

CURRICULUM VITAE

Date: May 7, 2010

Full Name and Degree: David F. Albertini, Ph.D.

Current Administrative Title Hall Professor of Molecular Medicine

Office Address: Department of Molecular and Integrative Physiology
KU Cancer Center, Lied 3014
3901 Rainbow Boulevard
Kansas City, KS 66160

Office Phone Number: (913) 588-0412

Office Fax Number: (913) 588-7430

E-Mail: dalbertini@kumc.edu

Education

1970 B.S. Marquette University (Biology)
1972 M.S. University of Massachusetts (Zoology)
1975 Ph.D. Harvard University (Cell Biology)

Fellowships

1972-1975 NIH Predoctoral Fellowship, Harvard University (Mentor: Everett Anderson)
1975-1977 NIH Postdoctoral Fellowship, University of Connecticut Health Center (Mentor: Richard Berlin)

Editorial Assignments

2002-2005 Associate Editor, Molecular Reproduction & Development
2003-2006 Associate Editor, Human Reproduction
2000-2007 Associate Editor, Reproduction (UK)
2007-present Associate Editor, Fertility and Sterility
2009-present Editor-In-Chief, Journal of Assisted Reproduction and Genetics

Academic Appointments

1977-1983 Assistant Professor of Anatomy
Laboratory of Human Reproduction and Reproductive Biology
Program in Cell and Developmental Biology, Harvard Medical School

1979 Visiting Professor, Reproductive Biology Training Program, Mayo Clinic

1980 Visiting Professor, Reproductive Endocrinology Program, University of Michigan

1982- 1986, 2003- 2009	Staff Scientist, Marine Biological Laboratory, Woods Hole
1991-1992	Visiting Professor, Departments of Cell Biology and Physiology, University Massachusetts Medical Center, Worcester, MA (Mentors: Fred Fay, Robert Singer)
1992	Visiting Staff Scientist, Jackson Laboratories (Mentor: John Eppig)
1984-1993	Associate Professor of Anatomy and Cellular Biology, Tufts University
1992-2004	Lecturer, Department of Pathology, Harvard Medical School
1992-2004	Visiting Staff Scientist, New England Regional Primate Research Center
1993-2004	Professor of Anatomy & Cellular Biology, Tufts University
1995-2004	Professor of Obstetrics & Gynecology, Tufts University
1997-2000	Acting Chair, Department of Anatomy and Cellular Biology, Tufts University
2002-2010	Faculty, Frontiers in Reproduction Course, MBL, Woods Hole, MA
2004-2008	Co-Course Director, Frontiers in Reproduction Course, MBL, Woods Hole, MA
2004-present	Hall Professor of Molecular Medicine, University of Kansas Medical Center, Kansas City, KS
2006-present	Member, Marine Biological Laboratory Corporation

Awards and Honors

1978	Basil O'Connor Research Award, National Foundation March of Dimes
1989	Lauro F. Cavazos Teaching Award, Tufts University
1996	President's Outstanding Faculty Achievement Award, Tufts University
2001	Founders Lecturer (named), Australian Society for Reproductive Biology
2002	Hammond Lecture (named), European Society for Reproduction and Fertility
2003	Colwin Summer Research Fellowship, Marine Biological Laboratory, Woods Hole, MA

Graduate/Post Doctoral Student Training

Graduate Students

Current None

Past

<u>Student</u>	<u>Graduated/School</u>	<u>Current Position</u>
Margaret S. Robinson	1982 Harvard	Professor, Cambridge University
Dineli Wickramasinghe	1990; Tufts	Senior Scientist, Genentech, SF
Susan Messinger	1991; Tufts	Research Associate Tufts University
Carlos Plancha	1995; Univ.Lisbon	Professor, Lisbon University
Raquell Holmes	1997; Tufts	Associate Professor, BU
Mary Jo Carabatsos	2000; Tufts	Teacher, Andover High School
Catherine Combelles	2002; Tufts	Assistant Professor, Middlebury College
Alexandra Sanfins	2005; Univ. Lisbon	Research Associate, Gulbenkian
Susan Barrett	2007; Tufts/KUMC	PostDoc, Northwestern U.
Patricia Rodrigues	2009; Univ. Lisbon	Embryologist, US-Lisbon Clinic
Lynda McGinnis	2009; KUMC	PostDoc, KUMC

Examining Committees (Harvard, Tufts and KUMC)

Preliminary/Qualifying: 73 students from 1979-2010

Dissertation: 48 students from 1979-2010

Current Dissertation Committees: Jeffrey Cotitta (KUMC)

Laurie Shannon (KUMC)

Ji-Hyah Park (KUMC)

Elizabeth Dille (KUMC)

Laboratory Rotations (Harvard, Tufts and KUMC)

90 students from 1979-2010

Postdoctoral Fellows

Current: None

Past

Current Position

Dr. Kenneth Campbell (1979) Boston	Professor, University of Massachusetts,
Dr. Brian Herman (1980-83)	Professor, and Chair, Cellular Biology University of Texas at San Antonio, School of Medicine, Vice Provost for Research
Dr. Kathleen Thomas (1984-85)	Associate Professor, Boston University
Dr. James Selgrath (1985-86)	Associate Professor Tufts University Veterinary School
Dr. Britta Mattson (1988-91)	Staff Scientist, Merck
Dr. Carlos Plancha (1988-91)	Professor, University of Lisbon
Dr. Alp Can (1991-93)	Professor, Ankara University
Dr. Ann Allworth (1992-94)	Associate Professor, Howard University
Dr. Susan Messinger (2000-2004)	Research Associate, Tufts University School of Medicine
Dr. Monica Palacios (1998-2000)	
Dr. Elena Ibanez (2002-2004)	Associate Professor, Univ. Barcelona

Dr. Karla Hutt (2004-2007)
Institute, Melbourne, Australia

Assistant Professor, Prince Henry Medical

Dr. John Bromfield (2007-2009) Research Fellow, Royal Veterinary College, Wales

Visiting Scientists

1993	Xian-Xiaoag (Jerry) Yang	Cornell University
2010	Christina Guigliemo	Biogenisi, Milan

Professional Societies

1967-1970	Sigma Xi
1977-1979	AAAS
1977-present	American Society of Cell Biology
1981-present	American Association of Anatomists
1985-present	Society for the Study of Reproduction
1986-present	New York Academy of Sciences
1997-present	European Society for Human Reproduction and Embryology (ESHRE)
2000-present	Society for Developmental Biology
2000-present	International Embryo Transfer Society
2007-present	American Society of Reproductive Medicine
2008-present	International Fertility Preservation Society

