CURRICULUM VITAE

MAGDALENA ZERNICKA-GOETZ

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PERSONAL INFORMATION

Nationality: Polish and British
Children: Natalia Katarzyna (born 2001) and Szymon David (born 2007)

EDUCATION

1982-1988	University of Warsaw, Faculty of Biology, Warsaw, Poland Graduated First Class (summa cum laude) Master of Science, Developmental Biology
1989-1993	University of Warsaw, Warsaw, Poland Department of Embryology, *Supervisor* Prof. Andrzej Tarkowski PhD, Developmental Biology of Mammals
1990-1991	University of Oxford, Oxford, UK Department of Zoology, *Supervisor* Prof. Chris Graham PhD SOROS Foundation Fellowship

PROFESSIONAL HISTORY

2010 - present	Professor of Mammalian Development and Stem Cell Biology Department of Physiology, Development & Neuroscience University of Cambridge, Cambridge, UK
2002 - present	Wellcome Trust Senior Research Fellow University of Cambridge
2007-2010	Reader in Developmental Biology, tenure awarded at the University of Cambridge Department of Physiology, Development & Neuroscience University of Cambridge
1997-2003	Senior Research Fellow Sidney Sussex College, Cambridge
1997-2002	Lister Institute Senior Research Fellow The Gurdon Institute and Department of Genetics University of Cambridge
1995-1997	EMBO Fellow University of Cambridge, *Supervisor* Prof. Martin Evans

Wellcome Trust/Cancer Research UK Institute

SCHOLARSHIP

The current main aim of my group is to understand the partnership between developmental potency and tissue architecture in early mouse and human development and to use this knowledge to direct self-organisation of stem cells.

The main achievements of my group are as follows:

- To discover functions of key genes in mammalian oocytes and embryos, we were the first group to establish RNA interference as a tool to determine gene function in mammalian cells (Nature Cell Biology, 2000). This tool is now commonly used to eliminate gene function by many groups.

- To understand how cells start to differentiate to specify the first distinct cell types, we established the use in mammalian embryos of *in vivo* markers to trace cells in a non-invasive way, including GFP (papers in Development, Nature 1996-2001),"cell painting" (Development, Nature Cell Biology, 2002-2005) and long-term time-lapse studies (Development 2008). These techniques allowed us to reveal that cells begin to differ earlier than was expected. These differences bias but do not restrict cell fate, by directing cell polarization and position.

- We found this developmental bias reflects differential epigenetic regulation in individual blastomeres of the 4-cell stage mouse embryo mediated by CARM1 (Nature, 2007). To date this is the earliest known epigenetic regulation of pluripotency in mammalian development.

- We generate a dynamic atlas of pre-implantation mouse development by carrying out long-term time lapse studies and analyses to relate cell division orientation, order and movement to cell fate in the first two cell fate decisions (Development, PNAS, Current Biology, 2008-2010). To relate cell behavior to gene function, we used single cell RNAseq to identify genes specifying cell fate and showed that they start to function differentially already at the 4-cell stage (Cell, 2016). Together, these findings opened new ways of thinking about embryogenesis.

- We found that sperm entry induces actomyosin-driven cytoplasmic movements that are predictive of subsequent cell division pattern and successful development to birth (Nature, 2001 and Nature Communications, 2011), providing an opportunity to identify the healthiest embryos to transfer to would-be-mothers in IVF clinics, which we currently explore.

- To study development beyond implantation, we pioneered development of the first system to *culture in vitro* mouse embryos until gastrulation (Nature Communications and Nature Protocols, 2012-2014). This revealed the first steps of embryo re-organization at implantation (Cell 2014), changing the text-book model about physical forces that shape embryo development at the time of implantation.

- We adapted this system to culture the first human embryos until day 13/14, current limit of in vitro culture (Nature and Nature Cell Biology, 2016). This offers outstanding potential to advance our understanding of human embryo development at this critical and yet mysterious stage and to provide insight on the pathological causes of embryo lethality and congenital disorders.

