

Carol A. Brenner, Ph.D.
carolbrenner3@gmail.com
954-892-3722

EDUCATION

Queen Mary College	B.S. (Honors)	1976
University of London,	Molecular Genetics	
Tufts University	Ph.D. Molecular Biology	1986

Dissertation: Extracellular Matrix Genes in *Strongylocentrotus purpuratus*.

TRAINING

1977 - 1979	Research Associate, Cornell University, Ithaca, NY.
1979 - 1981	Research Associate, Harvard University, Cambridge, MA.
1980 - 1986	Graduate Student, Tufts University, Medford, MA.
1986 - 1988	Postdoctoral Fellow, University of California, San Francisco, CA.

FACULTY APPOINTMENTS

1989 - 1991	Assistant Professor, University of Tennessee Medical Center, Knoxville, TN.
1991 - 1994	Assistant Professor of Cell/Molecular Biology, University of Dayton, OH.
1994 - 1996	Assistant Professor, Harvard University, Faulkner Center for Human Reproduction, Boston, MA.
1996 - 2002	Director of Molecular Embryology and Genetics, The Institute for Reproductive Medicine and Science at Saint Barnabas Medical System, West Orange, NJ
2002 - 2007	Greater New Orleans Endowed Chair and Associate Professor in Biology, Dept. of Biological Sciences, University of New Orleans, LA.
2007 - 2011	Associate Professor, Department's of Physiology and Obstetrics and Gynecology, Wayne State University, Detroit, MI.
2011 - 2014	Associate Dean for Biomedical Affairs and Research, Edward Via College of Osteopathic Medicine, Carolinas Campus, Spartanburg, SC. Research Professor, Department of Bioengineering, Clemson University.
2014- 2015	Director of Faculty Affairs and Professional Development. Stony Brook School of Medicine
2015-present	Dean of the Biomedical Sciences Program/ Consultant for the Future Proposed Osteopathic Medical School at Larkin Health Sciences Institute.

MAJOR PROFESSIONAL SOCIETIES

2004 - present	Member, International Stem Cell Society.
2002 - present	Member, International Embryo Transfer Society.
1998 - present	Member of ESHRE.
1996 - present	Member of American Society for Reproductive Medicine.
1988 - present	Member Societies of Cell Biology, Developmental Biology, Sigma Xi, and FASEB.

HONORS AND AWARDS

President, Graduate Student Association, Tufts University, MA (1985 - 1986).
NRSA Fellow, University of California, San Francisco, CA (1986 - 1988).
Wayne State University President's Research Enhancement Program (2008)

Edward Via School of Osteopathic Medicine at the Carolina Campus-Founding Faculty
Development and opening of Gibbs Cancer Research and Stem Cell Institute (2012)

SERVICE

1. *Patient Care:* NA
2. *Committees at VCOM-CC:*
 - Faculty recruitment, hiring and contract negotiations
 - Medical Student Recruitment and Admissions
 - Curriculum & Assessment for medical students and faculty evaluations
 - Tenure and Promotion Committee
 - Institutional Environmental and Biosafety Committee
 - Facilities Committee
 - VCOM Institutional Review Board
 - Monitoring Medical Student's Academic Progress
 - Vice Dean's and Dean's Council
3. *Journal/Editorial Activity:*
 - a. Editorships
 - Editor for Cell Biology Text, *Asking About Cells*, Saunders College-Publishing (1993-1994).
4. *Other Professionally Related Service:*
 - 2011 Editorial Board for Fertility and Sterility.
 - 2010 Editorial Board for Journal of Reproductive and Stem Cell Biotechnology (JRSCB).
 - 2010 Collaborator with Program in Perinatal Research Branch at National Institute for Child Health and Human Development.
 - 2010 Steering Committee for the World Stem Cell Summit in Detroit, MI.
 - 2009 CEO MitoStem and Co-Director of the Stem Cell Commercialization Center at TechTown, Detroit, MI.
 - 2008 Stem Cell Steering Committee for the State of Michigan.
 - 2008 Board Member of Stem Cell Commercialization Center at TechTown, Detroit, MI.
 - 2007 Collaborator with Program in Reproduction and Adult Endocrinology Intramural Research Division, Eunice Kennedy Shriver National Institute for Child Health and Human Development, NIH, Bethesda, MD.
 - 2005 Organizer for Pre-symposium IETS 2006 meeting for Orlando, FL. Frontiers of Primate Stem Cell Research.
 - 2004 Co-organizer, Symposium on "Supporting Human ART through Basic Science" Portland, OR, January 9.

