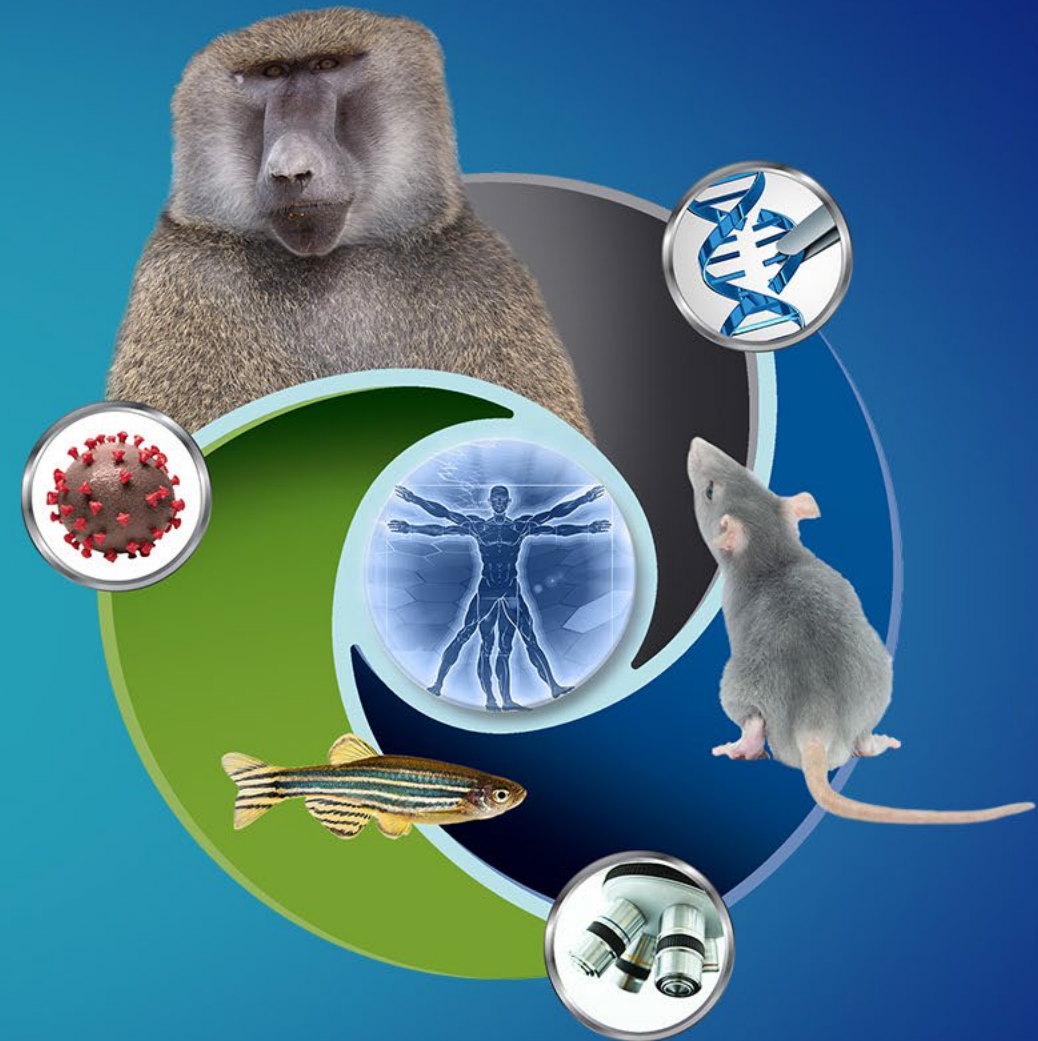


Mutant Mouse Resource and Research Centers (MMRRCs) and the Informatics, Coordination, and Service Center (ICSC) for the MMRRCs

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ORIP

OFFICE OF RESEARCH
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Concept Clearance: Reissue

Mutant Mouse Resource & Research Centers (MMRRCs) and the Informatics, Coordination, and Service Center (ICSC) for the MMRRCs

Objective: To support the continued acquisition, distribution, and cryopreservation of scientifically valuable, genetically engineered mouse strains and mouse embryonic stem (ES) cell lines, including the maintenance of the associated ICSC

Funds Available and Anticipated Number of Awards: Up to four MMRRCs and one ICSC contingent upon NIH appropriations

Award Project Period: 5 years

Council Action: Vote for approval of the concept for “MMRRCs and the ICSC for the MMRRCs”



Background

- 1999: The National Center for Research Resources and NIH establish the MMRRCs.
- October 2002: MMRRCs' first strains become available.
- 2002: The MMRRCs greatly expand their resources by adding mouse ES cell lines.
- 2019: The largest MMRRC Consortium collection is from the Knockout Mouse Project (KOMP), supported by the NIH Common Fund.

