

CURRICULUM VITAE

JOSEPH CONAGHAN

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| BIRTH PLACE | Donegal, Ireland |
| CITIZENSHIP | USA and Ireland |
| HOME ADDRESS | 17 Le Havre Place, Half Moon Bay, CA 94109 |
| CURRENT EMPLOYMENT | Laboratory Director, Pacific Fertility Center, San Francisco. Laboratory Director, Advanced Fertility Care, Scottsdale, AZ. Laboratory Director, Fertility Specialists Medical Group, San Diego, CA. Faculty, San Francisco State University. |
| EDUCATION | |
| 1991-1994 | Royal Postgraduate Medical School, University of London. Ph.D. awarded 1996, Thesis Advisors: Alan Handyside/Henry Leese. Human Embryology |
| 1983-1987 | University of Limerick, Ireland. B.Sc., Biology and Agricultural Science, with Honors |
| 1978-1983 | St. Eunan's College, Letterkenny, Ireland. Leaving Certificate (High School Diploma). |
| BOARD CERTIFICATION | |
| 1999 | American Board of Bioanalysis, certified as a "High-complexity Clinical Laboratory Director (HCLD)" for Embryology and Andrology. |
| 2002 | American Board of Bioanalysis, certified as a "Embryology Laboratory Director (ELD)" and "Clinical Consultant (CC)". |

EMPLOYMENT

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| December 1999 to present | Director, Assisted Reproductive Technology Laboratories at Pacific Fertility Center, San Francisco, CA |
| January 2009 to present | Off-site Director, Assisted Reproductive Technology Laboratory at Advanced Fertility Care, Scottsdale, AZ. |
| December 2007 to present | Off-site Director, Assisted Reproductive Technology Laboratory at Fertility Specialists Medical Group, San Diego, CA |
| August 2003 to present | Faculty, San Francisco State University (teaching <i>Reproductive Technologies</i>) |
| February 2002 to February 2008 | Off-site Director, Assisted Reproductive Technology Laboratory at Scripps Clinic, La Jolla, CA |
| February 2002 to July 2007 | Off site Director, Assisted Reproductive Technology Laboratory at Southern California Center for Reproductive Medicine, Newport Beach, CA |
| December 1999 to October 2003 | Director, Assisted Reproductive Technology Laboratories at San Francisco Center for Reproductive Medicine, San Francisco, CA |
| July 1997 to November 1999 | Assistant Professor, Department of Obstetrics, Gynecology and Reproductive Sciences, Reproductive Genetics Division, University of California San Francisco, San Francisco, CA |
| January 1995 to June 1997 | Visiting Postdoctoral Fellow, Laboratory of Professor Roger Pedersen, University of California, San Francisco. Responsible for the daily operation of the UCSF <i>In Vitro</i> Fertilization Laboratory. |
| July 1991 to December 1994 | Graduate student at the Royal Postgraduate Medical School, University of London. Thesis title: " <i>The human preimplantation embryo: assessment of culture conditions and viability</i> "; Supervisors: Dr. Alan Handyside and Dr. Henry Leese |
| April 1989 - June 1991 | Research Officer with the IVF Unit at Hammersmith Hospital, London, UK. |
| June 1988- Mar. 1989 | Research Assistant with the IVF Unit at Hammersmith Hospital, London, UK. |

2022 ACTIVITIES (INVITED SPEAKER)

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| <i>January</i> | <i>ABB Board meeting</i> |
| <i>February</i> | <i>Middle East Fertility Society, Cairo Egypt</i> <i>Reproductive Technology Master's program, Pavia, Italy</i> |
| <i>March</i> | <i>North Carolina Embryology Society, Raleigh, NC</i> <i>Florida Embryology Society, Miami, FL</i> |
| <i>April</i> | <i>Vitrolife "Thought Leaders" conference, Denver, CO</i> |
| <i>May</i> | <i>ABB annual meeting, Austin, TX</i> |
| <i>July</i> | <i>ESHRE meeting, Milan, Italy</i> |
| <i>August</i> | <i>University of Gothenburg, Sweden</i> <i>Nordic Fertility Society, Helsinki, Finland</i> |
| <i>September</i> | <i>Brazilian Fertility Society, Sao Paulo, Brazil</i> <i>Canadian Andrology and Fertility Society, Halifax, NS</i> <i>South East Asia Fertility Society, Malaysia</i> |
| <i>October</i> | <i>Alpha meeting, Seville, Spain</i> |

