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Nationality: Italian

Current location: Varese, Italy

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BIOGRAPHICAL SKETCH

POSITION

Retired Professor of Medical Microbiology and Director, Clinical Microbiology - University of Insubria Medical School and Ospedale di Circolo

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SUMMARY

Medically-qualified Research and Clinical Microbiologist. Licensed for practicing Medicine and Clinical Microbiology in the EU and Switzerland. Served as Full Professor at four Medical Schools of the Italian Universities of Pisa, Sassari, Pavia, and Insubria (Varese). Visiting Professor at the Universities of Reims and Tokyo; ISMS, Panama.

Expertise in culture-based and molecular microbiology/virology achieved in tertiary care Academic Medical Centers. Contributed to the mission of his Departments via participation in research and teaching programs, training residents and medical students, continuing medical education, tenders for diagnostic systems, infection control, antibiotic stewardship. In addition to clinical work, performed basic and translational research, served as Director of PhD programs in Medicine, acted as mentor for over 50 PhD students. Was leading a team of 25 members for medical diagnosis and research. Was responsible for financial (7 ME turnover), quality, and strategic management. Expertise in automated microbiology (including platforms from BD and Kiestra, Abbott Molecular, Diasorin, Alifax, Accelerate Diagnostics) as well as in culture-based and molecular bacteriology/virology/mycology. Identification of bacteria and fungi through mass spectrometry and DNA sequencing. Gut and respiratory microbiome. Automated quantitative tests for susceptibility to antimicrobials (EUCAST and CLSI criteria). Infectious serology and cell-mediated immune response to a wide range of microorganisms.

In 2015, his laboratory was renewed with state-of-the-art technology and infrastructure for enhanced safety up to the BSL3 level. Half million tests/year for bacteriology, virology, infectious serology, mycology, parasitology. Lab services have been increasing 5-10% year over year with a net margin of 15-20%. Upon implementation of rapid diagnostics and a novel IT system interacting with the PHS (hospitals, private clinics, general practitioners, individual patients), his Medical Center has seen a reduction of hospital-related infections and hospital stay.

Research: viral etiology of chronic disorders (diabetes, autoimmune thyroid conditions, chronic cardiomyopathy, post-polio syndrome); endocrine changes in lethal COVID-19 cases; viral and bacterial genomics; autoimmunity; vaccines; antimicrobial resistance. Collaborative research with international groups: USA, Japan, Scandinavia, UK, France). Funding from the Italian Ministry of Health, the Juvenile Diabetes Research Foundation (New York, USA), the University of Miami (Miami, USA), Post-Polio Health International (St. Louis, USA), the European Polio Union (Bruxelles, Belgium), The University of Tokyo (Tokyo, Japan), the RIKEN Institute (Tokyo, Japan), the Norwegian Research Council (Oslo, Norway). Clinical studies for Pharma Companies and CROs.

Member of research and PhD evaluation committees: Universities of Oslo, Tampere, Amsterdam, Dusseldorf, Barcelona, Tokyo, NUS, Sains Malaysia, INSERM (Paris), Jordan (Amman), New South Wales (Sydney).			
EDUCATION AND TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Liceo Classico, Pisa, Italy	Baccalaureate	07/1966 (5 yrs)	Humanities, arts, latin, greek, philosophy, science, math, physics, chemistry
University of Pisa Medical School, Pisa, Italy	M.D. degree (cum laude)	12/1972 (6 yrs)	Medical sciences
License to practice Medicine in the European Community	Medical Doctor	02/1976 (3 yrs)	Clinical Sciences
Dipartimento Federale dell'Interno, DFI, CH - License to practice Medicine in the Swiss Confederation	Medical Doctor	02/2012	Clinical Sciences
Department of Microbiology, University of Pisa, Italy	Specialist in Clinical Microbiology (cum laude)	10/1976 (4 yrs)	General microbiology, pathology, immunology. Clinical bacteriology, virology, mycology, parasitology, immunology
Dipartimento Federale dell'Interno, DFI, CH - License to practice Clinical Microbiology in the Swiss Confederation	Specialist FAMH in Medical Microbiology	03/2013	Clinical Microbiology
Laboratory of Experimental Medicine, National Institutes of Health, Bethesda, MD, USA	Visiting Scientist	1978-1981 (3 yrs)	Virus-induced endocrine disease
Department of Molecular Immunology, University of Tokyo, Tokyo, Japan	Visiting Professor	1997	Autoimmune and neurologic disorders

