



IVF Histories and Cultures Seminar 1
23-24th June 2014, Christ's College
Cambridge



Monday 23rd June 2014

12:30 – 1:00pm	Buffet Lunch
1:00 – 2:00pm	Short Introductions
2:00 – 3:30pm	Panel 1 'What Bob Edwards saw when he looked at an embryo: Part 1' Richard Gardner and Martin Johnson – Chair Nick Hopwood
3:30 – 4:00pm	Tea
4:00-5:30pm	Panel 2 'What Bob Edwards saw when he looked at an embryo: Part 2' Marilyn Monk, Jonathan Van Blerkom and Steen Willadsen - Chair Sarah Franklin
5:30 – 7:00pm	Break
7:00pm /7:30pm	Drinks reception/Dinner in Old Combination Room

Tuesday 24th June 2014

9:00 – 10:30am	Panel 3 'Looking at Cells and Embryos: perspectives from the humanities' Barbara Orland, Susan Squier, Gina Glover - Chair Martin Johnson
10:30 -11:00am	Tea
11:00 -12:30pm	Open Session: tbc
12:30 – 2:00pm	Lunch
2:00 -5:00pm	Open discussion beginning with Suzanne Anker serving as discussant.
5:00pm	Close

Welcome

Welcome to the Inaugural Workshop of the IVF Histories and Cultures Project. Thank you especially to those of you who have travelled very long distances only to arrive at Heathrow or Gatwick and begin yet another lengthy journey to Cambridge! And thank you to everyone for accepting our invitation to participate in this unconventional event. We hope you will find everything you need while you are here, and that you will leave with more than you expected, including new connections to your own work in this field.

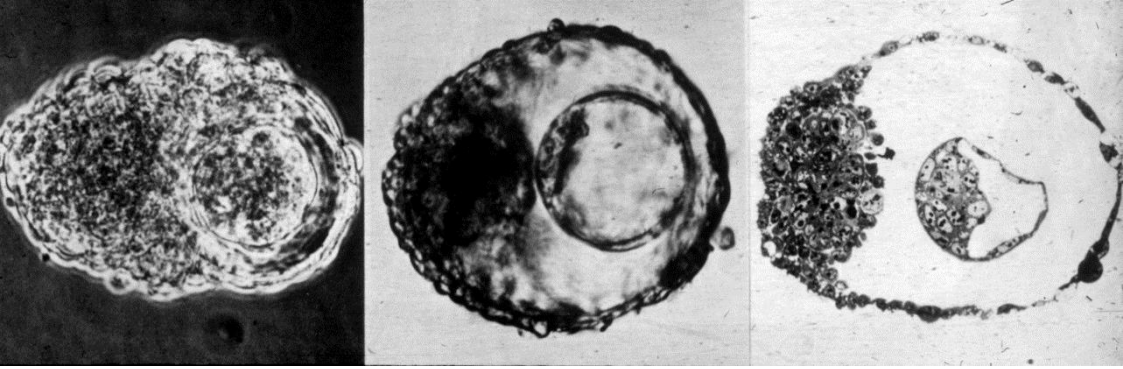
This workshop is the outcome of several intersecting projects over many years, and its design reflects an ongoing desire to leave room for different strands of the study of IVF cultures and histories to overlap and diverge. Encouraging interdisciplinary dialogue is one thing: developing and sustaining it successfully over time is another. Trust is required to make the initial leap into the unknown waters of interdisciplinary collaboration, especially with people one has never met.

As it happens, IVF turns out to be a very useful topic for encouraging cross-talk. Perhaps because it means so many different things to so many people, and conversely because it provides so much common ground, it is a natural arena for making connections from new angles. Perhaps IVF is useful too because it inevitably mirrors basic questions about the human condition – including our relationships to technology, reproduction, knowledge, the future, the past, science, law, kinship, society, art and ethics – among others!

It is this role of IVF – to function as a looking glass, or lens – that is frequently mentioned by many social scientists who have studied it. Social scientists have also described IVF as a ‘quest’ (Inhorn 1994) and as an ‘ontological choreography’ (Thompson 2005). For artists too, IVF provides a window into questions of beauty, aesthetics and representation, as well as into ideas about regeneration, cosmology and the future (Anker and Nelkin 2004).

Among scientists, questions of aesthetics are never far from the challenges posed by either laboratory technique or the art of making knowledge. Model systems, hand-made tools, happy cells, and viable offspring can all be described as beautiful, or even awe-inspiring. Learning to see as a means of understanding and manipulating comprises one of the great satisfactions of scientific work – often regardless of its other purposes or outcomes.

By starting from disparate perspectives, and bringing with us diverse forms of expertise -- but by limiting our field to a select range of images and questions -- our aim is exploratory and experimental, collaborative and inquisitive. Using conversation and dialogue as our experimental equipment, we hope to exchange perspectives and share demonstrations that reveal new questions. Some of them might even be sublime....



About the IVF Histories and Cultures Project (IVFHCP)

This collaborative research initiative began in 2005 as an investigation into the active culture of mammalian developmental biology in the UK after World War 2. This field has yielded some of the most important biomedical innovations of the late twentieth century, including in-vitro fertilisation (IVF), preimplantation genetic diagnosis (PGD), embryonic stem cell derivation, cloning, cryopreservation, chimeras, imprinting, epigenetics and regenerative medicine. We have been interested in how and why such a productive research area developed. Through an initial set of broadly focussed interviews conducted by Martin Johnson and Sarah Franklin with 'key players' in both basic science and also policy formation (now deposited in the British Library), we have concentrated increasingly on the recent history of IVF.

