

FA0702 “Maternal Interaction with Gametes and Embryos”
Priority areas for the first round of STSM Applications

STSMs within Workgroup 1. Experimental models

Applications for Short Term exchange visits between laboratories within the Experimental Models workgroup should be to share or learn new technologies of any form associated with any of the following scientific areas (all species) concerning maternal interaction with gametes and embryos. Whilst the areas identified are purposefully broad, priority will be given to innovative technologies most likely to enhance our understanding of these interactions in basic or applied fields and with the potential for new grant applications between participants:

- Standardisation of in vivo models for studying particular aspects of maternal interaction/communication with gametes and embryos
- Application of minimally invasive techniques to collect in vivo gametes/embryos and cells/fluids of maternal tract for creation of an interactive map/database of maternal interaction/communication with gametes and embryos
- Standardisation or set-up of in vitro models aiming to investigate the effect of maternal interaction/communication with gametes and embryos
- Application of sophisticated in vitro techniques aiming to mimic the dynamic environment which is present in the maternal genital tract
- Set-up of experimental models to study embryonic differentiation processes in vivo and in vitro

STSMs within Workgroup 2. Technologies and Systems Biology

Applications for Short Term exchange visits between laboratories within the **Technologies and Systems Biology** workgroup should be firstly for setting-up strategy to share or organizing a data base and secondly for learning new technologies, methods of any form associated with the scientific problems related to maternal interaction with gametes and embryos.

Whilst the areas identified are purposefully broad, priority will be given

1. to applications which include a clear description of the scientific problem under investigation, the model system that will be used for the study, and the methods for the recovery and preservation of samples. Applications may include – but are not limited to – the following technologies:
 - Cellular assays (signalling, life cell imaging ...)
 - Transcriptome profiling
 - Proteome profiling
 - Metabolic profiling
 - Transgenic reporter systems
 - Data mining and modelling
 - modulation of gene expression (e.g. RNAi)

2. to application that aim at collecting and organizing data in such a way that systems biology approach makes it possible (or open the possibility) to create an interactome map of maternal communication.
3. to application that aim enhancing our capability of manipulating the cell physiology in-vitro, with the potential of establishing a link between early signaling events inside the gametes (*under the influence of maternal environment*) and developmental disorders that are manifested late in the developmental process or life.

STSMs within Workgroup 3. Maternal nutrition

Applications for Short Term exchange visits between laboratories within the Maternal Nutrition workgroup should be to share or learn new technologies of any form associated with any of the following scientific areas (all species) concerning maternal interaction with gametes and embryos. Whilst the areas identified are purposefully broad, priority will be given to innovative technologies most likely to enhance our understanding of these interactions in basic or applied fields and with the potential for new grant applications between participants:

- Maternal nutrition effects in vivo on the biology and phenotype of the female reproductive tract
- Maternal nutrition effects in vivo on the biology and phenotype of gametes and embryos within the tract
- In vitro models of the interaction between maternal nutrients and the biology and phenotype of gametes, embryos and/or maternal tract cells/tissues.