The Mutant Mouse Resource and Research Center (MMRRC): the NIH-supported National Public Repository and Distribution Archive of Mutant Mouse Models in the USA

Mamm Genome. 2022; 33(1): 203–212

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8314026/>



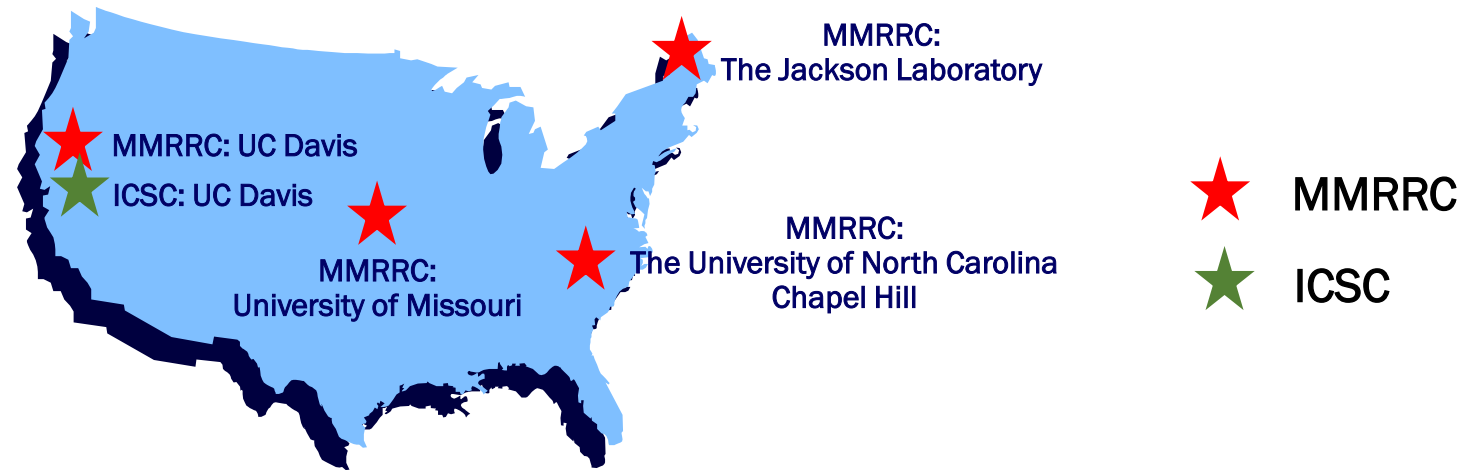
MAMMALIAN GENOME

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MMRRC Consortium



- The MMRRC Consortium consists of four Centers, located at The University of North Carolina at Chapel Hill, University of Missouri, University of California, Davis (UC Davis), and The Jackson Laboratory.
- An Informatics, Coordination, and Service Center (ICSC), located at UC Davis, provides informatics and coordinating services to support the function of the MMRRC Consortium.



Purpose of the MMRRCs

- ORIP's Strategic Plan emphasizes expansion and accessibility to animal models and animal and biological materials, as well as exploration of ways to improve the reproducibility of research using disease models.
- The MMRRCs distribute and cryopreserve scientifically valuable, genetically engineered mouse strains and mouse ES cell lines with potential value for the genetics and biomedical research communities.
- Each MMRRC is responsible for obtaining mice from donating investigators and establishing banks of cryopreserved sperm, embryos, and related materials for distribution to research investigators.
- Each Center provides services on a fee-for-service basis (<https://www.mmrrc.org/about/members.php>).
- 10% of the budget is used for small high-risk, high-return research pilot projects that complement the goals and needs of the MMRRC Consortium.



Purpose of the ICSC

- Maintain and further develop a public website portal and Customer Service Center.
- Operate the order processing system; review and process applications from donating investigators.
- Facilitate interactions with biomedical investigators, informatics services, and database activities; archive MMRRC documents and files.
- Coordinate requests to donate mouse strains to the MMRRC and to order mouse strains from MMRRC.
- Oversee marketing efforts; prepare monthly and yearly metrics reports.
- Organize and participate in monthly teleconferences and an annual Consortium meeting; compose reports and summaries from these forums for the Consortium members and NIH.