POSITIONS AND CAREER

- Director PhD Program in Translational Medicine, University of Insubria, Varese, Italy (2009-2017).
- Director, Department of Experimental Medicine, University of Insubria, Varese, Italy (2001-2010).
- Director, Department of Clinical Pathology, Ospedale di Circolo e Fondazione Macchi, Varese (2001-2009; clinical chemistry and hematology, transfusion medicine, anatomic pathology, microbiology and virology, human genetics). Team of 150 FTEs; annual budget 20-30 MEuro.
- Nov 1985-Oct 2019 - Full Professor of Medical Microbiology at four Italian Medical Schools: University of Sassari (Nov 1985-Oct 89); University of Pisa (Nov 1989-Oct 91); University of Pavia (Nov 1991-Oct 98); University of Insubria (Aug 1998-2018).
- Nov 1982, Associate Professor, University of Pisa Medical School.
- Visiting Scientist, National Institutes of Health: Sept 1978-Nov 81 (Bethesda, Maryland, USA) – Mentor, Abner L Notkins, MD (International Awards: 1983 Paul E Lacy; 1986 Paul Ehrlich Prize; 1989 NYU Berson Award).
- Lieutenant Physician, Medical Corps of the Italian Army (Mar 1976-Aug 1977; 18-month service). Then, Reserve Medical Captain.
- Medical Assistant, Clinical Microbiology (Jan 1973-Feb 1978), University of Pisa Medical School.

SCIENTIFIC SOCIETIES AND REVIEWER ACTIVITIES

- President, Italian Society for Medical and Clinical Microbiology (2001-2006).

- Member: American Society for Microbiology (ASM); NIH Alumni Association (NIHAA); International Society for Pediatric and Adolescent Diabetes (ISPAD); Asia-Pacific Society for Medical Virology (APSV); Global Virus Network (GVN).
- Board Member: Virus in Diabetes International Study Group (London); European Polio Union (Huldenberg, Belgium); Ambassador to Italy for the American Society for Microbiology (Washington, DC).
- Reviewer for the following Journals: J Clinical Microbiology, J General Virology, Viruses, J Medical Virology, J Virological Methods, Future Virology, Future Microbiology, Microbial Pathogenesis, Int J Molecular Sciences, New Eng J Med, Lancet, PLoSOne, E-Biomedicine, Scientific Reports, Chemosphere, Microbial Pathogenesis, Pathogens, Nature Medicine, Nature Endocrinology, Diabetes, Diabetologia, Pediatric Diabetes, Diabetes Care, Diabetes Research and Clinical Practice. Editorial Board: Vaccines (Basel).

HONORS

2018-2020 – Member of Scientific Committee, Milan Center for Food Law and Policy (President, Livia Pomodoro), Milano, Italy

2016 – Member, Evaluation Committee for Medical Sciences, Italian National Agency for the Evaluation of Universities and Research (ANVUR)

2014-2017 - American Society for Microbiology: ASM International Ambassador

2014-2016 Research Award “Virology of the Late Consequences of Polio”, Post-Polio Health International, St. Louis, Missouri

2013-2016 - Research Scholar, Accademia dei Lincei, Roma, Italy

2013-2016 – Consulting Director, International School of Medical Sciences, Panama City, Panama.

2012-2014 - Chair, National Committee for the Selection of University Professors in Medical Microbiology

2013 - Co-Editor, volume “Diabetes and Viruses”, Springer Science, New York - “Diabetes and Viruses” (over 50,000 downloads in the Springer eBook Collection 2014).