Our first conference was held in 2009 at Christ's College, Cambridge. On the 40th anniversary of the first generally accepted fertilization of a human egg *in vitro*, '40 Years of IVF' brought together an interdisciplinary group of scholars to explore the wider social significance of the rapid expansion of IVF. Our first research paper, examining 'Why the Medical Research Council Refused Robert Edwards and Patrick Steptoe Support for Research on Human Conception in 1971', was published in *Human Reproduction* in July 2010, shortly before the award to Edwards of the Nobel Prize for Physiology or Medicine in December of that year. A second conference, 'Futures in Reproduction', was held in December 2012 to commemorate and further

Edwards' concerns with basic science and reproductive biomedicine, as well as ethics, law and social policy.

Edwards' death in April 2013 was seen by many to mark a watershed in the history of IVF, and it is this history our project continues to explore through a number of interlinked initiatives including a British Academy-funded research project into 'IVF Histories' and an ESRC funded seminar series exploring 'IVF Histories and Cultures'. These are complemented by research being conducted by Martin Johnson and Kay Elder into the early years of IVF in Oldham and Cambridge, research on the history of feminist activism and scholarship concerning new reproductive technologies by Sarah Franklin, and research on representations of IVF in the media and parliamentary debate by Katie Dow. Together with Nick Hopwood, we are continuing to explore the many intersections and implosions thrown up by IVF histories and cultures, including the expansive visual culture of IVF, and its interface with the broadcast media, as well as the interfacing of IVF technology with both agricultural and clinical applications, leading to its emergence as an iconic translational technology.

Throughout our research, we have been grateful to the Wellcome Trust for many sources of support, including two Medical Humanities Research Resources grants and both a Strategic Award (Hopwood) and a Senior Investigator Award (Franklin). With these, and other, resources, we are continuing to conduct interviews, visit and catalogue archives, collect new archival materials and assist with their deposition, publish new articles, organise conferences, workshops and seminars, and build links with cognate researchers around the world. We have also benefited from the support of the British Library, the British Academy, the National Archive, the MRC, the ESRC, the RCOG, the London School of Economics, and both Christ's and Churchill Colleges at Cambridge.

British Library Interview Collection: Stage One Interviewees

John Biggers, Graham Cannon, Bruce Cattanach, Jenny Croft, Roy Cunningham, Frank Dobson, Kay Elder, Richard Gardner, Malcolm Godfrey, Chris Graham, Alan Handyside, Brigid Hogan, Martin Johnson, Mary Lyon, Anne McLaren, John Modle, Marilyn Monk, Virginia Papaioannou, Marcus Pembrey, Ralph Robinson, Roger Short, Duncan Thomas, Mary Warnock.

Archives

We have assisted in the deposit of material to the British Library (McLaren and Monk), LSE archives (PROGRESS and Braude), and Churchill College (Edwards). We are continuing to identify and collect archival material for deposit, as well as searching and identifying relevant material in numerous existing archives including: the National Archive at Kew (MRC papers), the Department of Health Repository (Warnock papers), the LSE (HFEA debate), Bourn Hall and the University of Cambridge.

Further information:

- '40 Years of IVF: 14th February 1969 – 2009'

http://www.pdn.cam.ac.uk/40yearsivf/commemorative_programme.pdf

- 'Why the Medical Research Council Refused Robert Edwards and Patrick Steptoe Support for Research on Human Conception in 1971' *Human Reproduction* 25:9:2157-2174 by Martin Johnson, Sarah Franklin, Matthew Cottingham and Nick Hopwood)

<http://humrep.oxfordjournals.org/content/25/9/2157.full>

- 'Futures in Reproduction' Conference: 15-16 December 2012

<http://www.pdn.cam.ac.uk/futuresinreproduction/speakers.html>

- Biological Relatives: IVF, stem cells and the future of kinship, by Sarah Franklin

<http://open.org/search?keyword=biological+relatives>

IVF HISTORIES AND CULTURES SEMINAR

PARTICIPANT BIOGRAPHIES

(in alphabetical order)



Suzanne Anker is a visual artist and theorist working at the intersection of art and the biological sciences. She works in a variety of mediums ranging from digital sculpture and installation to large-scale photography to growing plants with LED lights. Her work has been shown both nationally and internationally in museums and galleries including the Walker Art Center, the Smithsonian Institute, the Phillips Collection, P.S.1 Museum, the JP Getty Museum, the Medizinhistorisches Museum der Charite in Berlin, the Center for

Cultural Inquiry in Berlin, the Pera Museum in Istanbul, the Museum of Modern Art in Japan, and the International Biennial of Contemporary Art of Cartagena de Indias, Colombia. Her books include *The Molecular Gaze: Art in the Genetic Age*, co-authored with the late sociologist Dorothy Nelkin, published in 2004 by Cold Spring Harbor Laboratory Press, *Visual Culture and Bioscience*, co-published by University of Maryland and the National Academy of Sciences in Washington, D.C. Her writings have appeared in *Art and America*, *Seed Magazine*, *Nature Reviews Genetics*, *Art Journal*, *Tema Celeste* and *M/E/A/N/I/N/G*. Her work has been the subject of reviews and articles in the *New York Times*, *Artforum*, *Art in America*, *Flash Art*, and *Nature*. She has hosted twenty episodes of the Bio Blurb show, an Internet radio program originally on WPS1 Art Radio, in collaboration with MoMA in

NYC, now archived on Alana Heiss' Art On Air. She has been a speaker at Harvard University, Cambridge University, Yale University, the London School of Economics, the Max-Planck Institute, University of Leiden, the Hamburger Bahnhof Museum in Berlin, the Courtauld Institute of Art in London, Banff Art Center and many others. Chairing SVA's Fine Arts Department in NYC since 2005, Ms. Anker continues to interweave traditional and experimental media in her department's new digital initiative and the Nature and Technology BioArt Lab.