Major Research Interests

My career has focused on understanding how a single egg cell (oocyte) is transformed into a viable embryo. The continuum of human development begins in the ovary where oocytes are assembled and matured in anticipation of fertilization. Our most recent work aims to understand the physiological regulation of oocyte growth and maturation in mammals in the context of clinical strategies to preserve fertility in women. Using animal models and clinical collaborations in the field of Assisted Reproductive Technology (ART) we have sought to establish the links between maternal health and oocyte, embryo, and offspring health. A multi-disciplinary program integrating the disciplines of reproductive, cell, and developmental biology is taken that relies upon murine, bovine and primate models. With the advent of mammalian cloning and heightened interest in the biology of stem cells, my career research on oocyte quality has been repurposed towards human embryonic stem cells and breast cancer stem cells. Three major areas of research are being pursued:

- **Mechanisms by which ovarian hormones/growth factors integrate oocyte and follicle development.** Studies using cultured follicles, live cell imaging and targeted gene deletions in mice address questions related to ligand-cell surface receptor interactions and the fate of ligand-receptor complexes once internalized by endocytosis. Most recently, efforts have focused on the characterization of paracrine signaling found at the interface between oocytes and follicular cells during ovarian folliculogenesis. An immediate outcome from this work has been the development of in vitro systems for oocyte maturation and follicular growth for fertility preservation applications. The role of GDF9 and DNA damage during maternal aging and or in response to environmental continues to be a major theme of women's health research.
- **Causes and consequences of aneuploidy in oocytes and embryos.** Identify oocyte and embryo signaling pathways and their targets to understand

determinants of meiotic aneuploidy, a known source of gamete and embryo failure in humans leading to birth defects and infertility. Mechanisms of meiotic aneuploidy have been studied with respect to cell cycle checkpoints, actions of chemotherapeutic drugs, and radiation in ovarian tissues and oocytes with special reference to DNA damage detection and repair.

- **Improvement of ARTs especially as related to fertility preservation strategies.** We are positioned to use our research expertise to develop new methods for cryopreservation of human oocytes as well as using frozen ovarian tissue to restore ovarian function after it has been compromised by radiation and/or chemotherapy. This goal is a mainstay of our primary research and development efforts in the laboratory and through our collaborative arrangements will emphasize using human materials.

Research Support

Present: Available upon request

Recent:

- "Coordination of folliculogenesis and oogenesis" **NIH NICHD 042076-03**, P.I., 4/1/07-9/1/09, \$175,770 direct costs
- "Embryonic Stem Cell Imaging" **ESHE Fund**, \$19,847 direct costs, 12/1/07-11/30/09
- "Oocyte Cryopreservation" **Italian Ministry of Science**, \$20,000 direct costs/yr, 3/1/07-2/28/09
- "Origins of Embryonic Stem Cells" **Hall Family Endowment**, 07/01/04 – present.
- "AhR and reproductive aging" **NIH R21ES015879**, 7/1/07-6/30/09, \$145,000/yr (Co-PI with Brian Petroff)
- "Breast stem cell analysis using RPFNA" **NIH 1RO3CA121417**, 12/107-11/30/09, \$50,000/yr, (Co-PI with Brian Petroff)
- "The influence of environmental toxicants on embryonic stem cells in the rat", PI., **KCALSI 044-07**, 7/01/07-6/30/08 \$50,000 for 1 year.

Past (from 1980)

"Structure and Function of Coated Vesicles," **NSF PCM 79-22781**, \$150,000, 1980-1983, Principal Investigator

"Fluorescence Microscopy Studies on the Function of Coated Vesicles," **NSF PCM 82-17579**, \$50,000, 1983-1985, Principal Investigator

"Oocyte Maturation: Vital Stain - Video Microscopy Analysis," **NIH 1 R01 HD 20068**, \$229,438, 1985-1988, Principal Investigator

"Oocyte Maturation: Vital Stain - Video Microscopy Analysis," **NIH 2 R01 HD 20068**, \$493,894; 1988-1993, Principal Investigator

"Cell Surface and Intracellular Ligand-Receptor Dynamics," **NIH 1 R01 AM 33583-01A1 CBY2**, \$230,056, 1985-1988, Principal Investigator

"Cellular Differentiation During Development of the Porcine Blastocyst," **USDA, 86-CR-1-2059**, \$84,730, 1986-1988, Principal Investigator, Eric Overstrom; David Albertini, Co-Principal Investigator

"Immunolocalization of Proteins by Transmission Electron Microscopy," **DRR-BRS Shared Instrumentation Grant #3 S10 RR03382-01**, \$195,000, 1987-1988, Principal Investigator

"Multiparameter Cytological Evaluation of Human Oocytes," **Serono Laboratories**, \$50,000, 1990-1991, Principal Investigator

"Mouse Oocyte Cortical Granule Maturation and Function," **NIH 1 R01 HD 24191**, \$163,294, 1988-1991, Principal Investigator, Tom Ducibella; David Albertini, Co-Principal Investigator

"Effects of Nitrous Oxide on Meiotic Chromosome Disfunction in Mammalian Oocytes," **March of Dimes, 15-184**, \$8,000, 1991, Principal Investigator

"Cytogenetic Assays in Female Germ Cells of Primates," **USEPA, Center for Environmental Management, Tufts University**, \$18,500; 1992-1993, Principal Investigator

"Herbicide Effects on Ovarian Cells of Primates," **USEPA, Center for Environmental Management, Tufts University**, \$37,500 (direct costs), 1993-1994, Principal Investigator

"Laser Scanning Confocal Imaging System," **NIH, RR08163**, \$172,000 (direct costs), 1993-1994, Principal Investigator

"The Evaluation of Action of Recombinant Products on Human Oocytes Following In Vivo on In Vitro Exposure," **Serono Laboratories, Inc.**, \$10,000 (direct costs), 1994-1995, Principal Investigator

"Culture Media for Preimplantation Development," **Subcontract: NIH, RFA-90-HD-12, 2401 HD21988-07**, National Coop. Prog. on Non-Human IVF and Preimplantation Development, \$23,000 per year (direct costs), 1991-1996, J.D. Biggers, Principal Investigator; David Albertini, Co-Principal Investigator

"Growth Factor and Oncogene Signal Transduction," **Lucille P. Markey Charitable Trust Foundation**, \$34,000 per year (direct costs), 1992-1997, L. Cantley, Principal Investigator; David Albertini, Co-Principal Investigator

Population Research Center Core Grant, **NIH, P30 HD28897-02**, \$122,217 per year (direct costs), 1992-1997, J. King, Principal Investigator; David Albertini, Director, Imaging Core (8% effort)

"Multiparameter analysis of human granulosa cells during infertility management," **NATO Collaborative Research Program Grant**, \$4,600; David Albertini, Co-PI with Dr. Alp Can, Univ. of Ankara, Turkey; 1996-1997.

