

Luca Magnani Ph.D

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PWP: <http://www.imperial.ac.uk/people/l.magnani> Lab: <http://www.cancer-epigenomics.com/>

Qualifications

2008: Ph.D Purdue University, USA. Department of Animal Science

2007: Mini-MBA Krannert's Business School, Purdue University, USA

2004 M.S University of Bologna, Italy. DIMORFIPA, Veterinary School

2004 B.S University of Bologna, Italy. Biotechnology

Employment

2019-present **Principal Research Fellow (Professor Equivalent)**, Imperial College, UK.

2017-2019 **Senior Research Fellow**, Imperial College, UK. I lead a multi-disciplinary research team studying breast cancer evolution in response to treatment. We use a multi-omics approach to find causative epigenetic and genetic drivers.

2013-2017: **Junior Research Fellow/Team Leader**, Imperial College, UK.

2009-2012: **Post-Doctoral Scientist**, Dartmouth College, USA/ NCCC-OCI Toronto, CAN. I led research projects that identified novel proteins involved in estrogen receptor signaling. I have also described the contribution of epigenetic reprogramming in the development of drug resistance.

2008-2009: **Post-Doctoral Scientist**, Michigan State University, MI, USA. Main responsibilities involved planning and executing research exploring the role of chromatin remodeling in mouse embryo and mouse embryonic stem cells

2004-2008: **Graduate Research Assistant**, Purdue University, West Lafayette, IN, USA. I planned and executed research toward understanding the role of epigenetic reprogramming in early embryo development. I also supervised students on related research projects.

Competitive Grants-Awards

Active

2019-2023 CRUK PhD studentship ~ £155,000/4 years

2019-2022: 2 PhD studentships (1 co-supervised) from Second Hope: £160,000/3 years

2019: CRUK CRUK Convergence Science Centre £ 30,000/1 year

2017-2023: CRUK career development fellowship £1,715,553.28/6 years

Completed

2015-2019 CRUK PhD studentship ~ £155,000/4 years

2014-2017 Curie Innovative Training Networks ~€258,000/3 years

2012-2015 Imperial College Junior Research Fellowship: ~ £150,000/3 years.

2013-2014 Breast Cancer Campaign (Breast Cancer Now) pilot: ~ £20,000 p.a/1 year

2014 Uccio Querci della Rovere Prize. IMSoGB/Italian Embassy £200

2011 Best Poster: Annual Dartmouth Post-Doctoral symposium \$500

2011 Best Oral Presentation: EMBO meeting/Nuclear receptors €500

2011 Best Poster: Dartmouth Integrative Biology Symposium \$500

2008 Bilsland Dissertation Fellowship Purdue University \$1000

2007 College of Agriculture mini-MBA Fellowship \$4000

2007 LOUJA graduate research competition travel award \$500

2006 LOUJA graduate research competition travel award \$500

2006 Featherson off-campus training award \$1000

2006 Book-Harmon Leadership fellowship \$1000

2003 off-campus training fellowship for outstanding thesis, Bologna University €3000

Overall Grant Income: £2.610.000

Reviewer and Editorial and Advisory activity (current)

Guest Editor for Stem Cells International (issue: Stem Cells in Translational Cancer Research). *Reviewer* for: Genes and Development 2015- /Genome Research 2015- /Oncogene 2014- /Clinical Epigenetics 2014- /PLoS Genetics 2014- /Molecular and Cellular endocrinology 2013- /Journal of Current Cancer Drug Target 2013- /BMC cancer 2013- /Journal of Molecular Endocrinology 2014- /Nucleic Acid Research 2013- /Molecular Oncology 2013- /Journal of Histochemistry & Cytochemistry 2014- /Clinical Cancer Research 2015- /Genome Biology 2016- /Journal

of Endocrinology 2016-/ Scientific Reports 2016-/Nature Communications 2016-/Nature Medicine 2017-/Molecular Cancer Research 2018-/Cell Reports 2018-/ Nature Genetics 2019-/Cancer Discovery 2019-

