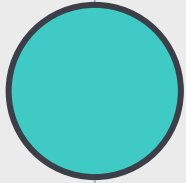




# Zebrafishing in Lisbon

**Catarina Certal, PhD**

**Fish and Molecular Coordinator**



# About Congento

**Consortium for Genetically Tractable Organisms**

Research infrastructure that synergises technology development across **Drosophila**, **zebrafish** and **mouse**, and provides **state-of-the art services** in all 3 organisms, integrating expertise in one research supporting facility

**Coordinator: Rui M. Costa, PhD**

## Three main domains of services

Continuous **education** and certification in animal research and technology

Generation of **new genetic lines and technologies** in the different species

**Maintenance and hosting** of genetically modified lines from the 3 species (**live or cryopreserved**)



## Education and Training

Coordinator: Ana Isabel Santos, PhD



**Education  
and  
Training**



**Tech Development**



**Mouse Services**



**Zebrafish Services**



**Fly Services**



**Molecular Tools**

- Education and training in Laboratory Animal Science
- Guidance with experimental design and procedures
- Training in rodent surgery, anesthesia and pathology
- Colony Management, Projects Submission and Severity Assessment
- Knowledge transfer (new technologies)



## Tech Development

Coordinator: Leonor Saúde, PhD

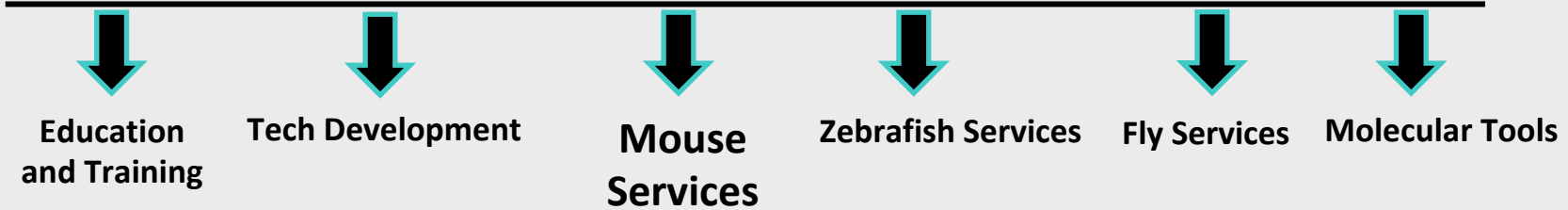


- Development/refinement of new technologies for transgenesis
- Development/refinement of new technologies gene editing
- Development/refinement of new technologies for cryopreservation
- Training of service providers



## Mouse

Coordinator: Manuel Rebelo, PhD

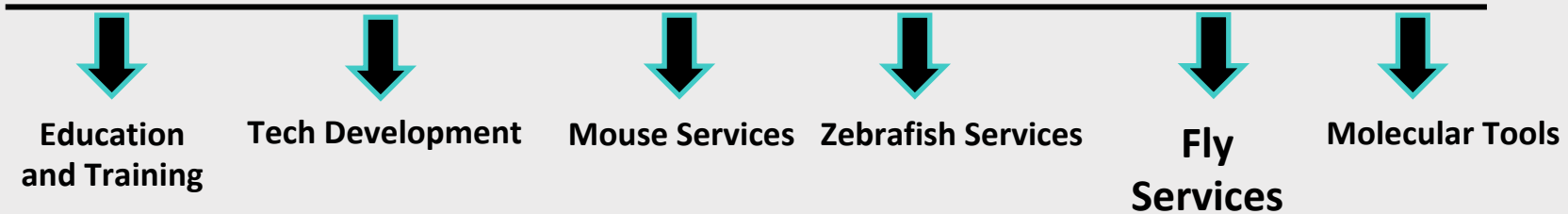


- Colony management/Housing, including genotyping
- Production and delivery
- Experimental space availability
- Rederivation and Revitalization
- Assisted reproduction
- Germplasm cryopreservation (embryos and sperm)
- Generation of genetically modified strains
- Consulting and Training