<http://bioart.sva.edu>

<http://www.suzanneanker.com>



Liberty Walther Barnes is a medical sociologist and gender scholar. She holds Ph. D. and M.A. degrees in Sociology from the University of California at San Diego (UCSD) and a Bachelor's degree in Media Arts from Brigham Young University (BYU). She is the author of *Conceiving Masculinity: Male Infertility, Medicine, and Identity* (Temple University Press 2014), based on her ethnographic study of male infertility in the United States. Liberty's research and teaching interests are in the fields of medicine, gender, masculinities,

reproduction, feminist theory and the body. While her previous research analyzed the social constructions of gender and disease in medical clinics and the personal lives of infertile men, her new research explores the historical development of male reproductive science.

<http://libertybarnes.com/>



Christina Benninghaus

I am currently working on a book on 'Infertility: The making of a modern experience, Germany 1870–1930'. It analyses how infertility was understood, experienced and dealt with during the late 19th and the early 20th centuries. To this purpose, I look at demographic debates and statistics, at medical texts and medical case

records, at advice literature and autobiographical writings and at sources concerning adoption. I argue that changes in biological and medical knowledge but also in the broader cultural conception of parenthood combined with a growing willingness to engineer one's own biography through the use of both social and medical technologies. Due to these changes, infertility took on a new and decisively modern meaning decades before IVF became available.

My previous work has focussed on the history of youth and on social protest in Germany, 19th and 20th centuries. A social and cultural historian by training, I got increasingly drawn towards the history of science and medicine. I am particularly interested in understanding how medicine and the life sciences affected every-day practices, how they informed and altered social interactions and how they shaped experiences and perceptions of the self, the body, and intimate relations.



Christina Brandt

I am a historian of life sciences, working at the Ruhr University Bochum in both, the interdisciplinary Mercator Research Group “Spaces of Anthropological Knowledge” and in the Department of Philosophy. Before, I was a research scholar at the Max Planck Institute for the History of Science in Berlin (2003-2010). My research encompasses a wide spectrum of questions on epistemic and

cultural issues of knowledge production in the history of sciences. I have specialized in analyzing late 19th-century heredity studies, and genetics around 1900, and, in particular, 20th-century molecular biology (“Metapher und Experiment. Von der Virusforschung zum genetischen Code”, Göttingen 2004). I am currently completing a book project on *A history of the clone. Techniques of reproduction in 20th century life science and culture*. In this project, I trace the circulation of the clone concept through diverse scientific and cultural fields from around 1900 until the early 1980s. My recent research considers the history of embryo research, the related public debates and the emergence of bioethics in Germany in the 1970s and early 1980s.



Katie Dow joined ReproSoc as a research associate in 2013. Her main interest is in the ethical questions provoked by assisted reproductive technologies and the connections people make between reproduction and everyday ethics. Katie gained her PhD in social anthropology from the London School of Economics in 2010. She was subsequently awarded an ESRC postdoctoral fellowship, which she took up at the University of Edinburgh.

As part of ReproSoc, Katie is working on various interrelated projects on the British public and media debate around the development of IVF and associated technologies in the latter half of the twentieth century. She is also currently editing a journal special issue on the contemporary relationship between nature and ethics and working on various publications from her doctoral research.



Kay T Elder BSc (Hons) MBChB PhD

Kay joined the team at Bourn Hall in 1984 as Clinical Assistant to Mr Patrick Steptoe. Her scientific background as a research scientist at Imperial Cancer Research Fund prior to a medical degree at Cambridge University naturally led her to Professor Edwards and the IVF laboratory, where she worked as a senior embryologist from 1987. A programme

of Continuing Education for IVF doctors, scientists and nurses at Bourn Hall was established in 1989, which she directed for 16 years. During this period she also helped in the foundation and running of two Master's degree programmes in Clinical Embryology, and continues to mentor and tutor postgraduate students of Clinical Embryology at the University of Leeds. She was Deputy Editor at RBMonline from 2006-2008, and has authored, co-authored and edited a number of student textbooks, including 3 editions of *In Vitro Fertilization* (CUP 1997, 2000, 2011), *Infections, Infertility and Assisted Reproduction* (CUP, 2005), *Human Embryo Evaluation and Selection* (Informa Healthcare, 2007), *Atlas of Oocytes, Zygotes and Embryos in Reproductive Medicine* (CUP, 2012). In her current role as Senior Research Scientist at Bourn Hall she co-ordinates research collaborations with the MRC Laboratory of Molecular Biology in Cambridge and the MRC National Institute for Medical Research in Mill Hill.



Tom Fleming is Professor of Developmental Biology in the Centre for Biological Sciences at the University of Southampton, UK. Tom graduated in Zoology from University of Wales (1972), obtained his PhD from University of London (1979), was a postdoc at University of Keele until 1981 and then Senior Research Associate at Cambridge University before moving to Southampton in 1988.