Grant reviewer: Qatar National Research Fund (QNRF) 2013-/FWF Austrian Science Fund 2017-/ISF Israel Science Foundations 2017- / Membership of Advisory Council: Breast Cancer Now Tissue Bank 2018- /NIHR Evaluation, Trials and Studies Coordinating Centre (NETSCC)/ Breast Cancer Now 2013-/ World Wide Cancer Research (AICR) 2014

Patents

Marker for identifying breast cancer treatment modalities: DC0478US.L
Markers for Identifying Breast Cancer Treatment Modalities: DC0478US.L2
UK patents 4550PWO Cholesterol Biosynthesis and Breast Cancer.

Mentoring and Teaching experience

Graduate: I teach recurrent classes on genomics and epigenomics to M.Res and Bachelors from various streams at Imperial College
Undergraduate: I teach recurrent classes on genomics and epigenomics to Bachelors from various streams at Imperial College/Purdue University: 495R-Physiology of Reproduction Lab 2007. I served as a Teaching Assistant in a didactic laboratory addressing the anatomy and physiology of the reproductive tract in domestic species. **Graduate:** Imperial College: group mentoring for Master students (Cancer Biology M.Res program), External committee member for several PhD students (UNICAL, Oxford University). **Outreach:** Howard Hughes Outreach Program 2010: Rivendell/Montshire Museum Norwich, NH. I mentored 8th grade student during a six-week period in which I helped them design and perform scientific experiments.

Patient and Public Involvement

I run recurrent science sessions for patients with secondary breast cancer. I have also hosted Focus Group to inform trial design. Patients are involved in grant writing, science dissemination and public engagement. We also host open lab meetings and lab visits

Selected Invited Talks and Presentations

2020 Sept. EMBO 'A 20/20 vision of the future of nuclear receptors and their role in precision medicine'. La Valletta, MT.
2020 June. 32nd Pezcoller Symposium, Trento, IT
2020 April EMBO 'Gender and cancer susceptibility', CH
2020 Jan-Anticancer Innovative Therapy, Milan, IT
2019 Dec. Educational Session Speaker. San Antonio Breast Cancer Symposium. TX, USA
2019 Nov. Innovators in Breast Cancer. Turin, Italy
2019 Aug. Gordon Research Conference. Hormone-Dependent Cancers. Newry, ME, US
2019 June Breast Cancer: from molecular signatures to clinical oncology. Parma. Italy.
2019- May Hungarian Academy of Sciences, Budapest, HUN
2019-May Novartis Oncology Seminar, Basel, CH
2019 April International Association for Breast Cancer Research (IABCR), ND
2019 March Leeds-genomics symposium. Leeds, UK
2019-March 7th PACRIM Breast and Prostate Cancer meeting, Adelaide, AU
2019 January Evolution in Breast Cancer Therapy, Cesenatico, IT
2018 Nov EACR sponsored speaker at: Systems Epigenetics: Towards Precision Cancer Medicine, Amsterdam, ND
2018: Nov. Society for Endocrinology BES, Glasgow, UK, 2018
2018 Sept. Dartmouth College, MSB seminars, Hanover, NH, USA
2018 July University of Amsterdam, invited seminar, Amsterdam, ND
2018 July Invited Speaker, CRUK all fellows meeting, York UK
2018 May Heidelberg, DKFZ's invited talk
2018 April London UK. Guest lecturer: Diagnostic Histopathology of Breast Disease
2018 March Porto, PT, i3S's institute invited seminar
2018 February Cancun MX, Fusion Nuclear Receptors meeting.
2018 January Festival of Genomics, London, UK.
2017 November Amsterdam, NL. UvA-SILS -organized mini-symposium
2017 November RCV-UCL, London, UK. Oncology Interest Group Seminar.
2017 August Newry, ME, US. Gordon Research Conference. Hormone-Dependent Cancers.
2017 April Lucca, IT. Gordon Research Conference. Cancer Genetics and Epigenetics
2017 February Kilkenny, EIRE, IACR Annual Meeting.
2017 March Budapest, HUN. Breast Cancer Think Tank
2017 March Cambridge, UK. Guest speaker for the Darwin Society
2017 February ICR, London, UK. Guest speaker for the Cancer Evolution seminar series
2017 January Heidelberg, DE. Guest lecturer on Bioinformatics Approaches to Breast Cancer
2016 September Dublin, EIRE. Steroidal Drivers and potential Putters in Breast Cancer.
2016 September Cambridge, UK. Translating molecular insights into clinical practice in breast and prostate cancer
2016 March Weggis, CH. ENBDC Workshop
2016 February Belfast, UK. Departmental Seminar
2015 September Ashburn, VA, US. Janelia Farm Transcription Imaging Consortium Meeting.
2015 August Newry, ME, US. Gordon Research Conference. Hormone-Dependent Cancers.
2015 July Milan, IT IFOM-IEO SEMM seminar series
2014 May Paris, FR. Curie Institute. Young Investigator invited Seminar.
2014 April London UK Institute of Cancer Research (ICR) seminar series.
2014 April Trento IT CIBIO seminar series
2014 March Reggio Calabria IT UNICAL seminar series.
2014 January Budapest HU Semmelweis University. Departmental Lecture.
2013 September Manchester UK Breast Cancer Campaign (Breast Cancer Now) invited Lecture
2013 October Amsterdam NL HOX and TALE Transcription Factors in Development and Disease
2013 May London UK Precision in Medicine conference
2012 September Brisbane, AU QIMR special seminar series
2012 February Milan, IT IFOM-IEO SEMM seminar series