2012 - Medical Expert “Commissione Affari Sociali”, Italian Parliament, Rome

2012-2014 - External Assessor, Persistent Virus Infections Network (PEVNET), University of Tampere, Finland

2005-2019 - External Assessor for Microbiology and Infection: Royal Netherlands Academy for Arts and Science (Amsterdam), Agence Nationale de la Recherche (Paris), Institut National de la Santé et de la Recherche Médicale (INSERM, Paris); National University of Singapore (Singapore), Universiti Sains Malaysia (Penang), University of Jordan (Amman), University of New South Wales (Sydney), University H Heine (Dusseldorf).

2011 - Research Award “Viral infections in type 1 diabetes”, Network for Pancreatic Organ Donors, Miami, FL

2009 - Research Award, “Viral pathogenesis of PPS”, Post-Polio Health International, St. Louis, MO

2007 - Member, Scientific Committee “Premio Nicolò Copernico”, Ferrara, Italy

2007 - Research Award, “Prion Research”, RIKEN Brain Institute, Tokyo, Japan

2001 - Research Award, “Resistance determinants to beta-lactams”, Wyeth-Lederle, Italy

1997 - Visiting Professor, University of Tokyo, Japan

1987 - Scholarship of the Erasmus Program, Universities of Reims and Paris V, France (3-month award)

1978-81 - Fogarty International Center, Bethesda, MD - International Research Fellowship, (3-year award)

1977-78 - National Research Council, Rome, Italy - International Research Fellowship (1-year award)

RESEARCH GRANTS (2005-Present)

- National Research Council, Oslo, Norway “Viral infections in autoimmune disorders” (2018-2020)
- University of Miami Medical School & Juvenile Diabetes Research Foundation (New York, NY) “Viral infections in diabetes” (2017-2019)
- National Ministry of Health, (Rome, Italy) “Etiology and prevention of type 1 diabetes” (2016-2019)
- Post-Polio Health International (St. Louis, Missouri) “Virology of the Late Consequences of Polio” (2014-2016)
- Juvenile Diabetes Research Foundation, JDRF (New York, NY) “Role of enteroviruses in type 1 diabetes” (2013-2016)
- Network of Pancreatic Organ Donors, nPOD (Miami, FL) “Viral infections in type 1 diabetes” (2012)
- CARIPLO Foundation (Milan, Italy): “Role of enterovirus infections in the pathogenesis of type 1 diabetes and associated autoimmune conditions” (2010-2012)

- Regione Lombardia (Milan, Italy): “Etiopathogenesis of the late consequences of polio” (2010-2013)
- Regione Lombardia (Milan, Italy): “Autologous stem cell therapy of large bone defects” (2009-2011)
- Post-Polio Health International & Fondazione Comunitaria del Varesotto: “Viral pathogenesis of the post-polio syndrome” (2008-2009)
- Fondazione Banca del Monte di Lombardia (Milan, Italy): “Cultured myoblasts as therapeutic aid in chronic cardiac failure” (2005-2007)
- The Bran Institute (Tokyo, Japan): “The prion gene complex: role in regulating cell susceptibility to virus infection” (2006-2007)
- Ministry of Education and Research (Rome, Italy): “Antiviral drugs against picornaviruses” (2005-2006)
- Ministry of Education and Research -COFIN, (Rome, Italy): “Determinants of bacterial of drug resistance” (2002-2005)