HONORS AND AWARDS

British Fertility Society Annual prize for the best oral abstract presented in Aberdeen, Scotland, May 1990
 UCSF Fellows Teaching Award (Reproductive Endocrinology) 1996
 American Board of Bioanalysts prize for the best oral abstract presented in Las Vegas, May 2008
 American Board of Bioanalysts prize for the best oral abstract presented in Orlando, May 2009
 Pacific Coast Reproductive Society prize for the best oral abstract presented in Palm Springs, April 2011

SCIENTIFIC ADVISORY BOARDS

Irvine Scientific, Santa Ana, CA, 2004-present
 EMD Serono, Rockland, MA, 2005-2009
 Stem Lifeline, Santa Clara, CA, 2006-2008
 Ovascience, Boston, MA, 2010-present

PROFESSIONAL SOCIETY MEMBERSHIP

American Society for Reproductive Medicine (ASRM)
 American Board of Bioanalysis (ABB)
 Northern California Association of Reproductive Biologists (NCARB)

UNIVERSITY AND PUBLIC SERVICE

- Society for Assisted Reproductive Technology (SART) executive committee, Laboratory Director representative, 2008-2010
- Chair, College of Reproductive Biology (special interest group within ABB), May 2007-May 2008
- Member, Board of Directors, American Association of Bioanalysts, May 2007-May 2008
- Lecturer, San Francisco State University, teaching Reproductive Technologies and Developmental Biology, 2003 - present
- American Society for Reproductive Medicine, Abstract Committee, 1995, 2005, 2008, 2011
- Northern California Association of Reproductive Biologists, Vice-President, 1997-1999.
- Northern California Association of Reproductive Biologists, President, 1999- 2001
- Inspector, College of American Pathologists/American Society for Reproductive Medicine reproductive laboratory accreditation program.
- World Health Organization Fellowship Supervisor, Summer 1998
- Participant, PBS Television, Frontline. The Ethical and Genetic Aspects of Infertility, June 1, 1999.
- Examinations Board member, American Board of Bioanalysis, Program for certification of High Complexity Clinical laboratory Directors in the discipline of Embryology, 1999-present.
- Government and Professional Relations Committee, American Association of Bioanalysts, 2003- 2007

ABSTRACTS PRESENTED AT SCIENTIFIC MEETINGS

Can non-invasive measurement of pyruvate uptake in culture assist embryo selection for transfer following in-vitro fertilization?

Talk presented at the British Fertility Society meeting in Aberdeen, May 1990.

Winner of annual prize for the best oral abstract.

Pyruvate uptake in relation to pregnancy outcome after human IVF.

Talk presented at the Society for the study of Fertility meeting in Glasgow, July 1992.

Glucose inhibits cleavage of human preimplantation embryos in vitro.

Talk presented at the joint meeting of the Society for the study of Fertility and the British Fertility Society in Bristol, December 1992.

The effects of culture media on the development of human preimplantation embryos in vitro. Talk presented at the meeting of the Society for the study of Fertility in Southampton, July 1994.

The effects of insulin on the development of human preimplantation embryos in vitro.

Talk presented at the meeting of the Society for the Study of Reproduction in Ann Arbor, Michigan, USA, July 1994.

Do IVF outcomes with epididymal spermatozoa vary with male factor etiology?

Pacific Coast Fertility Society. Annual Meeting, Indian Wells, CA, June 1997.

Delivery of a Healthy Baby after Using Embryos That Had Been Frozen Twice (Day 2 and Blastocyst)

Am. Soc. Repro. Med. Annual Meeting, Orlando, FL., October 2001

PH Equilibration Dynamics within Microdrops

Pacific Coast Fertility Society. Annual Meeting, Palm Springs, CA, April 2008

Real-time pH profiling of IVF culture medium using an in incubator device with continuous monitoring
College of Reproductive Biology/American Board of Bioanalysis Annual Meeting, Las Vegas, 2008

Vitrification and warming of oocytes may be impacted by the number of oocytes retrieved
College of Reproductive Biology/American Board of Bioanalysis Annual Meeting, Las Vegas, 2008

Vitrification and warming of blastocysts produces high implantation and pregnancy rates when compared to slow freezing.

College of Reproductive Biology/American Board of Bioanalysis Annual Meeting, Las Vegas, 2008

Winner of annual prize for the best oral abstract.