- We demonstrated that aneuploid cells arising during embryogenesis are eliminated from the epiblast but incorporated into placenta in the mouse (Nature Communications, 2016). This might explain why mosaic aneuploidy identified by chorionic villus sampling in human embryos might be tolerated.

- To uncover the crosstalk between embryonic and extra-embryonic tissues, we established 3D models of mouse and human distinct stem cell types (Cell 2014 and unpublished). This works has clinical potential as these stem cell models recapitulate key aspects of embryogenesis until gastrulation.

RESEARCH SUPPORT

2016-2021	European Research Council Advanced Grant (PI). Self-Organising Capacity of Stem Cells during Implantation and Early Post-implantation Development (2.3M Euros)
2013-2018	Wellcome Trust Senior Research Fellowship (PI): Regulation and dynamics of progressive cell fate transitions and morphogenesis during development of the early mouse embryo (£3.3M)
2013-current	EMBO fellowships for 3 post-doctoral fellows
2016-current	Marie Curie Fellowship for 1 post-doctoral fellow
2007-2014	Wellcome Trust Senior Research Fellowship (PI): Early cell fate decisions and cell positioning in the mouse embryo
2008-2011	Medical Research Council (co-PI): Investigating the role of cyclin B1 in early cell divisions
2008-2011	Wellcome Trust (co-PI): Zygote viability judged by image analysis
2002-2007	Wellcome Trust Senior Research Fellowship (PI): Development of early asymmetry and embryonic polarity in the mouse
2004-2007	Biotechnology and Biological Science Research Council (PI): Morphogenetic cell movements in the mouse embryo immediately after implantation
2002-2005	Biotechnology and Biological Science Research Council (PI): Role of Par genes in early mouse development
2002-2004	CRT Grant/GSK/Cyclacel Collaboration: RNA interference in embryonic and tissue culture cells in mammals
2000-2003	Human Frontier Science Program Grant (co-PI). Mechanism of axis formation in mammals
1997-2000	Wellcome Trust Project Grant (PI): Spatial patterning and cell fate determination in the early mouse embryo.
1997-2001	Cancer Research UK (co-PI): Mammalian polo-like kinase: dissecting its function in mouse meiosis and early embryonic cell cycles.
1997-2002	Lister Senior Research Fellowship (PI): Spatial patterning and cell fate in the mouse embryo.

RECOGNITION IN THE FIELD

Fellowship of Academic Societies

- Foreign Member of Polish Academy of Arts and Sciences, elected 2016
- Fellow of British Academy of Medical Science, elected 2013
- Member of European Molecular Biology Organisation, elected 2007

Awards and Honors

- Winner of the People's Vote for Scientific Breakthrough of the year 2016 by Science magazine
- Feature profile in Science magazine, "Pushing the limit" by Gretchen Vogel. Science. Volume 354(6311):404-407. October 28, 2016. Published by AAAS.
- Anne McLaren Memorial Lecture Award, International Society of Differentiation, 2008
- Young Investigator Award, EMBO (2001-2004)
- Wellcome Trust Senior Research Fellowship (2002-2008, 2008-2013, 2013-2018)
- Lister Institute of Preventative Medicine Senior Research Fellowship (1997-2002)
- EMBO Long-term Fellowship for post-doctoral studies at the University of Cambridge (1995-1997)

- Best Ph.D. thesis Award, Polish Ministry of Education, 1994
- Promising Young Scientist Prize, Foundation for Polish Science, 1993

Career Evaluation Panels

- Max Planck Institute for Molecular Genetics International Advisory Board, Berlin
- Pasteur Institute, Paris
- Member of Peer Review College, Wellcome Trust.
- Sustain Programme, British Academy of Medical Sciences, to support the career development of women researchers on the cusp of independence.