Granting Agencies Reviewer and Panelist

National Center for Advancing Translational Sciences (NCATS) Social Emphasis
Panel ZRG1 Improvement of Animal Models for Stem Cell-Based Regenerative
Medicine 3/1/2014

National Center for Advancing Translational Sciences (NCATS) Social Emphasis
Panel ZRG1 Improvement of Animal Models for Stem Cell-Based Regenerative
Medicine 12/1/2013

National Center for Resource Research (NCRR) Improvement of Animal Models for
Stem Cell-Based Regenerative Medicine 7/19/2011

Collaboration with Stemgent with PRB NICHD 1/1/2010-2011

NICHD Cellular, Molecular and Integrative Reproductive Study Section (2007-2010)

NICHD Molecular Neuroscience Special Emphasis Panel ZZRI 6/23/2010.

Expert Reviewer for University of Leuven (K.U.Leuven) on Unraveling the causal
mechanisms of chromosome instability at early (human) embryogenesis 03/20/2010

NICHD Ad Hoc Reviewer BMIT - Biomedical Imaging Technology Study Section
02/05/2010.
NCCR Special Emphasis Panel ZRR1 RI-2 05/07/2008-05/08/2008.
NCCR Special Emphasis Panel ZRR1 CM Wisconsin NPRC 01/23/08 - 01/25/08.
Grant Reviewer for Wellcome Trust and Keck Foundation (2002-present).
Grant Reviewer for Bedford Research Foundation (2002-present).
British Medical Research Council (2001-present).
Grant Reviewer for International Science Foundation (2001-present).

5. University and hospital boards and committees:

- 2007-2010 Graduate Committee (Physiology and Reproductive Science Program)
Wayne State Medical School, Detroit, MI.
- 2008 Dissertation Committee, Doctor of Philosophy, Catherine Dupont,
Department of Physiology and Obstetrics and Gynecology Reproductive
Science Program, *The mechanisms of aneuploidy in oocytes, embryos
and embryonic stem cells in rhesus macaques*, Wayne State Medical
School, Detroit, MI.
- 2008 Dissertation Committee, Doctor of Philosophy, Tiffini Gibson
Physiology and Obstetrics and Gynecology Reproductive Science
Program, *The role of mitochondrial mutations associated with oocyte,
embryo and embryonic stem cell competence in rhesus macaques*,
Wayne State Medical School, Detroit, MI.

ADMINISTRATION EXPERIENCE

- Dean of Biomedical Sciences at Larkin Health Sciences- Curriculum development, faculty and student recruitment, faculty affairs and development, national, regional and state accreditation (State of Florida, SACSOC ACICS), setting up grants and research office for Larkin Health Sciences, mentoring faculty writing federal grants. COCA accreditation for the proposed Osteopathic School.
- Development of Faculty Affairs and Medical Education Programs at Stony Brook School of Medicine. These included Leaders in Medical Education, Faculty Development CME bimonthly lectures, orientation for new faculty, Women's in Medicine Research Day, Annual Partner's and Quality and Patient Safety Program, Peer-Mentoring, Governance, Faculty Appointments, Tenure and Promotion recommendations.
- Founding faculty of Via Edwards Osteopathic Medical School Carolina Campus (VCOM Carolina) 2011.
- Recruitment of faculty for Biomedical Affairs (Search Committees, Interview scheduling, job offers, Contract negotiation and writing contracts with Dean of VCOM.
- Managed Biomedical office with two administrative assistants.
- Medical Education curriculum development, scheduling and assessment.
- Biomedical Faculty bi-monthly meetings.
- Manager of Biomedical, Medical Education and Research Budget for VCOM Carolina.
- Assessment of yearly faculty evaluations for the Vice Dean and Dean of VCOM.
- Planned, built, equipped and managed 7500 sq. ft. laboratory for the Gibbs Cancer Center and VCOM Carolina.
- Attended VCOM functions as representative of Associate Dean for VCOM Carolina.
- As Associate Dean of Academic Affairs and Research participated in document preparation for yearly visits by AOA Commission for Osteopathic College Accreditation (COCA) for VCOM Carolina until school with fully accredited.
- **VCOM Committees**: Student Recruitment and Admissions, Vice-Dean's Council, Class of 2016-2018 Admissions, Interviews Curriculum and Assessment Block Committee, Promotion Board, Tenure and Promotion Committee, IRB, Facilities, Student Advisor, Faculty Development, Scholarship, Development of grant writing skills for junior faculty.

