

Curriculum vitae**Marina Mapelli**

Place and Date of Birth Milan (Italy) January 20, 1971
 Nationality Italian

CURRENT POSITION

2016 – pres. Tenured Associate Professor, Department of Experimental Oncology, European Institute Oncology, Milan (Italy)

PREVIOUS POSITIONS

2009 – 2015 Assistant Professor, Department of Experimental Oncology, European Institute Oncology, Milan (Italy)

2005 – 2008 Staff Scientist. Department of Experimental Oncology, European Institute of Oncology, Milan (Italy)

2001 – 2004 Post-doctoral fellow. Department of Experimental Oncology, European Institute of Oncology, Milan (Italy).
 Advisor: Prof. Andrea Musacchio

EDUCATION

1996 – 2000 PhD in Crystallography: Birkbeck College, University of London.
 Advisor: Dr. Paul A. Tucker. Training at the EMBL, Heidelberg and Hamburg (Germany)

1990 – 1995 Degree in Physics: University of Milan (*summa cum laude*) Milan (Italy)
 Advisor: Prof. Giancarlo Baldini

FELLOWSHIPS and GRANTS

2021 - 2025 Principal Investigator Grant of AIRC, the Italian Association for Cancer Research
 2017 - 2020 Principal Investigator Grant of AIRC, the Italian Association for Cancer Research
 2016 - 2020 Principal Investigator Grant of the Italian Ministry of Health
 2013 - 2015 Principal Investigator Grant of AIRC, the Italian Association for Cancer Research
 2009 - 2015 Young Investigator of the Italian Ministry of Health
 2009 - 2012 Principal Investigator Grant of AIRC, the Italian Association for Cancer Research
 2002 - 2004 Post-doctoral fellow of FIRG
 2003 Short Term EMBO Fellow
 1996 - 2000 EMBL doctoral fellow

HONOURS and COMMITTEES

2022 Elected EMBO member
 2020 – pres. Moderator for the EU Horizon-2020 funded program for infrastructure iNext-Discovery
 2020 – pres Member of the *FEBS Letters* editorial board
 2020 – pres. Member of the Italian Association of Crystallography Steering Committee, section BMM
 2016 – pres. MIUR (Ministry of Schools, University and Research) Habilitation for Full Professor in Biochemistry.
 2016 – 2019 Member of the User Panel of the Horizon-2020 EU program for infrastructures iNext.
 2014 – 2020 MIUR (Ministry of Schools, University and Research) Habilitation for Associate Professor of Biochemistry, Molecular Biology and Applied Physics.

- 2014 – pres. Representative for Structural Biology at User Organization Committee of the European Synchrotron Radiation Facility, Grenoble (France).
- 2011- 2016 Italian Coordinator of the EU Program BioStruct-X (FP7/2007-2013).
- 2011- 2014 Coordinator of the Italian Block Allocation Group to the European Synchrotron Radiation Facility (ESRF), Grenoble (France).
- 2007 - 2010 Scientific supervisor of the Crystallization Facility, Cogentech, Milan (Italy).

TEACHING AND FACULTY ACTIVITIES

- 2013 – pres. Organizer of the Biochemistry Course at the European School of Molecular Medicine (SEMM), Milan (It)
- 2009 – pres. Organizer of the Structural Biology Course at the SEMM School, Milan (It)
- 2009 – 2018 Lecturer at the course of Cell Biology of the SEMM School, Milan (It)
10. 03. 2014 Lecturer at the PhD program of the Istituto di Candiolo, Torino (It)
05. 11. 2012 Lecturer at the course *Mitosis: Experimental approaches and model systems* CNR Roma (It)
- 2009 – pres. Direct supervisor of 10 Post-doctoral fellows, 8 PhD students, 2 technicians, and 5 undergraduate students (graduated with highest marks) working in my laboratory at the European Institute of Oncology.
- 2009 – pres. Co-supervisor and internal examiner for the Molecular Oncology program of the SEMM School, Milan (It), the Ecole Normale Supérieure, Paris (Fr), King's College London, (Uk) ESRF-University of Grenoble (Fr), University of Geneva, University of Bologna, and the CNR.