Scientific Boards

- International Society of Differentiation, Board Member
- Member of Editorial Boards of: Differentiation, PeerJ, Developmental Dynamics, Faculty of 1000, Cells, Reproduction, BMC Dev Biol.
- Cambridge Philosophical Society, Board Member

Organisation of international conferences

Pluripotency and Reprogramming. Cambridge Philosophical Society, UK 2009. Scientific co-organiser with Prof. John Gurdon.
*Cell Biology of Early Mouse Development***.** EMBO Workshop, Cambridge, UK 2012. Scientific organizer.
Frontiers in Reproductive Biology. SKLRB Symposium. Beijing, China, 2014. Scientific co-organiser.

Reviewer for the scientific journals: BioEssays; Cell; Cell Reports; Cell Research; Current Biology; Dev; Dev Biol; Dev Cell; Dev Dynamics; Differentiation; eLife; Genes and Dev; genesis; J Cell Sci, J Cell Biol; Mech of Dev; Mol Cell; Mol Cell Biol; Nature; Nature Genetics; Nature Cell Biology; Nature Comm; Nature Biotechnology; Open Biology; PLoS Biology; PLoS Genetics; PNAS USA; Reproduction; Science; Scientific Reports.

TEACHING AND MENTORSHIP

Overview

My teaching is focused on developmental biology to undergraduate and graduate students. I regard this as an opportunity to inspire students to have an interest in developmental biology with the hope that this will entice them to take their interests beyond this. One of the advanced courses I organise is focused upon understanding the development of pluripotent cells within the embryo and their first differentiation steps. I am also the instructor of a medical student lab class on human reproduction. In addition to formal lecture classes, I give supervisions on courses associated with graduate programmes in which we bring students coming from different backgrounds to a similar knowledge base.

Lectures

Undergraduate & Medical Student Lectures and Practical Classes:
Part II course “Module P4: Development: Patterning the Embryo” series of lectures and journal clubs.
Organizer of the Part II course “Pluripotency and Differentiation” series of lectures and journal clubs.
Instructor on Laboratory Class on “Human Reproduction”

Graduate student courses:
Developmental Biology Course, lectures
Imaging development in vivo Course, lectures

Career Mentoring
PhD students and post-docs join my lab not only because there are interested in our science topics but also because of the interactive, fun and caring atmosphere of the lab and the department. I have trained 17 graduate students for the PhD degree and 27 post-doctoral fellows and currently mentor 6 PhD students, 9 post-doctoral fellows and 1 GAP-year pre-University student. Many of my ex-lab-members continue to have excellent careers and remain in close contact. For example: Maria Elena Torres-Padilla (PI at Max Planck Institute, Munich), Qiang Wu (PI at National University of Singapore), Sigolene Meilac (PI, Institut Pasteur, Paris), Samantha Morris (PI, Washington University in St Louis), Alex Bruce (PI, University of South Bohemia, Czech Republic), Ivan Bedzhov (OI, Max Planck Institute, Muenster).

Current Group Members
Francesco Antonica, Postdoctoral fellow
Neophytos Christodoulou, Postdoctoral fellow
Andy Cox, Postdoctoral fellow and Lab Manager
Mubeen Goolam, PhD student
Sarah Harrison, PhD student
Rosie Larter, Gap-year pre-University student
Ania Hupalowska, Postdoctoral fellow
Agnieszka Jedrusik, Postdoctoral fellow
Christos Kyprianou, PhD student
Lorenzo Orietti, PhD student
Shruti Singla, PhD student
Marta Shahbazi, Postdoctoral fellow
Berna Sozen, PhD student
Meng Zhu, PhD student

ADMINISTRATIVE DUTIES
2002 - present: Graduate Student Advisor and young PIs Mentor, University of Cambridge
2010 - present: Senior Examiner, University of Cambridge, Department of Physiology Development & Neuroscience
2009-2014: Organizer of the External Seminar Series, University of Cambridge, The Gurdon Institute
2008-2014: Animal House Committee, University of Cambridge/The Gurdon Institute
2003-2013: Organizer of the Institute Retreats, The Gurdon Institute
2010-2014: Microscopy Committee, The Gurdon Institute
2016-2017: Recruitment Committee for the Anatomy Chair, University of Cambridge, Department of Physiology Development & Neuroscience

PATENTS
1. 2000 "**Inhibiting Gene Expression with dsRNA".** European and USA Patents following first demonstration of RNAi in mammalian cells (Wianny, F & Zernicka-Goetz, M. 2000. Nature Cell Biology). Wordwide exclusive therapeutic rights licensed to Alnylam Pharmaceuticals, Inc.

