

# Rebecca C. Rancourt, Ph.D. B.Sc.

Nationality: USA · Date of birth: 03 Dec 1977

## Work Experience

Aug 2012 –present

**Charité - Universitätsmedizin Berlin**, Division of Experimental Obstetrics, Clinic of Obstetrics, Berlin, (Germany), **Postdoctoral Research Fellow** at the Plagemann laboratory.

- Deputy Head of Molecular biology and Epigenomics
- Scientific responsibility: design and implementation of epigenetic research projects. Establish ‘in house’ pyrosequencing technology and respective gene expression arrays.
- Managerial responsibility for: writing grants and funding proposals, budgeting and purchasing for the lab, and mentoring and training of doctoral students
- Freelance scientific European correspondent for epigenie.com
- Research focus: Investigate the effect *in utero* environment has on epigenetic factors such as methylation, and how this relates to the gene expression. Examine how developmental and maternal stressors (*e.g.* gestational diabetes) impact the infants’ epigenome.

May 2010 –July 2012

**Harvard School of Public Health** (Department of Epidemiology), and **Harvard School of Medicine** (Obstetrics and Gynecology Epidemiology Center, Brigham and Women's Hospital), Boston, MA (USA): **Postdoctoral Research Fellow** at the Michels’ laboratory.

- Scientific responsibility: design and implementation of epigenetic research projects
- Managerial responsibility for: budgeting and purchasing for the lab, assist with grants and funding proposals, and mentoring and training of post-doc fellows
- Freelance scientific correspondent for epigenie.com
- Research focus: The aim was to investigate the effect different *in utero* exposures have on epigenetic factors such as methylation, imprinted genes and expression in a large birth cohort. Established the lab’s methylation assays and gene expression assays at various genomic imprinted loci.

Dec 2002 – Sept 2005

**AVEO Pharmaceuticals**, Cambridge, MA (USA): **Senior Research Associate**.

- Scientific responsibility: chimeric mouse tumor model development
- Managerial responsibility: joined company during start-up phase and coordinated research in the core model development group
- Research focus: Principle blastocyst injector generating transgenic mice for cancer research. Designed targeting constructs for *in vivo* validation studies for potential drug and small molecule efficacy.

Jan 2000 – Dec 2002

**Wyeth (now: Pfizer)**, Andover/Cambridge, MA (USA): **Research Associate II**.

- Scientific responsibility: target gene identification and profiling
- Managerial responsibility: supervision and teaching of visiting scientist and interns
- Research focus: identifying target genes involved in Rheumatoid Arthritis through expression profiling (Affymetrix GeneChip) on diseased samples (arthritis murine model), as well as relevant cell lines.

## Education

Oct 2005 – Mar 2010

**University of Cambridge**, Department of Physiology, Development & Neuroscience, Cambridge (UK): **PhD student** at the Ferguson-Smith laboratory.

- Epigenetics research on a control element in an imprinted region: “Functional genomic analysis of an imprinting control region”
- Awarded the Gates Foundation’s Cambridge Scholarship

- 4-month guest researcher at the Forné laboratory, Institut de Génétique Moléculaire de Montpellier (France), performing the innovative Chromosome Conformation Capture (3C) technique
- Established the ES Cell culture laboratory protocols and trained other researchers

Aug 1996 – Dec 1999

**Syracuse University**, Syracuse (USA): **Bachelor of Science** in Biochemistry.

- Independent sensory research at the Department of Bioengineering and Neuroscience
- Undergraduate representative of the Institutional Animal Care and Use Committee

### Selected technical skills

<b>Molecular biology</b>	DNA isolation/preparation, cloning various vector systems ( <i>i.e.</i> plasmid, cosmid, genomic Bacterial Artificial Chromosomes), generating targeted constructs using REDET technology for BAC engineering, Southern blotting, PCR, RT-PCR) Luciferase assay system, <i>in vitro</i> methylation assay
<b>RNA</b>	RNA isolation, cDNA synthesis, qRT-PCR analysis, Northern blotting, Affymetrix GeneChip expression profiling, RNase protection assay (RPA)
<b>Epigenetic</b>	Pyrosequencing methylation analysis and assay design, SNP analysis, allele-specific expression analysis, chromatin- Chromosome conformation capture (3C) assay
<b>Cell culture</b>	Standard tissue culture practice with various cell lines (NIH3T3, HEK293 and HepG2), and generating stable and primary fibroblast cell lines. Mouse ES cell manipulation, derivation, and targeting. Biosafety level 2 – viral work with Adenovirus and Adeno-Associated Virus
<b>Mouse chimera</b>	Blastocyst injections, Piezo drill technology, genotyping, Husbandry-breeding colonies, embryo isolation, survival surgery: embryo transfer – uterine and oviduct, and necropsy
<b>Bioinformatics</b>	Genome resources (NCBI, UCSC), DNA sequencing programs, Vector NTI, PyroMark assay design

