Professor David Albertini

Telephone	913 588-0412
Positions	Professor of Molecular and Integrative Physiology Editor-in-Chief, Journal of Assisted Reproduction and Genetics
Email	dalbertini@kumc.edu
Fax	913 588 7180
Mobile	913 221 4120
Building	Hemenway Life Sciences
Floor/Room	3/3083
Campus	Kansas University Medical Center

Org Unit	Institute of Reproductive Health and Regenerative Medicine

Biography/ Background

David Albertini held The Hall Professorship of Molecular Medicine at the University of Kansas from 2004-2011 and is an internationally recognized scientist and educator in the field of reproductive biology and medicine. He has served as Director of the Center for Reproductive Sciences at the University of Kansas Medical Center and Tufts University School of Medicine, and Chair of the Department of Anatomy and Cell Biology at Tufts University School of Medicine. He is currently the Editor-in-Chief of the Journal of Assisted Reproduction and Genetics, an official journal of the American Society for Reproductive Medicine. He has over 150 peer-reviewed original primary research publications, over 50 chapters and reviews, and one book. He serves on the editorial board of major journals. His major research contributions have been in the cell and developmental biology of mammalian reproduction, particularly in oogenesis, and the translation of basic science on oocyte and embryo quality to human assisted reproductive technologies. He is an active reproductive scientist who has trained over 40 students and postdocs and serves on grant review committees for the National Institutes of Health, the National Science Foundation, American Cancer Society, National Foundation March of Dimes, The Lalor Foundation, and funding agencies from Israel, Ireland, The Netherlands, Turkey, Belgium, Portugal and the U.K.

Education

1970 - BSc Biology, Marquette University (mentor: Anthony P. Mahowald)

1972 - MSc, Zoology, University of Massachusetts-Amherst (mentor: Everett Anderson)

1975 – PhD, Anatomy and Cell Biology, Harvard University (mentors: Everett Anderson and Don W. Fawcett)

1975-1977-Postdoctoral Fellow, Physiology and Biophysics,University of Connecticut Health Center(mentor: Richard D. Berlin)

Positions Held

1972-1975
NIH Pre-doctoral fellow, Anatomy Department, Harvard Medical School, Boston, MA
1976-1977
NIH Post-doctoral fellow, Physiology Department, Univ. Conn. Health Center, Farmington, CT

1977-1983
Assistant Professor, Dept. Anatomy; Member, Laboratory of Human Reproduction and Reproductive Biology and Program in Cell and Developmental Biology, Harvard Medical School, Boston, MA

1984-1993
Associate Professor of Anatomy and Cellular Biology, Tufts Univ. School of Medicine, Boston, MA

1991
Visiting Scientist, UMASS Medical Center; Anatomy Cell Biology and Physiology (sabbatic with Fred Fay and Rob Singer)

1993-2004
Professor of Anatomy and Cellular Biology, and Obstetrics and Gynecology, Tufts Univ. School of Medicine, Boston, MA

1999-2003
Chair, Department of Anatomy and Cellular Biology, Tufts University School of Medicine

2001-2003
Director, NIH P30 Center for Reproductive Sciences, Tufts University

1995-2002
Board of Directors, Serono Ovarian Workshop, Member (Chair 2001)

1993-2004
Lecturer in Pathology, Harvard Medical School, Boston, MA

1992-2004
Associate Scientist, New England Regional Primate Research Center, Southborough, MA

2004-2008
Frontiers in Reproduction, Course Co-Director, Marine Biological laboratory; Whitman Fellow

2004-2011
Hall Professor of Molecular Medicine, Molecular and Integrative Physiology, Anatomy and Cell Biology, Obstetrics and Gynecology, University of Kansas Medical Center

2006-present
Member, Marine Biological Laboratory Corporation

2000-2012
Associate Editor, Human Reproduction (2003-2006), Reproduction (2005-2008), Molecular Reproduction and Development (2002-2005), Fertility and Sterility (2003-2008)

2009-present
Editor-in-Chief, Journal of Assisted Reproduction and Genetics

Awards & Achievements

- 2013 Beacon Award, Frontiers of Reproduction, MBL (shared with Teresa Woodruff)
- 2011 Deutsch Memorial Lectureship in Reproductive Medicine, Wayne State University
- 2003 – Colwin Fellow, Marine Biological Laboratory, Woods
- 2001-Founder's Lecturer, Australian Society of Reproductive Biology

- 1999-Hammond Medal Recipient, Society for Reproduction and Fertility (UK)
- 1980 – Basil O'Connor Fellow, National Foundation March of Dimes
- 1978 – Whittaker Health Sciences and Technology Fellow, Harvard-MIT HST Program
- 1976 – NIH Postdoctoral Fellowship, University of Connecticut Health Center (mentor, Richard D. Berlin, M.D.)
- 1972 – NIH Predoctoral Fellowship, T32 Training Grant, Harvard Medical School (mentor, Everett Anderson, PhD)
- 1969- NIH Summer Research Fellowship, Harvard Medical School, NERPRC (mentor, Arthur T. Hertig, M.D.)