2. 2011 “**Monitoring embryo vitality**”. Pattern of cytoplasmic movements in the mammalian egg at fertilisation are predictive of successful development to birth (Ajduk et al 2011 Nature Communications). Licensed to BlueGnome, now a division of Illumina.

3. 2013 “**Embryo in vitro culture system**”. Method for culturing mammalian embryos beyond the blastocyst stage outside the mother (Bedzhov and Zernicka-Goetz, Cell 2014).

OTHER PASSIONS

Creative Art and Human Behaviour
Sports: Tennis

SEMINARS AND INVITED PRESENTATIONS (since 2007)

2007
March: Institute of Science and Technology conference, Okinawa, Japan
April: Stanford University, USA
April: PhD course lecturers, Milan, Italy
May: Chromatin and Epigenetic EMBL/ EMBO conference, Heidelberg, Germany
May: PRBB-CRG meeting, Barcelona, Spain
June, MRC, Oxford, UK
August: Developmental Biology conference, Lisbon, Portugal
September: Chromatin symposium FB/590 German Research Council, Düsseldorf, Germany
September: Universidad Internacional De Andalucia, conference of early development, Baeza, Spain
November: SGI Summit Meeting on Reproductive Medicine, Valencia, Spain
December, MRC, Mill Hill, London, UK

2008
January: Symposium "Pluripotency & differentiation in embryos and stem cells", Pavia Italy
May: Albert Einstein College of Medicine of Yeshiva University, New York
May: Center for Integrative Genomics, University of Lausanne, Switzerland
May: Society for the Study of Reproduction conference, Kona Hawaii
June: Centro Nacional de Biotechnologica, Madrid
July: American Society of Developmental Biology, Philadelphia, USA
August: Banbury Center, Cold Spring Harbor, USA
August: ELSO meeting, Nice, France
September: "Germ cells and pluripotency" Symposium, Rome, Italy
September: Keystone Symposium, Singapore
September: New EMBO Members conference, Tempera, Finland
October: JFRC, conference, Washington, USA
November: IMP, Vienna, Austria
December: Cambridge Philosophical Society, Cambridge, UK

2009
February: Keystone Symposia, Santa Fe, USA
May: Yale University, USA
June: Gordon conference, USA
September: Lister Institute symposium, Cambridge, UK
September: 800 Cambridge University anniversary lecture, Cambridge, UK
November: Architecture of Life Conference, Barcelona, Spain
November: conference Stockholm, Sweden
November: Max Planck, Munster, Germany

2010

March Biochemistry Department, Oxford UK
May: SKLRB Symposia, Beijing China
June: ESHRE symposium, Rome Italy
July: SCDB conference, Santa Cruz USA
July: Center of Trophoblast Conference, Cambridge
October: EMBO Imaging Workshop, Lisbon Portugal
November: Stem Cells Conference, Bangalore India
December: IVF conference, Amsterdam Holland

2011
January: Stanford Stem Cell Institute, Stanford, USA
April: Stem Cell Institute, CalTech, USA
May: Stem Cell and Regenerative Biology Department, Harvard, USA
July: ESHRE meeting, Stockholm, Sweden
August: Intracellular RNA localization & localized translation meeting, Barga, Italy
September: Mouse Molecular Genetics Meeting, Hinxton, UK
November: Cell Polarity Meeting, Oxford, UK
December: ESI seminar Rotterdam, Holland