- Development of partnerships with Clemson University, Greenwood Genetics and Greenville Hospital, and biotechnology companies, Kiyatec and iTOR.
- Developed relationships and grants with biotechnology companies in the South Carolina Stem Cell Core Laboratory on South Carolina Bioengineering Center of Regeneration and Formation of Tissues.
- Mentored research and development of NIH grants for junior faculty at VCOM Carolina and Clemson.
- Grants liaison for VCOM Carolina with VCOM Virginia Sponsored Grants and Research Intellectual Property liaison with Mike Miller and the Cleveland Clinic Alliance.
- Preparation of Accreditation Documentation Materials for the AOA Commission on Osteopathic College Accreditation (COCA) serves the public by establishing, maintaining, and applying accreditation standards and procedures to ensure that academic quality and continuous quality improvement delivered by the colleges of osteopathic medicine (COMs) reflect the evolving practice of osteopathic medicine.
- Preparation of Accreditation Documentation Materials for the AOA Commission on Osteopathic College Accreditation (COCA) serves the public by establishing, maintaining, and applying accreditation standards and procedures to ensure that academic quality and continuous quality improvement delivered by the colleges of osteopathic medicine (COMs) reflect the evolving practice of osteopathic medicine.
- Ongoing Preparation of Accreditation Documentation of Materials for LCME for Stony Brook University Standards for Faculty Affairs, Professional Development and Diversity.

TEACHING

- Course and curriculum development for medical and graduate students (2002-2014)

Medical Genetics	1 st year medical school
Cell Biology	1 st year medical school
Embryology	2 nd year medical school
Reproduction	2 nd year medical school
Endocrinology	2 nd year medical students
Hematology/Oncology	2 nd year medical school
Obstetrics/Gynecology	2 nd and 3 rd year medical students
Research Projects	1-4 year medical students

Undergraduate and Graduate School

Stem Cell Biology
Molecular Biology
Molecular Genetics and Development
Reproductive Biology

Junior Faculty Mentoring

Stephan Brown MD, PhD (VCOM)
Cindy McKinney PhD (VCOM)
David Jaynes PhD (VCOM)
Ken Webb (Clemson)
Sarah Harcum (Clemson)
Ying Mei (Clemson/Medical University South Carolina)
Jeoung Soo Lee (Clemson)
Barbara Christenson (Gibbs Cancer Center)

Graduate student's dissertations directed:

Neha Aggarwal, PhD Student (2010-

Mitochondrial mechanisms in stem cells
Albayrak, Samet, MD Postdoctoral Fellowship (2010-
Generation of amniotic fluid stem cells
John Irish, PhD. Student (2010 -
Induced Pluripotency Models for Cancer
Katio Filios, MS student (2010 -
Thesis: The role of amniotic fluid stem cells during pregnancy
Kathrin Dennis, PhD student (2010 -
Thesis: The role of amniotic fluid stem cells during pregnancy.
Tiffini Gibson, PhD student Graduated May 2010
Thesis: The role of mitochondrial mutations associated with oocyte, embryo and
embryonic stem cell competence in *rhesus macaques*.
Catherine Dupont, PhD. Student Graduated May 2009
Thesis: The mechanisms of aneuploidy in oocytes, embryos and embryonic stem cells
in rhesus macaques.
Stephanie Nichols, PhD. Candidate (major professor, B. Bavister)
Thesis: Chromosomal anomalies associated with in vitro maturation and aging in
rhesus macaques.

Postdoctoral Fellows

Dr. Alexandra Harvey (July 2005- 2010)
Project: The role of mitochondrial nuclear transcription plays in early development and
embryonic stem cells.
Project: Directed differentiation of monkey embryonic stem cells into cardiomyocytes.
Dr. Yijin Pei (November 2004- August 2007)
Project: Development of newly derived monkey embryonic stem cells off layers.
Project: Characterization of monkey embryonic stem cells using microarrays, proteomics
and bioinformatics technology.

Technician

Tabitha Quibedeaux
Project: The role of mitochondria nuclear transcription factor Pol gamma.

