PAOLO TIERI, PhD

CURRICULUM VITÆ ET STUDIORUM

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EDUCATION

- **Università di Bologna, Italy,** *2006-2009* — *Philosophiæ Doctor* in Systems Biology & Experimental Pathology

- **Università di Bologna, Italy,** *1999* — *Laurea magistralis* (4-yrs M.Sc. equiv.) in Physics, final thesis in Biomedical Physics

PROFESSIONAL ACTIVITIES

- **Sapienza University, Data Science program, Rome, Italy**, *2017-now*
  http://datascience.i3s.uniroma1.it/it — Adjunct Professor, Bioinformatics & Network Biology

- **CNR National Research Council IAC Institute for Computing Applications Rome, Italy,** *2011-now*
  http://www.iac.cnr.it — Staff Scientist, Computational Biology, Network Biology, Systems Biology

- **PICB CAS-MPG Partner Institute for Computational Biology Shanghai, China,** *Mar-Sep 2012*
  http://www.picb.ac.cn — Visiting Scientist, Network Biology of Rheumatoid Arthritis (CAS-Awarded)

- **Harvard Medical School, Dana Farber Cancer Institute, Vidal Lab, Boston, USA,** *Oct 2005-Feb 2006*
  http://ccsb.dfci.harvard.edu/ — Visiting Research Fellow, mathematical models for protein-protein interaction networks

- **Università di Bologna, Italy,** *2003-2011*
  http://www.dimes.unibo.it/ — Research fellowship, Systems Biology & Systems immunology; lecturing activity for the Biotechnology M.Sc. courses at UNIBO

- **ENEA National Research Agency, Bologna, Italy,** *2000-2002*
  http://www.enea.it/ — Technology Transfer Specialist, EU-funded Tech-Transfer Project Manager

- **"Mario Negri Sud" Research Institute S. Maria Imbaro, Italy,** *1998*
  http://tinyurl.com/negrisud-2006 — Trainee in the Radiation protection Unit, Dept. Cell Biology and Oncology

POSTGRADUATE COURSES

- *2006,* **Gulbenkian Inst.** Lisboa (PT), course "Aging Research with Bioinformatic Methods"
- *2005*, **Biocomputing Lab, Bologna Univ.** (I), 6th Winter school "How complex is functional genomics?"
- *2004*, **Biocomputing Lab, Bologna Univ.** (I), 5th Winter school "State of the art of protein-protein interaction: the role of *in silico* approach"
- *2003*, **Biocomputing Lab, Bologna Univ.** (I), 4th Winter school "Hot topics in structural genomics"
- *2003*, **Dept. Mathematics, Firenze Univ.** (I), School of mathematical modelling for biology
- *2002*, **Inst. Theor. Biol., Humboldt Univ.** Berlin (D), Autumn school of theoretical biology
- *2000*, **CINECA supercomputing center**, Bologna (I), Summer school in Parallel Computing

MAIN PROJECTS AND GRANTS *as Proposer/Principal Investigator/co-PI*

- **COST** Cooperation in Science and Technology, 2016-2020**,** Action **CA 15120 OpenMultiMed** Open Multiscale Systems Medicine science network, management committee member, **scientific missions coordinator** http://www.cost.eu/COST_Actions/ca/CA15120

- **European Union FP7**, 2013-2015, **MISSION-T2D** Multiscale Immune System Simulator for the ONset of Type 2 Diabetes integrating genetic, metabolic and nutritional data, **Work Package Leader** for WP6 Model Integration http://www.mission-t2d.eu/

- **Chinese Academy of Sciences**, 2012, **Visiting Fellowship Award**, in collaboration with Prof C Nardini group, *P.I.* network biology approach in rheumatoid arthritis

- **EU FP7**, 2012-2014, **KEPAMOD** Knowledge exchange in processing and analysis of multi-omic data, Marie Curie Action, grant no. 294935, **co-P.I.**

