

Systems Genetics Core Facility CC Pilot Program

Proposals are accepted on a rolling basis and will be reviewed monthly.

The **Collaborative Cross (CC)** is a unique experimental resource consisting of 63 recombinant inbred mouse strains derived from eight laboratory inbred strains. It is available in its entirety only at UNC, where it is maintained and distributed by the Systems Genetics Core Facility (SGCF). The high-level and uniform distribution of genetic variants genome-wide, the presence of combinations of alleles derived from three different subspecies, and the fact these are reproducible inbred strains, make this resource uniquely suited to test and characterize the role of genetic diversity in the etiology of biomedical traits.

Successful proposals for NIH funding using the CC typically require preliminary data supporting the scientific premise. As such, the OoR facilities a call for pilot project proposals that will use surplus CC mice at a deeply discounted price to obtain preliminary data to apply for new external funding. CC mice can be used to address a broad range of biological questions, but are especially useful for addressing the following questions/goals:

- Assessing the impact of genetic variation on biomedically relevant phenotypes
- Assessing how other biological variables (e.g., sex, environment, and/or exposure) modulate genetic differences in biomedically relevant phenotypes
- Developing new or improved models of human disease

Successful Pilot Projects will have access to a total of 96 CC mice at \$42.00 per mouse (about 30% of their subsidized UNC cost). **Non-federal funds must be used for the purchase.** The CC strains allocated to each Pilot Project will be based on availability and researchers cannot select specific strains. The default formats will be either:

- 6 replicates (either 3 males and 3 females or 6 males) from 16 strains or
- 8 replicates (either 4 males and 4 females or 8 males) from 12 strains.

These mice will be transferred soon after weaning (4-8 weeks of age when delivered but age cannot be specified in order). Generally, mice will be provided in 1 to 2 batches. Please specify the preferred format in your proposal.

Special requests outside of the standard format (but critical for the experimental plan) will be considered. Special Requests incur extra costs (generally \$10 per mouse per stipulation). Examples of extra costs are listed below:

- **Strain selection:**
 - Excluding <21 designated CC strains, +\$10/mouse.

- Excluding <42 designated CC strains, +\$20/mouse.
 - Excluding >42 strains is not allowed.
 - Requests to include specific strains in the Pilot is not allowed.
- **Age requests:** Requiring young mice, a tight age window, or specifically aging mice in the SGCF rooms may or may not be feasible. When feasible, extra charges will be incurred.
- **Batching different than the standard format:** Requiring special batching may incur extra charges (+\$10/mouse)
- ALL special requests must be discussed during the consultation meeting with the Director

Prior to submission to OoR, the PI must schedule a short consultation meeting with the SGCF to discuss the most appropriate study design given their goals. Please contact the SGCF Director, **Rachel Lynch, PhD** (rachel_lynch@med.unc.edu), to schedule the consultation meeting.

Application Materials:

If you are interested in submitting a proposal to access these mice, please provide the following information in your proposal:

- Title of the project
- PI and coI(s) of the project
- Short description of Specific Aims with the proposed use of the mice (including a detailed experimental plan based on the requested number of CC mouse strains and replicates).
 - If Special Requests are required for the experimental plan, these stipulations and extra charges (as discussed with the SGCF Director during the consultation meeting) must be included.
- Please provide a short description on how data gathered from pilot project will be used to satisfy the following programmatic goals:
 - apply for new external funding
 - support potential publications
 - publicly disseminate data generated by the pilot (i.e. deposition in public databases, Mouse Phenome Database, bioRxiv)
- Timeline for experiments and outcomes
- IACUC protocol #
- Current other support for PI and co-I

Requirements:

- The PI should have an active IACUC protocol covering the proposed experiments (and mouse space) at the time of the proposal
- Mice provided through Pilot Projects cannot be used to establish CC colonies. CC mice can be used to breed to other model strains or to make mice of certain ages for data

collection, but the mice from the CC pilots should be for terminal use by the conclusion of the pilot study.

- These pilot studies **cannot be used to purchase CC mice for experiments covered by existing funded grants.**
- If the investigator has current funding to use the CC resource, the proposal must explicitly state how the pilot project is different from the currently funded project.
- Projects should be able to take the mice soon after notification of award, but timing of the actual delivery of the mice will be specified by the Systems Genetics Core Facility. If the time of delivery of the mice needs to be adjusted, the project may be moved to the bottom of the list.
- A brief progress report summarizing the outcomes must be provided at 6 and 12 months receiving the mice from the Pilot. Data generated must be deposited in the Mouse Phenome Database (<https://phenome.jax.org/>) and a link provided in the progress report. MPD can put a hold on the data until it is published.

Submissions and Review:

Proposals are accepted on a rolling basis and will be reviewed monthly.

Please contact **Jennifer Brennan, PhD (jenbren@med.unc.edu)** in the Office of Research with any questions. After the consultation meeting with the SGCF Director, proposals can be emailed directly to Dr. Brennan at oor_submissions@med.unc.edu.