2012 February Turin, IT University of Turin, SysByoM lecture series
2011 December London, UK Imperial College, London

2011 September Barcelona, ESP Sept EMBO nuclear receptor meetings
2006 July Omaha, USA SSR meeting

Selected abstracts

2019 1 abstract* Hormone dependent Cancers, Newry, ME, US)
2019 3 abstracts* at GRC Genomics and epigenomics, 1abstract*§ ENDO meeting, New Orleans, US.
2018 2 abstracts* at Fusion Conference Nuclear Hormone Receptors, Cancun, Mexico.
2017 1 abstract* at the SfE BES conference, Harrogate, UK.
2017 4 abstracts* at Gordon Research Conferences (2: Genetics and Epigenetics*, Lucca, IT; 2 Hormone dependent Cancers*, Newry, ME, US)
2016 Magnani et al*. Presented at the Breast Cancer Now Symposium.
2015 Faronato et al*§ Presented at British Society for Cell Biology (BSCB), Warwick, UK
2015 Nguyen et al*, Presented at Gordon Conference Cancer Genetics & Epigenetics, Lucca, IT
2014 Nguyen et al* Presented at the Epigenomics of Common Diseases, Cambridge, UK
2014 Lombardo Y et al*. Presented at the NY stem cell foundation, NYC, NY
2013 Magnani L et al. Presented at the Gordon Conference Cancer Genetics & Epigenetics.
2012 Magnani L, et al. Presented at the MRC epigenetic regulation meeting.
2011 Magnani L, et al§. Presented at the annual EMBO meeting/Nuclear Receptors. Barcelona.
2008 Magnani L and Cabot R. Presented at SSR annual meeting, Hawaii.
2008 Magnani L and Cabot R. Presented at EITS annual meeting, Denver.
* Corresponding Author § Best presentation winner

Book Chapters

Methods in Molecular Biology – Epigenome editing SpringerNature editions 2018
Breast Cancer - Innovations in Research and Management. SpringerNature editions 2017
Chromatin and epigenetic determinants of resistance to aromatase inhibitors. Springer editions 2014.
Histone post-translational modifications in breast cancer and their use in clinical diagnosis and prognosis. Elsevier 2014.

