

## CURRICULUM VITAE

Francesca Demichelis, PhD

### EDUCATION

- 2005 PhD, University of Trento, Italy (UNITN), International Doctoral School in Information and Telecommunication.
- 1996 MSc, Physics Department, UNITN.
- 1993-1994 Physics, Imperial College of Science, Technology and Medicine, London UK.

### EMPLOYMENT

- 2018 Jan–present Professor (BIO11), Head of the Laboratory of Computational and Functional Oncology, Department of Cellular, Computational and Integrative Biology, UNITN.
- 2014 Oct–2017 Dec Associate Professor (BIO11) with tenure, Head of the Laboratory of Computational Oncology, Centre for Integrative Biology, UNITN.
- 2011 Feb–present Group Leader, Computational and Functional Oncology, UNITN.
- 2011 Feb–2014 Sept Assistant Professor in Computational Biology, Head of the Laboratory of Computational and Functional Oncology, Centre for Integrative Biology, UNITN.
- 2008 July–2011 Jan Assistant Professor in Pathology and Laboratory Medicine, and in Computational Biomedicine, Weill Cornell Medical College, New York, NY.
- 2007 Oct–2008 June Instructor in Pathology and Laboratory Medicine, and Institute Fellow at Institute for Computational Biomedicine, Weill Cornell Medical College, New York, NY.
- 2005 Feb–2007 Sep Post-doctoral Fellow at the Department of Pathology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA.
- 1997 Sep–2005 Jan Research Associate at ITC-IRST (Fondazione Bruno Kessler) in Medical Informatics, Intelligent Data Analysis in Biomedicine, Automated Reasoning System Unit, Trento, Italy.
- 1996 Dec- 1997 Aug Scholarship at UNITN from the Istituto Nazionale Fisica della Materia (INFM). Title: Parallel computing for molecular dynamics simulations of monatomic glasses.

### INSTITUTIONAL RESPONSIBILITIES and MANDATES

- 2024-present Deputy Rector of the University of Trento (UNITN), Italy;
- 2024-present Member, designated by the Rector, of the Academic Senate (UNITN), Italy;
- 2022-present European Consortium of Innovative Universities (ECIU) Alliance, Member of the Vice-President for Research Board;
- 2021-present Vice-Rector for Research at the University of Trento, Italy;
- 2021-present Faculty member at Interdepartmental Center of Medical Sciences - CISMED, University of Trento, Italy;
- 2017–2021 President of Transdisciplinary Program in Computational Biology Panel, International PhD Program in Biomolecular Sciences, UNITN;
- 2016–2021 CIBIO Director's Delegate for Research SUA-RD;
- 2016–2021 CIBIO Director's Delegate for Health Science Programs (CLAPS);
- 2016–2018 Member of CIBIO Executive Committee;
- 2015–2021 CIBIO Director's Delegate Unitn Library;
- 2013-2019 Adjunct Assistant Professor of Computational Biomedicine in the Institute for Computational Biomedicine, Weill Cornell Medicine, New York, NY

- 2013–present Standing Member of the Caryl and Israel Englander Institute for Precision Medicine at Weill Cornell Medicine and NewYork-Presbyterian Hospital, NY;
- 2012–2014 Plagiarism Prevention Committee member at UNITN;
- 2011–present Faculty member of the International PhD Program in Biomolecular Sciences, UNITN;
- 2011-2021 Member of the Executive Committee of International PhD Program in Biomolecular Sciences;
- 2010–2011 Faculty Member of Weill Cornell Graduate School of Medical Sciences, Program in Physiology, Biophysics, & Systems Biology, New York, NY;
- 2008–2010 Member of Translational Research Committee, Weill Cornell Medicine, New York, NY;

## TEACHING ACTIVITIES

### Courses\*:

- 2024-2025 Course director, OT Precision Medicine, Medicina e Chirurgia, UNITN;
- 2016–2025 Course director, Computational Human Genomics, Master Program in Quantitative and Computational Biology UNITN (0521H);
- 2013–2015 Course director, Computational Biology, Undergraduate Program in Biomolecular Sciences and Technologies, UNITN (0516G);
- 2011–2013 Co-director, Systems Biology, Fundamentals of Computational Biology, UNITN (0516G);