"Gamete Biology: Fundamental and Applied Aspects in Animal Reproduction." **USDA 97-35203-4961**, \$5,000 to support IETS Symposium, CO-PI with Dr. Eric Overstrom

"Oocyte Maturation: Vital Stain-Video Microscopy Analysis," **NIH, R01 HD 20068**, \$105,000 per year (direct costs), 1993-2000, Principal Investigator

"Cellular Basis for Enhanced Cloning Efficiency for Animal Genome Modification", USDA, Co-PI (P.I. Overstrom) 9/1/00 to 4/30/03, \$180,000/yr.

"Mechanisms of Meiotic Spindle Assembly in Mouse and Human Oocytes", March of Dimes Birth Defects Foundation, P.I., 6/1/01 – 5/31/04, \$80,000 direct costs/yr

"Cellular Dynamics during Cumulus-Oocyte Complex Expansion" Sero Reproductive Biology Institute, 3/1/02-2/28/05, \$25,000/yr.

Study Sections

Maryland State Stem Cell Research Fund, study section chair (2007, 2008, 2009)

NSF, Cell Biology, (1987-1991)

NIH, CMIR (2006, 2007)

American Cancer Society Cell Cycle and Growth Control Study Section (2003-2007)

NIH, Reproductive Biology (REB) (2001)

Ad Hoc Grant reviewer

NIH (Reproductive Biology Study Section, now CMIR)

NSF

USDA (Animal Biotechnology)

MRC (Canada)

Wellcome Trust Fund (UK)

Israeli Science foundation

Belgian Science Authority

Advisory Boards

Worcester Polytechnic Institute

Oncofertility Consortium, Northwestern University

Maryland State Stem Cell review committee (Chair)

HLAG PPG KUMC (Dr. Joan Hunt PI)

NIH Study Sections (CMIR ad hoc once, SEGs twice this past year)

Bibliography

Refereed Papers

Wolin, E.M., Laufer, H. and Albertini, D.F. Uptake of the yolk protein, lipovitellin, by developing crustacean oocytes. *Devel. Biol.* 35:160-170, 1973.

Albertini, D.F. and Anderson, E. The appearance and structure of intercellular connections during the ontogeny of the rabbit ovarian follicle with particular reference to gap junctions. *J. Cell Biol.* 63:2234-250, 1974.

Albertini, D.F. and Anderson, E. Structural modifications of lutein cell gap junctions during pregnancy in the rat and mouse. *Anat. Rec.* 181:171-194, 1975.

Albertini D.F., Fawcett, D.W. and Olds, P.J. Morphological variations in gap junctions of ovarian granulosa cells. *Tissue and Cell.* 7:389-405, 1975.

Ducibella, T., Albertini, D.F., Anderson, E. and Biggers, J.D. The preimplantation mammalian embryo: characterization of intercellular junctions and their appearance during development. *Devel. Biol.* 45:231-250, 1975.

Albertini D.F. and Clark, J.I. Concanavalin A-induced redistribution of cytoplasmic microtubules and colchicine binding protein in cultured ovarian granulosa cells. *Proc. Nat. Acad. Sci. (USA)* 72:4976-4980, 1975.

Wasserman, P.W., Albertini, D.F., Josefowicz, W.J. and Letourneau, G.E. Cytochalasin B induced pseudo-cleavage of mouse oocytes in vitro: asymmetric localization of mitochondria and microvilli associated with a stage specific response. *J. Cell Sci.* 21:523-535, 1976.

Anderson, E. and Albertini, D.F. Gap junctions between the oocyte and companion follicle cells in the mammalian ovary. *J. Cell Biol.* 71:680-686, 1976.

Oliver, J.M., Albertini, D.F. and Berlin, R.D. Effects of glutathione-oxidizing agents on microtubule assembly and microtubule-dependent surface properties of human neutrophils. *J. Cell Biol.* 71:921-932, 1976.

Anderson, E., Lee, G., Letourneau, R., Albertini, D.F. and Meller, S.M. Cytological observations of the ovarian epithelium in mammals during the reproductive cycle. *J. Morph.* 150:135-166, 1976.

Albertini, D.F. and Anderson, E. Microtubule and microfilament rearrangement during capping of concanavalin A receptors on cultured ovarian granulosa cells. *J. Cell Biol.* 73:111-127, 1977.

Albertini D.F., Berlin, R.D. and Oliver, J.M. The mechanism of concanavalin A cap formation in leukocytes. *J. Cell Sci.* 26:57-75, 1977.

Boxer, L.A., Albertini, D.F., Baehner, R.L. and Oliver, J.M. Impaired microtubule assembly and polymorphonuclear leucocyte function in the Chediak-Hidashi syndrome correctable by ascorbic acid. *Brit. J. Haematol.* **43**:207-213, 1979.

Albertini, D.F. and Kravit, N.G. Isolation and biochemical characterization of 10-nm filaments from cultured ovarian granulosa cells. *J. Biol. Chem.* **256**:2484-2492, 1981.

Albertini D.F. and Clark, J.I. Visualization of assembled and disassembled microtubule protein by double label fluorescence microscopy. *Cell Biol. Int. Reports* **5**:387-397, 1981.

Campbell, K.L. and Albertini, D.F. Freeze-fracture analysis of gap junction disruption in rat ovarian granulosa cells. *Tissue and Cell* **13**:651-668, 1981.

Linck, R.W., Albertini D.F., Kenney, D.M. and Langevin, G.L. Tektin filaments: Chemically unique protofilaments of sperm flagellar microtubules. *Cell Motility Suppl.* **1**:127-132, 1982.