Undergraduate Students:

Bonnie D Gasquet (summer project)
Project: The role of mitochondria in primate cardiomyocytes

Wayne State University

Physiology Department Seminar Series
Department of Obstetrics and Gynecology SC Mott Seminar Series
Reproductive Endocrinology Fellowship Interviewer for the Department of Obstetrics and
Gynecology
Physiology Department Graduate Committee
Physiology Department Space Committee
Co-Director of the Stem Cell for WSU Program at TechTown
PhD committee member for the following students:
Phillip Jessman, Gi Sang Yoon, Jill Slater, Jennell White, Dhiman Maitra

New Orleans

Brown Foundation site visit at CERM on September 27th, 2004
Brown Foundation Laboratory Cellular Facility set-up at CERM
My role was to set up a cellular imaging facility to be utilized by faculty at UNO and other
academic institutions in New Orleans
Departmental Comprehensive Exam Committee 2004
Departmental Undergraduate Honors Committee 2004

GRANT SUPPORT

A. Grants Received (Carol A. Brenner)

Hormonal control of extracellular matrix degradation in the murine uterus.
Research Corporation (Tucson, AZ)
Award \$30,000.

Principal Investigators Richard Adler and Carol Brenner
01/01/90-01/01/93
Expression of metalloproteinases during peri-implantation murine development.
Research Council, University of Dayton
Award \$8,000. Renewal, \$9,000.

NIH-RF1, Gene expression during trophoblast development.
National Institute of Child Health and Development (NICHD)
PI Zena Werb Co-investigators Carol Brenner and Richard Adler
Award \$750,000 Support Period 09/02/88-09/01/93

Academic Enhancement Research Award, HD30377-01.
Metalloproteinases and TIMPs in the Murine Uterus
Award \$101,612.
Principal Investigator Carol Brenner
9/01/93-9/01/96

National Institutes of Health
Tissue Interactions in Palatal Self-Closure, DEO2774,
Consultant
Subcontract \$50,000 PI Carol Brenner
9/01/93-9/01/94

Laylor Fellowship Grant for Postdoctoral Student.
Award, \$60,000
Principal Investigator Carol Brenner
9/01/94-9/01/96

5R24RR015395 NCRR Co-investigator Carol Brenner
Embryo Technologies for Propagation of Rhesus Monkeys.
NIH/NCRR R24
Award \$1,500,000 9/01/02 – 8/31/06

RO3HD046553-01A1 NIH/NICHD Brenner (PI)
Chromosome Anomalies in Macaque Monkey Oocytes
\$200K Support Period: 12/1/05–7/31/10

R21RR02188101 NIH/NCRR Brenner(PI)
Characterization of Monkey Embryonic Stem Cells
\$350K Support Period: 7/1/05 – 6/30/10

Wayne State University President's Research Enhancement Program
Wayne State Medical School,
"Non-Human Primate Embryonic Stem Cell Culture System for Translational Research"
PI Carol Brenner \$400,000; Support Period: 07/01/08-06/30/11

PI-Carol Brenner
Vice President of Research Award at Wayne State University

Development of induced pluripotent cell disease lines for CMT2A using lenti-virus reprogramming and protein transduction
Wayne State University
\$100,000 Support Period: 01/01/10- 01/02/11

MitoStem CEO Jim Eliason
MitoStem Intern-CSO Carol Brenner
SBIR Generation of induced pluripotent stem cells using recombinant proteins
\$200,000 Support Period: 01/06/2010-01/06/2011

RO1HD045966 NIH/NICHD Defects in Mitochondria Impacting Primate Oocyte Quality
PI Barry Bavister
Role: Co-Principal Investigator Carol Brenner
\$1,680,000 Support Period: 4/15/05–3/31/10

RO1HD045966 05S1 NIH/NICHD ARRA Brenner (Co-investigator)
Defects in Mitochondria Impacting Primate Oocyte Quality
\$184,671 ARRA Supplement Support Period: 7/12/2010- 6/30/2011

NIGM SBIR 1R43GM097768-01 Generation of Human Disease Stem Cells from Amniotic Fluid
PIs-Carol A. Brenner, Jim Eliason
09/01/2012-09/01/2013
NIH Phase I SBIR \$125,000

Generation of Down Syndrome Induced Pluripotent Stem Cell Lines as Disease Models for Leukemogenesis
PIs- Jeffrey Taub, Carol A. Brenner, Jim Eliason
04/15/2012-04/15/2013
Children's Research Center of Michigan
\$50,000