### Ad hoc classes:

2013 European School of Oncology e-oncoreview session on ‘Gene profiling and prostate cancer’; 2012 European School of Oncology Viareggio (Italy), Gene profiling in clinical oncology, Genomic tools in Prostate Cancer; 2012 Mini-Course in Next Generation Sequencing Data Management and Analysis in Clinical Research Setting (4 hours), University of Pavia, Pavia, Italy; 2009 Graduate Program, Weill Cornell Medical College New York, NY, Quantitative Understanding in Biology; 2000–2004 Graduate Program, University of Udine, Italy, Medical Informatics.

\*Compliant with UNITN regulations (art. 14 comma 2, of Regolamento didattico di Ateneo) over the past years, I obtained a significant reduction of teaching duties based on research activities funded through international highly competitive research grants where I act as Principal Investigator, and/or on institutional roles.

## SUPERVISION OF STUDENTS AND POSTDOCTORAL FELLOWS

- 2011–2024 UNITN: Postdoctoral fellows, 10; PhD students, International PhD Program in Biomolecular Sciences, 9; Master students: 16 in Quantitative and Computational Biology and 5 in Cellular and Molecular Biotechnology.
- 2008–2010 Weill Cornell Medical University: Postdoctoral fellows, 2; MD/PhD, Post-graduate training in Systems Biology in Prostate Cancer, 1 (co-mentor); PhD student from Physiology, Biophysics, and Systems Biology graduate program, 1; Master student in Science (now MD/PhD student at the University of Pennsylvania), 1.

## COMMISSIONS OF TRUST and MEMBERSHIPS

### Grant Review Panels/Expert Grant Review Activity:

- 2024-2027 Member of the Scientific Technical Committee (CTS) of the Fondazione AIRC per la Ricerca sul Cancro ETS, 01/01/2024-31/12/2027.
- 2024 Swiss National Science Foundation, Expert Reviewer.
- 2021-23-. ERC Advanced grants, LS4, Deputy Panel Chair, Panel Member.
- 2021,2025 Federal Ministry of Education and Research, Germany, Review Panel Member “Collaborative research on tumor heterogeneity, clonal tumor evolution and therapy resistance”.
- 2021,2022 German Cancer Aid, Review Committee Member for the Translational Oncology Priority Program;
- 2021 Swiss Cancer League, Review Board Member;
- 2020 European Research Council Executive Agency (ERCEA), Remote Referee for "Excellent science" of H2020 Framework Programme;
- 2015–2020 Italian Association for Cancer Research Foundation (AIRC), Scientific Fellowship Committee Member;

Previous: 2019 AXA Research Fund; 2010/-14/-19 Austrian Science Fund (FWF), Austria; 2018 CR-UK, UK; 2017 Interfaculty Research Cooperation Grant, University of Bern, Switzerland; 2015–2016 Institut National du Cancer – INCa, France; 2011/2013/2014 Prostate Cancer UK, UK; 2010 Italian Ministry of

Health, Italy; 2010 National Medical Research Council, Ministry of Health, Singapore; 2009 National Cancer Institute (NCI, US);

Editorial Board activity:

2025- Editorial Board member, [Machine Learning: Health \(IOP Publishing\)](#);  
2024- Editorial Board member, NAR Cancer;  
2019-2023 Senior Editor, Molecular Cancer Research (MCR, AACR);  
2020-2021 Editorial Board member, Journal of Cancer Metastasis and Treatment (JCMT);  
2018-present Editorial Board member, European Urology Oncology;  
2010-2018 Associate Editor, BMC Medical Genomics;  
2005-2010 Editorial Board member, Diagnostic Pathology;

Manuscript Reviewer for international journals, including:

Annals of Oncology, Cancer Cell, Cancer Research, Clinical Cancer Research, Communications Biology, Genome Biology, Genome Research, Human Genetics, JCI, JCO Precision Oncology, JEV, Nature, Nature Genetics, Nature Medicine, Nature Methods, Nature Reviews Cancer, Oncogene, PLoS Computational Biology, PNAS, Science.