Blastocyst Vitrification and warming: two years and 200 cycles, College of Reproductive Biology/American Board of Bioanalysis Annual Meeting, Orlando, 2009

Winner of annual prize for the best oral abstract.

Human Blastocyst Vitrification and Warming: 3 Years Experience Using the CryoTip, 1st annual congress on Controversies in Cryopreservation of Stem Cells, Reproductive Cells, Tissue and Organs, Valencia, Spain, 2010

Establishment of a reliable blastocyst vitrification protocol allows for more widespread use of elective single embryo transfer (eSET). ESHRE meeting, Rome, 2010

Optimization of Blastocyst Vitrification May Require Artificial Collapse, Pacific Coast Reproductive Society annual meeting, Palm Springs, 2011

Winner of annual prize for the best oral abstract.

*PUBLICATIONS**PEER REVIEWED/ORIGINAL ARTICLES*

Conaghan, J., Dimitry, E.S., Mills, M., Margara, R.A. and Winston, R.M.L., (1989), Delayed human chorionic gonadotrophin administration for *in vitro* fertilization, *Lancet*, i: 8650, pp 1323-1324.

Dimitry, E.S., Oskarsson, T., **Conaghan, J.**, Margara, R., and Winston, R.M.L., (1991), Beneficial effects of a 24 hour delay in human chorionic gonadotrophin administration during *in vitro* fertilization treatment cycles, *Human Reproduction*. **6**, pp 944-946.

Tarin, J.J., **Conaghan, J.**, Winston, R.M.L. and Handyside, A.H., (1992), Human embryo biopsy on the second day post insemination for preimplantation diagnosis: removal of a quarter of embryo retards cleavage. *Fertility and Sterility*. **58**, (5), 970-976.

Conaghan, J., Hardy, K., Handyside, A.H., Winston, R.M.L. and Leese, H.J., (1993), Selection criteria for human embryo transfer: A comparison of pyruvate uptake and morphology. *Journal of Assisted Reproduction and Genetics*. **10**, (1), 21-30.

Leese, H.J., **Conaghan, J.**, Martin, K.L. and Hardy, K., (1993), Early human embryo metabolism. *Bioessays*. **15**, (4), 393-398.

- Conaghan, J.**, Handyside, A.H., Winston, R.M.L. and Leese, H.J., (1993), Effects of pyruvate and glucose on the development of human preimplantation embryos *in vitro*. *Journal of Reproduction and Fertility*, **99**, (1), 87-95.
- Dawson, K.J., **Conaghan, J.**, Ostera, G.R., Winston, R.M.L. and Hardy, K., (1995), Delaying transfer to the third day post-insemination, to select non-arrested embryos, increases development to the fetal heart stage, *Human Reproduction*, **10**, (1), 177-182.
- Ray, P.F., **Conaghan, J.**, Winston, R.M.L. and Handyside, A.H., (1995), Increased number of cells and metabolic activity in male human preimplantation embryos following *in vitro* fertilization, *Journal of Reproduction and Fertility*, **104**, (1), 165-171.
- Nudell, D.M., **Conaghan, J.**, Pedersen, R.A., Givens, C.R., Schriock, E.D. and Turek, P.J., (1998), The mini-MESA for sperm retrieval: a study of urological outcomes. *Human Reproduction*, **13**, (5), 1260-5.
- Conaghan, J.**, Leese, H.J., Winston, R.M.L., Hardy, K. and Handyside, A.H., (1998), Culture of human preimplantation embryos to the blastocyst stage: a comparison of 3 media., *International Journal of Developmental Biology*, **42**, (7), 885-894.
- Turek, P.J., Givens, C.R., Schriock, E.D., Meng, M.V., Pedersen, R.A.P. and **Conaghan, J.**, (1999), Testis sperm extraction and intracytoplasmic sperm injection guided by prior fine-needle aspiration mapping in patients with nonobstructive azoospermia, *Fert. Steril.*, **71**, 552-7.
- Turek, P.J., Nudell, D.M. and **Conaghan, J.**, (1999), Methods of epididymal sperm retrieval: A urologic perspective. *Assisted Reproduction Reviews*, **9**: 60-64, 1999
- Lavoie, M.-C., **Conaghan, J.** and Pedersen, R.A.P. (1999), Culture of human embryos for studies on the derivation of human pluripotent cells. *Reprod. Fertil. Dev.*, **10** (7), 557-561.
- Bactell, N., **Conaghan, J.** and Turek, P. (1999) Pre and post thaw viability of human sperm from the epididymis and testicle of infertile men. *Hum. Reprod.*, **14** (11) 2927-2933.
- Turek, P.J., Ljung, B.M., Cha, I. and **Conaghan, J.** (2000), Diagnostic findings from testis fine needle aspiration mapping in obstructed and non-obstructed azoospermic men. *J. Urol.*, **163**(6):1709-16.
- Cayan, S., Lee, D., **Conaghan, J.**, Givens, C.A., Ryan, I.P., Schriock, E.D. and Turek, P., (2001), A comparison of ICSI outcomes with fresh and cryopreserved epididymal spermatozoa from the same couples. *Hum. Reprod.* **16** (3) 495-9.
- Cayan, S., **Conaghan, J.**, Schriock, E.D., Ryan, I.P., Black, L.D. and Turek, P., (2001), Birth after intracytoplasmic sperm injection with use of testicular sperm from men with Kartagener/immotile cilia syndrome. *Fertil. Steril.*, **76** (3) 612-614.
- Lavoie MC, Weier J, **Conaghan J.**, Pedersen RA., (2005) Poor development of human nuclear transfer embryos using failed fertilized oocytes., *Reprod Biomed Online*, Dec;11(6):740-4.