Tom's group are currently interested in how the environment of the oocyte and preimplantation embryo may influence the developmental programme and long-term potential into adulthood. Our work indicates maternal diet (in vivo), maternal sickness (in vivo) or IVF-related culture conditions (in vitro) around the time of conception may modify developmental potential with important implications for adult health and disease risk affecting cardiovascular and metabolic physiology, behaviour, and immune reactivity. Our studies comprise a range of molecular, epigenetic, cellular and physiological technologies to help understand the legacy of early embryonic environment.

Tom has been Editor-in-Chief of *Reproduction* over 2008-end 2012, is an editorial board member for several reproductive/developmental biology journals, is a Council member and Treasurer Elect of the Society of

Reproduction and Fertility (SRF), is current member of Society for the Study of Reproduction Awards and Nominations committees, and sits on various grant committees and advisory boards including National Institute of Child Health and Development (USA). He became an RCOG Fellow *ad eundem* and was awarded the Marshall Medal from SRF in 2013.



Sarah Franklin began her research on IVF in 1986 in Birmingham where she conducted one of the first ethnographic studies of assisted conception technology, later published as *Embodied Progress: a cultural account of assisted conception* (Routledge, 1997). While completing her PhD and lecturing at

Lancaster University, she worked with Marilyn Strathern on the ESRC funded study that was published as *Technologies of Procreation: kinship in the age of assisted conception* (Manchester, 1993). Between 1998 and 2003, she co-edited three conference-based anthologies: *Reproducing Reproduction: kinship, power and technological innovation* (with Helena Ragone, Penn 1998); *Relative Values: the reconfiguration of kinship studies* (with Susan McKinnon, Duke 2001) and *Remaking Life and Death: toward an anthropology of the biosciences* (with Margaret Lock, SAR 2003). These volumes, along with her single authored monographs *Dolly Mixtures: the making of genealogy* (Duke 2007) and *Biological Relatives: IVF, stem cells and the future of kinship*, have substantially contributed to the social study of reproductive technology. She was elected to the Chair of Sociology at Cambridge in 2011, and is a Fellow of Christ's College.



Richard Gardner studied Natural Sciences at St Catharine's College Cambridge before doing a Ph.D in the University's Physiology Department under the supervision of Robert Edwards. In 1973 he was appointed to a University Lectureship in Zoology at Oxford where, from 1978 til his retirement in 2008, he held a Royal Society Research

Professorship. His research interests include investigating the lineage and patterning of cells in early mammalian development and the biology and properties of the various types of stem cells derived from early embryos.

He was awarded the Zoological Society's Scientific Medal in 1977 and was elected to the Royal Society in 1979. He received the March of Dimes Prize in Developmental Biology in 1999, the Royal Society's Royal Medal in 2001, a Knighthood in 2005 and an Honorary Doctorate from Cambridge in 2012. For many years he chaired the Royal Society's working group on 'human embryo research', and served recently as President of the Institute of Biology (now the Society of Biology).



Eva Gillis-Buck works in the Department of Stem Cell and Regenerative Biology at Harvard University and will begin medical school next term at the University of California, San Francisco. She received an MPhil in the History and Philosophy of Science from the University of Cambridge and an A.B. in developmental biology and gender studies from Harvard College. Her research interests

include gender-specific medicine and reproductive technologies



Gina Glover is a recipient of the Royal Photographic Society's Hood Medal, and twice winner of the Medical Research Council's Visions of Science Award. Her work ranges from playful explorations of the biomedical sciences, long term studies of way in which the landscape has been altered by human conflict, to social-psychological explorations of the landscape. Glover's biomedical studies

are exhibited in around 20 hospitals, clinics and private collections in Britain and worldwide, including the Gregor Mendel Institute, Austria. Her latest book, *The Metabolic Landscape*, features nuclear power in France, hydroelectric power in Wales, coastal erosion in England, coal mining in the Arctic, fracking in the USA and glacier melting in Greenland. It will be published by Black Dog Publishing in June 2014.



Zeynep Gurtin is a Research Associate at ReproSoc. Her research interests concern the social and ethical issues surrounding the globalization of assisted reproductive technologies. Her work specializes in three areas: IVF in the Middle East, egg-donation and egg-sharing, and "reproductive tourism". Her PhD thesis, "The ART of Making Babies", provides an analysis of the cultural constructions of in vitro

fertilization (IVF) in Turkey, combining archival analysis of media and regulatory materials with ethnographic research and in-depth interviews with IVF patients and practitioners.



Nick Hopwood is a Reader in the Department of History and Philosophy of Science, University of Cambridge, where he teaches history of science and medicine and runs the Wellcome Trust-funded 'Generation to Reproduction' programme that is reassessing the history of reproduction from antiquity to the present day. Trained in developmental biology, he is the author of *Embryos in Wax* (2002), co-editor of

Models: The Third Dimension of Science (2004), and co-curator of the online exhibition *Making Visible Embryos* (www.hps.cam.ac.uk/visibleembryos). Chicago will publish *Haeckel's Embryos: Images, Evolution and Fraud* in January 2015. He is currently writing a history of visualizing human embryos, co-editing a book for CUP on *Reproduction: From Antiquity to the*

Present Day and working, with Martin Johnson and Sarah Franklin, on the history of IVF.



Karen Jent's Ph.D. project is an ethnography of regenerative medicine in Scotland and explores stem cell therapeutic development and the laboratory-based regrowth of tissues and organoids for the aging body. The project further examines technologies of translation that combine fundamental biology, clinical medicine

and society. She received her M.A. (2013) and B.A. (2010) from the Department of Social and Cultural Anthropology at the University of Zurich.

