annunziata, G. Mandrile, M. De Marchi, N. Brunetti-Pierri, D. di Bernardo. *In-silico modelling of Primary Hyperoxaluria Type 1, a human inborn error of liver metabolism, unravels a key enzyme for histamine homeostasis*. *Inflammation Research*, Volume 64, Supplement 1, 2015.
- [5] R. Pagliarini, M. Sangiovanni, A. Peron, D. di Bernardo. *Combining Flux Balance Analysis and Model Checking for Metabolic Network Validation and Analysis*. *Natural Computing*, Natural Computing. Vol. 14, Issue 3, pp. 341-354, 2015.
- [6] V. Manca, A. Castellini, G. Franco, L. Marchetti, R. Pagliarini. *Metabolic P Systems: A Discrete Model for Biological Dynamics*. *Chinese Journal of Electronics*, Vol.22, No.4, 2013.

- [7] R. Pagliarini, D. di Bernardo. *A genome-scale modeling approach to study inborn errors of liver metabolism: toward an in silico patient*. Journal of Computational Biology, 20(5), 2013.
- [8] R. Pagliarini, O. Agrigoroaiei, G. Ciobanu, V. Manca. *An Analysis of Correlative and Static Causality in P Systems*. Lecture Notes in Computer Science, Volume 7762, pp 323-341, 2013.
- [9] V. Manca, L. Marchetti, R. Pagliarini. *MP Modelling of Glucose-Insulin Interactions in the Intravenous Glucose Tolerance Test*. International Journal of Natural Computing Research, vol. 3, Issue2, 2011, pp. 13-24
- [10] G. Franco, V. Manca, R. Pagliarini. *Regulation and Covering Problems in MP Systems*. Lecture Notes in Computer Science, Volume 5957, pp. 242-251, 2010.
- [11] A. Castellini, G. Franco and R. Pagliarini. *Data analysis pipeline from laboratory to MP models*. Natural Computing. Vol. 10, Issue 1, pp. 55-76, 2011.
- [12] R. Pagliarini, G. Franco, V. Manca. *An algorithm for initial fluxes of MP systems*. International Journal of Computers, Communications & Control. Vol. IV, No. 3, pp. 263-272, 2009.
- [13] V. Manca, R. Pagliarini, S. Zorzan. *A photosynthetic process modelled by a metabolic P system*. Natural Computing, Vol. 8, pp. 847-864, 2009.
- [14] V. Manca, R. Pagliarini, S. Zorzan. *Toward an MP model of Non Photochemical Quenching*. Lecture Notes in Computer Science, volume 5391, pp. 299-310, 2009.

Refereed Conferences with Proceedings

- [15] R. Pagliarini, A. Boletta. In SILICO Simulations Predict a Causative Link between Increased Glycolysis and Metabolic Reprogramming in Autosomal Dominant Polycystic Kidney Disease. 2019 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology, CIBCB 2019, July 2019, Article number 8791243.
- [16] R. Pagliarini, L. Bianco, V. Manca, C. Bessant. *Linking bistable dynamics to Metabolic P Systems*. In Proceedings of the Eighth Brainstorming Week on Membrane Computing. Seville, Spain, February 2010.
- [17] L. Bianco, R. Pagliarini, C. Bessant. *Towards a GPU-aided simulation of nuclear receptors modulation*. International Workshop on High Performance Computational Systems Biology, October 2009.
- [18] R. Pagliarini, V. Manca. *The discovery of initial fluxes of Metabolic P Systems*. In Proceedings of the Seventh Brainstorming Week on Membrane Computing. Seville, Spain, February 2009.

Book Chapters

- [19] G. Gambardella*, R. Pagliarini*, F. Gregoretti, G. Oliva, D. di Bernardo. *Differential Equation Based Reverse-Engineering Algorithms: Pros and Cons*. Gene Network Inference, Springer-Verlag Berlin Heidelberg, 2014.
- [20] L. Marchetti, V. Manca, R. Pagliarini, A. Bolling-Fischer. *MP Modelling for Systems Biology: two case studies*. Applications of membrane computing in systems and synthetic biology. Applications of Membrane Computing in Systems and Synthetic Biology, volume 7 of Emergence, Complexity and Computation, pages 223–245. Springer International Publishing, 2014.