1R21HD071408-01 PIs D. Randall Armant, Carol Brenner
Genetic Analysis of Human First Trimester Trophoblast in Ongoing Pregnancies
\$418,000 Support Period: 07/01/2012-11/30/2014

P20GN103444 PI Naren Vyavahare
Center of Biomaterial for Tissue Regeneration (CBTR)
FUNDED 07/01/2014-07/01/2019 for \$10,500,000
Subcontract PI Carol Brenner \$258K

PUBLICATIONS

1. Original observations in refereed journals

1. Ernst SG, Miller H, **Brenner CA**, Nocente-McGrath C, Francis S and McIssac R. (1987) Characterization of a cDNA clone coding for a sea urchin histone HZA variant related to HZA. F/Z histone protein in vertebrates. *Nucleic Acids Res.* 15:4629-4644.
2. **Brenner CA**, Adler RR, Rappolee DA, Pedersen RA and Werb Z (1988). Gene expression of metalloproteinases and their inhibitors in preimplantation mouse embryos. *Genes Dev.* 4:348-359.

3. Rappolee DA, **Brenner CA**, Schultz R, Mark D and Werb Z (1988). Developmental expression of PDGF, TGF- α and TGF- β in preimplantation mouse embryos. *Science* 241:1823-1825.
4. Larrick JW, Danielsson L, **Brenner CA**, Abrahamson M, Fry KE and Borrebaeck CA. (1989) Rapid cloning of rearranged human immunoglobulin genes from human hybridoma cells using mixed primers and the polymerase chain reaction. *Biochem. Biophys. Res. Comm.* 160:1250-1256.
5. Nocente-McGrath C, **Brenner CA** and Ernst S. (1989) Endo16, a lineage specific protein of the sea urchin embryo, is first expressed just prior to gastrulation. *Dev. Biol.* 136:264-272.
6. **Brenner CA**, Tam AW, Nelson PA, Engleman EG, Suzuki N, Fry KE and Larrick JW. (1989). Message Amplification Phenotyping (MAPPING): A technique to simultaneously measure multiple mRNAs from small numbers of cells. *Biotechniques* 7:1096-1101.
7. Nelson PA, Tam AW, Sukienneci T, Wong-Lee J, **Brenner CA** and Larrick JW. (1990) Soluble suppressive molecule released by human T-cell lymphocytes induced by heat inactive allostimulator cells in the presence of cyclosporin A. *Transplantation* 50:276-283.
8. Suzuki NE, Bianchi E, Bass H, Suzuki T, Bender, Pardi T, **Brenner CA**, Larrick JW and Engleman EG. (1989) Natural killer lines and clones with apparent antigen specificity. *J. Exp. Med.* 172:457-462.
9. Adler RR, **Brenner CA** and Werb Z. (1990) Expression of extracellular matrix-degrading metalloproteinases and metalloproteinase inhibitors is developmentally regulated during endoderm differentiation of embryonal carcinoma cells. *Development* 110:211-220.
10. Daniels SD, **Brenner CA**, Legendre AM, Solomon A and Rouse BT. (1992) Feline cytokines TNF- α and IL-1 β : PCR cloning and sequencing of cDNA. *Anim. Biotechnol.* 3:117-121.
11. Sharkey M, Adler R, Neider G and **Brenner C**. (1996) Metalloproteinase expression during peri-implantation development. *Am. J. Reprod. Immunol.* 36:72-80.
12. **Brenner CA**, Scott RT and Cohen J. (1997) Use of anucleate donor oocyte cytoplasm in recipient eggs. *Lancet.* 350:961-963.
13. Denis AL, Guido M, Adler RR, Bergh, PA, **Brenner C** and Scott RT. (1997) Antiphospholipid antibodies and pregnancy rates and outcome in vitro fertilization patients. *Fertil. Steril.* 67:1084-1090.
14. **Brenner CA**, Wolny YM, Barritt JA, Matt DW, Munne S and Cohen J. (1998). Mitochondrial deletion in human oocytes and embryos. *Mol. Hum. Reprod.* 4:887-892.
15. Cohen J, Scott R, Alikani M, Schimmel T, Munne S, Levron J, Wu L, **Brenner C**, Warner C and Willadsen S. (1998) Ooplasmic transfer in mature human oocytes. *Mol. Hum. Reprod.* 4:269-280.
16. Warner CM, Cao W, Exley GE, McElhinny AS, Alikani M, Cohen J, Scott R and **Brenner CA** (1998) Genetic regulation of egg and embryo survival. *Hum. Reprod.* 13:178-190.
17. Steuerwald N, Cohen J, Herrera R and **Brenner CA**. (1999) Analysis of gene expression in single oocytes and embryos by real-time rapid cycle fluorescence monitored RT-PCR. *Mol. Hum. Reprod.* 5:1034-1039.
18. Barritt JA, **Brenner CA**, Cohen J and Matt DW. (1999) Mitochondrial DNA rearrangements in human oocytes and embryos. *Mol. Hum. Reprod.* 5:927-933.