PUBLICATIONS

- Ribeiro H, Maioli TU, de Freitas LM, **Tieri P**, Castiglione F. (**2017**) *Modeling immune response to leishmania species indicates adenosine as an important inhibitor of Th-Cell activation.* Frontiers in Cell and Infect Microbiol, doi:10.3389/fcimb.2017.00309
- Moreau JF, Pradeu T, Grignolio A, Nardini C, Castiglione F, **Tieri P**, Capri M, Salvioli S, Taupin JL, Garagnani P, Franceschi C. (**2016**) *The emerging role of ECM crosslinking in T cell mobility as a hallmark of immunosenescence in humans.* Ageing Research Reviews, 35:322-335, doi:10.1016/j.arr.2016.11.005
- Mendez T, Castiglione F, **Tieri P**, Felicori L. (**2016**) *Systems and Synthetic Biology applied to Health*, Curr Dev Biotech Bioeng, Elsevier, doi:10.1016/B978-0-444-63660-7.00009-7
- Castiglione F, **Tieri P**, Palma A, Jarrah AS. (**2016**) *Statistical ensemble of gene regulatory networks of macrophage differentiation.* BMC Bioinformatics, 17:506, doi:10.1186/s12859-016-1363-4
- Bartoletti-Stella A, Chiaro G, Calandra-Buonaura G, Contin M, Scaglione C, Barletta G, Cecere A, Garagnani P, **Tieri P**, Ferrarini A, Piras S, Franceschi C, Delledonne M, Cortelli P, Capellari S. (**2015**) *A patient with PMP22-related hereditary neuropathy and DBH-gene-related dysautonomia.* J Neurol. 262:2373-81, doi: 10.1007/s00415-015-7896-z
- **Tieri P**, Nardini C, Dent JE, eds (**2015**) *Multi-omic Data Integration* (ebook), Publisher: Frontiers Media SA, ISBN: 978-2-88919-648-7
- Nardini C, Dent J, **Tieri P** (**2015**). *Editorial: Multi-omic Data Integration.* Front. Cell Dev. Biol. **3**:46. doi: 10.3389/fcell.2015.00046
- Cappuccio A, **Tieri P**, Castiglione F. (**2015**) *Multi-scale modeling in immunology, a review.* Brief Bioinform. 10.1093/bib/bbv012

- **Tieri P**, Prana V, Colombo T, Santoni D, Castiglione F. (**2014**) *Multi-scale Simulation of T Helper Lymphocyte Differentiation*. In: Campos S, editor. Advances in Bioinformatics and Computational Biology. Lecture Notes in Computer Science. 8826: Springer International Publishing; p. 123-34 doi**:** 10.1007/978-3-319-12418-6_16

- **Tieri P**, Zhou XY, Zhu L, Nardini C. (**2014)** *Multi-omic landscape of rheumatoid arthritis: re-evaluation of drug adverse effects*. Front. Cell Dev. Biol. , 2:59. doi: 10.3389/fcell.2014.00059

- Grignolio A, Mishto M, Faria AMC, Garagnani P, Franceschi C, **Tieri P** (**2014)** *Towards a liquid self: how time, geography, and life experiences reshape the biological identity*. Front. Immunol. *5*:153. doi: 10.3389/fimmu.2014.00153

- Castiglione F, **Tieri P**, De Graaf A, Franceschi C, Liò P, Van Ommen B, Mazzà C, Tuchel A, Bernaschi M, Samson C, Colombo T, Castellani GC, Capri M, Garagnani P, Salvioli S, Nguyen VA, Bobeldijk-Pastorova I, Krishnan S, Cappozzo A, Sacchetti M, Morettini M, Ernst M (**2013**) *The onset of type 2 diabetes: proposal for a multi-scale model*. JMIR Res Protoc. *2(2):e44*. doi: 10.2196/resprot.2854

- **Tieri P**, Nardini C (**2013**) *Signalling Pathway Database Usability: Lessons Learned*. Mol Biosystems *9(10)*, 2401-7. doi: 10.1039/c3mb70242a

- Garagnani P, Giuliani C, Pirazzini C, Olivieri F, Bacalini MG, Ostan R, Mari D, Passarino G, Monti D, Bonfigli AR, Boemi M, Ceriello A, Genovese S, Sevini F, Luiselli D, **Tieri P**, Capri M, Salvioli S, Vijg J, Suh Y, Delledonne M, Testa R, Franceschi C (**2013**) *Centenarians as super-controls to assess the biological relevance of genetic risk factors for common age-related diseases: A proof of principle on type 2 diabetes*. Aging *5(5)*, 373-85

- **Tieri P**, Bellavista E, Termanini A, Salvioli S, Capri M, Franceschi C (**2012**) *Charting the NF-kB interactome map*. PLoS ONE 7(3): e32678. doi:10.1371/journal.pone.0032678

- **Tieri P**, de la Fuente A, Termanini A, Franceschi C (**2011**) *Integrating omics data for signaling pathways, interactome reconstruction, and functional analysis*. Methods Mol. Biol. *719*, 415-33 **rated *"must read"* by** FACULTYof1000

- **Tieri P**, Grignolio A, Zaikin A, Mishto M, Remondini D, Castellani GC, Franceschi C (**2010**) *Network, degeneracy and bow tie: integrating paradigms and architectures to grasp the complexity of the immune system*. Theoretical Biology and Medical Modelling, *7*, 32

- Termanini A, **Tieri P**, Franceschi C (**2010**) *Encoding the states of interacting proteins to facilitate biological pathways reconstruction*. Biology Direct, *5,* 52 Highly accessed