- Pomeroy KO, Harris S, Conaghan J, Papadakis M, Centola G, Basuray R, Battaglia D., (2009), Storage of cryopreserved reproductive tissues: evidence that cross-contamination of infectious agents is a negligible risk. *Fertil Steril.* 94(4):1181-8. Review.
- Racowsky C, Vernon M, Mayer J, Ball GD, Behr B, Pomeroy KO, Wininger D, Gibbons W, **Conaghan J**, Stern JE. (2010), Standardization of grading embryo morphology. *Fertil Steril.* 94(3):1152-3.
- Racowsky C, Vernon M, Mayer J, Ball GD, Behr B, Pomeroy KO, Wininger D, Gibbons W, **Conaghan J**, Stern JE. (2010), Standardization of grading embryo morphology. *J Assist Reprod Genet.* ;27(8):437-9.
- Lieberman, J. and **Conaghan, J.**, (2013), Artificial Collapse prior to Blastocyst Vitrification: Improvement of Clinical Outcomes, *Journal of Clinical Embryology*, 16 (1) p 107-119
- Conaghan J.**, (2014), Time-lapse imaging of preimplantation embryos., *Semin Reprod Med.* 32(2):134-40
- Conaghan J.**, Chen AA, Willman SP, Ivani K, Chenette PE, Boostanfar R, Baker VL, Adamson GD, Abusief ME, Gvakharia M, Loewke KE, Shen S., (2013), Improving embryo selection using a computer-automated time-lapse image analysis test plus day 3 morphology: results from a prospective multicenter trial., *Fertil Steril.*, 100(2):412-9
- Iager AE, Kocabas AM, Otu HH, Ruppel P, Langerveld A, Schnarr P, Suarez M, Jarrett JC, **Conaghan J**, Rosa GJ, Fernández E, Rawlins RG, Cibelli JB, Crosby JA., (2013), Identification of a novel gene set in human cumulus cells predictive of an oocyte's pregnancy potential., *Fertil Steril.* 99(3):745-752
- Athayde Wirka K, Chen AA, **Conaghan J**, Ivani K, Gvakharia M, Behr B, Suraj V, Tan L, Shen S., (2014), Atypical embryo phenotypes identified by time-lapse microscopy: high prevalence and association with embryo development. *Fertil Steril.*, 101(6):1637-48

BOOK CHAPTERS

- Leese, H.J., **Conaghan, J.**, Hardy, K., Handyside, A.H. Martin, K.L. and Winston, R.M.L., (1994), Non-invasive biochemical methods for assessing human embryo quality. In: *Gamete and Embryo Quality*, edited by Mastroianni, L., Coelingh Bennink, H.J.T., Suzuki, S. & Vemer, H.M. The Parthenon Publishing Group, London, p. 125-138.
- Conaghan, J.**, (2014), pH in the embryo culture environment, In *Culture Media, Solutions and Systems in Human ATR*, edited by Patrick Quinn, Cambridge University Press, p 142-154