19. **Brenner CA**, Wolny YM, Adler RR and Cohen J. (1999) Alternative splicing of the telomerase catalytic subunit in human oocytes and embryos. *Mol. Hum. Reprod.* 5:845-850.
20. **Brenner CA** and Tomkin G. (1999) Telomeres, telomerase; is the key to biological aging programmed in the human oocyte? *ALPHA Journal.* * 16:1-3.
21. **Brenner CA**. (1999) ART's brave new world-designer babies? The future of ART: micro arrays with macro consequences in reproduction. *ALPHA Journal.* *18: 1-3.
22. Cao W, **Brenner CA**, Alikani M, Cohen J and Warner CM. (1999) Search for a human homologue of the mouse Ped gene. *Mol. Hum. Reprod.* 5:541-547.
23. **Brenner CA** and Barritt JA. (2000) Mitochondrial heteroplasmy haunts the Romanov house. *ALPHA Journal.* * 29:1-3.
24. Barritt JA, Cohen J and **Brenner CA**. (2000) Mitochondrial DNA point mutation in human oocytes is associated with maternal age. *Reprod. Biomed. Online.* 1:96-100.
25. Pierce KE, Rice J , Sanchez, A, **Brenner CA** and Wangh LJ. (2000) Precision PCR using molecular beacons for accurate detection of the Y chromosome in single human blastomeres. *Mol. Hum. Reprod.* 6:1155-1164.
26. **Brenner CA** and Cohen J. (2000) The genetic revolution in artificial reproduction: a view of the future. *Hum. Reprod.* 15:101-106.
27. Barritt J, **Brenner CA**, Willadsen S and Cohen J. (2000) Spontaneous and artificial changes in human ooplasmic mitochondria. *Hum. Reprod.* 15 (suppl 2):207-217.
28. **Brenner CA**, Barritt J, Willadsen S and Cohen J. (2000) Mitochondrial DNA heteroplasmy after human ooplasmic transplantation. *Fertil. Steril.* 74:573-578.
29. Steuerwald N, Barritt J, Adler R, Malter H, Schimmel T, Cohen J and **Brenner CA**. (2000) Quantification of mtDNA in single oocytes, polar bodies and subcellular components by real- time rapid cycle fluorescence monitored PCR. *Zygote.* 9:209-215.
30. Steuerwald N, Cohen J, Herrera R and **Brenner CA**. (2000) Quantification of mRNA in single oocytes and embryos by real-time rapid cycle fluorescence monitored RT-PCR. *Mol. Hum. Reprod.* 6:448-453.
31. Barritt JA, **Brenner CA**, Malter HE and Cohen J. (2001) Rebuttal: interoplasmic transfer in humans. *Reprod. Biomed. Online.* 3:47-48.
32. Warner CM and **Brenner CA**. (2001) Genetic regulation of preimplantation survival. *Curr. Top. Dev. Biol.* 52:151-192.
33. Barritt JA, **Brenner CA** and Cohen J. (2001) Cytoplasmic transfer in assisted reproduction. *Hum. Reprod. Update.* 7:428-435.
34. Barritt JA, **Brenner CA**, Malter H and Cohen J. (2001) Mitochondria in human offspring derived from ooplasmic transplantation. *Hum. Reprod.* 15:207-217.
35. Steuerwald N, Cohen J, Herrera R and **Brenner CA**. (2001) Quantification of checkpoint transcripts in single human oocytes by real time rapid cycle fluorescence monitored RT-PCR. *Mol. Hum. Reprod.* 7:101-109.
36. Barritt J, Kokot M, Cohen J and **Brenner CA**. (2002) Quantification of ooplasmic mitochondria. *Reprod Biomed Online.* 4: 243-247.
37. Warner CM, Tyas D, Goldstein C, Cohen J and **Brenner CA**. (2002). Genotyping the HLA system and embryo development. *Reprod. Biomed. Online.* 4:133-139.