## Fly

Coordinator: Isabel Campos, PhD



- Medium production
- Transgenics generation - classical p-element transgenesis, phiC31 mediated transgenesis, MiMIC and CRISPR/Cas9
- Stock maintenance
- Stock quarantine
- Stock pooling and ordering
- Virgins generation
- Fly brain dissection, staining and image acquisition/registration
- Consulting and Training





## Molecular Tools

Coordinator: Catarina Certal, PhD



**Education  
and Training**



**Tech Development**



**Mouse Services**



**Zebrafish Services**



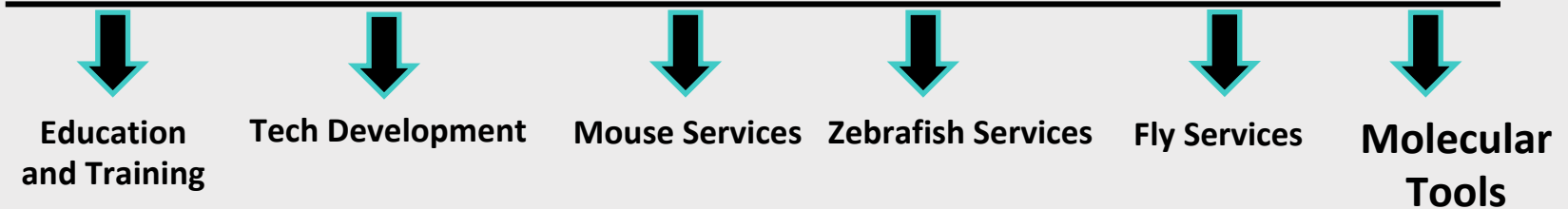
**Fly Services**



**Molecular  
Tools**

- Production of competent bacterial cells
- ISH probe cloning and production (Fluo/Dig)
- Molecular cloning (Restriction Enzyme Cloning, Gateway<sup>®</sup> Recombination Cloning, TOPO<sup>®</sup> Cloning, Isothermal Assembly Reaction (Gibson Assembly))
- Site-Directed Mutagenesis
- BAC recombineering
- Design and generation of constructs for transgenic/mutant animals (e.g. Tol2, CRISPR)
- Consulting and Training

## Molecular Tools



### Virus Production

- Adeno-associated virus (AAV):
  - serotypes 1, 2, 5, 9, DJ and retro
  - gene of interest can be cloned into several available pAAV plasmids
- Lentivirus
  - production using ViraPower™ HiPerform™ Lentiviral Expression System
  - gene of interest can be cloned into pLenti6.3/V5-DEST™ Gateway Vector
- siRabies (self-inactivating) virus - starting mid 2018
- Consulting and Training



## Zebrafish

Coordinator: Catarina Certal, PhD



**Education  
and Training**



**Tech Development**



**Mouse Services**



**Zebrafish  
Services**



**Fly Services**



**Molecular Tools**

- Housing/stocking of live lines
- Maintenance and breeding of lines
- Generation of new transgenic/mutant lines (Tol2; CRISPR-Cas9)
- Database training (DanioData)
- Sperm cryopreservation
- Assisted reproduction (IVF)
- Drug screening
- **Human cancer xenografts**
- Consulting and training

## ● Zebrafish Services



Housing/stocking of live zebrafish lines

Maintenance and breeding of lines

Generation of new transgenic/mutant lines  
(Tol2; Crispr-Cas9)

## ● Zebrafish Services



- Assisted reproduction (IVF)
- Sperm cryopreservation
- Drug screening
- Human cancer xenografts (in collaboration with Rita Fior, PhD)

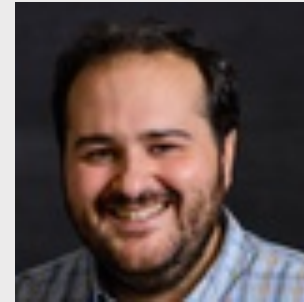
## ● Zebrafish Services



- Database training (DanioData)
- Consulting and training on facility design and management, husbandry and complex line maintenance

# Acknowledgments

Executive Manager – João Cruz



Steering Committee

Coordinators

Technical and scientific staff



[WWW.CONGENTO.ORG](http://WWW.CONGENTO.ORG)



[INFO@CONGENTO.ORG](mailto:INFO@CONGENTO.ORG)