PEER-REVIEWING

- 2009 - pres. Referee for peer-reviewed journals including EMBO Rep.; Nature Communications, Nature Chemical Biology, Journal of Cell Biology, eLife, Journal of Biological Chemistry, NAR, Journal of Molecular Biology, Acta Crystallographica D, Scientific Reports, International Journal of Molecular Sciences. Eur. J. of Med Chem.
- 2009 - pres. Referee for funding agencies: ERC European Research Council; MRC Career Developmental panel (Uk); the Hungarian Scientific Research found OTKA (Hu); US-Israel Binational Science Foundation (Il); French National Cancer Institute INCa (Fr).
- 2009 - pres. Tenure Evaluation (J), Program evaluation for the MRL Laboratory of Molecular Biology LMB (Uk).

INVITED PRESENTATIONS

- 23-25.05.2022 Organizer of the Italian Association for Crystallography meeting, section BMM, Fiesole (It)
- 07.04.2022 Invited seminar at Karolinska Institute, Stockholm (Se)
- 12.10.2021 Invited speaker at the GiiN Network meeting (virtual)
- 6-8.06.2020 Organizer of the Italian Association for Crystallography meeting, section BMM (virtual)
- 26-28.06.2019 Invited seminar at the Biannual iNEXT Meeting, Lund (Se)
- 26-31.05.2019 Invited seminar EMBO Workshop *Cell Polarity and Membrane Dynamics*, Saint Felieux (Es)
- 4.02.2019 Invited speaker at the HBIGS School *Molecular mechanisms in mitosis*, Heidelberg (De)
- 21.05.2018 Invited seminar at the CNR, Roma (It)
- 3-4.05.2018 Invited speaker at the *EMBL in Italy*, IFOM, Milan (It)
- 6.03.208 Invited speaker at the University of Geneva (Ch)
- 6.12.2017 Invited speaker at the Graduate Symposium, Max Planck for Biology of Aging, Köln (De)
- 28-29.06.2017 Invited speaker at the Italian Association of Crystallography Congress, Perugia (It)
- 5-12.05.2017 Invited speaker at the GRC Epithelial Differentiation & Keratinization, Il Ciocco (It)
- 14-15.11.2016 Invited speaker at the *Mechanisms of Asymmetric Cell Divisions*, Royal Society (Uk)
- 24.05.2016 Invited seminar at the University of Kiel (De)
- 15.01.2016 Invited seminar at the University of Turin (It)
- 30.09.2015 Invited seminar at the CECAD, University of Cologne (De)
- 18.09.2015 Invited speaker at the Italian Association of Crystallography Congress, Vercelli (It)

- 18.03.2015 Invited seminar at the IRIBHM, Brussel (Be)
- 10.12.2014 Invited seminar at the Institut de Biologie Valrose, Nice (Fr)
- 1.12.2014 Invited seminar at the EPFL, Lausanne (CH)
- 17.09.2014 Invited seminar at the IRB, Barcelona (Es)
- 5-12.08.2014 Chair of the Symposium *Enzymes and Molecular Machines* at the IUCr, Montreal (Ca)
- 16.06.2014 Invited seminar at the University of Padova (It)
- 28-31.05.2014 EMBO Workshop *Microtubules: Structure, regulation and functions*, Heidelberg (de)
- 18-21.05.2014 EMBO Symposium *Molecular Machines*, Heidelberg (De)
- 10.03.2014 Invited seminar at Istituto di Candiolo, Torino (It)
- 22.11.2013 Invited seminar at LRI - Cancer Research UK, London (Uk)
- 24.10.2013 Invited seminar at the Institute Pasteur, Paris (Fr)
- 12-14.11.2012 Normal and Tumor Stem cells. Barcelona BioMed Conferences (Es)
- 5-7.11.2012 Mitosis: Experimental approaches and model systems, Roma (It)
- 13.04.2012 Invited seminar at the Max Planck for Molecular Physiology, Dortmund (De)
- 1.03.2012 Invited seminar at the Max F. Perutz Laboratories, University of Vienna (Au)
- 5.09.2011 Invited seminar at the Max Planck of Molecular Cell Biology and Genetics, Dresden (De)
- 26.05.2011 Invited seminar at the University of Konstanz (De)
- 25.11.2010 Invited seminar at the IECB, Bordeaux (Fr)
- 17.06.2010 Invited seminar at the Max Planck Institute for Biochemistry, Muenich (De)
- 23-25.06.2008 Structure and mechanisms of essential complexes for cell survival. CNIO-Madrid (Es)
- 16-20.06.2007 Chromosome Segregation and Aneuploidy Workshop. Naantali (Fi)
- 25-30.06.2006 Gordon Research Conference: Three-dimensional Electron Microscopy. Il Ciocco, (It).
- 21-25.05.2006 8th International School on the Crystallography of Biological Macromolecules. Como (It).
- 15-20.01.2006 Second EuChemS School of Protein Chemistry. Alba di Canazei (It).