38. **Brenner CA**, Pierce KE and Kubisch HM (2004) The role of the mitochondrial genome in assisted reproductive technologies and embryonic stem cell-based therapeutic cloning. *Reprod. Fertil. Dev.* 16: 743-751.
39. Warner CM and **Brenner CA** (2004) Soluble HLA-G (sHLA-G)—A predictor of IVF outcome? *J Assist Reprod Genet.* 9:315-316.
40. Bavister BD and **Brenner CA** (2004) How can basic science help human ART? *The Clinical Embryologist.* 7:6-11.
41. **Brenner CA** and Bavister BD (2004) Invited Commentary: Stem cells – hope or hype? *The Clinical Embryologist.* 7:3-7.
42. **Brenner CA**, Nichols SM, Jacoby ES and Bavister BD. (2004) Non-human primates as a model for reproductive aging and human infertility. *Gynecol Obstet Invest.* 57:21-23.
43. **Brenner CA** (2004) Ooplasmic transplantation: more questions than answers. *Assist. Reprod. Genet.* 14:59:1170-1171.
44. Bavister BD, Wolf DP and **Brenner CA** (2005) Challenges of primate embryonic stem cells research. *Cloning and Stem Cells* 7:1-13.
45. Nichols SM, Bavister BD, **Brenner CA**, Didier PJ, Harrison RM and Kubisch HM. (2005) Ovarian senescence in the rhesus macaque (*Macaca mulatta*). *Hum. Reprod.* 1:79-83.
46. Gibson TC, Kubsich MH and **Brenner CA** (2006) Mitochondrial deletions in primate embryonic and adult stem cells. *Reprod. Biomed. Online.* 12:93-98.
47. Gibson TC, Kubsich MH and **Brenner CA** (2005) Mitochondrial deletions in oocytes and embryos in rhesus macaque (*Macaca mulatta*). *Molecular Human Reproduction*, 11(11): 785-789
48. Lonergan T, **Brenner CA** and Bavister BD (2006). The functionality of mitochondria in primate stem cells. *Journal of Physiology J Cell Physiol.* 208(1): 149-153
49. Lonergan T, Bavister B, **Brenner C** (2007) Mitochondria in stem cells. *Mitochondrion.* 7: 289-296.
50. Mtango NR, Harvey AJ, Latham KE, **Brenner CA** (2008) Molecular Control of Mitochondrial Function in Developing Rhesus Monkey Oocytes and Preimplantation Embryos. *Reprod Fertil Dev.* 2008; 20(7): 846-859.
51. Dupont C, Bavister BD, **Brenner CA** (2009). Delayed polar body extrusion is associated with increased embryo chromosomal abnormalities in rhesus monkey. *Hum Reprod.* 24(4): 929-935.
52. Dupont C, Froenicke L, Lyons LA, Bavister BD, **Brenner CA** (2009): Chromosomal instability in rhesus macaque preimplantation embryos. *Fertil Steril.* 91(4): 1230-1237
53. Dupont C, Bavister BD, Armant DR, **Brenner CA** (2009) Rhesus macaque embryos derived from MI oocytes maturing after retrieval display high rates of chromosomal anomalies. *Hum Reprod.* 24(4): 929-935.
54. Harvey AJ, Armant DR, Bavister BD, Nichols SM, **Brenner CA** (2009) Inner cell mass localization of NANOG precedes OCT3/4 in rhesus monkey blastocysts. *Stem Cells Dev.* Dec; 18(10):1451-1458.