Her research concerns include questions of health and disease, knowledge and expertise, science and technology, aging and rejuvenation, biological matter and the body, gender and feminist theory.



Martin Johnson FRCOG, FMedSci, FRS

Martin H Johnson is an Editor of RBM Online and Emeritus Professor of Reproductive Sciences in the Department of Physiology, Development and Neuroscience at the University of Cambridge UK. He was, with Richard Gardner, Bob Edwards' first graduate student (1966-1969), and opened the Nobel Symposium on Bob's work in Stockholm, 2010. He is author of *Essential Reproduction* (seventh edition,

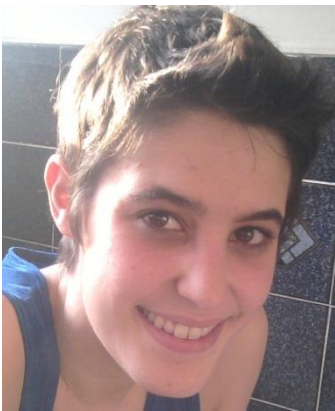
Wiley Blackwell, January 2013), co-editor of *Sexuality Repositioned* (2004), *Death Rites and Rights* (2007) and *Birth Rites and Rights* (2011), and has

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authored over 270 papers on reproductive and developmental science, history, ethics, law and medical education. He was chair of the British Society for Developmental Biology (1984-89); the first CIBA Foundation Public Debate Annual Lecturer on “Human Embryo Research”, Swansea (1990); a member of the Human Fertilisation and Embryology Authority (1993–1999); treasurer and founding scientific member of the Cambridge Socio-legal group (2000-2014); and specialist scientific advisor to the Joint Lords and Commons Committee scrutinizing the Draft Human Embryos and Tissue Bill (2007). He is Fellow and Tutor at Christ’s College, where he was previously Vice Master and President.



Sara Lafuente Funes is a Ph.D student who holds a pre-doc scholarship at the Institute of Public Goods and Policies (IPP) at the Spanish National Research Council (CSIC). She got her Master’s degree at the London School of Economics on the program ‘Biomedicine, Bioscience and Society’ and her bachelors in Sociology at Universidad Complutense de Madrid. Her thesis, supervised by Vincenzo Pavone, CSIC, and Rubén Blanco, UCM, studies imaginaries and expectations around

eggs within scientific contexts. In particular, she is interested in the imaginaries around eggs within different types of research, such as parthenogenesis research, stem cell research and research on human assisted reproduction. She follows a Feminist STS perspective in dialogue with feminist economics and queer theory. Her Master’s thesis ‘Parthenogenesis: A Feminist Approach to its Imaginaries within the Scientific Community’ focused on imaginaries around parthenogenesis on the news found in *Science* and *Nature* during the last twenty years. She is also part of the research group BioARReMe, whose main researcher is Vincenzo Pavone and which is founded by the Spanish Ministry of Economics to study ‘The Bioeconomy of Reproduction: the mutually

constitutive interaction between assisted reproduction and regenerative medicine’.



Janelle Lamoreaux is a Research Associate in ReproSoc who specializes in the anthropology of science, technology and medicine with an emphasis on reproduction, kinship, and gender. As a recent graduate of the University of California and San Francisco's Joint Program in Medical Anthropology, her dissertation investigates the relationship between reproductive and environmental health in China, especially as it relates to male infertility. When not rambling around Cambridgeshire or

tending to her garden, Janelle is working on a book manuscript currently titled *Infertile Futures: Producing and Reproducing the Chinese Environment*.



Merete Lie is a social anthropologist and professor at Norwegian University of Science and Technology (NTNU), Department of Interdisciplinary Studies of Culture. Her field of research is gender, science and technology;

including globalization, ICT, ART and bioethics. She is at present leader of the research projects ‘Inside Out’ and ‘Reproductive Relations. The Production of Gendered Meaning in the Field of Reproduction’ (supported by Research Council Norway). She has edited/co-edited *Making technology our own? Domesticating technology into everyday life* (Scandinavian University Press 1996); *He, She and IT Revisited. New Perspectives on Gender in the Information Society* (Gyldendal Academic 2003); and *The Social Meaning of Children and Fertility Change in Europe* (Routledge 2013).

Merete Lie is head of the Centre for Gender Research at NTNU and leader of the National Research School in Gender Studies.



Ilana Löwy is a senior researcher at INSERM (Institut National de la Santé et de la Recherche Scientifique), Paris. Trained as a biologist, with a PhD in immunology, she then retrained as a historian of science and medicine. Her main research interest are relationships between laboratory sciences, clinical medicine and public health. She is interested in history of bacteriology and immunology, tropical medicine, history of oncology and the intersection between gender studies and biomedicine in areas such as female cancers, contraception or the medicalization of pregnancy. Another area of interest is the epistemology of Ludwik Fleck, and its importance for the understanding of present-time biomedicine. She is studying now the history of birth defects and prenatal diagnosis, with a special focus on the ways new biomedical technologies radically modify the perception of normal / acceptable human being. Her recent books publications are: *L'emprise du genre: Masculinité, féminité, inégalité*, La Dispute, 2006; *Preventive Strikes: Women, Precancer and Prophylactic Surgery*, Johns Hopkins University Press, 2009; *A Woman's Disease: A History of Cervical Cancer*, Oxford University Press, 2011.