INVITED LECTURER

Abbott Research Center, Wiesbaden, Germany; Academic Medical Center, Amsterdam, Netherlands; BD Italia, Milan and BD Germany, Heidelberg; Centro de Educación Médica e Investigaciones Clínicas “Norberto Quirino” (CEMIC), Buenos Aires, Argentina; Children's Hospital Westmead; The University of Sydney, NSW, Australia; Columbia University Medical School, New York, NY; Diabetes Research Institute, Miami, FL; Georgetown University, Washington, DC; Institute for Medical Microbiology, Bellinzona, CH; Institute of Human Virology, University of Maryland, MD, USA; La Jolla Institute of Allergy and Immunology, La Jolla, CA; Medical Center Punta Paitilla, Panama, Republic of Panama; National Institutes of Health, NICDR, Bethesda, MD; National University of Kyushu, Department of Internal Medicine, Fukuoka, Japan; National University of Singapore, Department of Immunology and Microbiology, Singapore; Tulane University, New Orleans, LA; University of Freiburg Medical School, Freiburg, Germany; University of Miami, Miller School of Medicine, Miami, FL; University of Oslo, Norway; University of Reims Medical School, Reims, France; University of Shanghai, School of Veterinary Medicine, Shanghai, China; University of New South Wales, School of Medicine, Sydney, Australia; University of Tampa Medical School, Tampa, FL; University of Tampere, Finland; University of Texas Medical Branch, Galveston, TX; University of Tokyo, Tokyo, Japan - Italian Medical Schools: Universities of Bologna, Cagliari, Catania, Firenze, Genova, L'Aquila, Milan University Vita-Salute, Padova, Pavia, Perugia, Pisa, Rome, Sassari, Siena, Verona; Italian Research Centers: The National Council for Research (CNR, Rome); Diasorin Research Center, Milan; Novartis Vaccines Center, Siena.

BIBLIOMETRIC DATA

Papers in peer-reviewed Journals: 225 ♦ Hirsch-index: 55 ♦ H-index last 5 years: 27

Over 400 presentations at National and International Conferences

PUBLICATIONS LAST 10 YEARS

1. Poma AM, Proietti A, Macerola E, Bonuccelli D, Conti M, Salvetti A, Dolo V, Chillà A, Basolo A, Santini F, Toniolo A, Basolo F. Suppression of pituitary hormone genes in subjects who died from COVID-19 independently of virus detection in the gland. *J Clin Endocrinol Metab.* 2022 May 14;dgac312. doi: 10.1210/clinem/dgac312.
2. Basolo A, Poma AM, Bonuccelli D, Proietti A, Macerola E, Ugolini C, Torregrossa L, Giannini R, Vignali P, Basolo F, Santini F, Toniolo A. Adipose tissue in COVID-19: detection of SARS-CoV-2 in adipocytes and activation of the interferon-alpha response. *J Endocrinol Invest.* 2022 Feb 15;1-9. doi: 10.1007/s40618-022-01742-5.
3. Sobur MA, Islam MS, Haque ZF, Orubu ESF, Toniolo A, Choudhury MA, Rahman MT. Higher seasonal temperature enhances the occurrence of methicillin resistance of *Staphylococcus aureus* in house flies (*Musca domestica*) under hospital and environmental settings. *Folia Microbiol (Praha).* 2021 Sep 26. doi: 10.1007/s12223-021-00922-9.
4. Poma AM, Basolo A, Bonuccelli D, Proietti A, Macerola E, Ugolini C, Torregrossa L, Ali G, Giannini R, Vignali P, Santini F, Toniolo A, Basolo F. Activation of Type I and Type II Interferon Signaling in SARS-CoV-2-Positive Thyroid Tissue of Patients Dying from COVID-19. *Thyroid.* 2021 Dec;31(12):1766-1775. doi: 10.1089/thy.2021.0345. PMID: 34541878.