Professional Memberships

2013- BACR/EACR	2007- Sigma Xi
2005-2008 IETS	2005- Gamma Sigma Delta
2005-2008 SSR	

Press Coverage and Highlights

"Study Points to New 'Pioneer Factor' Role in ER+ Breast Cancer Proliferation" Genomeweb.org
"Staking a claim" Nicola McCarthy, Nature Reviews Cancer 12, 4-5 (2012)
"CYP19A1 Amplification Promotes Acquired Resistance to Aromatase Inhibitors". Cancer Discovery. DOI: 10.1158/2159-8290
Nature Genetics CYP19A1 has an Altmetric score of 825 and rank 7th among all-time Nature Genetics articles.
<http://www.targetedhc.com/articles/Potential-Pathway-of-Resistance-in-ER-Breast-Cancer-Identified>
<http://www.sciencedaily.com/releases/2013/04/130401151035.htm>
<http://connexoncreative.com/publications/archives/MCN513.aspx>
<http://la.repubblica.it/saluteseno/news/bypassare-la-resistenza-ai-farmaci/1920/>
<http://www.imperial.ac.uk/news/187371/breast-cancer-fuelled-mysterious-yin-yang/?hootPostID=8456e871a80c8526308be45f55d61b75>
"A role for chromatin regulatory dynamics in breast cancer evolution". Probert and Curtis, Nature Medicine, Volume 24, pages1309–1311 (2018),
Nature Communications Editor Highlight: <https://www.nature.com/collections/bhkhbxstgj>

Collaborators (current projects).

Dr. Jason Carroll (Cambridge, UK), Dr. Fernando Calvo (UNICAN, ES), Dr. Andrea Sottoriva (ICR, UK), Dr. Saverio Minucci (IEO, IT), Prof. Giancarlo Pruneri (IEO, IT), Prof. Daniele Generali (Cremona, IT), Dr. Maria Vittoria Dieci (IOV< Italy), Drs. Andrea Rocca and Sara Bravaccini (IRST, IT), Dr. Balazs Gyoffry (Simmelweiss, HUN), Prof. Simak Ali (ICL, UK), Dr. Tiziana Bonaldi (IEO, IT), Prof. Molly Stevens, (ICL, UK), Prof. Charles Coombes (ICL,UK), Prof. Marianne Rots (UMCG, ND), Prof. Pernette Vershure (U. Amsterdam, ND), Dr. Laura Kenny (UMCG, ND), Prof Antoine Van Kampen (U. Amsterdam, ND), Dr. Paola Scaffidi (CRICK, London, UK), Prof. Massimo Loda (Weill Cornell, USA), Prof. Peter Scacheri (Case Western University, USA), Prof. Nicola Valeri (ICR, UK).

Staff Supervised (past and present)

Post-Docs: Drs. Monica Faronato (2013-2015), Ylenia Lombardo (2013-2015), Sung Pil Hong (2014-), Iros Barozzi (2017-), Emanuela Mensa' (2019-)

Ph.D Imperial College: Darren Patten (17), Giacomo Corleone (19), Ylenia Perone (19), Neil Slaven (exp. 20), Nikolaos Trasanidis (co-supervised, exp. 20), Valentina Viricillo (co-supervisor UNICAL 17) Puay Lee (Co-supervisor, CRICK institute, exp 2021), Diana Ivanoiu (exp. 2022), Eleonora Canale (exp. 2023). Over 10 visiting research fellows.

M.Res Imperial College: Van Nguyen (14), Alba Meira Rodriguez (14), Tayyibah Ali (15). Lewis Wong (15), Nikolaos Trasanidis (15), Neil Slaven (16), Diana Ivanoiu (17-18), Marta Malattia (18).

External PhD committees: Dr. Rebecca Broome (Cambridge 19), Dr. Caitriona Tyndall (Imperial College 19), Dr. John Cassidy (Cambridge 19), Dr. Michael Reschen (Oxford, 15), Dr. Simon Johnson (Cambridge 17), Mannus Kempe (Amsterdam, 17), Gaia De Sanctis (Milan, 17).