Poster Papers, Abstracts and Posters

- [21] C. Podrini, I. Rowe, R. Pagliarini, S. Raineri, I. Di Meo, M. Chiaravalli, V. Tiranti, D. di Bernardo, A. Boletta. Global Profiling in Polycystic Kidney Disease Reveals a Metabolic Rewiring Reminiscent of Cancer. ASN Kidney Week 2016.
- [22] R. Pagliarini, R. Castello, F. Napolitano, R. Borzone, P. Annunziata, G. Mandrile, M. De Marchi, N. Brunetti-Pierri, D. di Bernardo. A Computational Systems-Level Approach to Decipher Inborn Errors of Metabolism. 13th Annual Meeting of the Bioinformatics Italian Society. University of Salerno, Italy, 15-17 June 2016.
- [23] R. Pagliarini, R. Castello, N. Brunetti, D. di Bernardo. A Large-scale Computational Model of Inborn Error of Liver Metabolism Unravels Previously Unrecognized Metabolic Derangements and Novel Therapeutic Options. Sixth Annual RECOMB/ISCB Conference on Regulatory and Systems Genomics, with DREAM Challenges. Toronto, Canada, 2013.
- [24] M. Sangiovanni, R. Pagliarini, D. di Bernardo, A. Peron. A Spin-based model checking approach for genome-scale metabolic networks validation and analysis. 4th International Workshop on Interactions between Computer Science and Biology. Florence, Italy, 2013.
- [25] R. Pagliarini, D. di Bernardo. *A genome-scale modelling approach to study inborn errors of liver metabolism: towards an in-silico patient*. Fifth Annual RECOMB/ISCB Conference on Regulatory and Systems Genomics, with DREAM Challenges. San Francisco, USA, 2012.
- [26] V. Manca, L. Marchetti, R. Pagliarini. Application of the MP theory for discovering biological models. 12th International Conference on Systems Biology. Mannheim Germany, 2011.
- [27] R. Pagliarini, V. Manca. Inference of Biological Pathways by Integrating Different Kinds of Correlation Indexes. In Proceedings of XII International Congress on Molecular Systems Biology, Lleida, Spain, 8-12 May 2011, pp. 102-102.

Guides and Tutorials

- [28] A. Castellini, R. Pagliarini. *Tutorial: Log-gain plugin for flux discovery by MetaPlab*, 2009.
- [29] V. Manca, A. Castellini, G. Franco, L. Marchetti, R. Pagliarini. *MetaPlab 1.2 user guide*, 2009.

Technical Reports

- [30] R. Pagliarini. Towards a "Virtual Gene Therapy" to Identify new Therapeutic Targets in an Unbiased and Inexpensive Way. 2013
- [31] R. Pagliarini. *BioPreDyn Report*. 2013.
- [32] R. Pagliarini. Toward the application of constraint-based modeling to study the primary hyperoxaluria type I. 2012.
- [33] R. Pagliarini. Modelling of Networks Topology, Regulation, and Dynamics by means of Membrane Computing and Statistical Analysis. 2012.
- [34] R. Pagliarini. *Towards a new perspective in modelling the glucose-insulin interactions and dynamics*. 2010.
- [35] R. Pagliarini. *Correlation coefficients to assess the soundness of regression models*. 2010.
- [36] R. Pagliarini. Integrating Statistical Measures to Elucidate Topology of Biological Networks. 2010.

Dissertations

- [37] R. Pagliarini. Modelling and Reverse-Engineering of Biological Phenomena by means of Metabolic P Systems. PhD Thesis, University of Verona. May, 2011.
- [38] R. Pagliarini. Esperimenti per la determinazione computazionale dei parametri regolativi nei P sistemi metabolici. Master Thesis in Computer Science, University of Verona, July 2007.