5. Poma AM, Bonuccelli D, Giannini R, Macerola E, Vignali P, Ugolini C, Torregrossa L, Proietti A, Pistello M, Basolo A, Santini F, Toniolo A, Basolo F. COVID-19 autopsy cases: detection of virus in endocrine tissues. *J Endocrinol Invest*. 2021 Jun 30;1–6. doi: 10.1007/s40618-021-01628-y.
6. Poma AM, Hammerstad SS, Genoni A, Basolo A, Dahl-Jorgensen K, Toniolo A. Immune Transcriptome of Cells Infected with Enterovirus Strains Obtained from Cases of Autoimmune Thyroid Disease. *Microorganisms*. 2021 Apr 19;9(4):876. doi:10.3390/microorganisms9040876.
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8. Poma AM, Genoni A, Broccolo F, Denaro M, Pugliese A, Basolo F, Toniolo A. Immune Transcriptome of Cells Infected with Enterovirus Strains Obtained from Cases of Type 1 Diabetes. *Microorganisms*. 2020 Jul 12;8(7):E1031. doi:10.3390/microorganisms8071031.
9. Oikarinen M, Bertolet L, Toniolo A, Oikarinen S, Laiho JE, Pugliese A, Lloyd RE, Hyöty H, The nPOD-V Study Group. Differential Detection of Encapsidated versus Unencapsidated Enterovirus RNA in Samples Containing Pancreatic Enzymes-Relevance for Diabetes Studies. *Viruses*. 2020 Jul 11;12(7):E747. doi:10.3390/v12070747.
10. Sobur A, Islam S, Haque E, Rahman T, Islam T, Toniolo A, Rahman T. Influence of temperature and relative humidity on the occurrence of COVID-19 pandemic: An observational study in 57 countries. *MedRxiv 2020-05* DOI: 10.1101/2020.05.03.20089342.
11. Islam MS, Sobur MA, Akter M, Nazir KHMNH, Toniolo A, Rahman MT. Coronavirus Disease 2019 (COVID-19) pandemic, lessons to be learned! *J Adv Vet Anim Res*. 2020 Apr 18;7(2):260-280. doi: 10.5455/javar.2020.g418.
12. Rahman MT, Sobur MA, Islam MS, Toniolo A, Nazir KHMNH. Is the COVID-19 pandemic masking dengue epidemic in Bangladesh? *J Adv Vet Anim Res*. 2020 Apr 15;7(2):218-219. doi: 10.5455/javar.2020.g412.
13. Lepuschitz S, Ruppitsch W, Pekard-Amenitsch S, Forsythe SJ, Cormican M, Mach RL, Piérard D, Allerberger F; Toniolo A, EUCRONI Study Group. Multicenter Study of Cronobacter sakazakii Infections in Humans, Europe, 2017. *Emerg Infect Dis*. 2019 Mar;25(3):515-522. doi: 10.3201/eid2503.181652.
14. Toniolo A, Cassani G, Puggioni A, Rossi A, Colombo A, Onodera T, Ferrannini E. The diabetes pandemic and associated infections: suggestions for clinical microbiology. *Rev Med Microbiol*. 2019;30:1-17. doi: 10.1097/MRM.0000000000000155.
15. Broccolo F, Drago F, Ciccarese G, Genoni A, Porro A, Parodi A, Chumakov K, Toniolo A. Possible long-term sequelae in hand, foot, and mouth disease caused by Coxsackievirus A6. *J Am Acad Dermatol*. 2019;80:804-806. doi: 10.1016/j.jaad.2018.08.034.
16. Broccolo F, Drago F, Ciccarese G, Genoni A, Puggioni A, Rosa GM, Parodi A, Manukyan H, Laassri M, Chumakov K, Toniolo A. Severe atypical hand-foot-and-mouth disease in adults due to coxsackievirus A6: Clinical presentation and phylogenesis of CV-A6 strains. *J Clin Virol*. 2019;110:1-6. doi: 10.1016/j.jcv.2018.11.003.
17. Broccolo F, Ciccarese G, Rossi A, Anselmi L, Drago F, Toniolo A. Human papillomavirus (HPV) and Epstein-Barr virus (EBV) in keratinizing versus non-keratinizing squamous cell carcinoma of the oropharynx. *Infect Agent Cancer*. 2018;13:32-36. doi: 10.1186/s13027-018-0205-6.
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20. Piantanida E, Gallo D, Veronesi G, Dozio E, Trotti E, Lai A, Ippolito S, Sabatino J, Tanda ML, Toniolo A, Ferrario M, Bartalena L. Cardiometabolic healthy and unhealthy obesity: does vitamin D play a role? *Endocr Connect*. 2017;6:943-951. doi: 10.1530/EC-17-0304.
21. Toniolo A, Leslie RD. Diabetes, the TYK2 Gene and the Interferon Response: In Search for Environmental Causes. *EBioMedicine* 2017; <http://dx.doi.org/10.1016/j.ebiom.2017.09.003>.