COMPLETE BIBLIOGRAPHY

- Eli S, Castagna R, **Mapelli M***, Parisini E* (2022) Recent Approaches to the Identification of Novel Microtubule-Targeting Agents. **Front Mol Biosci**. doi: 10.3389/fmolb.2022.841777
- Donà F, Eli S, **Mapelli M**. (2022) Insights into mechanisms of oriented division from studies in 3D cellular models. **Front Cell Dev Biol**. doi: 10.3389/fcell.2022.847801
- Ronchini C, Gandini S, Pasqualato S, Mazzarella L, Facciotti F, **Mapelli M**, IEO Covid Team, Frige' G, Passerini R, Pase L, Capizzi S, Mastrilli F, Orecchia R, Natoli G, Pelicci PG (2022) Lower probability and shorter duration of infections after COVID-19 vaccine correlate with anti-SARS-CoV-2 circulating IgGs. **PLoS One** Jan 31; doi: 10.1371/journal.pone.0263014.
- Capizzi M, Carpentier R, Denarier E, Adrait A, Kassem R, **Mapelli M**, Couté C, Humbert S (2022) Developmental defects in Huntington's disease show that axonal growth and microtubule reorganization require NUMA1. **Neuron** Nov 17, doi:10.1016/j.neuron.2021.10.033 .
- Santaguida S, **Mapelli M**. (2021) Crotonylation directs the spindle. **Nat Chem Biol**. doi: 10.1038/s41589-021-00881-9.
- Lechler T. and **Mapelli M**. (2021) Spindle positioning and its impact on vertebrate tissue architecture and cell fate. **Nat. Rev. Mol. Cell Biol**. doi: 10.1038/s41580-021-00384-4.
- Palmerini V., Monzani S., Laurichesse Q., Loudhaief R., Mari S., Cecatiello V., Olieric V., Pasqualato S., Colombani J., Andersen D., **Mapelli M**. (2021) Drosophila TNFRs Grindelwald and Wengen bind Eiger with different affinities and promote distinct cellular functions. **Nat. Comm**. April 6. doi: 10.1038/s41467-021-22080-9.
- Pellanda P, Dalsass M, Filipuzzi M, Loffreda A, Verrecchia A, Castillo Cano V, Thabussot H, Doni M, Morelli MJ, Soucek L, Kress T, Mazza D, **Mapelli M**, Beaulieu ME, Amati B, Sabò A. (2021) Integrated requirement of non-specific and sequence-specific DNA binding in Myc-driven transcription. **EMBO J**. April 1. doi: 10.15252/embj.2020105464.
- Polverino F., Naso F.D., Asteriti I.A., Palmerini V., Singh D., Valente D., Bird A.W., Rosa A., **Mapelli M.***, Guarguaglini G.* (2021) The Aurora-A/TPX2 Axis Directs Spindle Orientation in Adherent Human Cells by Regulating NuMA and Microtubule Stability. **Curr. Biol**. 31(3). doi: 10.1016/j.cub.2020.10.096.