PEER REVIEWED ABSTRACTS

- Conaghan, J.**, Martin, K., Hardy, K., Winston, N.J., Dawson, K.J., Winston, R.M.L. and Leese, H.J., (1991), Can non-invasive measurement of pyruvate uptake in culture assist embryo selection for transfer following *in vitro* fertilization, *J. Obstet. Gynecol.*, **11**, pp 87-88.
- Conaghan, J.**, Martin, K., Hardy, K., Winston, N.J., Dawson, K.J., Winston, R.M.L. and Leese, H.J., (1991), Prospects for pre-transfer assessment of human embryo viability following *in vitro* fertilization, *Hum Reprod. Abstracts from the 7th World Congress on IVF and Assisted Procreation*, pp 232, N^o. 188.
- Dimitry, E.S., **Conaghan, J.**, Mastrominas, M., Sousis, I., Margara, R.A. and Winston, R.M.L., (1991), Beneficial effects of a 24h delay in hCG administration in IVF treatment cycles, *J. Obstet. Gynaecol.*, **11**, pp 86-87.
- Conaghan, J.**, Hardy, K., Handyside, A.H., Winston, R.M.L. and Leese, H.J., (1992), Pyruvate uptake in relation to pregnancy outcome after human IVF. *J. Reprod. Fert., Abstract series no. 9*, pp 27, No. 39.
- Conaghan, J.**, Handyside, A.H., Winston, R.M.L. and Leese, H.J., (1992), Glucose inhibits cleavage of human preimplantation embryos *in vitro*. *J. Reprod. Fert., Abstract series no. 10*, pp 4, No. 4.
- Dawson, K.J., **Conaghan, J.**, Ostera, G.R., Hardy, K. and Winston, R.M.L., (1992), Pregnancy rates after IVF are similar whether embryos are transferred on day 2 or day 3 post insemination. *J. Reprod. Fert., Abstract series no. 10*, pp 21, No. 37.
- Conaghan, J.**, Winston, R.M.L. and Handyside, A.H., (1994), Effects of culture media on human preimplantation embryos *in vitro*. *J. Reprod. Fert., Abstract series no. 13*, pp 24, No. 68.
- Conaghan, J.**, Handyside, A.H., Winston, R.M.L., Leese, H.J. and Hardy, K. (1994), Effects of insulin on human preimplantation embryo development *in vitro*. *Society for the Study of Reproduction*.
- Turek, P.J., Tom, R.A., Pedersen, R.A. and **Conaghan, J.**, The Mini-MESA for Sperm Retrieval: A study of efficacy and outcome. *Pacific Coast Fertility Society. Annual Meeting, Indian Wells, CA*
- Shamanski, F.L., Lavoie, M.-C., **Conaghan, J.** and Pedersen, R.A., (1997), Mouse embryo development after fertilization by spermatid fusion. *Presented at the Keystone Symposium on meiosis, Colorado*.
- Conaghan, J.**, Givens, C.G., Schriock, E. and Turek, P.J., (1997), Do IVF outcomes with epididymal spermatozoa vary with male factor etiology? *Pacific Coast Fertility Society. Annual Meeting, Indian Wells, CA*.
- Turek, P.J., Nudell, D., Tom, R.A., Pedersen, R.A. and **Conaghan, J.** (1997), The Mini-MESA for sperm retrieval: a study of urological outcomes. *Fertility and Sterility, Vol 68, Suppl 1, pp S107-108*
- Turek, P.J., **Conaghan, J.**, Pedersen, R.A., Givens, C. and Schriock, E. (1997), How to treat male infertility due to Kartagener's syndrome. *West Sect., Am. Urol. Assoc. Salt Lake City, Utah*.
- Turek, P.J., **Conaghan, J.**, Pedersen, R.A., Givens, C., Schriock, E., Cha, I. and Ljung, B.M., (1997), Fine needle testis "mapping" for sperm: a tool to locate and guide sperm retrieval for ICSI in men with non-obstructive azoospermia. *West Sect., Am. Urol. Assoc. Salt Lake City, Utah*.
- Nudell, D., Tom, R., Pedersen, R.A., **Conaghan, J.** and Turek, P.J., (1997), The mini-MESA for sperm retrieval: a study of urological outcomes. *West Sect., Am. Urol. Assoc. Salt Lake City, Utah*.