Scientific Committee activity:

2026 IPCS Organizing Committee, SAB;  
2026 ESMO Congress 2026 Scientific Committee member;  
2025 Third JCA-AACR Precision Cancer Medicine International Conference, Kyoto, Japan, June 28-30, 2025. Organizing Committee member;  
2024-present AACR Data Science Task Force, member;  
2024 ESMO Congress 2025 Scientific Committee;  
2024 AACR Annual Meeting 2024 Education Committee Member;  
2023-present Scientific Standing Committee of the Pezcoller Foundation Symposia, Member;  
2023 Guest Committee Member, Editorial Committee of the Annual Review of Cancer Biology;  
2023 Selection Committee member 2023 Pezcoller Foundation-AACR International Award for Extraordinary Achievement in Cancer Research;  
2023 Chair of the International Society of Extracellular Vesicles (ISEV) workshop, titled QuantitatEVs: Multiscale analyses, from bulk to single vesicle, Trento, I;  
2022 Scientific Committee, European Society for Medical Oncology (ESMO) Congress 2022;  
2020/21/22 Selection Committee, Marina Larcher Fogazzaro Women in Cancer Research Award, Fondazione Pezcoller - European Association for Cancer Research (EACR);  
2020/2022 Selection Committee, "PREMIO BIENNALE PER LA RICERCA SUL CANCRO", INTITOLATO A GUIDO VENOSTA, AIRC Foundation.  
2020 Selection Committee, Premio oncologia Gruppo 2003  
2020,2021 Program Committee Member, ISMCO'20 and ISMCO'21 2<sup>nd</sup>/3<sup>rd</sup> International Symposium on Mathematical and Computational Oncology, San Diego;  
2019 CR-UK/AIRC, Grand Challenge International Consultation Workshop member;  
2015–2016 Scientific Program Committee, 2016 AACR Annual Meeting;  
2015–2017 Scientific Committee, Società Italiana di Urologia Oncologica (SIUrO);

Scientific Consortia activity:

She served as an active member of international consortia as MAQC-II, TCGA-PRAD, Stand Up 2 Cancer (SU2C)-Prostate Cancer Foundation (PCF) (resulted in Nat Biotechnol. 2010, Cell 2015, Cell 2015, PNAS 2019) and the CCG Ancestry Informative Markers AWG (TCGA-NCI).

Memberships, Scientific Societies

2024-present European Liquid Biopsy Society (ELBS), Representative for UniTN;  
2021-present ERC in Italy;  
2021-present European Association for Cancer Research (EACR);  
2020-present 'Gruppo 2003' (Italian Highly Cited Researchers as per the Institute for Scientific Information (ISI));  
2018-2021 Top Italian Women Scientists (TIWS);  
2013–2020 Società Italiana di Biofisica e Biologia Molecolare (SIBBM);  
2012–present American Association for Cancer Research (AACR);  
2012–2014 Società Italiana di Biochimica Clinica e Biologia Molecolare Clinica (SIBIOC);  
2008–2010 American Society of Human Genetics;

Advisory Board activities:

- 2022- Vice President of the Advisory Board of Hub Innovazione Trentino Foundation (HIT);  
2022-2025.02 Vice-President of the Advisory Board of iNEST – Interconnected Nord-Est Innovation Ecosystem;  
2022-present Prostate Cancer UK - Scientific Advisory Board Member.