- Berte' R, Mazza S, Stefanucci MR, Noviello D, Costa S, Ciafardini C, Mileti E, **Mapelli M**, Pasqualato S, Pinto S, Favale A, Vecchi M, Neurath MF, Atreya R, Fantini MC, Facciotti F, Caprioli F. (2020) Seroprevalence of SARS-CoV2 in IBD patients treated with biological therapy. **J Crohns Colitis**. **Nov. 19**. doi: 10.1093/ecco-jcc/jjaa237.
- Bruni M., Cecatiello V., Diaz-Basabe A., Lattanzi G., Mileti E., Monzani S., Pirovano L., Rizzelli F., Visintin C., Bonizzi G., Giani M., Lavitrano M., Faravelli S., Forneris F., Caprioli F., Pelicci P.G., Natoli G., Pasqualato S*, **Mapelli M***, Facciotti F*(2020) Persistence of Anti-SARS-CoV-2 Antibodies in Non-Hospitalized COVID-19 Convalescent Health Care Workers. **J Clin. Med**. October 1. doi: 10.3390/jcm9103188.
- Rizzelli F, Malabarba MG, Sigismund S, **Mapelli M**. (2020) The crosstalk between microtubules, actin and membranes shapes cell division. **Open Biology** 10, 190341. doi: 10.1098/rsob.190314
- Renna C, Rizzelli F, Carminati M, Gaddoni C, Pirovano L, Cecatiello V, Pasqualato S, **Mapelli M**. (2020) Organizational principles of the NuMA-Dynein interaction interface and implications for mitotic spindle functions. **Structure** May 11, doi: 10.1016/j.str.2020.04.017 .
- Bruno O, Brullo C, Rapetti F, Alfei S, Maric I, Rizzelli F, **Mapelli M**, Rosano C, Viale M. (2020) Discovery of new antiproliferative imidazopyrazole acylhydrazones able to interact with microtubule system. **Chem Med Chem** March 31. doi: 10.1002/cmdc.202000122.
- Pirovano L, Culurgioni S, Carminati M, Alfieri A, Monzani S, Cecatiello V, Gaddoni C, Rizzelli F, Foadi J, Pasqualato S, **Mapelli M** (2019) Hexameric NuMA:LGN structures promote multivalent interactions required for planar epithelial divisions. **Nat. Comm.** 10, doi:10.1038/s41467-019-09999-w
- Culurgioni S., Mari S., Bonetti P., Gallini S., Bonetto G., Brennich M., Round A., Nicassio F., **Mapelli M**. (2018) Insc:LGN tetramers promote asymmetric divisions of mammary stem cells. **Nat. Comm.** 9, doi: 10.1038/s41467-018-03343-4.
- Colaluca I.N., Basile A., Freiburger L., D'Uva V., Disalvatore D., Vecchi M., Confalonieri S., Tosoni D., Cecatiello V., Malabarba M.G., Yang C.J., Kainosho M., Sattler M., **Mapelli M***, Pece S*, Di Fiore PP*. (2018) A Numb-Mdm2 fuzzy complex reveals an isoform-specific involvement of Numb in breast cancer. **J Cell Biol.**, 217, 745-762.
- Saadaoui M., Konno D., Loulier K., Goïame R., Jadhav V., **Mapelli M.**, Matsuzaki F., Morin X. (2017) Loss of the canonical spindle orientation function in the Pins/LGN homolog AGS3. **EMBO Rep.**, 18, 1509-1520.
- Santoro A, Vlachou T, Carminati M, Pelicci PG, **Mapelli M**. (2016) Molecular mechanisms of asymmetric divisions in mammary stem cells. **EMBO Rep.**, 17, 1700-1720.
- Wollscheid H.P., Biancospino M., He F., Magistrati E., Molteni E., Lupia M., Soffientini P., Rottner K., Cavallaro U., Pozzoli U., **Mapelli M.**, Walters K.J., Polo S. (2016) Diverse functions of myosin VI elucidated by an isoform-specific α -helix domain. **Nat. Struct. Mol. Biol.** 23, 300-308.
- Carminati M, Cecatiello V, **Mapelli M**. (2016) Crystallization and X-ray diffraction of LGN in complex with the actin-binding protein afadin. **Acta Crystallogr. F**, 72, 145-51.
- Gallini S., Carminati M., De Mattia F., Pirovano L., Martini E., Oldani A., Asteriti I.A., Guarguaglini G, **Mapelli M**. (2016) NuMA phosphorylation orchestrates spindle orientation. **Current Biol.**, 26, 458-69.
- Carminati M., Gallini S., Pirovano L., Alfieri A., Bisi S. and **Mapelli M**. (2016) Concomitant binding of Afadin to LGN and F-actin directs planar spindle orientation. **Nat. Struct. Mol. Biol.**, 23,155-63. doi: 10.1038/nsmb.3152.
- Fornasa G, Tsilingiri K, Caprioli F, Botti F, **Mapelli M**, Meller S, Kislak A, Homey B, Di Sabatino A, Sonzogni A, Viale G, Diaferia G, Gori A, Longhi R, Penna G, Rescigno M. Dichotomy of short and long thymic stromal lymphopoietin isoforms in inflammatory disorders of the bowel and skin. (2015) **J. Allergy Clin. Immunol.** 136, 413-422.
- Andersen D.S., Colombani J., Palmerini V., Chakrabandhu K., Röthlisberger M., Toggweiler J., Basler K., **Mapelli M.**, Hueber A., and Léopold P. (2015) The Drosophila TNF receptor Grindelwald couples loss of cell polarity with neoplastic growth. (2015) **Nature**, 522, 482-6.
- Bezil C., Asada N., Ishiguro K., Nakaya T., Parsons K., Pendolino V., Neumayer G., **Mapelli M.**, Nakatani Y., Sanada K., and Nguyen M.D. (2014) p600 regulates spindle orientation in apical neural progenitors and contributes to neurogenesis in the developing neocortex, **Biology Open**. 3, 475-85.