Research Interests

- Oogenesis
- Ovarian Physiology and Reproductive Endocrinology
- Assisted Reproduction and Fertility Preservation
- Stem Cells in Reproductive Medicine
- Cytoskeleton and Cell Cycle

Publications

Books

Oogenesis (2013) Editors:Cotichhio, G., Albertini, D.F., and DeSantis, L. Springer. ISBN: 978-0-85729-825-6 (Print) 978-0-85729-826-3 (Online); DOI 10.1007/978-0-85729-826-3

Recent Publications

Li, R and Albertini, DF 2013 The road to maturation: somatic cell interaction and self-organization of the mammalian oocyte. Nature Reviews Molecular Cell Biology 14: 141-152. .doi:10.1038/nrm3531.

McGinnis LK, Limback SD, Albertini DF 2013 Signaling modalities during oogenesis in mammals. In P M Wassarman, editor: Current Topics in Developmental Biology, Vol. 102,Academic Press, pp. 227-242. ISBN: 978-0-12-416024-8

Albertini, DF and Olsen,R 2013 Effects of fertility preservation on oocyte genomic integrity. In: Oocyte Biology in Fertility Preservaion; Editor S S Kim; Chapter 4 Springer-Verlag, N.Y.(in press)

Telfer E E and Albertini, DF 2012.The quest for human ovarian stem cells. Nature Medicine 18:353-354.

Limback, SD and Albertini, DF 2012 Imaging strategies for studying mammalian oogenesis. In "Oogenesis" Editors Coticchio, G., Albertini, D.F., and DeSantis, L. Ch.1. pp.3-18; Springer Publishing, N.Y.

Guglielmo, MC and Albertini, DF 2012 The structural basis for coordinating oogenesis and folliculogenesis. In: "Oogenesis" Editors Coticchio, G., Albertini, D.F., and DeSantis, L. Ch.7. pp.63-74; Springer Publishing, N.Y.

Albertini, DF 2012 Oocyte In Vitro Maturation: Formidable Obstacles on the Road to Fertility Preservation", In: Fertility Preservation, Eds. Seli, E., and Agarwal, A. Springer, London Ch. 10,pp121-128.

So IH, Hodges CA, Albertini DF, Hunt PA. 2011 Oocyte-specific differences in cell cycle control create an innate susceptibility to meiotic errors. Current Biology 21:651-657 DOI 10.1016/j.cub.2011.03.003

Petroff, B Valdez, K.Brown, SB, Piasecka, J and Albertini, DF. 2011 The aryl hydrocarbon receptor agonist 2,3,7,8-tetrachloro-dibenzo-*p*-dioxin (TCDD) alters early embryonic development in a rat IVF exposure model. Reprod. Toxicology 32:286-292.

McGinnis, L. K., & Albertini, D. F. 2010. Dynamics of protein phosphorylation during meiotic maturation. Journal of Assisted Reproduction and Genetics, 27, 169–182.

Albertini DF, Akkoyunlu G. 2010 Ovarian follicle culture systems for mammals. Methods Enzymol. 476:107-21. PubMed PMID: 20691863.

Hutt KJ, Shi Z, Petroff BK, Albertini DF. 2010 The environmental toxicant 2,3,7,8tetrachlorodibenzo-p-dioxin disturbs the establishment and maintenance of cell polarity in preimplantation rat embryos. Biol Reprod. 82:914-20. PMCID: PMC2857633.

Barrett SL, Albertini DF. 2010 Cumulus cell contact during oocyte maturation in mice regulates meiotic spindle positioning and enhances developmental competence. J Assist Reprod Genet. 27:29-39. PMCID: PMC2826619.

Donnez J, Kim SS, Albertini DF. 2010 Proceedings of the First World Congress on Fertility Preservation: executive summary. J Assist Reprod Genet. 27:191-5. PubMed PMID: 20464473.

McLaughlin M, Bromfield JJ, Albertini DF, Telfer EE.2010 Activin promotes follicular integrity and oogenesis in cultured pre-antral bovine follicles. Mol Hum Reprod. 16:644-53.PubMed PMID: 20203128

Coticchio G, Sciajno R, Hutt K, Bromfield J, Borini A, Albertini DF. 2010 Comparative analysis of the metaphase II spindle of human oocytes through polarized light and high-performance confocal microscopy. Fertil Steril. 93:2056-64. PMID: 19243751.

Coticchio G, Bromfield JJ, Sciajno R, Gambardella A, Scaravelli G, Borini A, Albertini DF. 2009 Vitrification may increase the rate of chromosome misalignment in the metaphase II spindle of human mature oocytes. Reprod Biomed Online. Suppl 3:29-34. PubMed PMID: 20034421.

Bromfield JJ, Coticchio G, Hutt K, Sciajno R, Borini A, Albertini DF. 2009 Meiotic spindle dynamics in human oocytes following slow-cooling cryopreservation. Hum Reprod. 24:2114-23. PMID: 19465461.

