

Transgenic Mouse Facility (TMF)

Shimako Kawauchi, PhD | *Manager*
Grant MacGregor, DPhil | *Director*

Mission and Leadership



MISSION

Facilitate use of the mouse as a mammalian experimental system to investigate mechanisms of oncogenesis and testing of cancer therapeutics

To fulfill this mission, **TMF**:

- Advises investigators wishing to use genetically engineered mouse models (GEMMs) in their research program, on experimental design and analysis, helps write grant proposals & manuscripts and provides letters of support.
- Provides access to specialized expertise and equipment to develop GEMMs, provides technical support, and sources additional reagents required to manipulate the mouse genome and analyze the consequences thereof.
- Communicates awareness of novel mouse-related resources via workshops, seminars, e-mail or the TMF Shared Resource website, facilitates their acquisition for Cancer Center members, and provides practical assistance with their use.
- Assists researchers by importing, or helping to develop, new experimental approaches necessary to address specific experimental questions in their research.

LEADERSHIP



Grant MacGregor,
DPhil
Director



Shimako Kawauchi,
PhD
Manager

Services cover design, development, re-derivation, cryopreservation, and re-animation of GEMMs in an efficient and cost-effective manner, including:

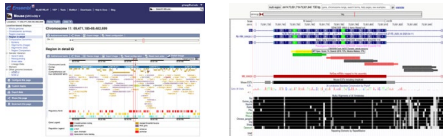
- Consultation, at no cost to PI, on strategies to engineer the mouse genome.
- Design and targeted engineering of loci in mouse zygotes via CRISPR (>300 projects completed to date).
- Targeted transgenesis at the *Hipp11* and *ROSA26* loci.
- Targeted engineering of endogenous loci in mES cells including CRISPR-mediated humanized gene replacement.
- Southern analysis of targeted loci in ES cells and animals, including PFGE.
- Insertion of conventional multi-copy transgenes and bacterial artificial chromosomes (BAC) at random loci via pronuclear injection of DNA.
- Cryopreservation, import, export, rederivation or reanimation of GEMMs via IVF or embryo transfer.
- Breeding and genotyping of GEMMs.
- Development of RT-PCR-based genotyping assays.
- High-throughput analysis of standard PCR assays using Fragment Analyzer.
- Production of large cohorts of genetically defined mice for studies, by IVF and embryo transfer.
- Annual lectures and workshops on genome engineering methods.
- Provision of language and figures for grant proposals and manuscripts, plus letters of support, at no cost to PI.

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current high-demand services

Key Equipment & Technologies



- Bioinformatic analyses of mouse and human genomics to facilitate strategies for genome engineering



- TaqMan, rhAMP based genotyping via two Bio-Rad RT-PCR systems



- High-throughput (3 x 96-well tray) analysis of standard PCR reactions using Agilent capillary array Fragment Analyzers (two instruments)



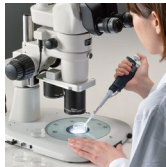
- Microinjection, electroporation and culture of zygotes / preimplantation embryos (two systems)



- Culture and cryogenic storage of sperm, embryos, mES cell lines



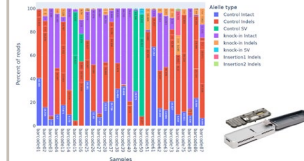
- PFGE and Southern analysis using Bio-Rad CHEF Mapper



- IVF-based mouse production (multiple incubators)



- Multiple animal holding rooms with ventilated cage racks and sterile caging.



- Deeper and faster CRISPR modification analysis with ONT sequencing

- Tissue culture suite with incubators, hoods and electroporation apparatus for ES cell culture (not shown)

Questions? Contact Us!



Website: <https://transgenic.uci.edu/>

Email: TMF@uci.edu

Welcome to the UCI
TRANSGENIC MOUSE FACILITY

Our Services Contact Us

Menu

+ Latest News

What We Do

The UC Irvine Transgenic Mouse Facility (TMF) core facility provides services for the design, generation, breeding, genotyping, importing, and preserving genetically-modified mice and embryonic stem cells. In addition to academic clients at UCI, we support academic investigators at several other sister UC-campuses and numerous other universities throughout the USA as well as providing these services to commercial clients. The TMF's research associates have a **combined 130 years of experience** in generation of genetically engineered mice. **Our experience can be your advantage.**

For Grant Submissions & Publications

- Facility Description
- Model Organism Sharing Plan
- Manuscript Acknowledgement

Summary of our Services and Current Pricing:

Summary & Pricing

Thank You