- Culurgioni S., **Mapelli M.** (2013) Going vertical: functional role and working principles of the protein Inscuteable in Asymmetric Cell Divisions. **Cellular and Molecular Life Sciences**, 70, 4039-46.
- Migliori V., **Mapelli M***, Guccione E* (2012) On WD40 proteins: propelling our knowledge of transcriptional control? **Epigenetics**, 7, 815-822.
- Migliori V., Muller J., Phalke S., Low D., Bezzi M., Mok W.C., Sahu S.K., Gunaratne J., Capasso P., Bassi B., Cecatiello V., De Marco A., Blackstock W., Kuznetsov V., Amati B., **Mapelli M.**, Guccione E. (2012) Symmetric dimethylation of H3R2 is a newly identified histone mark that supports euchromatin maintenance. **Nat. Struct. Mol. Biol.** 19, 136-144.
- **Mapelli M.**, Gonzalez C. (2012) On the inscrutable role of Inscuteable: structural bases for the competitive binding of NuMA and Inscuteable to LGN. **Open Biology**, 2.
- Culurgioni S., Alfieri A., Pendolino V., Laddomada F. and **Mapelli M.** (2011) Inscuteable and NuMA proteins bind competitively to Leu-Gly-Asn repeat-enriched protein (LGN) during asymmetric cell divisions. **P.N.A.S.**, 108, 20998-1003.
- Simonetta M., Manzoni R., Mosca R., **Mapelli M.**, Massimiliano L., Vink M., Novak B., Musacchio A. and Ciliberto A. (2009) The influence of catalysis on Mad2 activation dynamics. **PLoS Biology**, 7, 175-188.
- Lagace D.C., Benavides D.R., Kansy J.W., **Mapelli M.**, Greengard P., Bibb J.A., Eisch A.J. (2008) Cdk5 is essential for adult hippocampal neurogenesis. **P.N.A.S.**, 105, 18567-71.
- **Mapelli M.** and Musacchio A. (2007) MAD contorsions: conformational dimerization boosts spindle checkpoint signaling. **Curr. Opin. Struct. Biol.** 17, 716-725.
- **Mapelli M.**, Massimiliano L., Santaguida S. and Musacchio A. (2007) The Mad2 Conformational Dimer: Structure and Implications for the Spindle Assembly Checkpoint. **Cell** 131, 730-743.
- Vink M. Simonetta M., Transidico P., Ferrari K., **Mapelli M.**, De Antoni A., Massimiliano L., Ciliberto A., Faretta M., Salmon E.D., Musacchio A. (2006) In vitro FRAP identifies the minimal requirements for Mad2 kinetochore dynamics. **Curr Biol.** 16, 755-66.
- **Mapelli M.**, Filipp F.V., Rancati G., Massimiliano L., Nezi L., Stier G., Hagan R.S., Confalonieri S., Piatti S., Sattler M., Musacchio A. (2006) Determinants of conformational dimerization of Mad2 and its inhibition by p31^{comet}. **EMBO J.** 25, 1273-84.
- Penengo* L., **Mapelli* M.**, Murachelli* A.G., Confalonieri S., Magri L., Musacchio A., Di Fiore P.P., Polo S., Schneider T.R. (2006) Crystal structure of the ubiquitin binding domains of rabex-5 reveals two modes of interaction with ubiquitin. **Cell** 124, 1183-95.