Rodrigues P, Limback D, McGinnis LK, Plancha CE, Albertini DF. 2009 Multiplemechanisms of germ cell loss in the perinatal mouse ovary. Reproduction. 137:709-20. PMID: 19176312.

Community Engagement

Media Reports 2012-2013
The following are representative of recent media interviews:

- February, 2013, Science Translational Medicine 'DNA Damage in Oocytes as they Age' ((Jennifer Couzin-Fraenkel)
- October,2012, Science News, 'Stem cells make eggs' Daniel Coussins)
- October, 2012, NPR Science report 'Controversies over ovarian stem cells' (Rob Steiner interview aired)
- October 2012, Interviews with AP (Malcolm Ritter), The Scientist, WebMD, Business Week
- February, 2012 New York Times (Nicholas Wade), 'Scientists use stem cells to generate eggs'
- February, 2012 Interviews with AP (Lauran Neergard), BBC, CBS News, Healthcare Today

Invited Lectures

2013

"Mechanisms of DNA Damage and Repair", Fertility Preservation and Cancer Symposium, Hong Kong, Feb 1

" Advances in human oocyte in vitro maturation" Fertility Preservation and Cancer Symposium, Hong Kong, Feb 3

"Linking oocyte and embryo quality in the practice of human ARTs" Fertility Society of Mumbai,Mumbai India (via SKYPE) Feb 12

"In vitro maturation of eggs and follicles", ASRM-ESHRE Symposium on Reproductive Medicine:The Future, Nassau, Bahamas, March 7

"How advances in reproductive physiology are making a difference in human ARTs", 3rd Symposium of the International Society for Mild Approaches in Assisted Reproduction, Nanjing, China, March 24

2012

"Testing the genetic integrity of oocytes derived from stem cells" (Nov 9), "Cell cycle control in human embryos-Why all the aneuploidy?" (Nov 11), Ovarian Club II, Prague.

"From within and without: how ovarian somatic cells influence oocyte quality during aging", NIH-ASRM Joint Workshop on the Ovarian Reserve, San Diego, October 22

"Overview of cryobiology in the field of fertility preservation", Big Chill Symposium, American Society for Reproductive Medicine, San Diego, October 20

"Follicle quality and chances to pregnancy: The Researcher's Viewpoint", Serono Symposium Honoring Jacques Donnez, Brussels, Belgium, September 20

"Coordinating oogenesis and folliculogenesis", Japanese Society for Fertility and Infertility, Osaka, Japan, August 29

"Maintaining follicle integrity after cryopreservation and culture", Symposium on Basic Science and fertility Preservation, Asian South Pacific Initiative for Reproduction and Embryology (ASPIRE) 2nd Annual Meeting, Osaka, Japan, August 31

"Human oocyte cryopreservation-the science behind the technology", Society for the Study of Reproduction Annual Meeting, Penn. State University, Happy Valley PA, August 10

"Coordinating oogenesis and folliculogenesis to obtain high quality oocytes", "Cell cycle checkpoint control in oocytes and embryos", and "Imaging strategies for gametes and embryos", Visiting Professor Lectureship Series in Reproductive Physiology, University of Sassari, College of Veterinary Medicine, Sardinia, Italy, June 13, 19, and 20

"Maintaining genome integrity in mammalian oocytes", Dept. Anatomy and cell Biology, New York medical College, Valhalla, N.Y. May 9

"Should elective oocyte cryopreservation be offered to young women", and "The basic science of oocyte cryopreservation" New England Fertility Society, Portland ME, April 27,28

"Genome integrity in mammalian oocytes", ESHRE Workshop on Oogenesis and Folliculogenesis, Stresa Italy, April 19

"New perspectives on genetic stability in mammalian oocytes", Reproduction Medicine Associates, Department of Obstetrics and Gynecology, Rutgers University, Morristown, N.J. April 5

"Empowering female germ cells with developmental potential", Department of veterinary Science, Cornell University, Ithaca, N.Y. April 4

“Oocyte stem cells-An update”, NYU Fertility Center, Department of Obstetrics and Gynecology, NYU Medical Center, New York, N.Y. April 3

“Determinants of oocyte quality for fertility preservation-beyond the big chill”, The Oncofertility Consortium Virtual Grand Rounds, Northwestern University, Chicago IL, February 9

“How do human oocytes maintain genetic stability?”, Grand Rounds, The Center for Human Reproduction, New York, N.Y. February 7

Useful Links

http://www.springer.com/medicine/gynecology/book/978-0-85729-825-6

http://link.springer.com/search?facet-author=%22David+F.+Albertini%22

http://www.nytimes.com/2012/02/27/health/research/scientists-use-stem-cells-to-generate-human-eggs.html

http://news.sciencemag.org/sciencenow/2012/02/human-egg-stem-cells-isolated.html

http://link.springer.com/journal/10815#

http://scholar.google.com/citations?hl=en&nun=David+Albertini&nua=Professor+of+Physiology,+KU+Medical+Center&nuve=dalbertini%40kumc.edu&nui=Biomedical+Research&img=author:%22David+Albertini%22&authorid=6595198911957892299&view_op=new_group&clastart=100