Herman, B. and Albertini, D.F. The intracellular movement of endocytic vesicles in cultured granulosa cells. *Cell Motility* **2**:583-597, 1982.

Herman, B. and Albertini, D.F. Ligand-induced rapid redistribution of lysosomes is temporally distinct from endosome translocation. *Nature* **304**:738-740, 1983.

Robinson, M.S., Rhodes, J.A. and Albertini, D.F. Slow internalization of human chorionic gonadotropin by cultured granulosa cells. *J. Cell. Physiol.* **117**:43-50, 1983.

Herman, B., Langevin, M.A. and Albertini, D.F. The effects of taxol on the organization of the cytoskeleton in cultured ovarian granulosa cells. *Europ. J. Cell Biol.* **31**:34-45, 1983.

Herman, B. and Albertini, D.F. Microtubule regulation of cell surface receptor topography during granulosa cell differentiation. *Differentiation* **25**:56-63, 1983.

Herman, B. and Albertini, D.F. A time lapse video image intensification analysis of cytoplasmic organelle movements during endosome translocation. *J. Cell Biol.* **98**:565-576, 1984.

Albertini D.F. Novel morphological approaches for the study of oocyte maturation. *Biol. Reprod.* **30**:13-28, 1984.

Albertini D.F., Herman, B. and Sherline, P. In vivo and in vitro studies on the role of HMW-MAPs in taxol-induced microtubule bundling. *Europ. J. Cell Biol.* **33**:134-143, 1984.

Castellot, J.J., Wong, K., Herman, B., Hoover, R.L., Albertini, D.F., Wright, T.C., Caleb, B.L. and Karnovsky, M.J. Binding and internalization of heparin by vascular smooth muscle cells. *J. Cell. Physiol.* 124:13-20, 1985.

Valberg, P.A., and Albertini, D.F. Cytoplasmic motions, rheology, and structure probed by a novel magnetic-particle method. *J. Cell Biol.* 101:130-140, 1985.

Albertini D.F. Cytoplasmic reorganization during the resumption of meiosis in cultured preovulatory rat oocytes. *Devel. Biol.* 120:121-131, 1987.

Batten, B.E., Albertini, D.F. and Ducibella, T. Patterns of organelle distribution in mouse embryos during preimplantation development. *Amer. J. Anat.* 178:204-213, 1987.

Albertini D.F., Overstrom, E.W. and Ebert, K.M. Changes in the organization of the actin cytoskeleton during preimplantation development of the pig embryo. *Biol. Reprod.* 37:441-451, 1987.

Ducibella, T., Anderson, E., Albertini, D.F., Aalberg, J. and Rangarajan, S. Quantitative studies of changes in cortical granule number and distribution in the mouse oocyte during meiotic maturation. *Devel. Biol.* 130:184-197, 1988.

Mattson, B.A., Overstrom, E.W. and Albertini, D.F. Transitions in trophectoderm cellular shape and cytoskeletal organization in the elongating pig blastocyst. *Biol. Reprod.* 42:195-205, 1990.

Mattson, B.A. and Albertini, D.F. Oogenesis: Chromatin and microtubule dynamics during meiotic prophase. *Molec. Reprod. Devel.* 25:374-383, 1990.

Wickramasinghe, D., Ebert, K.M. and Albertini, D.F. Meiotic competence acquisition is associated with appearance of M-phase characteristics in growing mouse oocytes. *Devel. Biol.* 143:162-172, 1991.

Johnson, L.D., Mattson, B.A., Albertini, D.F., Sehgal, P.K., Becker, R.A., Avis, J. and Biggers, J.D. Quality of oocytes from superovulated rhesus monkeys. *Human Reproduction* 6:623-631, 1991.

Messinger, S.M. and Albertini, D.F. Centrosome and microtubule dynamics during meiotic progression in the mouse oocyte. *J. Cell Sci.* 100:289-298, 1991.

Wickramasinghe, D. and Albertini, D.F. Centrosome phosphorylation and the developmental expression of meiotic competence in mouse oocytes. *Devel. Biol.* 152:62-74, 1992.

Plancha, C.E. and Albertini, D.F. Protein synthesis requirements during resumption of meiosis in the hamster oocyte: early nuclear and microtubule configurations. *Molec. Reprod. Devel.* 33:324-332, 1992.

Albertini, D.F. Cytoplasmic microtubule dynamics and chromatin organization during oogenesis and oocyte maturation in mammals. *Mutation Res.* 296:57-68, 1992

Allworth, A., and Albertini, D.F. Meiotic maturation in cultured bovine oocytes is accompanied by remodeling of the cumulus cell cytoskeleton. *Devel. Biol.* 158:101-112, 1993.

Albertini, D.F. and Rider, V. Patterns of intercellular connectivity in the mammalian cumulus-oocyte complex. *Microscopy Research and Technique* 27:125-133, 1994.

Plancha, C.E. and Albertini, D.F. Hormonal regulation of oocyte maturation in hamster cumulus-oocyte complexes involves a cytoskeleton mediated process. *Biol. Reprod.* 51:852-864, 1994.

Albertini, D.F., and Eppig, J.J. Unusual cytoskeletal and chromatin configurations in mouse oocytes that are atypical in meiotic progression. *Devel. Genetics* 16:13-19, 1995.

Johnson, L.D., McGinnis, L.H., Albertini, D.F., and Biggers, J.D. Chromatin organization, meiotic status, and meiotic competence acquisition in mouse oocytes from cultured ovarian follicles. *J. Reprod. Fert.* 104:277-284, 1995.

Younis, A.I., Toner, M., Albertini, D.F., and Biggers, J.D. Cryobiology of non-human primate oocytes. *Human Reproduction* 11:156-165, 1996.