SCIENCE AWARDS and RECOGNITIONS

- 2024 Premio " Armida Barelli "Università Cattolica Sacro Cuore Milano, Italy.  
2019- Listed as "Highly Cited Researcher" in 2019, 2020, 2021, 2022, 2023, and 2025 by Clarivate Analytics and Web of Science.  
2021 Knight of the Order of Merit of the Italian Republic ("Cavaliere dell'Ordine 'Al merito della Repubblica Italiana") appointed by the President of the Italian Republic (n 16474 sVI, decr. 15/03/2021).  
2020 Premio Maria Teresa Messori Roncaglia ed Eugenio Mari ('ad uno Scienziato' 2020), Accademia Nazionale dei Lincei.  
2018 Accelerator Award 2018 by CRUK-AIRC (with Attard, Basso, Caffo, De Giorgi, Tucci). PRIME for the use of liquid biopsy to accelerate clinical research.  
2016 Prostate Cancer Foundation Challenge Award (with Beltran H, Attard G, Van Allen E, Chi K., Wyatt A., Rubin, M.A., Maher C.). Development and Qualification of the PCF SELECT (Specific Evaluation in Liquid biopsies of Established prostate Cancer Targets) Plasma DNA Assay.  
2014 Prostate Cancer Foundation Challenge Award (with Beltran H, Attard G). Early Detection of Neuroendocrine Prostate Cancer Transformation Using Circulating Genomic Signatures.  
2011 Prostate Cancer Foundation Challenge Award. Proposal title: "Recurrent SPOP Mutations in Prostate Cancer: Characterization of a Potentially Targetable Sub-class of Prostate Cancer."  
2010 Department of Defense, USA, New Investigator Award. "Towards Understanding the Genetic Predisposition for Signalling Pathway Activation in Aggressive Prostate Cancer."  
2009 Dana-Farber Harvard Cancer Center SPORE Developmental Project Award. "Copy Number Variants Predisposing to ETS Rearrangements and Oncogenic Lesions."  
2008 Pilot Research Award for Translational and Cross-disciplinary Studies, Clinical and Translational Science Center at Weill Cornell Medical College, New York. "Towards the Identification of Germline Risk factors for Lethal Prostate Cancer."  
2008 STARR Cancer Consortium Award, Determining Germline Risk Factors for Lethal Prostate Cancer: The Role of Copy Number Variations in Prostate Cancer Progression (#I2-A94-Co-recipient).  
2007 American Association for Cancer Research (AACR) Team Science Award, University of Michigan-Brigham and Women's Hospital Team.  
2005 Prostate Cancer Foundation Competitive Awards, "Fusion of TMPRSS2 and ETS Family of Transcription Factors in Prostate Cancer."

INVITED SPEAKER TALKS and SEMINARS (selected since 2010)

- 2026 EMBO workshop. The Many Faces of Cancer Evolution, May 27-29, Rimini, Italy  
2025 Prostate Cancer Foundation 32th Annual Scientific Retreat, 23-25 October, Carlsbad, CA. Boosting liquid biopsy signal through new technology  
2025 Gordon Research Conference (GRC) on Hormone-Dependent Cancers, August 10-15, Newry, ME. *De novo* Steroid Biosynthesis Driven by a Germline-Somatic Liaison  
2025 36° Pezcoller Symposium, Trento, Italy, June 23-24, 2025  
2025 JCA-AACR, Precision Cancer Medicine International Conference, Kyoto, Japan, June 2025  
2024 ISEVxTech, launch of the EVP-FAIR-KID task-force. Baltimore, MD, US, Nov 2024.  
2024 EACR Liquid Biopsy, 'The added value of multi-modal liquid biopsy approaches for cancer profiling, Lyon, France, Nov 2024.