### Further skills

<b>Languages</b>	English (native), French (basics), German (elementary A2.3 level currently being extended)
<b>IT</b>	MS Office (extensive experience in Word, PowerPoint, Excel, Access)
<b>Hobbies</b>	Competitive rowing (including Darwin College captain and coach), traveling and gardening

### Publications and scientific correspondence

**Rancourt, R.C.**, Harris, H, and Michels, K.B., *Methylation levels at imprinting control regions are not altered with ovulation induction or in vitro fertilization in a birth cohort.* 2012, Human Reproduction

Non, A.L., Binder, A.M., Barault, L., **Rancourt, R.C.**, Kubzansky, L.D., and Michels, K.B., *DNA methylation of stress-related genes and LINE-1 across the healthy human placenta,* 2012, Placenta

**Rancourt, R.C.** and Barault, L., Chapter 4: *An Overview of Methodology behind Epigenetic Epidemiology Research,* Epigenetic Epidemiology, Springer Science Publishing, ISBN 978-94-007-2494-5 2012

**Rancourt, R.C.**, Presenter at 2012 Contribution of Epigenetics in Pediatric Environmental Health conference, San Francisco, CA, talk titled: *Methylation levels at imprinting control regions are not altered with fertility treatments*

**Rancourt, R.C.**, *Conference review: The Contribution of Epigenetics in Pediatric Environmental Health conference,* Press correspondent for Epigenie.com, 2012, <http://epigenie.com/conferences/the-contribution-of-epigenetics-in-pediatric-environmental-health/>

**Rancourt, R.C.**, *Conference review: Genomics Research conference,* Press correspondent for Epigenie.com, 2012, <http://epigenie.com/conferences/genomics-research/>

Conducted interviews as corresponded for Epigenie.com, 2011, <http://epigenie.com/Headlines/Interviews-Keystone-Environmental-Epigenomics-Dise.html>

**Rancourt, R.C.**, *Conference review: Environmental Epigenomics and Disease Susceptibility Keystone Symposia,* 2011, <http://epigenie.com/Highlighted-Conferences/Keystone-Environmental-Epigenomics-2011-Conference.html>

Zhou, Y., Rideout III, W.M., Zi, T., Bressel, A., Reddypalli, S., **Rancourt, R.C.**, Woo, J., Horner, J., Chin, L., Chiu, M.I., Bosenberg, M., Jacks, T., Clark, S.C., DePinho, R.A., Robinson, M.O., and Heyer, J., *Chimeric mouse tumor models reveal distinct pathway activation between ERBB family and KRAS dependent lung adenocarcinomas*, 2009, Nature Biotech.

**Rancourt, R.C.** and Ruf, N., *Insights from Keystone: advances in the understanding of epigenetic regulation of the genome*, Genome Medicine, 2009, 1, pp1-5.

Braem, C., Recolin, B., **Rancourt, R.C.**, Angiolini, C., Branchu, P., Court, F., Cathala, G., Ferguson-Smith, A. C., and Forné, T., *Genomic MAR and 3C-qPCR assay identify novel putative regulatory elements at the imprinted Dlk1/Gtl2 locus*, Journal of Biological Chemistry, 2008, 283, pp 18612-18620.

#### Publications in preparation

Plagemann, A. and **R. C. Rancourt**, *Perinatal Programming and Epigenetics*, American Journal of Obstetrics and Gynecology, invited review, Manuscript in prep.

Schellong, K., Neitzke, U., **R. C. Rancourt**, and Plagemann, A., *Long-term metabolic syndrome risk in SGA rats*, Manuscript in prep.

**R. C. Rancourt**, H. R. Harris, L. B. Barault and K. B. Michels, *The prevalence of loss of imprinting of H19 and IGF2 at birth*. Manuscript submitted for review.

**R. C. Rancourt**, and K. B. Michels, *Stability of bisulfite treated DNA*. Manuscript submitted for review.

K. B. Michels, H. R. Harris, L. B. Barault and **R. C. Rancourt**, *Loss of imprinting and birth weight*. Manuscript in prep.

**Rancourt, R.C.\***, Edwards, C.A.\*, Youngson, N.A, Strogantsev, R. Ito, M., Braem, C., Forné, T. & Ferguson-Smith, A.C., *Identification and Characterisation of Functional DNA elements within the Dlk1-Dio3 imprinted domain*. Manuscript completed waiting for submission \*co-first authors