Key Publications (first/corresponding author only). For a complete list see: <http://bit.ly/Kn9107>

* **Corresponding/Senior Author**

Under Revision (and available on www.biorxiv.org):

Published

2019

1. Sung Pil Hong*, Thalia E Chan, Ylenia Lombardo, Giacomo Corleone, Nicole Rotmensch, Giancarlo Pruneri, Kirsten R McEwen, Charles R Coombes, Iros Barozzi* and **Luca Magnani***. **Single-cell Transcriptomics reveals multi-step adaptations to endocrine therapy.** *Nature Communications*.
2. Ylenia Perone¹, Aaron Farruggia^{2**}, Alba Rodríguez Meira^{1§*}, Balázs Gyórfy^{2,3}, Charlotte Ion¹, Andrea Uggetti², Darren Patten¹, Anthony Chronopoulos³, Monica Faronato⁴, Sami Shousha⁵, Jenny H Steel⁶, Claire Davies⁶, Naina Patel⁶, Armando del Rio Hernandez³, Charles Coombes¹, Giancarlo Pruneri², Adrian Lim^x, Fernando Calvo^{2*} and **Luca Magnani^{1*}**. **SREBP1 drives KRT80-dependent cytoskeletal changes and invasive behavior in endocrine resistant ER α breast cancer.** *Nature Communications*.

2018

3. Darren K. Patten[#], Giacomo Corleone[#], Balázs Gyórfy, Edina Erdős, Alina Saiakhova, Kate Goddard, Andrea Vingiani, Sami Shousha, Lőrinc Sándor Pongor, Dimitri J. Hadjiminias, Gaia Schiavon, Peter Barry, Carlo Palmieri, Raul C. Coombes, Peter Scacheri, Giancarlo Pruneri, **Luca Magnani***. **Enhancers mapping uncovers phenotypic heterogeneity and evolution in patients with luminal breast cancer.** *Nature Medicine*.

2017

4. **Luca Magnani^{#*}**, Gianmaria Frige^{'#}, Raffaella Maria Gadaleta, Giacomo Corleone, Sonia Fabris, Mannus Kempe, Pernette Vershure, Iros Barozzi, Valentina Viricillo, Van Nguyen, Giuseppe Viale, Antonino Neri, Simak Ali, Marco Angelo Colleoni, Giancarlo Pruneri* and Saverio Minucci*. **Acquired CYP19A1 amplification is an early specific mechanism of resistance in ER α metastatic breast cancer.** *Nature Genetics*.

2016

5. Ylenia Perone and **Luca Magnani***. **Going off the grid: ER α breast cancer beyond estradiol.** JME-16-0062. *Journal of molecular endocrinology*,

2015

6. Van Nguyen [#], Iros Barozzi[#], Monica Faronato, Ylenia Lombardo, Jennifer Steel, Naina Patel, Philippa Darbre, Leandro Castellano, Balázs Gyórfy, Laura Woodley, Alba Meira, Darren Patten, Gianmaria Frige, Saverio Minucci, Charles Coombes and **Luca Magnani***. **Differential epigenetic reprogramming in response to specific endocrine therapies promotes cholesterol biosynthesis and cellular invasion.** Nov 27;6:10044. doi: 10.1038/ncomms10044. *Nature Communications*.
7. Okamoto OK, Matheu A, Magnani L. Stem Cells in Translational Cancer Research. *Stem Cells Int*.