Dong, J., Albertini, D.F., Nishimori, K., Kumar, T.R., Lu, N., and Matzuk, M.M. Growth of differentiation factor-9 is required during early ovarian folliculogenesis. *Nature* 383:531-535, 1996

Can, A., and Albertini, D.F. M-phase specific centrosome-microtubule alterations induced by the fungicide MBC in human granulosa cells. *Mutation Res.* 373:139-151, 1996

Can, A. and Albertini, D. F. Stage specific effects of cabendazim (MBZ) on meiotic cell cycle progression in mouse oocytes. *Molec Reprod. Devel.* 46:351-362, 1997

Albertini, D. F. and Carabatsos, M. J. Comparative aspects of meiotic cell cycle regulation during oogenesis in mammals. *J. Molec. Medicine* 76:795-799, 1998

Carabatsos MJ, Elvin J, Matzuk MM, Albertini DF. Characterization of oocyte and follicle development in growth differentiation factor-9-deficient mice, *Dev Biol.* 204:373-84,1998

Mailhes, J. B., Carabatsos, M. J., Young, D, London, S. N., Bell, M., Albertini, D. F. Taxol-induced meiotic maturation delay, spindle defects, and aneuploidy in mouse oocytes and zygotes. *Mutation Res.* 423:79-90, 1999

Carabatsos, M. J., Combelles, C. M. H., Messinger, S. M., and Albertini, D. F. Sorting and reorganization of centrosomes during oocyte maturation in the mouse. *Microscopy Research and Technique*. 49:435-44, 2000

Carabatsos, M.J., Sellitto, C., Goodenough, D.A., and Albertini, D.F. (2000) Oocyte-granulosa cell heterologous gap junctions are required for the coordination of nuclear and cytoplasmic meiotic competence. *Dev. Biol.* 226:167-179, 2000

Combelles, C.M.H., Carabatsos, M.J., London, S.N., Mailhes, J.B., and Albertini, D.F.

(2000) Centrosome-specific perturbations during *in vitro* maturation of mouse oocytes exposed to cocaine. *Exp. Cell Res.* 260:116-126

Cekleniak, N.A., Combelles, C.M.H., Ganz, D.A., Fung, J. Albertini, D.F., Racowsky, C. (2001) A novel system for *in vitro* maturation of human oocytes. *Fert. Ster.* 75: 1185-93.

Combelles, C.M.H. and Albertini, D.F. (2001) Microtubule patterning during meiotic maturation in mouse oocytes is determined by cell cycle-specific sorting and redistribution of α -tubulin. *Dev. Biol.* 239:281-294.

Combelles, C.M.H., Cekleniak, N.A., Racowsky, C., and Albertini, D.F. (2002). Assessment of nuclear and cytoplasmic maturation in *in vitro* matured oocytes. *Human Reproduction* 17:1006-16.

DeSousa, P.A., Dobrinsky, J.R., Zhu, J., Archibald, A.L., Ainslie, A., Bosma, W., Bowering, J., Bracken, J., Ferrier, P.M., Fletcher, J., Gasparrini, B., Harkness, L., Johnston, P., Ritchie, M., Ritchie, W.A., Travers, A., Albertini, D., Dinnyes, A., King, T.J., Wilmut, I. (2002) Somatic cell nuclear transfer in the pig: Control of pronuclear formation and integration with improved methods for activation and maintenance of pregnancy. *Biol. Reprod.* 66:642-650.

Combelles, C.M.H. and Albertini, D.F., (2003) Assessment of oocyte quality following repeated gonadotropin stimulation in the mouse. *Biol. Reprod.* 68:812-821

Ibanez, E., Albertini, D.F. and Overstrom, E.W. (2003) Demecolcine-induced oocyte enucleation for somatic cell cloning: coordination between cell cycle egress, kinetics of cortical cytoskeletal interactions, and second polar body extrusion. *Biol. Reprod.* 68:1249-1258

Sanfins, A., Lee, G.Y., Plancha, C.E., Overstrom, E., and Albertini, D.F. (2003). Distinctions in Meiotic Spindle Structure and Assembly During *In vitro* and *In vivo* Maturation of Mouse Oocytes. *Biol Reprod.* 69:2059-2067

Albertini, D.F., A.P. Sanfins, and CMH Combelles. (2003) Origins and manifestations of oocyte maturation competencies. *Reprod. Biomed. Online.* 6: 35-40

Combelles, C.M., Albertini, D.F., and Racowsky, C. (2003) Distinct microtubule and chromatin characteristics of human oocytes after failed in-vivo and in-vitro meiotic maturation. Human Reprod. 18:2124-2139

Albertini D.F., Barrett S.L. (2004). The developmental origins of mammalian oocyte polarity. Semin Cell Dev Biol. 15(5):599-606.

Combelles C.M., Carabatsos M.J., Kumar T.R., Matzuk M.M., Albertini D.F. (2004) Hormonal control of somatic cell oocyte interactions during ovarian follicle development. Human Repro. Dev. 69(3):347-55.

Sanfins, A, Plancha CE, Overstrom E.W., Albertini DF. (2004). Meiotic spindle morphogenesis in *in vivo* and *in vitro* matured mouse oocytes :insights into the relationship between nuclear and cytoplasmic quality. Human Reprod. 19:2889-2899.

Combelles, C. M. H., Fissore, R. A., Albertini, D. F., and Racowsky, C. (2005) In Vitro maturation of human oocytes and cumulus cells using a coculture three-dimensional collagen gel system. Hum Reprod. 20(5):1349-58.

Ibanez E., Sanfins A., Combelles C. M., Overstrom E. W., Albertini D. F. (2005) Genetic strain variations in the metaphase-II phenotype of mouse oocytes matured in vivo or in vitro. Reproduction. 130(6):845-55.

Ibanez E., Albertini D. F., Overstrom E. W. (2005) Effect of genetic background and activating stimulus on the timing of meiotic cell cycle progression in parthenogenetically activated mouse oocytes. Reproduction. 129(1):27-38.

Plancha C. E., Sanfins A., Rodrigues P., Albertini D. (2005) Cell polarity during folliculogenesis and oogenesis. Reprod Biomed Online. 10(4):478-84.

Russell D. F., Ibanez E., Albertini D. F., Overstrom E. W. (2005). Activated bovine cytoplasts prepared by demecolcine-induced enucleation support development of nuclear transfer embryos *in vitro*. Mol Reprod Dev. 72(2):16-27.

Telfer E. E., Gosden R. G., Byskov A. G., Spears N., Albertini D., Andersen C. Y., Anderson R., Braw-Tal R., Clarke H., Gougeon A., McLaughlin E., McLaren A., McNatty K., Schatten G., Silber S., Tsafiri A. (2005) On regenerating the ovary and generating controversy. Cell. 23;122(6):821-2.