- Grignolio A, **Tieri P**, Castellani GC (**2010**) *Networks, Degeneracy and Bow ties: A Unifying Perspective of Immunological Paradigms and Architectures*, in: Immunology Today - Three Historical Perspectives under Three Theoretical Horizons, Grignolio A Ed., Bononia University Press, *Quaderni del CIG* series, *2*, 53-68

- Cevenini E, Bellavista E, **Tieri P**, Castellani G, Lescai F, Francesconi M, Mishto M, Santoro A, Valensin S, Salvioli S, Capri M, Zaikin A, Monti D, de Magalhães JP, Franceschi C (**2010**) *Systems Biology and Longevity: an emerging approach to identify innovative anti-aging targets and strategies,* Curr. Pharm. Des.,*16*, 802-813

- **Tieri P**, Grignolio A, (**2009**) *Paradigms and architectures in the immune system: from degeneracy to bow ties*, in: ACUME2 Living Texts conference series proceedings, PNW Polish Scientific Publishers, 57-70

- Capri M, Salvioli S, Cevenini E, Celani L, Sevini F, Bellavista E, Lanzarini C, Lukas S, Lescai F, **Tieri P**, Monti D, Franceschi C (**2009**) *Aging and Longevity in Animal Models and Humans,* in: Life-Span Extension, Aging Medicine, Sell C et al. eds., Springer/Humana Press, DOI: 10.1007/978-1-60327-507-1_11, 175-191

- **Tieri P** (**2008**) *The immune system: look who's talking*, in: Biocomplexity at the cutting edge of Physics, Systems Biology and Humanities, Bononia University Press, *Quaderni del CIG* series, *1*, 145-154

- Cevenini E, Invidia L, Lescai F, Salvioli S, **Tieri P**, Castellani GC, Franceschi C (**2008**) *Human models of aging and longevity*. Expert Opin. Biol. Ther. *8* (9), 1393-1405

- Salvioli S, Capri M, **Tieri P**, Loroni J, Barbi C, Invidia L, Altilia S, Santoro A, Pirazzini C, Pierini M, Bellavista E, Alberghina L, Franceschi C (**2008**) *Different types of cell death in organismal aging and longevity: state of the art and possible systems biology approach,* Curr. Pharm. Des., *14*, 226-236
- Salvioli S, **Tieri P**, Castellani GC, Capri M, Barbi C, Santoro A, Altilia S, Invidia L, Pierini M, Bellavista E, Monti D, Franceschi C (**2007**) *Longevity genes across species: conservation versus evolvability*, Inv. Surviv. J., *4*, 112-118
- Remondini D, Neretti N, Sedivy JM, Franceschi C, Milanesi L, **Tieri P**, Castellani GC (**2007**) *Networks from gene expression time series: characterization of correlation patterns*, Int. J. Bifurcat. Chaos, *17* (7), 2477-2483
- **Tieri P,** Castellani GC, Remondini D, Valensin S, Loroni J, Salvioli S, Franceschi C (**2007**) *Capturing Degeneracy in the Immune System*, in: In silico Immunology, D. Flower and J. Timmis Eds., Springer Verlag, New York, ISBN 9780387392387, pp 109-118
- Remondini D, **Tieri P**, Valensin S, Verondini E, Franceschi C, Bersani F, Castellani GC (**2006**) *A general learning rule for network modeling of neuroimmune interactome*, in: Neural Nets, WIRN/NAIS 2005 Proceedings, Lecture Notes in Computer Science, Springer Verlag, *3931*, pp 286-292
- Salvioli S, Capri M, Valensin S, **Tieri P**, Monti D, Ottaviani E, Franceschi C (**2006**) *Inflamm-aging, Cytokines and Aging: state of the art, new hypotheses on the role of mitochondria and new perspectives from systems biology*, Curr. Pharm. Des., *12*, 3161-71
- **Tieri P**, Valensin S, Latora V, Castellani GC, Marchiori M, Remondini D, Franceschi C (**2005**) *Quantifying the relevance of different mediators in the human immune cell network*, Bioinformatics, *21*, 1639-1643
- **Tieri P**, Valensin S, Franceschi C, Morandi C, Castellani GC (**2003**) *Memory and selectivity in evolving scale-free immune networks*, in Artificial Immune Systems, ICARIS 2003 Proceedings, Lecture Notes in Computer Science, Springer-Verlag, *2787,* pp.93-101