- Turek, P.J., MacInnes, M.A., Bachtell, N., **Conaghan, J.** and Pedersen, R.A., (1998), Cryopreservation and recovery of motile, aspirated human sperm within biopsy capsules from hamster eggs. *American Society of Andrology Ann Meeting, Los Angeles, CA.*
- Turek, P.J., **Conaghan, J.**, Pedersen, R.A., Givens, C., Schriock E. and Ljung, B.M., (1998), Testis fine needle "mapping": a tool for sperm detection and retrieval in men with non-obstructive azoospermia. *Pacific Coast Fertility Society, Ann. Meeting, Indian Wells, CA.*
- Bachtell, N., **Conaghan, J.** and Turek, P.J., (1998), Testicular sperm viability after freezing in men with non-obstructive azoospermia. *Am. Urol. Assoc. Annual meeting, San Diego, CA.*
- Bachtell, N., **Conaghan, J.** and Turek, P.J., (1998), The sperm hypoosmotic swelling assay for IVF and ICSI: Sperm viability varies with type of tail coiling. *Am. Soc. Repro. Med. Annual Meeting, San Francisco.*
- Turek, P.J., Bachtell, N. and **Conaghan, J.**, (1998), The relative viability of human sperm from the testis, epididymis and vas deferens before and after cryopreservation. *Am. Soc. Repro. Med. Annual Meeting, San Francisco.*
- Dandekar, P., **Conaghan, J.** and Pedersen, R.A., (1998), Efficiency of Fluorescence In Situ Hybridization (FISH) with multicolor probes for simultaneous detection of chromosomes X, Y, 16, 21 and 22 in human lymphocytes and blastomeres. *Am. Soc. Repro. Med. Annual Meeting, San Francisco.*
- Bachtell, N., **Conaghan, J.** and Turek, P.J., (1998), The sperm hypoosmotic-swelling assay for IVF and ICSI: Sperm viability varies with type of tail coiling. *West Sect., Am. Urol. Assoc. Maui, Hawaii.*
- Turek, P.J., Lee, D. and **Conaghan, J.**, (1999), How does aspirated sperm quality vary with obstructive azoospermia etiology? *American Urological Association annual meeting, Dallas, Texas.*
- Lee, D., Givens, C., Schriock, E.D., Ryan, I, **Conaghan, J.** and Turek, P.J., (1999), IVF/ICSI with epididymal sperm: comparative fertilization rates with fresh and cryopreserved sperm from the same couples. *American Urological Association annual meeting, Dallas, Texas.*
- Nudell, D., Lee, D.M., Schriock E., Givens, C., Turek, P.J., and **Conaghan, J.**, (1999), Does embryo quality correlate with sperm quality in male factor IVF/ICSI cases?. *Am. Soc. Repro. Med. Annual Meeting, Toronto, Canada, and West Sect., Am. Urol. Assoc. Monterey, CA.*
- Turek, P.J., Meng, M., Cha, I. and Conaghan, **J.**, (1999), Does testis injury from diagnostic fine needle aspiration mapping affect later sperm retrieval procedures? *Am. Soc. Repro. Med. Annual Meeting, Toronto, Canada, and West Sect., Am. Urol. Assoc. Monterey, CA.*
- Conaghan, J.**, Schriock E.D., Ryan, I.P. and Givens, C., (2001), Delivery of a Healthy Baby after Using Embryos That Had Been Frozen Twice (Day 2 and Blastocyst). *Fertility and Sterility, Vol. 76, Issue 3, Suppl 1, pp S121*
- Arredondo, S., Shen, S.H., **Conaghan, J.** and Turek, P.J., (2004), A clinical care pathway for nonobstructive azoospermia based on testis biopsy and mapping data. *Fertility and Sterility, Vol. 82, Suppl 2, pp S86*
- Steel, T and **Conaghan, J.**, (2008), pH equilibration dynamics of culture media under oil, *Fertility and Sterility, Vol. 89, Issue 4, Suppl, pp S27*

- Fischer, E., Holmes, E., Branch, M., Givens, C., Herbert, C., Ryan, I., Chenette, P., Schriock, E. and **Conaghan, J.**, (2008), Pregnancy results following initiation of a blastocyst vitrification program, *Fertility and Sterility*, Vol. 89, Suppl , pp S17
- Holmes, E., Fischer, E., Branch, M., Givens, C., Herbert, C., Ryan, I., Chenette, P., Schriock, E. and **Conaghan, J.**, (2008), Vitrification and warming of donor oocytes using a closed straw system, *Fertility and Sterility*, Vol. 89, Issue 4, Suppl , pp S16-17
- Fischer, E., Givens, C and **Conaghan, J.**, (2011), Optimization of blastocyst vitrification may require artificial collapse, *Fertility and Sterility*, Vol. 95, Issue 4, Suppl , pp S5-6