Invited Talks

- "Reverse engineering and modelling of metabolic networks: the case of Mendelian disorders"- 13th May 2014, BioPreDyn: The systems biology modeling cycle - building mechanistic dynamical models, EMBL-EBI, Hinxton, Cambridge, U. K., 12-15th May 2014.
- "Computational Modelling of Inborn Errors of Liver Metabolism"- 19th June 2013, National Research Council (CNR), Naples, Italy.
- "Systems biology of genetic diseases/integration of gene networks and metabolic networks" – 14th June 2013, BioPreDyn Workshop, Centre de Regulacio Genomica (CRG), Barcelona, Spain, 11-15th June 2013.
- "Developing a mathematical modeling framework for linking signaling, regulation, and metabolism: metabolic processes under the influence of hormones and genetic disorders as case studies" – 5th March 2013, 1st BioPreDyn Annual Meeting, Naples, Italy, 4-6th March 2013.

Talks

- In Silico simulations predict a causative link between increased glycolysis and metabolic reprogramming in autosomal dominant polycystic kidney disease. 16th IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology, University of Siena, Italy, 9-11 July 2019
- *A Computational Systems-Level Approach to Decipher Inborn Errors of Metabolism*. 13th Annual Meeting of the Bioinformatics Italian Society. University of Salerno, Italy, 15-17 June 2016.
- "Differential Flux-balance Analysis: a new computational approach to identify alterations in human metabolic disorders" – 25th February 2015, BioPreDyn Annual Meeting 2015, Barcelona, Spain, 24-25th February 2015.
- "An analysis of correlative and quantitative causality in P systems" – 29th August 2013, CMC13 - The 13th International Conference on Membrane Computing, Budapest, Hungary, 28-31st August 2012.
- "A genome-scale modelling approach to study inborn errors of liver metabolism: towards an in-silico patient" – 15th November 2012, Fifth Annual RECOMB/ISCB Conference on Regulatory and Systems Genomics, with DREAM Challenges. San Francisco, USA, 12-15th November 2012.
- "Metabolic P Systems practical" – 9th February 2010, Cranfield University, Cranfield, U. K.
- "Metabolic P Systems: an overview" -9th February 2010, Cranfield University, Cranfield, U. K.
- "MP analysis of the stochastic Schlogel's reaction" – 4th February 2010, Eight Brainstorming Week on Membrane Computing, Sevilla, Spain 1-5th February 2010.
- "MetaPlab, a virtual laboratory for Metabolic P systems: use examples and main structures" – 24th August 2009. Tenth Workshop on Membrane Computing, Curtea de Arges, Romania, 24-27th August 2009.
- "Modelling and inferring biological phenomena by using Metabolic P Systems" – 24th April 2009. University of Verona, Department of Computer Science, Verona, Italy.

- “Multi-agent systems simulating the physiological role of plasmic membrane” – 22nd April 2009. University of Verona, Department of Computer Science, Verona, Italy.
- “Log-Gain theory for Metabolic P systems: work in progress” – 19th March 2009. University of Verona, Department of Computer Science, Verona, Italy.
- “Inferring the initial fluxes of a metabolic process” – 3rd February 2009, Seventh Brainstorming Week on membrane Computing, Sevilla, Spain 2-6th February 2009.
- “Towards an MP model of non-photochemical quencing” – 20th July 2008. Ninth Workshop on Membrane Computing, Edinburgh, U.K., 29-31th July 2008.
- “Quantum P Systems: Background, Definition and Computational Power” – 17th September 2008. University of Verona, Department of Computer Science, Verona, Italy.
- “The R language: what is it?” – 12th September 2008. University of Verona, Department of Computer Science, Verona, Italy.
- “Reverse-engineering of gene networks” – 11th September 2008. University of Verona, Department of Computer Science, Verona, Italy.

Participations in congresses

Symbol * denotes personal presentation of a work in the conference.