8. Yichen Xu, Hua Zhang, VanThuy MaiNguyen, Nicos Angelopoulos, Joao Nunes, Alistair Reid, Laki Buluwela, **Luca Magnani***, Justin Stebbing and Georgios Giamas*. LMTK3 Represses Tumour Suppressors through Chromatin Remodeling in Breast Cancer. 2015. Aug 4;12(5):837-49. doi: 10.1016/j.celrep.2015.06.073. [Cell Reports](#).
9. Monica Faronato, Monica Faronato, Van T.M. Nguyen, Jenny Steel, Naina Patel, Laura Woodley, Sami Shousha, Giancarlo Pruneri, Darren K. Patten, Ylenia Lombardo, Charles R Coombes, and Luca **Magnani***. DMXL2 drives Notch hyper-activation in hormonal therapy resistant breast cancer. 2015. [Oncotarget](#). Sep 8;6(26):22467-79
10. **Luca Magnani***, Darren Patten, Van T.M. Nguyen, Sung-Pil Hong, Jennifer H. Steel, Naina Patel, Ylenia Lombardo, Monica Faronato, Ana R. Gomes, Laura Woodley, Karen Page, David Guttery, Lindsay Primrose, Daniel Fernandez Garcia, Jacqui Shaw, Patrizia Viola, Andrew Green, Christopher Nolan, Ian O. Ellis, Emad A. Rakha, Sami Shousha, Eric W. Lam, Balázs Györfffy, Mathieu Lupien and Charles Coombes. The pioneer factor PBX1 is a novel driver of metastatic progression in ER α -positive breast cancer patients. 2015. [Oncotarget](#). Sep 8;6(26):21878-91.

Before 2014

11. **Luca Magnani***. Epigenetic engineering and the art of epigenetic manipulation. [Genome Biology](#). 2014;15(6):306.
12. Gadaleta R and **Magnani L***. Nuclear receptors and chromatin: an inducible couple. [J Mol Endocrinol](#). 2014 Jan 30;52(2):R137-49.
13. **Magnani L** et al. Genome-wide reprogramming of the chromatin landscape underlies endocrine therapy resistance in breast cancer. 2013. [Proceeding of the National Academy of Sciences](#). Apr 16;110(16):E1490-9
14. **Magnani L* and Lupien M**. Chromatin and Epigenetic Determinants of Estrogen Receptor Alpha (ESR1) Signaling. 2013. [Mol Cell Endocrinol](#). 2014 Jan 25;382(1):633-41.
15. **Magnani L** et al. Chromatin Landscape and Endocrine Response in Breast Cancer. [Epigenomics](#). 2012 Dec;4(6):675-83.
16. **Magnani L*** et al. CHIP-ing away at cancer. 2012. [Lancet Oncol](#). 2012 Dec;13(12):1185-7.
17. **Magnani L**, et al. PBX1 genomic pioneer function drives ER α signaling underlying progression in breast cancer. [PLoS Genetics](#). 2011. Nov;7(11).
18. **Magnani L**, et al. Pioneer factors: directing transcriptional regulators within the chromatin environment. [Trends Genet](#). 2011 Nov;27(11):465-74
19. **Magnani L**, et al. Manipulation of BRAHMA and BRG1 transcript levels in porcine embryos differentially alters development and expression of SNF2I, SOX2, NANOG and eIF1A. [Reproduction](#). 2009 Jan;137(1):23-33.
20. **Magnani L**, et al. Expression of eukaryotic elongation initiation factor 1A differentially marks zygotic genome activation in biparental and parthenogenetic porcine embryos and correlates with in vitro developmental potential. [Reprod Fert Dev](#). 2008; 20(7):818-25.
21. **Magnani L**, et al. In vitro and in vivo derived porcine embryos possess similar, but not identical, patterns of Oct4, Nanog, and Sox2 mRNA expression during cleavage development. [Mol Reprod Dev](#). 2008 Dec; 75(12):1726-35.
22. **Magnani L**, et al. Developmental capacity of porcine nuclear transfer embryos correlate with levels of chromatin-remodeling transcripts in donor cells. [Mol Reprod Dev](#). 2008 May; 75(5):766-76.
23. **Magnani L**, et al. Developmental arrest induced in cleavage stage porcine embryos following microinjection of mRNA encoding Brahma (Smarca 2), a chromatin remodeling protein. [Mol Reprod Dev](#). 2007 Oct; 74(10):1262-7