PRESENTATIONS, TALKS AND CONFERENCES

- **The "omic" era: dalla ricerca di base alla medicina personalizzata,** 26 May 2016, Accademia Medica di Roma, Italy, talk "Integrazione di dati multi-omici e systems medicine".
- **MMH2015 1st International Conference on Computational Modeling of Metabolic Health, Inflammation and Diabetes**, 6-7 October 2015, Computer Laboratory, University of Cambridge, UK, co-organizer.
- **Nautilus, the storytelling of science**, RAI Italian national public broadcasting company, Rome, May 2015, TV episode "I nemici della rete", http://tinyurl.com/nautilus-p-tieri
- **The 2ⁿᵈ Intl. Conference on Mathematics and Statistics**, 2-5 April 2015, American University of Sharjia, UAE, talk "The multi-omic landscape of rheumatoid arthritis".
- **Network Biology, a short course 2015**, Universidade Federal de Minas Gerais, 9-13 Feb 2015, Belo Horizonte, Brazil.
- **Seminars at PICB 2012**, Partner Institute for Computational Biology, Shanghai, 21 Mar 2012, talk title "Network Immunology".
- **SBH SysBioHealth Symposium 2011**, Univ Bologna, IT, 14-15 Dec 2011, talk title "The immunological Self: a reappraisal".
- **Network Biology, a short course 2010**, Univ Univ Bologna, IT, June 2011.
- **RecombSat 2010**, Columbia Univ, NYC, USA, 15-20 Nov. 2010, poster "Charting the NF-kB pathway interactome map".
- **NetSci 2010**, MIT Boston, USA, 12-14 May 2010, talk title "Charting the NF-kB pathway interactome map".
- **SBH SysBioHealth Symposium 2009,** Univ Milano Bicocca, Milan, IT, 25-27 November 2009, **talk** title "Reconstruction and analysis of the NF-kB pathway interactome".
- **ICMSB'09, 11th International Conference on Molecular Systems Biology**, CAS-MPG PICB, Shanghai, China, 21-25 June 2009, talk title "Reconstruction of the NF-kB Interactome".

- **SBH 2008, SysBioHealth Symposium 2008**, 'Galvani' Center, Univ Bologna, IT, 24-25 November 2008, **keynote lecture** "A systemic and evolutionary approach to immune responses".
- **Living texts: interdisciplinary approaches and methodological commonalities in biology and textual analysis,** E-Science Institute, Edinburgh, UK, 16-17 Oct 2008, **invited talk** "Protocols, bow ties and the immune system".
- **Biophys 08, Biology and Beyond 2008,** Arcidosso, IT, 10-12 Sept 2008, **invited talk** "Degeneracy in complex systems: a biological point of view".
- **Immunology Day,** Institute of Advanced Studies & Academy of Sciences, Bologna, 7 May 2008, **talk** "Degeneracy and Complexity in the Immune System".
- **SBH 2007, SysBioHealth Symposium 2007,** Univ Milano Bicocca, Milan, IT, 16-19 October 2007, **poster** and **talk** title "Towards an unifying perspective of the fundamental properties and structural principles governing the immune system".
- **ARBM 2006, Aging Research with Bioinformatic Methods,** Gulbenkian Inst., Lisboa, PT, 6-9 November 2006, **talk** title "Network approaches in gene expression data & systems biology".
- **ECI 2006, 1st Joint Meeting of European National Societies of Immunology**, Paris, F, 6-9 September 2006, **poster** title "Modeling of immune networks".
- **SIMAI 2006, VII International conference of the Italian Society for Applied Mathematics**, Baia Samuele, Ragusa, IT, 22-26 May 2006, **chair** of the session "*Mathematical and Computational Modeling in Bioinformatics and Systems Biology*".
- **BITS Italian Bioinformatics Society, Annual meeting**, Bologna, IT, 28-29 April 2006, **talk** title "Quantifying the relevance of different mediators in the human immune cell network".
- **FGA 2006 Functional Genomics of Aging**, Palermo, IT, 29 March-2 April 2006, **poster** "Modeling and quantification of mediator relevance in immune cell network".
- **Biocomplexity**, *a paradigm useful for other disciplines?* International Italo-Canadian workshop, Bologna, IT, 13-15 July 2005, **talk** title "Cytokine network modeling".
- **ISMB2005 Intelligent Systems for Molecular Biology**, ISCB conference, Detroit, USA, 25-29 June 2005, **poster** "Quantifying the relevance of different mediators in the human immune cell network".

OTHER PROFESSIONAL ACTIVITIES

- **Frontiers in Cell and Developmental Biology: Systems Biology; BMC Systems Biology** — Editor, Review Editor
- **RAI Radio3, Italian National Radio & Television Broadcasting Company** — Author of Politics of Science & Research radiodocumentary programs
- **Il Domani di Bologna, daily newspaper, Bologna, Italy, *2003*** — Popular science writer
- **M.A.D. Environmental Dynamic Monitoring, Bologna, Italy, *2003*** — Winner of an *Emilia Romagna Region*-funded 1-yr bursary for a spin-off company study