2012
April: Institute of Zoology and Tsinghua University, Beijing, China
April: University of Hawaii, Honolulu, USA
May: Vertebrate Organogensis in Health and Disease, Cold Spring Harbor, USA
May: Alpha Reproductive Medicine Meeting, London UK
May: PDGS conference, Bergenz, Austria
July: IRB meeting, Barcelona, Spain
November: International Society for Differentiation meeting, Amsterdam, Holland

2013
April: Wellcome Trust Research Meeting, London, UK
May: Cell and Developmental Biology Conference, Zakopane, Poland
June: ISD meeting, Cancun, Mexico
July: IBD meeting, Vienna, Austria
September, University of Gdansk, Poland
September: Roslin Institute, Edinburgh, Scotland
October: Mammalian Embryology Conference, University of Warsaw, Poland
December: Institute for Reproductive Sciences, University of Oxford, UK
December: Wellcome Trust Research meeting, Ashridge, Berkhamsted, UK

2014
January: Imaging in Development conference, France
April: Developmental Biology Training Grant Retreat, University of Utah, USA
May: Weizmann Institute, Israel
May: Annual Conference of The Israel Fertility Association, Tel Aviv, Israel
June: Institute Curie, Paris, France
June: Gordon Conference: Signaling by Adhesion Receptors, Bates Collage, USA
June: Department of Developmental and Regenerative Biology, Mount Sinai, USA
October: Swebodo conference, Umeå, Sweden
October: SKLRB Symposium on Reproductive Biology, Beijing, China
December: Institute for Reproductive Sciences, University of Oxford, UK

2015
March: Max-Planck Institute for Molecular Genetics, Berlin
March: Keystone meeting Transcriptional and Epigenetic Influences on Stem Cell States, Colorado, USA

April: Cellular Heterogeneity Symposium, Heidelberg, Germany
May: **Keynote address** at Young Embryologists Network meeting, King's College London
May: University College London, Institute of Child Health, London
May: **Frontiers Seminar**, Stanford University, USA
June: Meeting Society for the Study of Reproduction "Evolution of Sex", San Paulo, Puerto Rico
July: invited lecture, Biopolis, Singapore
September: EMBO meeting, Birmingham, UK
October: Congress on Stem cells and cellular therapies, Antalya, Turkey
October: International Titisee Conference "Organoids: modelling, development and disease in 3D culture", Titisee, Germany
November: Max Planck Institute for Developmental Biology, Tübingen, Germany
December: Institute for Reproductive Sciences, University of Oxford, UK

2016

January: Stem Cells and Organoids as Models of Tissue Differentiation and Disease Conference, Royal College of Physicians, London
April: EMBO **Keynote Lecture**, The Hunter Cell Meeting, Australia
April: Childx Conference TedTalk format presentation, , Stanford
May: European Society of Human Genetics meeting, Barcelona
June: invited seminar UPenn, Philadelphia, USA
June: Cell biology, Nencki Institute conference, Warsaw, Poland
June: Imaging Mouse Development, Janelia Mammalian Embryo imaging workshop, USA
July: Center of Trophoblast Research, Cambridge, UK
August: SDB/ISD Meeting plenary lecture, Boston, USA
September: Aging and Cell Fate, Croatia
October: **Keynote lecture**, Epigenetic in Development, EMBO Workshop, Mainz
October: invited seminar, Biopolis, Singapore
October: World Science Conference, Beijing
November: COGI Congress, Amsterdam
November: **Opening Breaking News lecture** at Translational Reproductive Biology and Clinical Reproductive Endocrinology congress, New York, USA
December: Institute for Reproductive Sciences, University of Oxford, UK
December: **Keynote presentation** Nuffield Council workshop – statutory time limit for maintaining human embryos in culture
December: Progress Educational Trust, the 14-day rule for Human Embryos, UCL, Institute of Child Health

2017

January: Peter Thorogood memorial lecture, Head Group Meeting, UCL

PUBLICATIONS

I've published 112 papers: of these, 101 are peer-reviewed (69 as the last senior and 21 as the first author). Current h-index = 39.