- Sessa* F., **Mapelli* M.**, Ciferri C., Tarricone C., Areces L.B., Schneider T.R., Stukenberg T.P. and Musacchio A. (2005) Mechanism of Aurora-B activation by INCENP and inhibition by Hesperadin. **Mol. Cell** 18, 379-91.
- **Mapelli M.**, Massimiliano L., Crovace C., Seeliger M.A., Tsai L.H., Meijer L. and Musacchio A. (2005) Mechanism of CDK5/p25 binding by CDK inhibitors. **J. Med. Chem.** 48, 671-679. (107 cit.)
- **Mapelli* M.**, Panjekar* S. and Tucker P. (2005) The crystal structure of the HSV-1 ssDNA binding protein suggests the structural basis for flexible, cooperative single-stranded DNA. **J. Biol. Chem.** 280, 2990-97.
- De Antoni A., Pearson C.G., Cimini D., Canman J.C., Sala V., Nezi L., **Mapelli M.**, Sironi L., Faretta M., Salmon E.D., Musacchio A. (2005) The Mad1/Mad2 complex as a template for Mad2 activation in the spindle assembly checkpoint. **Curr. Biol.** 15, 214-25.
- Lacy E.R., Wang Y., Post J., Nourse A., Webb W., **Mapelli M.**, Musacchio A., Siuzdak G., Kriwacki R.W. (2005) Molecular basis for the specificity of p27 toward cyclin-dependent kinases that regulate cell division. **J Mol Biol.** 349, 64-73.
- Ahn J.S., Radhakrishnan M.L., **Mapelli M.**, Choi S., Tidor B., Cuny G.D., Musacchio A., Yeh L.A., Kosik K.S. (2005) Defining Cdk5 ligand chemical space with small molecule inhibitors of tau phosphorylation. **J Mol Biol.** 349, 764-73.
- Ahn J.S., Musacchio A., **Mapelli M.**, Ni J., Scinto L., Stein R., Kosik K.S., Yeh L.A. (2004) Development of an assay to screen for inhibitors of tau phosphorylation by cdk5. **J. Biomol. Screen.** 9, 122-31.
- **Mapelli M.** and Musacchio A. (2003) The structural perspective on CDK5. **Neurosignals** 12, 164-172.

- Sironi L., **Mapelli M.**, Knapp S., De Antoni A., Jeang K.T. and Musacchio A. (2002). Crystal structure of the tetrameric Mad1-Mad2 core complex: implications of a safety belt binding mechanism for the spindle checkpoint. **EMBO J.** *21*, 2496-2506.
- **Mapelli M.**, Muehleisen M., van der Zandt H., Persico G. and Tucker P.A. (2000). The 60-residue C-terminal region of the single-stranded DNA binding protein of Herpes Simplex Virus type 1 is required for co-operative DNA binding. **J. Virology** *74*, 8812-22.
- **Mapelli M.** and Tucker P.A. (1999). Crystallisation and preliminary x-ray studies on the Herpes Simplex Virus 1 single-stranded DNA binding protein. **J. Struct. Biol.** *128*, 219-222.