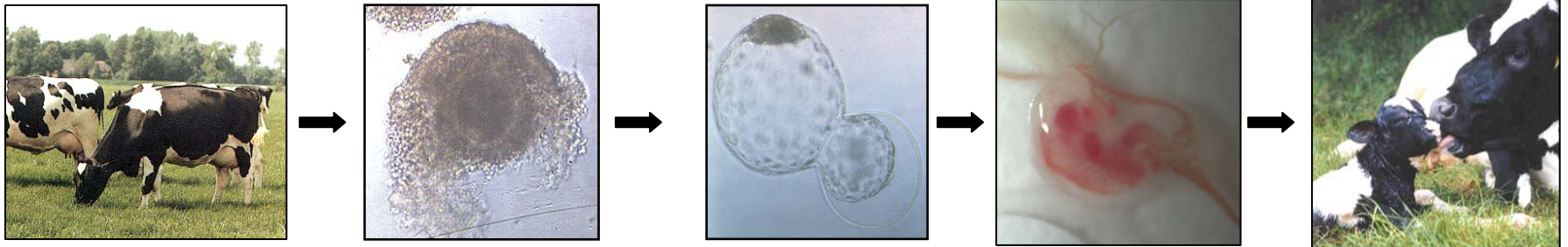


Research on Fertility in Cattle

UCD

Alex Evans



Reproductive Biology



45%



35%



25%

Fertility

(pregnancy rates to a single insemination)



40%

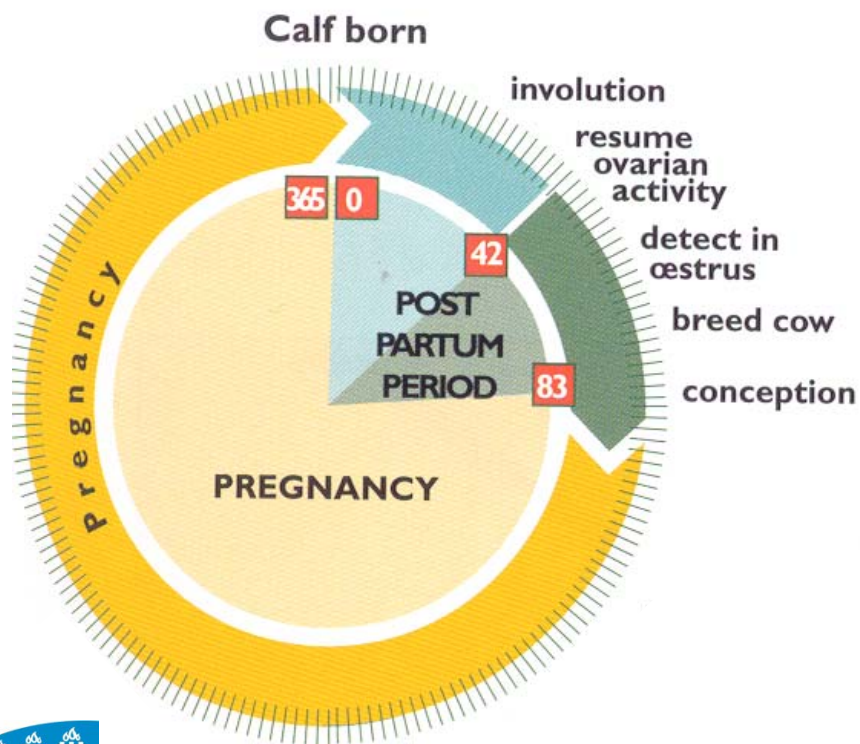


85%



90%

Postpartum Reproduction



Aim to have a calf per cow per year with peak lactation to correspond with peak grass growth



Reproduction – dairy cows

The issues

- Uterine involution
- Resumption of oestrous cycles
- Insemination and Fertilization
- Establishment of pregnancy
- Gestation
- Parturition



Reproductive Biology Research Cluster:

Discovering and manipulating molecules to enhance fertility



Commercial
partners

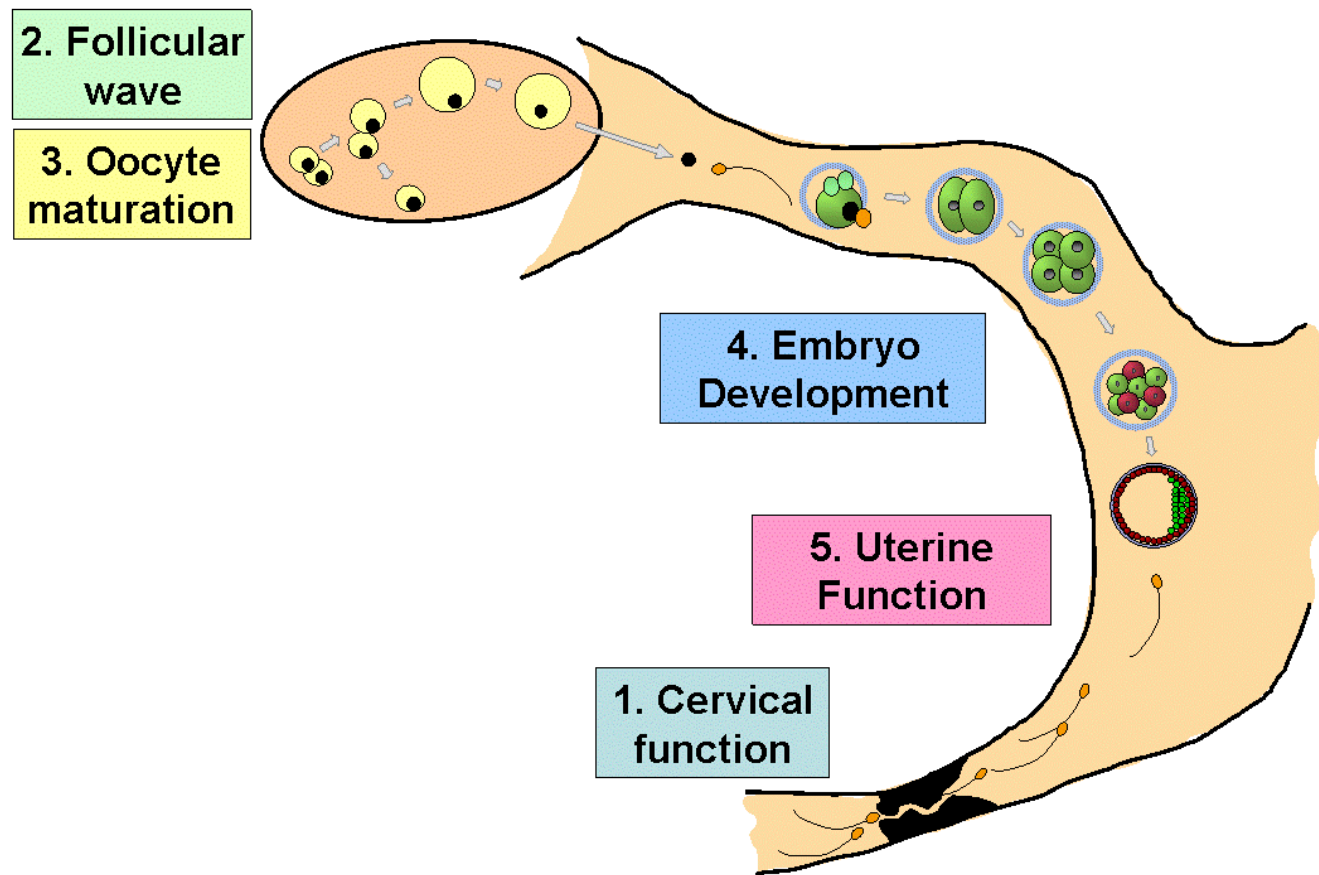


Reproductive wastage in dairy cows

- Fertilization Failure
 - 10 to 20 %
- Embryo mortality
 - 25 to 45%
- Reproductive wastage
 - Insemination to Recognition of Pregnancy: 35 to 65%



Reproductive Biology Research Cluster:



Reproductive Biology Research Cluster:

Issues

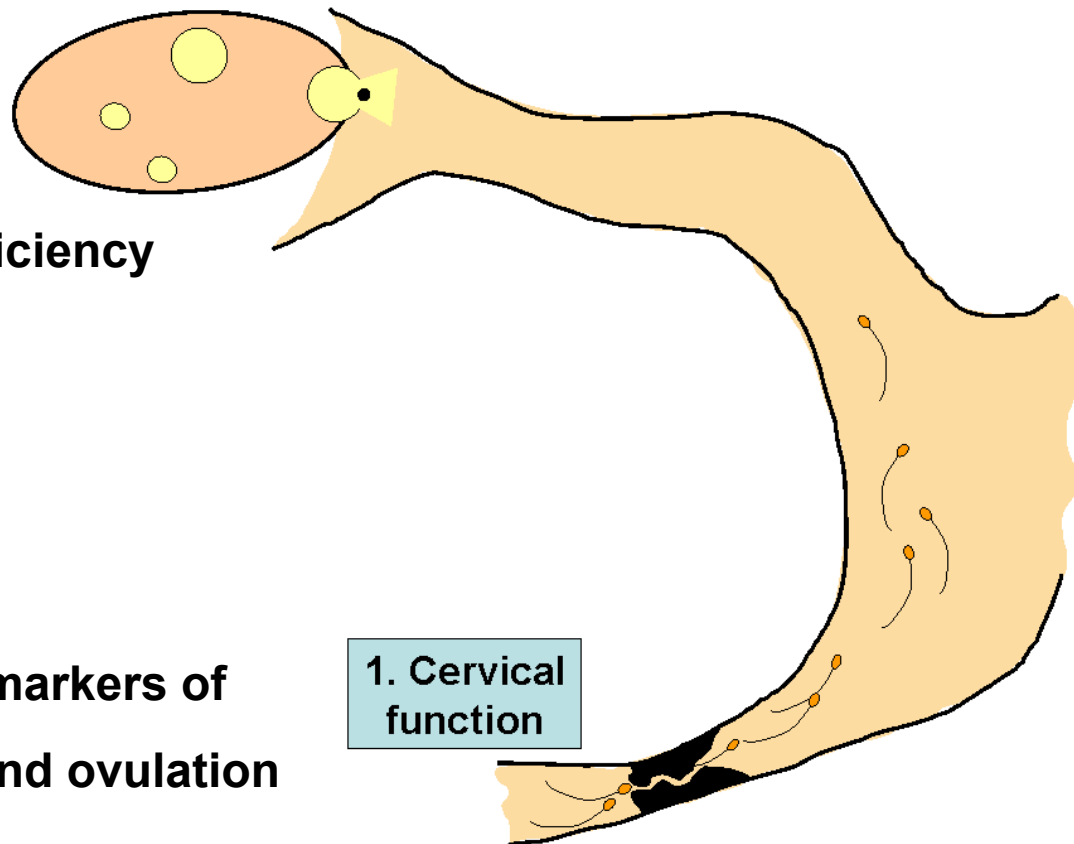
Heat detection efficiency

Sub oestrus

Timing of AI

Outputs

Cervical markers of
oestrus and ovulation



Reproductive Biology Research Cluster:

2. Follicular wave

Issues

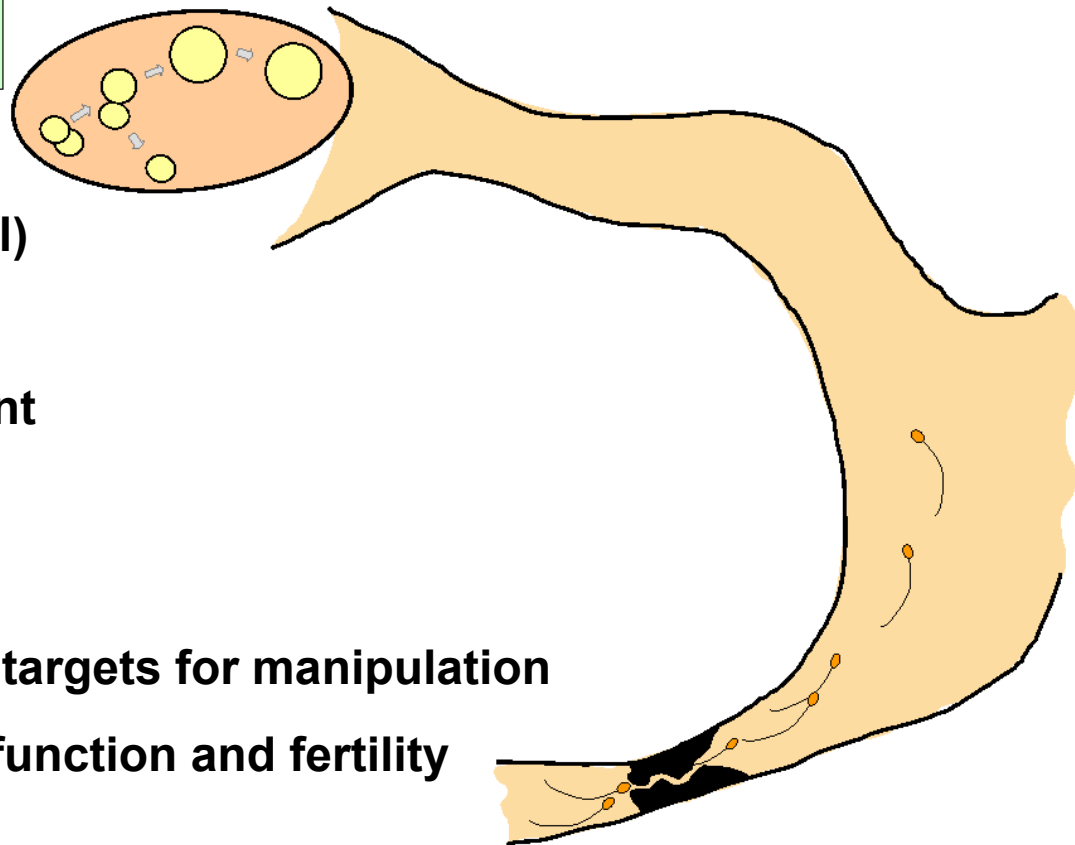
Oestrus (oestradiol)

CL function

Oocyte environment

Outputs

Molecular targets for manipulation
of follicle function and fertility



Reproductive Biology Research Cluster:

3. Oocyte maturation

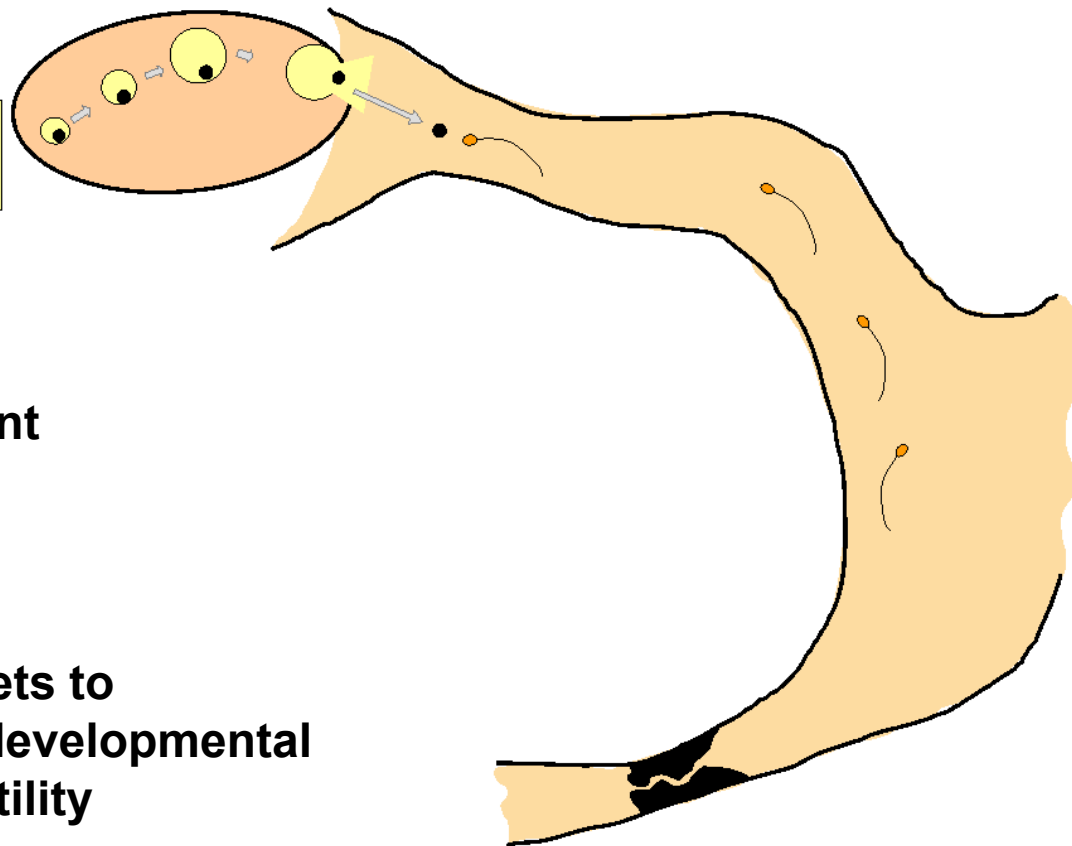
Issues

Oocyte competence

Maternal environment

Outputs

Markers of and targets to manipulate oocyte developmental competence and fertility



Reproductive Biology Research Cluster:

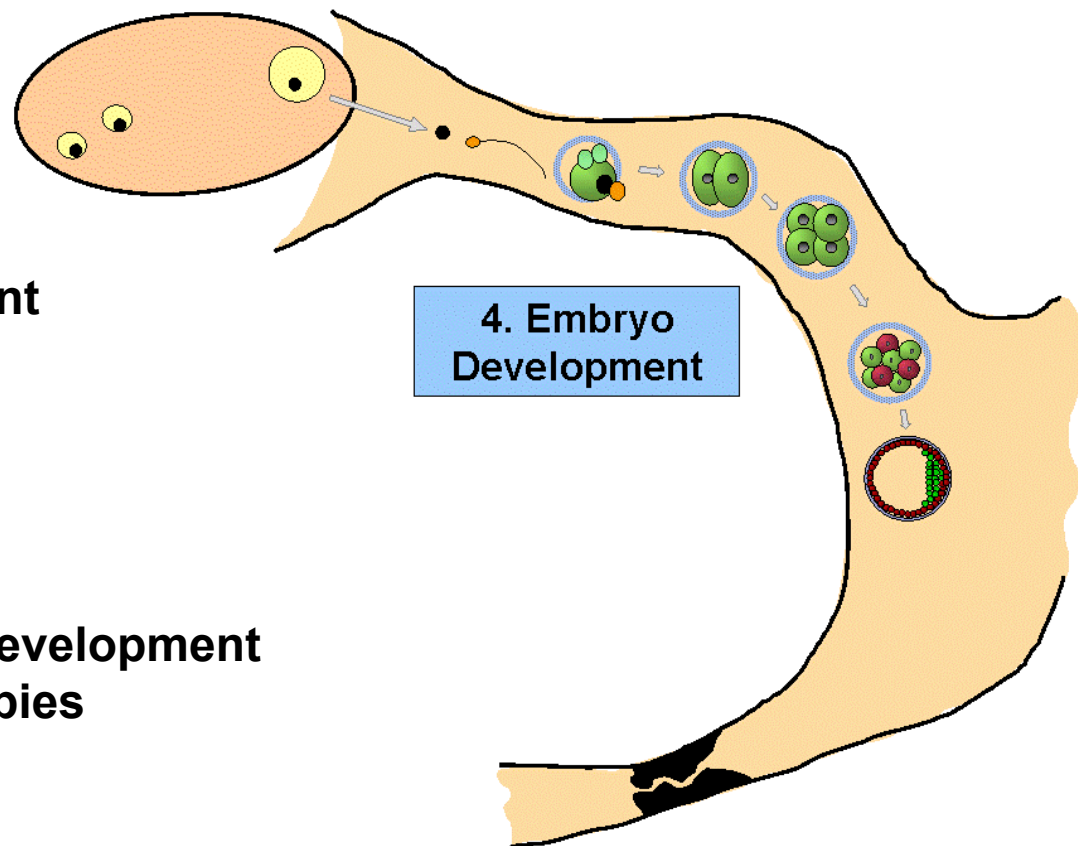
Issues

Retarded development

Progesterone

Outputs

Markers of embryo development
and targets for therapies



Reproductive Biology Research Cluster:

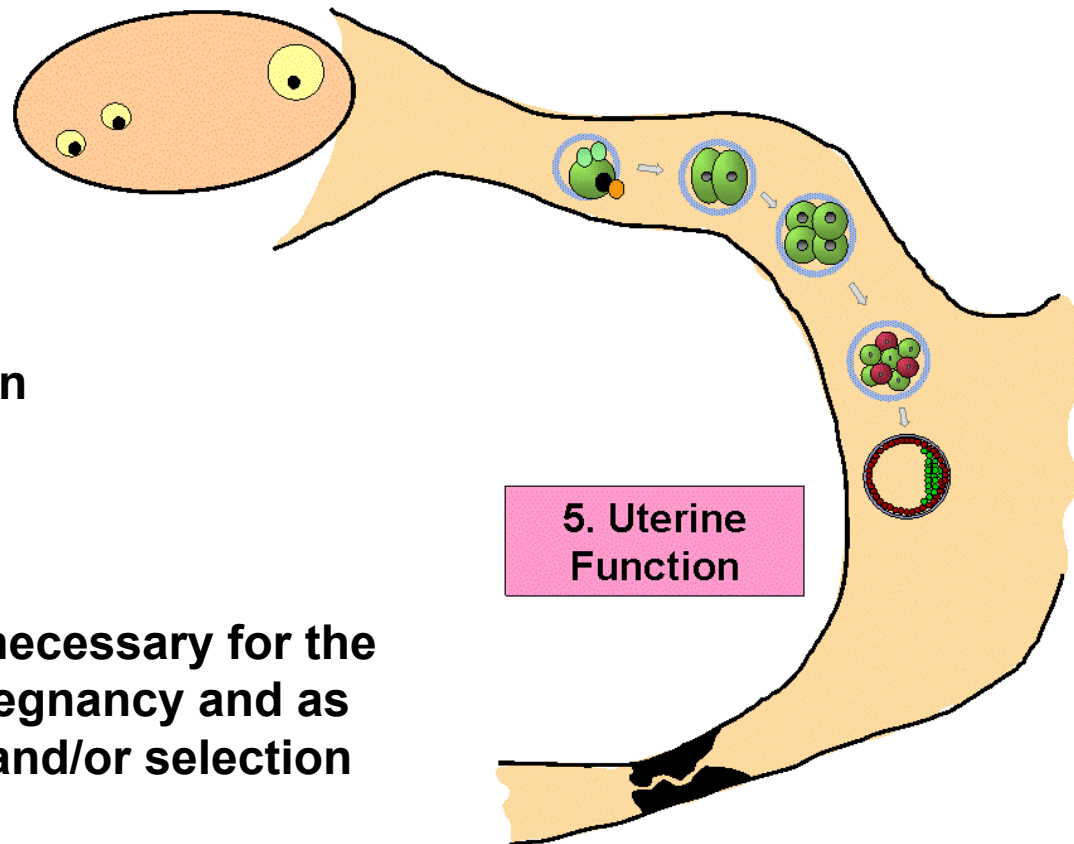
Issues

Uterine pathology

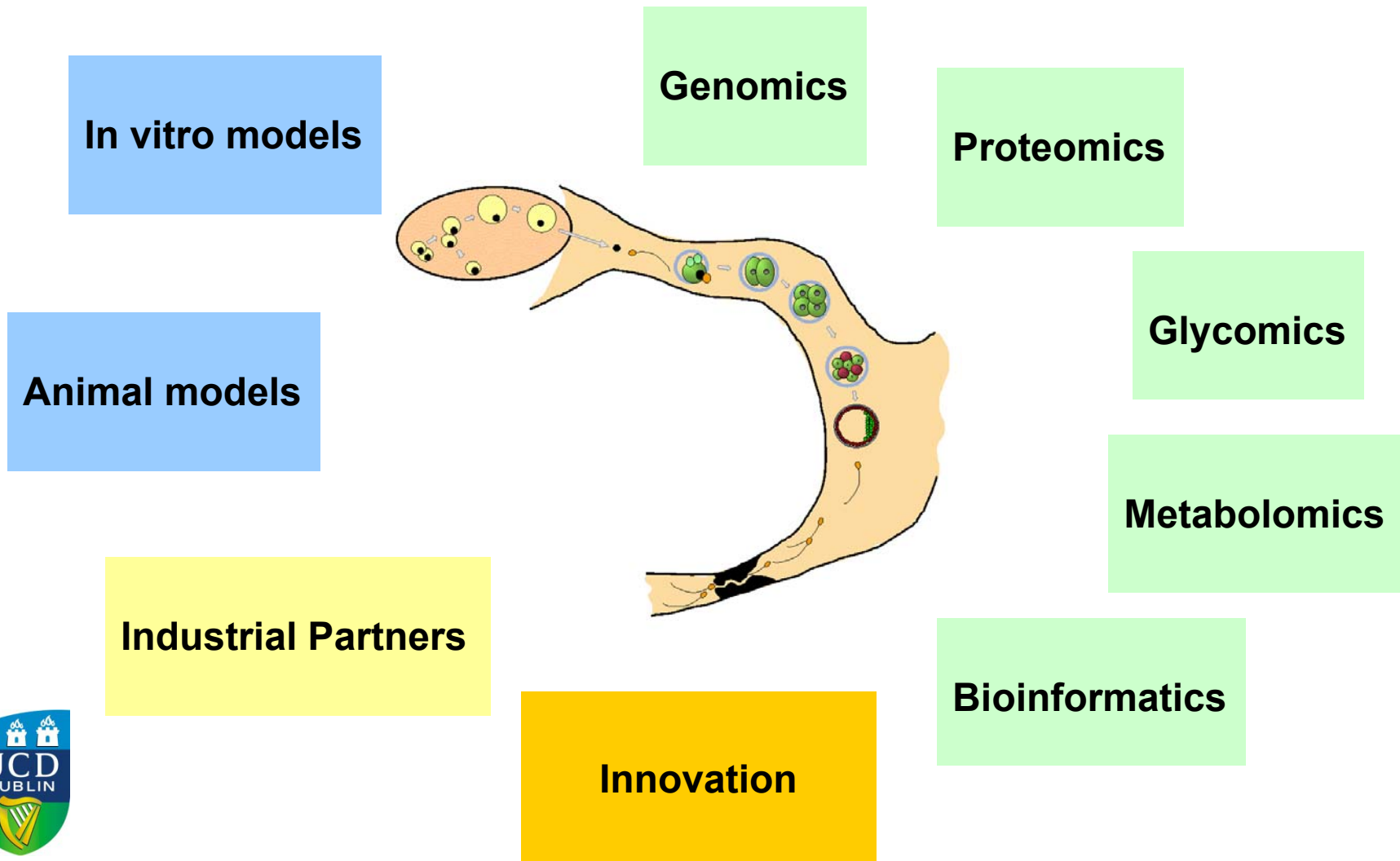
Endometrial function

Outputs

Identify molecules necessary for the establishment of pregnancy and as targets for therapy and/or selection for fertility



Resources, Models, Methods



Focus effort on:

Main Issues

- Uterine health
- Detection of oestrus
- Embryo mortality



Lesser Issues

- Oocyte quality
- Fertilization
- Uterine function
- Fetal development and life long development



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