Peer-reviewed Publications

1. Shahbazi MN Jedrusik A, Vuoristo S, Recher G, Hupalowska A, Bolton V, Fogarty N, Campbell A, Gasparini LD, Ilic D, Khalaf Y Niakan KK, Fishel S and **Zernicka-Goetz M**. (2016). Human embryo implantation morphogenesis and self-organization in the absence of maternal tissues. **Nature Cell Biology,** 18(6):700-8. doi: 10.1038/ncb3347
2. Deglincerti A, Croft GF, Pietila LN, **Zernicka-Goetz M**, Siggia ED, and Brivanlou A. (2016). Self-organization of the *in vitro* attached human embryo. **Nature**, 4;533(7602):251-4. doi: 10.1038/nature17948.
3. Leung CY, Zhu M, **Zernicka-Goetz M** (2016). Polarity in Cell-Fate Acquisition in the Early Mouse Embryo. Curr Top Dev Biol. 120:203-34. doi: 10.1016/bs.ctdb.2016.04.008.
4. Goolam M, Scialdone A, Graham SJ, Macaulay IC, Jedrusik A, Hupalowska A, Voet T, Marioni JC and **Zernicka-Goetz M** (2016). Heterogeneity in Oct4 and Sox2 Targets Biases Cell Fate in Four-Cell Mouse Embryos. **Cell,** 165(1):61-74. doi: 10.1016/j.cell.2016.01.047. PMID: 27015307.
5. Bolton H, Graham SJ, Van der Aa N, Kumar P, Theunis K, Fernandez Gallardo E, Voet T, and **Zernicka-Goetz M** (2016). Mouse model of chromosome mosaicism reveals lineage-specific depletion of aneuploid cells and normal developmental potential. **Nature Comm**. 7:11165. doi: 10.1038/ncomms11165. PMID: 27021558
6. Panamarova M, Cox A, Wicher K, Butler R, Bulgakova N, Jeon S, Rosen B, Seong RH, Skarnes W, Crabtree G and **Zernicka-Goetz M** (2016). BAF chromatin remodelling complex is an epigenetic regulator of lineage specification in the early mouse embryo. **Development**. 143(8):1271-83. doi: 10.1242/dev.131961. PMID: 26952987
7. Graham SJ, **Zernicka-Goetz M**. (2016) The Acquisition of Cell Fate in Mouse Development: How Do Cells First Become Heterogeneous? **Curr Top Dev Biol.** 117:671-95. doi: 10.1016/bs.ctdb.2015.11.021. PMID: 26970007
8. Leung CY, **Zernicka-Goetz M**. (2015). Mapping the journey from totipotency to lineage specification in the mouse embryo. **Curr Opin Genet Dev.** 34:71-6. doi: 10.1016/j.gde.2015.08.002. PMID: 2634301
9. Coelho PA, Bury L, Shahbazi MN, Liakath-Ali K, Tate PH, Wormald S, Hindley CJ, Huch M, Archer J, Skarnes WC, **Zernicka-Goetz M** and Glover DM (2015). Over-expression of Plk4 induces centrosome amplification, loss of primary cilia and associated tissue hyperplasia in the mouse. **Open Biol.** 5(12):150209. doi: 10.1098/rsob.150209. PMID: 26701933.
10. Ajduk A, **Zernicka-Goetz** M (2015). Polarity and cell division orientation in the cleavage embryo: from worm to human. **Mol Hum Reprod**. pii: gav068. PMID: 2666032
11. Bedzhov I, Bialecka M, Zielinska A, Kosalka J, Antonica F, Thompson AJ, Franze K, **Zernicka-Goetz M** (2015). Development of the anterior-posterior axis is a self-organizing process in the absence of maternal cues in the mouse embryo. **Cell Res.** 25(12):1368-71. doi: 10.1038/cr.2015.104. PMID: 26337800
12. Graham SJ, Wicher KB, Jedrusik A, Guo G, Herath W, Robson P and **Zernicka-Goetz M**. (2015). BMP signaling regulates the pre-implantation development of extra-embryonic cell lineages in the mouse embryo. **Nature Comm**. 5:5667. doi: 10.1038/ncomms6667. PMID: 25514175
13. Macaulay IC, Haerty W, Kumar P, Li YI, Hu TX, Teng MJ, Goolam M, Saurat N, Coupland P, Shirley LM, Smith M, Van der Aa N, Banerjee R, Ellis PD, Quail MA, Swerdlow HP, **Zernicka-**