Coticchio G, Santis L. D., Rossi G., Borini A., Albertini D., Scaravelli G., Alecci C., Bianchi V., Nottola S., Cecconi S. (2006) Sucrose concentration influences the rate of cryopreservation in human oocytes with normal spindle and chromosome configurations after slow-cooling cryopreservation. Hum Reprod. 21(7):1771-6.

Dai, Y., Wang, L., Wang, H., Liu, Y., Li, N., Lyu, Q., Keefe, D. L., Albertini, D. F. and Liu, L. (2006) Fate of centrosomes following somatic cell nuclear transfer (SCNT) in bovine oocytes. Reproduction. 131(6):1051-61.

Hutt KJ, Albertini DF. Clinical applications and limitations of current ovarian stem cell research: a review. J Exp Clin Assist Reprod. 2006 Jul 27;3-6.

Liu, Y., Wu, W., Lyu, Q., Yang, D., Albertini, D.F., Keefe, D.L., and Liu, L. (2007) Germline stem cells and neo-oogenesis in the adult human ovary. Devel.Biol. 306:112-120.

Barrett, S.B. and Albertini, D.F. (2007) Allocation of gamma-tubulin between oocyte cortex and meiotic spindle in fluences asymmetric cytokinesis in the mouse oocyte. Devel. Biol. 76:949-957.

McGinnis, L.M., Albertini, D.F., and Kinsey, W. (2007) Localized activation of Src family protein kinases in the mouse egg. Devel. Biol. 306:241-254.

Hutt, K.J., Shi, Z., Albertini, D.F., and Petroff, B.K. (2008) The environmental toxicant 2,3,7,8-tetrachlorodibenzo-p-dioxin disrupts morphogenesis of the rat pre-implantation embryo. *BMC Developmental Biology* 8: 1-12. doi:10.1186/1471-213X/8/1.

Bromfield, J.J., Coticchio, G., Hutt, K., Sciajno, R., Borini, A. and Albertini, D.F. (2009) "Human Meiotic Spindle Dynamics in Oocytes Following Slow-Cooling Cryopreservation." *Human Reproduction*, 24: 2114-2123.

McGinnis, L.M., Kinsey, W. and Albertini, D.F. (2009) "Functions of Fyn kinase in the completion of meiosis in mouse oocytes." *Dev Biol.* 327:280-287. PMID: 19118543.

Rodrigues, P. Limback, D., McGinnis, L.M., Plancha, C.E. and Albertini, D.F. (2009) "Multiple mechanisms of germ cell loss in the perinatal mouse ovary." *Reproduction* 137:709-720.

Barrett, S.B. and Albertini, D.F. (2010). Cumulus cell contact during oocyte maturation in mice regulates meiotic spindle positioning and enhances developmental potential. *J. Assisted Reproduction and Genetics.* 27:29-39

Coticchio, G., Bromfield, J.J., Sciajno, R., Borini, A. and Albertini, D.F. (2009) "Vitrification Increases the Rate of Chromosome Misalignment in the Metaphase II Spindle of Human Mature Oocytes." *RBMonline* 19: 29-34.

Coticchio, G., Sciajno, R., Hutt, K., Bromfield, J.J., Borini, A. and Albertini, D.F. (2010) "Comparative analysis of the metaphase II spindle of human oocytes through polarized light and high performance confocal microscopy." *Fertility and Sterility* (in press – DOI:[10.1016/j.fertnstert.2008.12.011](https://doi.org/10.1016/j.fertnstert.2008.12.011)).

McGlaughlin, M. Bromfield, J.J., Albertini, D.F., Telfer, E.E. (2010) Activin promotes maintenance of follicle integrity in cultures bovine preantral follicles. *Molec. Human Reprod.* (in press).

McGinnis, L.M. and Albertini, D.F. (2010). Dynamics of protein phosphorylation during meiotic maturation. *J. Assisted Reproduction and Genetics* (on line 1/3/2010)

Hutt, K.J., Shi, Z., Petroff, B.K. and Albertini, D.F. (2010). The environmental toxicant 2,3,7,8-tetrachlorodibenzo-p-dioxin disturbs the establishment and maintenance of cell polarity in preimplantation rat embryos. *Biol. Reprod.* 82:914-920

Book Chapters/Reviews (*indicates peer-reviewed publications)

Clark, J.I. and Albertini, D.F. Filaments, microtubules and colchicine receptors in capped ovarian granulosa cells. In: **Cell Motility** eds. R. Goldman, T. Pollard and J. Rosenbaum; Cold Spring Harbor Laboratory, New York, Vol. 3, pp. 323-331, 1976.

Anderson, E., Albertini, D.F. and Wilkinson, R.F. Cytological differentiation of the female gamete. In: **International Cell Biology** eds. B.R. Brinkley and K.R. Porter, The Rockefeller University Press, New York, pp. 561-568, 1977.

Albertini D.F. Plasma membrane changes during folliculogenesis. In: **Biology of the Ovary** eds., P.M. Motta and E.S.E. Hafez; Martinus Nijhoff, The Hague, Netherlands. pp. 138-149, 1980.

Albertini D.F. and Herman, B. Cell shape and membrane receptor dynamics: modulation by the cytoskeleton. In: **Cell and Muscle Motility** eds. R.M. Dowben and J.W. Shay, Vol. V, Plenum Press, pp. 235-253, 1983.

Albertini, D.F., Auerbach, R., Tsao, C. and Gervais, D. Digital image analysis studies of folliculogenesis and oogenesis in mammals. In: **Ultrastructure of the Ovary** eds. P.M. Motta and G. Familiari, Kluwer Acad. Publ. Norwell, MA; pp. 91-100, 1991.

Albertini, D.F. Regulation of meiotic maturation in the mammalian oocyte: interplay between exogenous cues and the microtubule cytoskeleton. *BioEssays* **14**:97-103 (cover) 1992.*

Albertini, D.F., Mattson, B.A., Messinger, S.M., Wickramasinghe, D. and Plancha, C.E. Nuclear and cytoplasmic changes during oocyte maturation. In: **Preimplantation Mammalian Development** ed., B.D. Bavister, Springer-Verlag, New York, Inc., Chapter 2, pp. 3-21, 1993.*

Wickramasinghe, D., and Albertini, D.F. Cell cycle control during mammalian oogenesis. *Curr. Topics Devel. Biol.*, Vol. 28, Chapter 4, pp. 125-153, 1993.*

Albertini, D.F., Allworth, A.E. and Messinger, S.M. Hormonal control of cell cycle checkpoints in mammalian oocytes. In: **Ovarian Cell Interactions: Genes to Physiology** eds., A. Hsueh and D.W. Schomberg, Plenum Press, Chapter 6, pp. 79-85, 1993.