- 2024 Feng Symposium, A germline-somatic variants partnership, UCSF, San Francisco, CA, US, May 2024.
- 2024 Hamburg Prostate Cancer Consortium (HPCC), The PRIME program, Multi-modal clinical testing of prostate cancer patient plasma, Hamburg, D, May 2024. (online)
- 2024 The University of Texas MD Anderson Cancer Center, Gallick Lab Seminar, Harnessing DNA allele-specific features to boost the power of liquid biopsy in precision oncology, Houston, TX, US, Feb 2024. (online)
- 2023 Prostate Cancer Foundation (PCF) Annual Scientific Retreat, Analytical Approaches and Computational Biology for Cancer Research, Carlsbad, CA, US, Oct 2023.
- 2023 UNIL | Université de Lausanne – Suisse. Computational Biology Seminar Series. Unlocking the power of liquid biopsy: how tailored multi-omics analytical approaches convert a blood drawn into a prognostic tool. Dec 2023.
- 2023 BRIC, Copenhagen. The convergence of tailored analytical approaches and prostate cancer unmet clinical needs via liquid biopsy. Nov 2023.
- 2023 AACR Annual Meeting, Orlando, April 2023. Loss of heterozygosity in cancer evolution.
- 2023 AACR Special Conference, Advances in prostate cancer research, Denver, March 2023. The genetic underpinnings of prostate cancer genomic heterogeneity
- 2022 Vall D’Hebron Institute of Oncology (VHIO), Scientific Seminars Series, November 11<sup>th</sup> 2022.
- 2022 European Society for Medical Oncology (ESMO), MAP, Liquid Biopsy, Amsterdam, Oct 2022.
- 2022 European Society for Medical Oncology (ESMO), Liquid Biopsy, Paris, Sept 2022.
- 2022 Dublin Steroid Cancer Meeting, The Royal College of Surgeons in Ireland, October 2022.
- 2021 Institute of Oncology Research, PhD Program in Cancer Biology and Oncology, Università della Svizzera Italiana (CH). Bellinzona, Sept 2021.
- 2021 European Prostate Cancer Alliance meeting. Online event, Sept 2021.
- 2021 CRUK City of London Centre - Symposium on Cancer Evolution. London (Online), Sept 2021
- 2021 European Society for Medical Oncology (ESMO), Methylation studies in liquid biopsies – potential clinical utility. Online event, June 16<sup>th</sup> 2021.
- 2021 AACR Annual Meeting, Cell free DNA features to track tumor evolution. May 18<sup>th</sup> 2021 (Online event).
- 2019 EMBL Conference, Cancer Genomics, Heidelberg, 4-6 November 2019. Synthetic Lethal candidates search using genomic and methylation features.
- 2019 PCF 26th Annual Scientific Retreat, 24-26 October, Carlsbad, CA. Genomics of Neuroendocrine prostate cancer.
- 2019 Associazione di Biologia Cellulare e del Differenziamento (ABCD) National Congress, 19-21 September, Bologna, IT. Cancer evolution studies, one allele at the time.
- 2019 Gordon Research Conference (GRC) on Hormone-Dependent Cancers, August 4-9, Newry, ME. Hormone-Dependent Cancers Evolution from Unbiased Allele Specific Analyses.
- 2019 Twelfth Annual Prostate Cancer Program Retreat March 3–5, 2019, W Hotel, Fort Lauderdale, Florida. Insights into prostate cancer progression from allele-specific genomics.
- 2018 25th Meeting of the EAU Section of Urological Research (ESUR), Athens. Epigenetic regulation and reprogramming: Neuroendocrine differentiation via epigenetic reprogramming.
- 2018 Nanoinnovation, Microfluidics and Biosystems for personalized medicine symposium, Rome. Emerging opportunities of liquid biopsies in precision oncology
- 2017 AACR Special Conference on Prostate Cancer: Advances in Basic, Translational, and Clinical Research, Orlando.
- 2017 Second Global Summit on Precision Diagnostic, AdMeTech Foundation, Boston, MA Emerging Fluid-Based Molecular Diagnostics.
- 2017 38th World Congress of The International Union of Physiological Sciences, Rio de Janeiro, Cell differentiation and drug pressure. Keynote Lecture.
- 2017 Cancer Research UK Manchester Institute. Prostate cancer evolution.