Goetz M, Livesey FJ, Ponting CP, Voet T (2015). G&T-seq: parallel sequencing of single-cell genomes and transcriptomes. **Nature Methods**. doi: 10.1038/nmeth.3370. PMID: 25915121

14. Bedzhov I and **Zernicka-Goetz M**. (2015). Cell death and morphogenesis during early mouse development: Are they interconnected? **Bioessays**. 37(4):372-8. doi:10.1002/bies.201400147. PMID: 25640415
15. Jedrusik A, Cox A, Wicher K, Glover D and **Zernicka-Goetz M**. (2014). Maternal zygotic knockout reveals a critical role of Cdx2 in the morula to blastocyst transition. **Dev Biol.** 398(2):147-52. doi: 10.1016/j.ydbio.2014.12.004. PMID: 25512302
16. Bedzhov I, Leung CY, Bialecka M, **Zernicka-Goetz M**. (2014). In vitro culture of mouse blastocysts beyond the implantation stages. **Nature Protocols** 9(12):2732-9. doi: 10.1038/nprot.2014.186. PMID: 25356584
17. Bedzhov I, Graham SJ, Leung CY and **Zernicka-Goetz M** (2014). Developmental plasticity, cell fate specification and morphogenesis in the early mouse embryo. **Philos Trans R Soc Lond B Biol Sci**. 369(1657). pii: 20130538 doi: 10.1038/nprot.2014.186 PMID: 25349447
18. Bedzhov I and **Zernicka-Goetz M.** (2014). Self-organizing properties of mouse pluripotent cells initiate morphogenesis upon implantation. **Cell**. 156(5):1032-44. doi: 10.1016/j.cell.2014.01.023. PMID: 24529478
19. Christophorou MA, Castelo-Branco G, Halley-Stott RP, Oliveira CS, Loos R, Radzisheuskaya A, Mowen KA, Bertone P, Silva JC, **Zernicka-Goetz M**, Nielsen ML, Gurdon JB, Kouzarides T. (2014). Citrullination regulates pluripotency and histone H1 binding to chromatin. **Nature.** 507(7490):104-8. doi: 10.1038/nature12942. PMID: 24463520
20. Ajduk A, Biswas Shivhare S and **Zernicka-Goetz M.** (2014). The basal position of nuclei is one pre-requisite for asymmetric cell divisions in the early mouse embryo. **Dev Biol**. 392(2):133-40. doi: 10.1016/j.ydbio.2014.05.009. PMID: 24855000
21. Coelho PA, Bury L, Sharif B, Riparbelli MG, Callaini G, Glover DM and **Zernicka-Goetz M.** (2013). Spindle formation in the mouse embryo requires plk4 in the absence of centriole. **Dev Cell**. 27(5):586-97. doi: 10.1016/j.devcel.2013.09.029. PMID: 24268700
22. Morris SA, Graham SJ, Jedrusik A and **Zernicka-Goetz M**. (2013). The differential response to Fgf signaling in cells internalized at different times influences lineage segregation in preimplantation mouse embryos. **Open Biol.** 3(11):130104. doi: 10.1098/rsob.130104. PMID: 24258274
23. Leung CY and **Zernicka-Goetz M**. (2013). Angiomotin prevents pluripotent lineage differentiation in mouse embryos via Hippo pathway-dependent and -independent mechanisms. **Nature Commun.** 4:2251. doi: 10.1038/ncomms3251. PMID: 23903990
24. Skamagki M, Wicher KB, Jedrusik A, Ganguly S and **Zernicka-Goetz M.** (2013). Asymmetric Localization of Cdx2 mRNA during the First Cell-Fate Decision in Early Mouse Development. **Cell Reports**. 3(2):442-57. doi: 10.1016/j.celrep.2013.01.006. PMID: 23375373
25. Ajduk A and **Zernicka-Goetz M** (2013). Quality control of embryo development. **Mol Aspects Med**. 34(5):903-18. doi: 10.1016/j.mam.2013.03.001. Epub 2013 Apr 4. Review. PMID: 23563243
26. **Zernicka-Goetz M**. (2013). Development: do mouse embryos play dice? **Curr Biol.** 23(1):R15-7. doi: 10.1016/j.cub.2012.10.032. PMID: 23305662
27. Morris S, Guo A and **Zernicka-Goetz M** (2012). Developmental plasticity is bound by pluripotency and the fgf and wnt signaling pathways. **Cell Reports**. 2(4):756-65. doi: 10.1016/j.celrep.2012.08.029. PMID: 23041313
28. Pasque V, Radzisheuskaya A, Gillich A, Halley-Stott RP, Panamarova M, **Zernicka-Goetz M**, Surani MA, Silva JC. (2012). Histone variant macroH2A marks embryonic differentiation in vivo and acts as an epigenetic barrier to induced pluripotency. **J Cell Sci**. 125(Pt 24):6094-104. doi: 10.1242/jcs.113019. PMID: 2307718