- *16th IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology* *. University of Siena, Italy, 9-11 July 2019
- *13th Annual Meeting of the Bioinformatics Italian Society* *. University of Salerno, Italy, 15-17 June 2016.
- *Sixth Annual RECOMB/ISCB Conference on Regulatory and Systems Genomics* *, with *DREAM Challenges*. Toronto, Canada, 8-12th November, 2013.
- *BioPreDyn Workshop* *, Centre de Regulacio Genomica (CRG), Barcelona, Spain, 11-15th June 2013.
- *4th International Workshop on Interactions between Computer Science and Biology* *. Florence, Italy, 6th June 2013.
- *1st BioPreDyn Annual Meeting* *, Naples, Italy, 4-6th March 2013.
- *Fifth Annual RECOMB/ISCB Conference on Regulatory and Systems Genomics* *, with *DREAM Challenges*. San Francisco, USA, 12-15th November, 2012.
- *The 13th International Conference on Membrane Computing* *, Budapest, Hungary, 28-31th August 2012.
- *Tigem Institutional Retreat*, Sorrento, Italy, 22-23th October, 2012.
- *12th International Conference on Systems Biology* *, Mannheim, Germany, 28th August – 1st September 2011.
- *XII International Congress on Molecular Systems Biology* *, Lleida, Spain, 8-12th May 2011,
- *Eight Brainstorming Week on Membrane Computing* *, Sevilla, Spain, 1-5th February 2010.
- *Tenth Workshop on Membrane Computing* *, Curtea de Arges, Romania, 24-27th August 2009.
- *Seventh Brainstorming Week on Membrane Computing* *, Sevilla, Spain, 2-6th February 2009.
- *The Architecture of Biological Complexity – Biocomplex 2008*, Trento, Italy, 4-6th November 2008.
- *Ninth Workshop on Membrane Computing* *, Edinburgh, U.K., 29-31th July 2008.

Activity as Referee

- Review Editor of Optimization
- International Journal of Computers, Communications & Control

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE	Italian
OTHER LANGUAGES	English
• Reading skills	Excellent
• Writing skills	Excellent
• Verbal skills	Good

OTHER LANGUAGES	German
• Reading skills	Basic
• Writing skills	Basic
• Verbal skills	Basic
Technical skills and competences	• Operative systems: DOS, WINDOWS/WINDOWS MOBILE, UNIX/LINUX, APPLE/MACHINTOSH • Programming languages: C, C++, SQL, Java, Visual Basic, Assembler, HTML, XML, CUDA • General-purpose modelling languages: UML, Schema E-R • MATLAB : numerical computing environment and fourth-generation programming language • R: software environment for statistical computing and graphics • Office and OpenOffice • <i>LATEX: document markup language and document preparation system for the TeX typesetting program</i> • Database, Internet/Intranet • Biological databases such as KEGG, MetaCyc
Driving Licence(s)	B

References

- Dr. Alessandra Boletta, Principal Investigator, San Raffaele Scientific Institute, Molecular basis of Polycystic Kidney Disease Unit, Director of Genetics and Cell Biology Division
Email: boletta.akassandra@hsr.it
Web page: <http://www.hsr.it/ricerca/divisioni-centri-istituti-e-programmi-di-ricerca/divisione-di-genetica-e-biologia-cellulare/alessandra-boletta/>
- Prof. Diego di Bernardo, Principal Investigator, Telethon Institute of Genetics and Medicine (TIGEM), Naples, Italy, Associate Professor, Dept. of Chemical Engineering, University of Naples "Federico II"
Email: dibernardo@tigem.it
Web page: <http://dibernardo.tigem.it>
- Prof. Vincenzo Manca, Full professor, Department of Computer Science, University of Verona.
Email: vincenzo.manca@univr.it
Web page: <http://www.scienze.univr.it/fol/main?ent=persona&id=173&lang=en>
- Prof. Adriano Peron, Full professor, Department of Electrical Engineering and Information Technology, University of Naples "Federico II"
Email: adrperon@unina.it
Web page: <http://people.na.infn.it/~peron/>

Data

30/12/2019

Luogo

Milano