Albertini, D.F. The meiotic to mitotic cell cycle transition in mammalian eggs. In: **Meiosis-II**, eds. F. Haseltine, S. Heyner, AAAS Press, Chapter 9, pp 117-128, 1993.

Wassarman, P.M. and Albertini, D.F. The mammalian ovum. In: **The Physiology of Reproduction** eds., E. Knobil and J.D. Neill, Raven Press Ltd., New York, Chapter 3, pp. 79-122, 1994 (in revision).

Albertini, D.F., Allworth, A.E., and Messinger, S.M. Nucleocytoplasmic modifications associated with meiotic maturation in mammalian oocytes. In: **Gamete and Embryo Quality** eds., L. Mastroianni, H.J.T. Coelingh Bennink, S. Suzuki and H.M. Vemer, Parthenon Pub. Group Ltd., Carnforth Lancs., England, Chapter 2, pp 27-34, 1994.

Albertini, D.F. Cell cycle checkpoints in male and female germ cells. Ernst Schering Research Foundation Workshop Supplement I. Molecular and Cellular Endocrinology of the Testis. Springer-Verlag-Heidelberg. Berlin Heidelberg, Chapter 7, pp 143-152, 1994.

Holmes, R., Cunha, M.J., and Albertini, D.F. Cytoskeleton mediated aspects of signal transduction. In: **Cell Structure and Signaling** ed. R.H. Getzenberg, JAI Press Inc., Greenwich, CT 24:95-123.

Albertini, D. F. Oogenesis. In: **Encyclopedia of Human Biology** R. Dulbecco, ed., Academic Press, San Diego, 1997.

Can, A., Holmes, R. M. and Albertini, D. F. Analysis of the mammalian ovary by confocal microscopy. In: **Microscopy of Reproduction and Development: A Dynamic Approach** P. Motta ed., Antonio Delfino Publication, pp 101-108, 1998.

Can, A., Albertini, D. F., Evirgen, O., Akkaya, T. and Tekelioglu, M. Protein phosphorylation patterns in *in vitro* matured human oocytes. In: **Clinical Management of Human Infertility** L. J. Dido and P. M. Motta eds., pp 83-91, 2000.

Albertini, D. F., Combelles, C. M. H., Benecchi, E., Carabatsos, M. J. Cellular basis of paracrine regulation of ovarian follicle development. *Reproduction* 121(5):647-53, 2001.

Albertini, D.F. The structural basis of oocyte-granulosa cell communication. In: **The Future of the Oocyte: Basic and Clinical Aspects**. J. Eppig, Ch. Hegele-Hartung, M. Lessl, eds. Ernst Schering Research Foundation Workshop, Springer-Verlag, 2002. Ch. 7, pp.101-110.

Albertini, D.F. and Barrett, S.L. Regulation of the oocyte-somatic cell dialogue during folliculogenesis *in vivo* and *in vitro*. Proceedings of the Sixth International Symposium on Reproduction in Domestic Ruminants. *Reproduction Supplement* 61: 49-53, 2003

Albertini, D.F. Follicle cell-oocyte interactions. In: **Essential IVF: Reviews of Topical Issues in Clinical In Vitro Fertilization**. Jonathan Van Blerkom and Linda Gregory, eds. Kluwer Academic Publishers, Boston, Ch. 2, P. 43-58. 2004.

Rodrigues, P., Limback, D., McGinnis, L., Plancha, C.E. and Albertini, D.F. "Oogenesis: Prospects and challenges for the future." *J Cell Physiology* 2008; 216:355-365. PMID:18452183

Bromfield, J., Messamore, W., Albertini, D. F., (2008) Epigenetic regulation during mammalian oogenesis. *Reproduction, Fertility and Development*. 20:74-80.

Albertini, D.F., Limback, S.D. "The natural life cycle of the mammalian oocyte. In: Preservation of human oocytes, Eds., A.Borini and G. Coticchio; 2009, Informa Healthcare Publishing, London, pp21-44.

Bromfield, J.J., Jones, K.L., Albertini, D.F. "In Vitro Maturation of Mammalian Oocytes, in *Biennial Review of Infertility* (2009), D. Carrell, C. Racowsky, P. Schlegel and B. Van Voorhis (Eds.) Humana Press (New York NY) pp 215-222.

Bromfield, J.J. and Albertini, D.F. "Soma-germ line interactions: an evolutionary perspective, in *Oogenesis - The Universal Process of Oogenesis*, M-H. Verlhac (Ed.) Wiley-Blackwell Inc. (published 2/22/2010)

Akkoyunlu, G., Albertini, D.F. Recent advances in ovarian follicle culture systems for mammals. In *Methods in Enzymology*, Ed. P.M.Wassarman, Elsevier Science (in press).

Albertini, D.F., Akkoyunlu, G., and Kim, S.S. Molecular and cellular integrity of cultured follicles. In *Fertility Preservation*, eds., J.Donnez and S.S.Kim, Oxford University Press (in press).

Non-Print Materials

Video sequences selected for "Television and Video Festival in India - 1985," produced by the American Film Institute

Photographs used in Boston Museum of Science Consortium Project on Human Sexuality and Reproduction, United States Tour, 1991-1992.

Photographs selected for renovation of Cell and Reproduction displays at Boston Museum of Science, 1993/1994.

10 journal/book covers (available upon request).

Recent Media Coverage

Discover Magazine Cover story: "When does viable life begin?" May, 2004.

FOX News "Building healthy eggs". National coverage. May, 2004

Channel 12 MSNBC KC News "The stem cell controversy".