Reuben Message is a PhD candidate in Sociology at the London School of Economics. He is pursuing a historical project focused on the technical development and economization of nonhuman reproduction, particularly in the area of fish and fish farming. He has previously worked as a research assistant on the history of British mammalian developmental biology initiative, an experience he

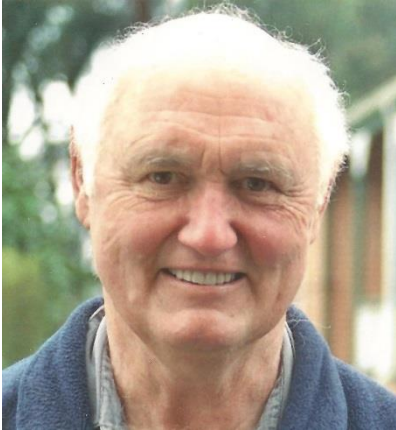
holds partly responsible for his ongoing interest in the study of social and biological reproduction and reproductive technologies in Britain.



Marilyn Monk is a research scientist in the fields of molecular biology, early development and cancer. She is Emeritus Professor of Molecular Embryology at University College London, and Honorary Professor at Melbourne and Monash Universities, Australia. Her research began with bacteria - the study of DNA replication and repair, isolation of transmissible elements (plasmids), and

induction of bacteriophage lambda. This was followed by a move to cell signalling in the cellular slime mould, *Dictyostelium*, to define the parameters of aggregation of fields of single amoebae into a multicellular organism. With another career change in the early 70's, she refined her molecular techniques to enable studies of gene expression and its regulation in mouse early development. Her work resulted in several paradigm shifts – notably the discovery of the late origin of the germ line (disproving Weissman's doctrine of continuity of the germ line for mammals) and, following an early demonstration of epigenetic regulation of gene expression by methylation of the DNA base cytosine, the discovery of deprogramming and reprogramming in early development. Her group developed a wide range of single cell molecular techniques to study gene expression, gene modification and gene mutation at the sensitivity of the single cell. These techniques were applied in pioneering experiments to demonstrate the feasibility of pre-implantation diagnosis of genetic disease. In subsequent work, she hypothesised that deprogramming may also be an initiating event in tumour formation and, together with Cathy Holding, isolated embryonic genes that were re-expressed in cancers.

Embryo/cancer genes, not expressed in normal tissues, might lead to a prophylactic vaccine to prevent cancer with ageing.



Robert Moor

After completing my doctorate in Cambridge it was my privilege to join the Unit of Reproductive Physiology and Biochemistry, commonly referred to as the Cambridge Animal Research Station. Despite its exceptional productivity, the Animal Research Station was closed during the Thatcher years and the staff were moved to the Babraham Institute

where I headed the Department of Molecular Embryology until my retirement.

My scientific interests centre around the development of the mammalian egg, the nature of the ovarian environment in which the egg develops and the means by which the embryo signals its presence to the mother in early pregnancy. The technology required for these studies ranged from the molecular to the whole animal but my research has always been most absorbing when conducted at the level of the single cell.



Dmitriy Myelnikov is a PhD student in the History and Philosophy of Science department who is finishing a thesis on the history of genetically modified mice. His interests lie in the history and sociology of post-war biomedical sciences, human-animal interactions and science-media relations. He is currently assisting with cataloguing and digitising Robert G. Edwards's slide and photographic archive.



Barbara Orland is senior lecturer (Privatdozentin) for history of life sciences at the University of Basle/Switzerland. In 2011 she replaced the professor for history of science at the University of Konstanz. In 2007/2008 she has been awarded the Käthe-Leichter guest professorship at the University of Vienna (Institute of Economic and Social History, Contemporary History Institute). Before she worked as a senior scientist at the Federal Institute of Technology Zurich, among others at the chair „History of Technology“ (1999-2004) and the Collegium Helveticum. Between 2004 and 2007 she was the managing director of the Center „History of Knowledge“ from the Federal Institute of Technology and the University Zurich. Her current research interests cover different fields of the history of life sciences and biomedicine.



Manuela Perrotta's research work is at the interface between Organization Studies on the one hand and Science and Technology Studies on the other. Her main research interests concern the relation among learning, work and innovation in organizations. Her

forthcoming research focuses on the study of techno-organizational innovations, especially in the fields of healthcare and biotechnologies. In the last years she has published in Italian and international journals such as “Organization”, “Management Learning”, “Society and Business Review”, “Rassegna Italiana di Sociologia”, “Studi Organizzativi”. She is currently on the Editorial Board of *Tecnoscienza – Italian Journal of Science and Technology Studies*.



Geof Rayner received his PhD (Sociology) from London University. He is formerly professor associate in public health at Brunel University and former chair of the UK Public Health Association. His most recent book is *Ecological Public Health: Reshaping the Conditions for Good Health*, Earthscan/Routledge 2012 (with Tim Lang). *The Metabolic Landscape: Perception, Practice and the Energy Transition*, Black Dog Publishing (with Gina Glover and Jessica Rayner) is available in June, 2014.



Susan Squier is Julia Brill Professor of Women's Studies and English at Penn State University. She is the author or editor of nine books, including *Babies in Bottles: Twentieth-Century Visions of Reproductive Technology*; *Liminal Lives: Imagining the Human at the Frontiers of Biomedicine*; *Poultry Science, Chicken Culture: A Partial Alphabet*; *Communities of the Air: Radio Century, Radio Culture*; and *Playing Dolly: Technocultural Formations, Fantasies, and Fictions of Assisted Reproduction* (with E. Ann

Kaplan). She is a co-organizer of the annual international "Graphic Medicine" conferences (held in London, Chicago, Toronto, and Brighton) which will take place in Baltimore, MD, June 26-29, 2014, with the theme "Comics & Medicine: From Private Lives to Public Health." Squier serves on the Editorial Boards of the Penn State Press and the journals *Configurations*, *Literature and Medicine* and *Journal of the Medical Humanities*. A coeditor of the *Graphic Medicine* book series at PSU Press.