55. Parker GC, Acsadi G, **Brenner CA** (2009) Mitochondria: determinants of stem cell fate? *Stem Cells Dev.* 18(6):803-806.
56. Dupont C, Armant DR, **Brenner CA** (2009) Epigenetics: definition, mechanisms and clinical perspective. *Semin Reprod Med.* 27(5): 351-357.
57. Nichols S, Harvey A, Gierbolini L, Gonzalez-Martinez J, **Brenner C**, Bavister B. (2010) Long-distance transportation of primate embryos developing in culture: a preliminary study. *Reprod Biomed Online.* Mar 20(3): 365-70.
58. Dupont C, Segars J, Decherney A, Bavister BD, Armant DR, **Brenner CA** (2010) Incidence of chromosomal mosaicism in morphologically normal non-human primate preimplantation embryos. *Fertil Steril.* 91(4): 1230-1237.
59. Beal S., **Brenner C**. Segars J. (2010) Oocyte Maturation Failure: a syndrome of bad eggs. *Fertil. Steril.* Dec 94(7): 2507-2513.
60. Harvey A, Gibson T, Lonergan T and **Brenner CA** (2011) Dynamic Regulation of Mitochondrial Function in Preimplantation Embryos and Embryonic Stem Cells. *Mitochondrion*, 2011 Sep; 11(5): 829-838.
61. Dupont C, Harvey A, Armant DR, **Brenner CA** (2012) Expression profiles of cohesins, shugoshins and spindle assembly checkpoint genes in rhesus macaque oocytes predict their susceptibility for aneuploidy during embryonic development. *Cell Cycle.* 2012 Feb 15; 11(4): 740-748
62. Harvey AJ, Mao S, Lalancette C, Bavister BD Mitalipov S, Krawetz SA. Ruden, D., **Brenner CA** (2012) Rhesus Embryonic Stem Cells Retain Transcriptional Perturbations of their Embryo Origin. *PLoS One.* 2012; 7(9)
63. Buhoiarova, TN, **Brenner, CA**, Singh, M. Review of Endometrial Carcinoma: Role of biomarkers in resolving persistent clinical dilemmas: current and emerging concepts. Submitted to journal of clinical pathology, 2015

*ALPHA Journal has now merged with J. Assist. Reprod. Genet.

2. Review Articles

3. Book Chapters (peer-reviewed)

1. **Brenner CA** Daniels S, Schell MG, and Adler RR. (1991) Cytokine MAPPING: Identification of cytokine expression by PCR in small cell numbers. In Cytokines: A Practical Approach. FR Balkwill (Ed.), Oxford University Press, London. p51-59.
2. **Brenner CA** Exley, G, Alikani M, Cohen J, Scott R, Adler R, and Warner C. (1997) Expression of bax mRNA associated with apoptosis in human oocytes and embryos. In In Vitro Fertilization and Assisted Reproduction. V. Gomel and PCK Leung (Eds.) Monduzzi Editore. p627-632.
3. Scott RT, Denis AL, Guido M, Adler RR, Sable DB, Drews MR, Robbins ED and **Brenner CA** (1997) Antiphospholipid antibodies and pregnancy rates and outcomes in IVF patients. In In Vitro Fertilization and Assisted Reproduction. V. Gomel and PCK Leung (Eds.) Monduzzi Editore. p627-632.
4. Cohen J, **Brenner CA**, Warner C, Steuerwald N, Shadowy S, Barritt J, Sandalinas M and Munne S. (1999) Genetics of the fertilized egg. In Towards Reproductive Certainty-Fertility

and Genetics Beyond R Jansen and D Mortimer (Eds.) Parthenon Publishing Group. p231-146.

5. **Brenner CA** and Scott RT. (2002) Model systems to study gene expression and function. In 12th World Congress on in Vitro Fertilization and Molecular Reproduction. Monduzzi Editore International Proceedings Division. p105-109.
6. **Brenner CA** (2003) The future for stem cell therapeutics. SARTimes, Winter.
7. **Brenner CA** (2004) What is the role of mitochondria in embryo competency? In Essential IVF: Basic and Clinical Applications J Van Blerkom (Ed.) Kluwer Academic Press, Boston, Chapter 11. p273-290.
8. **Brenner CA** Kubisch HM and Bavister BD. (2005) Molecular and cellular mechanisms in fertilization. In Encyclopedia of Molecular Cell Biology and Molecular Medicine. RA Meyers. (Ed.) Wiley-VCH, Weinheim, Germany. p531-552.
9. Bavister BD and **Brenner CA** (2006) Non-human primate as a model for reproductive aging and human infertility. Animal Models for Aging. Michael Conn (Ed.), Elsevier Press. p469-484.

Commercialization Business Partnerships

Advanced Reproductive Diagnostics, LLC (1996-2002)

Founding Partner-Carol Brenner

Regenerate, LLC (2002-2007)

Founding Partner- Carol Brenner

Mitostem, Inc (Founding Partner 2009-present)

CSO- Carol Brenner, CEO- Jim Eliason

Reproductive Diagnostic Testing, LLC (2010-present)

Founding Partner- Carol Brenner

RealBio (2010-present)

Board of Directors-Carol Brenner

Kyiatech (2014-present)