Published interviews: (Lawrence World Journal, July, 2004; Kansas City Star, February, 2005; Independence Examiner, February, 2005; New York Times, August, 2005; The Scientist, May 2006; Nature, August 2006; Plos Biology, Dec. 2007; Science, March, 2009)

Invited Lectures (2006-2010)

2006

“The history of in vitro maturation of mammalian oocytes” and “ Oocyte-granulosa dialogue during gamete maturation.” Medicult Symposium on Human Oocyte In Vitro Maturation, Tampa FL (February 4 and 5)

“Ovarian stem cells and the genesis of oocytes” Veterinary School, Kansas State University, Manhattan (February 13)

“The history and politics of human embryonic stem cell research.” Student Society for Stem Cell Research, U. Missouri KC (February 22)

“Stem cell research: the science and the politics.” Wichita Medical Research and Education Foundation, keynote lecture, (April 18)

“The brave new world of assisted reproductive technology.” KUMC Schools of Allied Health and Nursing (May 3)

“The risky business of of cell cycle regulation in mammalian eggs and embryos.” Worcester Polytechnic Institute, Department of Biology and Biotechnology (October 12).

“Optimizing oocyte cryopreservation for infertility patients” Technobios Procreazione symposium on Human ARTs, Bologna Italy (October 20)

“Stem cell biology in the early embryo” Stowers Medical Research Institute, Kansas City MO (November 15)

“The dialogue between germ line and soma: how the ovary ensures embryonic competence” Biomedical Sciences Guest lecture series, Colorado State University, (December 4)

2007

“How oogenesis specifies embryo quality” University of Wisconsin, Department of Reproductive Physiology, Madison WI (March 14).

“Oocyte cumulus dialogue and embryo development” ESHRE SIG on gamete influence on embryo, Lyons France (July 1)

“ The role of oocyte-granulosa communication in in vitro maturation of human oocytes”, Medicult Symposium on Human IVM, sponsored by Medicult, Lyons France (June 30)

“How hormones influence oocyte quality” Plenary lecture 3rd International Conference on Ovulation Induction, Rome Italy (September 14)

“Oocyte cryopreservation and its impact on embryo development and survival” Reproductive Endocrinology Division, Cornell-Weill Medical Center. NY, NY (April 4)

“The impact of chemotherapy on the survival and developmental competence of oocytes” Biosymposia USA meeting on Fertility Preservation, Boston MA (September 22)

“Human oocyte in vitro maturation: clinical questions and prospects for the future” Fertility Restoration Symposium, American Society for Reproductive Medicine, Washington, D.C. (October 11).

“Oocyte cryopreservation for cancer survivors” Fertility Restoration Symposium, American Society for Reproductive Medicine, Washington, D.C. (October 12).

“Can oocytes be regenerated from ovarian stem cells?” Debate held at American Society for Reproductive Medicine, Washington, D.C. (October 13).

2008

“The epigenetics of oogenesis” Plenary Lecture, International Society of Embryo Transfer, Denver CO, (January 5)

“The biology behind aging in the female germ line: avoiding the inevitable” Department of Cell Biology, KU Medical Center, (March 13).

“The causes of aneuploidy in mammalian oocytes and embryos” Alpha Reproductive Society Annual Meeting, Istanbul Turkey (May 5)

“Stem cells in reproductive health” Gordon Research Conference on Reproductive Tract Biology (August 10)

“Epigenetics and offspring health: influence of reproductive toxins” Plenary Lecture, Brazilian Society for Reproductive Biology (September 15)

“New methods to cryopreserve the female germ line” Technobios Procreazione Symposium of Fertility Preservation, Bologna Italy (November 20)

2009

“Good, bad and ugly cysts” Sullivan Conference, KUMC Kidney Institute. (January 23)

“Building better follicles for fertility preservation” DC Johnson Seminar series, KUMC. (February 18)

“Optimizing human oocyte cryopreservation” Annual Meeting of Society for Gynecological Investigation, Glasgow, Scotland (March 21)

“Advances in the evaluation of oocyte quality for ARTs.” Edinburgh Assisted Reproduction Annual Meeting, Edinburgh, Scotland. (March 23)

Mechanisms underlying in vitro oocyte maturation” 15th World Congress on In Vitro Fertilization and 5th World Congress on In Vitro Maturation, Geneva, Switzerland (April 20)

“Oogenesis” and “Ovarian development” lectures and labs; Frontiers in Reproduction Course, Marine Biological Laboratory, Woods Hole MA. (June 2, 4)

“On protecting oocytes from chemotherapy induced damage” European Union Oncofertility Consortium Meeting, Amsterdam. (June 27)

“On the ovarian stem cell controversy”, Gordon Research Conference on Female Reproductive Tract, Tilton, NH (August 12)

“The role of oocyte cryopreservation in fertility preservation”; Society for the Study of Reproduction, Annual Meeting, Pittsburgh PA, Minisymposium plenary lecture. (July 18)

“Commercializing human egg donation for stem cell research”; Center for Practical Bioethics, KCMO. (August 20)

“The biology behind establishing oocytes of high developmental potential”, McGill University International Congress on ARTs, Montreal CA. (November 16)

“Human ARTs:the biology and the prospects”; Pittsburgh State University, Pittsburgh KS. (November 23)

“The integration of oogenesis and folliculogenesis”; 1st International Congress on Fertility Preservation, Brussels Belgium. (December 10)

2010

“Granulosa-Oocyte Interactions: An old concept with new meaning.” Department of Reproductive Medicine, U. California San Diego, La Jolla CA.(January 23).

“ Three Faces of Eve: the ovarian follicle as a multitasking unit.” Keynote address NICHD U-54 Ovary Focus Group Meeting, UCSD, La Jolla, CA. (January 25)

“What ovarian follicles do to protect genomic integrity in the female germ line.” Center for Reproductive Sciences, KU Medical Center, Kansas City KS. (February 17).

“Regulatory developmental mechanisms based on the oocyte-granulosa cell dialogue.” Symposium on the Future of Reproductive Medicine, The Mediterranean Institute for Biomedical Research, Syracuse, Italy (May 14).

“Analyzing early mammalian development using dynamic imaging.” Marquette University Imaging Symposium, Milwaukee, WI (May 21).

“Nurturing human oocytes to maturity: An update on human IVM.”

“The relationship between oocyte and embryo quality.” UCLA Course on Infertility Treatment, Santa Barbara, CA (July 13,14).

“DNA damage detection and repair in cryopreserved ovarian tissues.” International Federation of Fertility Societies (IFFS), Symposium on Gamete Genomic Integrity, Munich Germany (September 14).

“Novel insights into cytoplasmic maturation: the key to production of high quality embryos.” Biogenesis Symposium on Reproductive Medicine, Monza, Italy (December 8)