Lucy van de Wiel is a funded PhD candidate at the Amsterdam School of Cultural Analysis, University of Amsterdam, under the supervision of Prof. dr. Mieke Bal, Prof. dr. José van Dijck and dr. Esther Peeren. Her research focuses on the changing understandings of ageing and the reproductive body as displayed in public, political and medical discourses surrounding oocyte cryopreservation.

Lucy van de Wiel holds a BA (English Language and Culture, cum laude) and Research MA (Cultural Analysis, cum laude) from the University of Amsterdam. She pursued postgraduate studies as a HSP and Fulbright grantee in Rhetorics at the University of California, Berkeley and was Graduate Research Assistant of Professor Judith Butler. Lucy did an internship at UNESCO, Paris, worked for the executive boards of the UvA, VU and has been a 3-year member of the accreditation committee of research masters for the Royal Dutch Academy of Arts and Sciences (KNAW). Prior to the start of the PhD project, she graduated with distinction in the MA Film Curating at the London Film School and London Consortium, University of London.



Jonathan Van Blerkom is a Professor in the Department of Molecular, Cellular and Developmental Biology at the University of Colorado, Boulder, and IVF Laboratory Director at Colorado Reproductive Endocrinology in Denver. He has published widely in the field of molecular and cellular aspects of early mammalian development, including the human, and his current research interests include

studies of the role of mitochondria in the regulation of developmental competence at the molecular and plasma membrane levels. He holds editorial positions in several journals in the field of developmental and reproductive biology, was named Embryologist of the Year for 2013 by the American College of Embryology, and was the 2013-2014 recipient of the University of Colorado Faculty Assembly Award for Excellence in Research.



David Whittingham

Emeritus Professor of Embryology St George's, University of London. Former Director of the MRC Experimental Embryology Unit and Professor Reproductive Physiology, Medical School University of Hawaii. His initial studies were on the nutrient requirements of the early mammalian embryo and

the problems of the so-called "2-cell block" experienced by mouse embryos grown in vitro. He found that pyruvate was the only extracellular energy source able to support maturation of the mouse oocyte and development of the zygote through the first cleavage division. Much of this early work contributed to the development of suitable media for oocyte maturation, IVF, embryo culture, transfer and storage in the human and other mammals. He achieved the first successful fertilization of mouse oocytes in vitro and the birth of live young. At the time it was only the second mammal in which IVF and the birth of live young had been obtained. Interest in low temperature storage of embryos led to the first successful preservation of mouse embryos. The basic technique has been adapted and used successfully for a variety of mammals including domestic livestock and the human. Some other achievements in gamete and embryo storage were vitrification of oocytes and embryos, freeze-drying of sperm and cryopreservation of primate and rodent ovarian tissue.

He also contributed to our knowledge of the activation of the mammalian egg at fertilization through studies of parthenogenesis and fertilization. Together with his student Roy Cuthbertson they discovered the unique pattern of Ca^{2+} oscillatory activity initiated in the mammalian oocyte by the fertilizing spermatozoon. Subsequently his colleague Karl Swann showed that a protein isolated from sperm triggers this unique pattern of oscillatory activity. In the 1980s colleagues in his Unit were responsible for producing the first animal model with a pre-selected genetic modification - the HPRT-deficient mouse model of Lesch-Nyhan syndrome - from a spontaneous mutation in a mouse embryonic stem cell line. With this model he showed

together with Alan Handyside and Marilyn Monk the feasibility of diagnosing an inherited defect in an embryo before implantation.



Steen Malte Willadsen

Born in 1943 in Copenhagen. Married since 1985. Two children.

Graduated from the Royal Veterinary College in Copenhagen 1969. After one and a half years in general practice, three years as a research student at the Royal Veterinary College. Major themes: In Vitro Maturation of

Bovine Oocytes, and Bovine Leucocyte Histocompatibility Antigens. Research scientist at the Animal Research Station, Cambridge, 1973-85. Main themes: Embryo Freezing (with a view to long term storage and long distance transport of livestock embryos, Blastomere Separation & Aggregation (with a view to production of genetically identical animals and chimaeras), and Nuclear Transfer Involving Eggs and Embryos (with a view to cloning of livestock embryos and animals). From 1985 to 1992, cattle embryo cloning ventures in Texas and subsequently Alberta. Between 1994 and 2008, experimental embryology in the mouse and human in New York and New Jersey, and, in the nineties, clinical human embryology in Orlando. Main themes: Egg activation, Parthenogenesis, Embryo Fragmentation, Nucleus and Spindle Manipulation, Nucleus/Cytoplasm Transfer within and between Species, Alternative Approaches to Fertilization, Intra- and Inter-species Chimaerism, and Instrumentation and Procedures of Relevance in Embryo Culture and -Manipulation. Since 2008: cooling of heels and reflection in Orlando, Florida.



Clare Williams

Professor of Medical Sociology, Dept of Sociology & Communications, Brunel University London.

Having previously worked as a nurse and health visitor for 22 years, I was awarded my PhD in Sociology in 1998. Following 10 years at King's College London, I joined the Department of Sociology & Communications at Brunel in 2011.