- 2017 RNGS2 - Revolutionizing Next-Generation Sequencing (2nd edition), VIB Conference, Antwerp. Assessment of metastatic disease burden through the analysis of cfDNA in patients' circulation.
- 2016 TEDx Trento, Combatto il cancro con i numeri.
- 2016 European Meeting on Urological Cancers (EMUC). The genomic evolution of metastatic prostate cancer.
- 2016 Androgens 2016, Innsbruck. The genetics of prostate cancer specific events.
- 2016 Pezcoller Foundation Symposium, Trento. Tumor evolution and cell differentiation.
- 2016 Armenise-Harvard Foundation 16th Symposium, Gubbio. Cell plasticity and divergent evolution in castration resistant prostate cancer.
- 2015 19th International Fritz Bender Foundation Symposium, Cancer Biology for Cancer Therapeutics, Pisa. Driver clones during prostate cancer evolution.
- 2015 Joint session at 2015 AUA Annual Meeting of Society for Basic Urologic Research (SBUR) and the Society of Urologic Oncology (SUO), New Orleans, Louisiana (USA). The Clonality of Prostate Cancer Metastases - Single or Multiple Origins?
- 2015 Heinrich-Warner-Symposium. Genomic and Epigenetic Variations in Prostate Cancer, Hamburg. Clonal Heterogeneity of Advanced Tumors through Allele Specific Quantification
- 2014 Federazione Italiana Scienze della Vita, Pisa (Italy). The multiple facets of genome instability: The dynamics of cancer genomes during disease progression.
- 2014 Towards the identification of cancer driver mutations: insights from clonal evolution. Dept. Cellular & Molecular Medicine, Leuven. Belgium.
- 2013 Cedars-Sinai Medical Center, Los Angeles (USA) - Immunology and Cancer Biology Seminar Series. Quantitative Approaches to Assess the Heterogeneity of the Cancer Genome.
- 2013 Italian Cancer Society, 55th Annual Meeting, Catanzaro, Italy. Molecular archaeology from next generation explorations.
- 2013 Biology, Information, and Computation (BCI), Cancer Bioinformatics Workshop, Trieste, Italy. Tumor evolution from DNA sequencing reads.
- 2012 Garvan Institute, Sydney (Australia). The Heterogeneous Cancer Genome Visualized through Computational Approaches.
- 2012 STARR Cancer Consortium Retreat, Cold Spring Harbor, NY (USA). Determining Germline Risk Factors for Lethal Prostate Cancer: The Role of Copy Number Variations in Cancer Progression.
- 2012 European Molecular Biology Laboratories (EMBL), Heidelberg, Germany. Linking Inherited and Somatic DNA Changes Across Prostate Cancer Progression.
- 2010 Prostate Cancer Foundation Annual Scientific Retreat, Washington D.C., USA.
- 2010 Dana-Farber Cancer Institute, SPORE in Prostate Cancer Meeting, Boston, USA.
- 2010 Harvard Medical School, Brigham and Women's Hospital, Boston, USA. Structural Variants and Prostate Cancer.

#### DISSEMINATION and REACHING OUT ACTIVITIES

Since 2011, she has participated in outreach and science dissemination activities for public audiences in collaboration with multiple Foundations and Institutions, including Fondazione Associazione Italiana per la Ricerca sul Cancro (AIRC), Fondazione Trentina per la Ricerca sui Tumori (FTRT), Lega Italiana per la Lotta contro I Tumori (LILT), Movember Foundation, the University of Trento, and Hub Innovation Trentino (HIT). Events include the following:

- 2024 AIRCampus lecture, University of Ferrara, Liquid biopsies as multi-analyte sources for the development of cancer diagnostic assays. (online event).
- 2023 Prostate Cancer Foundation (PCF) Annual Scientific Retreat, Women in Science Forum, Strategies for Amplifying the Voices of Women in Science, Carlsbad, CA, USA.
- 2021 ResearchHERs Power, Trento, IT.
- 2021 CICAP Fest 2021, Padova, IT.
- 2019 Galileo Festival dell'Innovazione, Padova, IT.
- 2018 Trieste Next 2018, Trieste, IT.
- 2016 TEDxTrento, Combatto il cancro con i numeri, Trento, IT.