22. Genoni A, Canducci F, Rossi A, Broccolo F, Chumakov K, Bono G, Salerno-Uriarte J, Salvatoni A, Pugliese A, Toniolo A. Revealing enterovirus infection in chronic human disorders: An integrated diagnostic approach. *Sci Rep.* 2017;7(1):5013. doi: 10.1038/s41598-017-04993-y.
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24. Drago F, Ciccarese G, Gasparini G, Cogorno L, Javor S, Toniolo A, Broccolo F. Contemporary infectious exanthems: an update. *Future Microbiol.* 2016 Nov 14. PubMed PMID: 27838923.
25. Maccari G, Genoni AP, Sansonno S, Toniolo A. Properties of two enterovirus antibodies that are utilized in diabetes research. *Sci. Rep.* 2016; 6, 24757; doi: 10.1038/srep24757.
26. Osculati A, Visonà SD, Colombo A, Basso P, Andreello L, Toniolo A. Neisseria meningitidis can survive in corpses for at least eleven days. *Front Cell Infect Microbiol.* 2016;6:74.
27. Toniolo A. Long-term poliovirus infection and its possible impact on Post-Polio Syndrome. *J Rehab Med.* 2016; 48:740 (KL19).
28. Park LP, Chu VH, Peterson G, Skoutelis A, Lejko-Zupa T, Bouza E, Tattevin P, Habib G, Tan R, Gonzalez J, Altclas J, Edathodu J, Fortes CQ, Siciliano RF, Pachirat O, Kanj S, Toniolo A, Wang A; International Collaboration on Endocarditis (ICE) Investigators. Validated risk score for predicting 6-month mortality in infective endocarditis. *J Am Heart Assoc.* 2016;5. pii: e003016. doi:10.1161/JAHA.115.003016
29. Nagafuchi S, Toniolo A. Viral diabetes: virus diabetogenicity and host susceptibility. *Immunoendocrinology* 2015; 2: e1026. doi: 10.14800/ie.1026.
30. Broccolo F, Esposito S, Falcone V, Toniolo A. Human Bocaviruses: possible etiologic role in respiratory infections. *J Clin Virol.* 2015;72:75-81.
31. Onori R, Gaiarsa S, Comandatore F, Pongolini S, Brisse S, Colombo A, Cassani G, Marone P, Grossi P, Minoja G, Bandi C, Sasseria D, Toniolo A. Tracking nosocomial Klebsiella pneumoniae infections and outbreaks by whole genome analysis: small-scale Italian scenario within a single hospital. *J Clin Microbiol.* 2015;53:2861-8.
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33. Drago F, Ciccarese G, Broccolo F, Toniolo A, Javor S, Parodi A. Localized exanthem due to echovirus 9. *J Med Virol.* 2015;87:1447-8. doi: 10.1002/jmv.24204. PMID: 25919440.
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44. Ugolini C, Elisei R, Proietti A, Pelliccioni S, Lupi C, Borrelli N, Viola D, Leocata P, Vitti P, Miccoli P, Toniolo A, Basolo F. FoxP3 expression in papillary thyroid carcinoma: a possible resistance biomarker to 131-iodine treatment. *Thyroid*. 2013 Aug 5. PMID: 23915122.
45. Colombo A, Maccari G, Congiu T, Basso P, Baj A, Toniolo A. Colonization of a central venous catheter by the hyaline fungus *Fusarium solani* Species Complex: a case report and SEM imaging. *Case Reports in Medicine*, 2013 doi.org/10.1155/2013/618358.
46. Vulcano E, Murena L, Falvo DA, Baj A, Toniolo A, Cherubino P. Bone marrow aspirate and bone allograft to treat acetabular bone defects in revision total hip arthroplasty: preliminary report. *Eur Rev Med Pharmacol Sci*. 2013. 17:2240-9. PMID: 23893192.
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