Having completed two years as Head of Research for the School of Social Sciences, I have just been appointed to the cross-University role of Dean of Research. In 2007, whilst at King's, I helped establish and became the Director of the Centre for Biomedicine & Society (CBAS). Although my interests are diverse, I am essentially a qualitative medical sociologist. My research focuses on four inter-related areas: the sociology of biomedical ethics; gendered experiences of chronic illness; the sociology of medical/scientific professions; and the development of new medical technologies. My current research (funded by a 5 year Wellcome Trust Strategic Award) explores the social, medical, scientific and ethical aspects of innovations in biomedicine, particularly the interface between the lab and the clinic in the fields of pre-implantation genetic diagnosis, stem cell research, embryo donation and experimental neuroscience. I am currently UK representative on the International Stem Cell Ethics Forum.

Generation to Reproduction

Cambridge historians of medicine and biology are using a Wellcome strategic award to take a concerted approach to the history of reproduction. The cross-disciplinary group of researchers will offer fresh perspectives on issues ranging from ancient fertility rites to IVF. Building on a lively field of historical investigation, this will provide a fresh basis for policy and public debate.

‘Generation’ and ‘reproduction’ are at the heart of ‘life-cycle’ medicine. They involve

- theories of sex and gender;
- entities such as seeds, germs, embryos, monsters and clones;
- concerns about creation, evolution, degeneration and regeneration;
- investments in maternity, paternity and heredity;
- practices of fertility control, potency and childbirth; and
- health relations between citizen and state, individual and population.

‘Generation to reproduction’ thematizes gradual, long-term shifts and modern transformations. Within an all-encompassing process of ‘generation’, the human acquisition of a rational soul was the crucial event. In the era of revolutions around 1800 this gave way to the more narrowly framed ‘reproduction’. Reproduction became an object of scientific knowledge, a target of medical and agricultural intervention, and a project for pressure-groups and states seeking to improve the quantity and quality of populations. Since World War II, scientific, social and ethical innovation has been particularly dramatic. But the term ‘generation’ has not disappeared; it has rather acquired new meanings, from ‘F1’ to ‘generation X’.



The Reproductive Sociology Research Group was established in October 2012 to develop and support funded research on the technological transformation of reproduction and related forms of social and cultural change. Led by Sarah Franklin, ReproSoc is designed to add a specifically sociological perspective to the wider context of reproductive studies at Cambridge. It builds on a number of projects including the Cambridge Interdisciplinary Reproduction Forum (CIRF), and the Generation to Reproduction Programme led by Nick Hopwood in HPS, and the IVF Histories and Culture Project (IVFHCP). ReproSoc has close ties to Susan Golombok's Centre for Family Research (CFR) as well as to CRASSH, Cambridge's Centre for Research into the Arts, Social Sciences and Humanities. It is based in the Department of Sociology and has funding from a range of sources including the Wellcome Trust, British Academy, ESRC, ERC and Office of the Vice Chancellor.

ReproSoc currently consists of 15 members who meet regularly throughout the year to share and develop research in progress. Our five postdocs are Dr Zeynep Gurtin, Dr Liberty Barnes, Dr Katie Dow, Dr Janelle Lamoreaux and Dr Marcin Smietana. Our Project Manager and Research Administrator is Rhiannon Williams, who is aided by two Research Assistants, Dilar Dirik and Dmitriy Myelnikov. Martin Johnson is a Consultant to the research group and six PhD students are linked to ReproSoc: Robert Pralat, Katie Hammond, Melisa Trujillo, Dilar Dirik, Dmitriy Myelnikov, and Karen Jent.

Our research covers a broad range of topics from cross-border reproductive care, the history of IVF, male infertility treatment, infertility and toxicology in China, surrogacy, stem cell research, non-heterosexual parenting aspirations, the IVF-stem cell interface, and IVF in Turkey. By combining historical and ethnographic approaches to the intersection of reproduction,

technology and society, our aim is to develop more generalizable sociological claims about, for example, changing definitions of nature and ethics, the biologization of technology, translational biomedicine, the political economy of reproduction, and theories of kinship and gender.

Our work thus contributes to sociology and anthropology, science and technology studies, social and oral history, feminist and queer theory, and the social study of biomedicine, bioscience and biotechnology, as well as other fields. We run a programme of visiting speakers, public lectures, workshops, conferences and other events that are open to the public and we welcome enquiries about us and our work via our webpage, which offers many resources related to the study of reproduction, technology and society. You can follow us on Twitter and Facebook, or join our mailing list for updates and announcements. We are committed to making outreach not only part of what we do, but part of how we learn, so we look forward to hearing from you and hope you visit us soon.

<http://www.reposoc.sociology.cam.ac.uk/>

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We are especially grateful to Sue O'Donnell for ably assisting us with the hosting of this event, and to the Cambridge University Travel Office.

Our efforts have been greatly aided by the kind generosity of the family of Robert Edwards, in particular Jenny and Meg, who kindly allowed us access to part of Bob's substantial archive. We would like also to acknowledge Gina Glover's ongoing support for the work of the Cambridge IVF Histories and Culture Project through permission to use her images, often without charge.

Special and final thanks are due to the members of the Reproductive Sociology Research Group (ReproSoc) -- in particular Katie Dow and Rhiannon Williams, who calmly and efficiently ensured no stone was left unturned in the pursuit of administrative perfection....



Generation
to Reproduction

repro
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IVF



HISTORIES AND CULTURES PROJECT