29. Morris SA, Grewal S, Barrios F, Patankar SN, Strauss B, Buttery L, Alexander M, Shakesheff KM and **Zernicka-Goetz M.** (2012). Dynamics of anterior-posterior axis formation in the developing mouse embryo. **Nature Comm.** 3:673. doi: 10.1038/ncomms1671. PMID: 2233407
30. Morris SA and **Zernicka-Goetz M** (2012). Formation of distinct cell types in the mouse blastocyst. **Results Probl Cell Differ.** 55:203-17. doi: 10.1007/978-3-642-30406-4_11. PMID: 22918808
31. Ajduk A and **Zernicka-Goetz M**. (2012). Advances in embryo selection methods. **F1000 Biol Rep.** 4:11. doi: 10.3410/B4-11. PMID: 22685489
32. Lee YH, Ma H, Tan TZ, Ng SS, Soong R, Mori S, Fu XY, **Zernicka-Goetz M**, Wu Q. (2012). Protein arginine methyltransferase 6 regulates embryonic stem cell identity. **Stem Cells Dev**. 21(14):2613-22. doi: 10.1089/scd.2011.0330. PMID: 22455726
33. Swann K, Windsor S, Campbell K, Elgmati K, Nomikos M, **Zernicka-Goetz M,** Amso N, Lai FA, Thomas A, Graham C. (2012). Phospholipase C-ζ-induced Ca2+ oscillations cause coincident cytoplasmic movements in human oocytes that failed to fertilize after intracytoplasmic sperm injection. **Fertil Steril.** 97(3):742-7. doi: 10.1016/j.fertnstert.2011.12.013. PMID: 22217962
34. Ajduk A, Ilozue T, Windsor S, Yu Y, Seres KB, Bomphrey RJ, Tom BD, Swann K, Thomas A, Graham C and **Zernicka-Goetz M** (2011). Rhythmic actomyosin-driven contractions induced by sperm entry predict mammalian embryo viability. **Nature Commun.** 2:417. doi: 10.1038/ncomms1424. PMID: 21829179
35. **Zernicka-Goetz M**. (2011) Proclaiming fate in the early mouse embryo. **Nat Cell Biol.**13(2):112-4. doi: 10.1038/ncb0211-112. PMID: 21283119
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