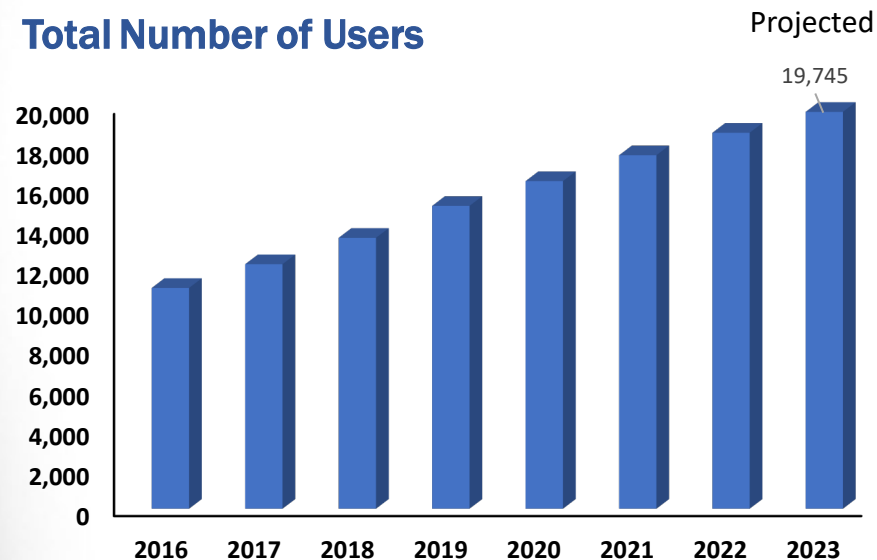


MMRRC Progress and Impacts

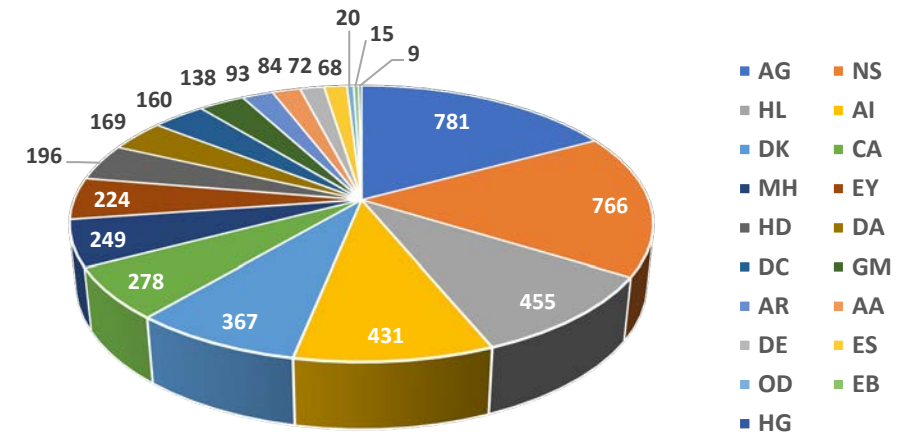
The collection consists of 61,866 unique mutant alleles (submissions include live mice, frozen germplasm, or ES cells).

The MMRRCs have received 16,383 orders from 7,466 unique investigators at 3,492 research institutions in the past 10 years.

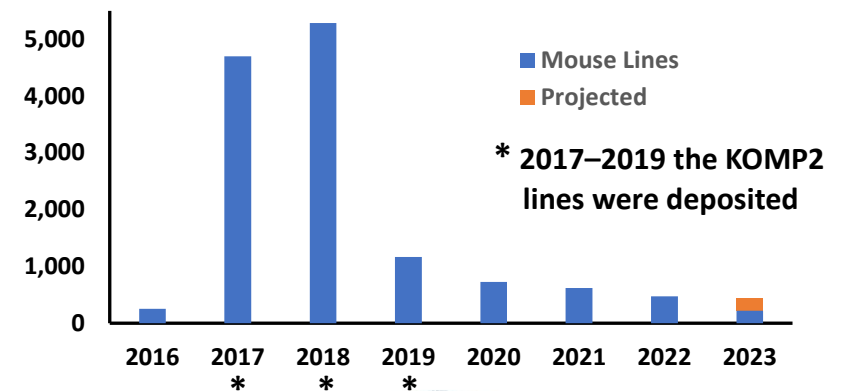
Total Number of Users



Orders by NIH Institutes and Centers (10 Years)



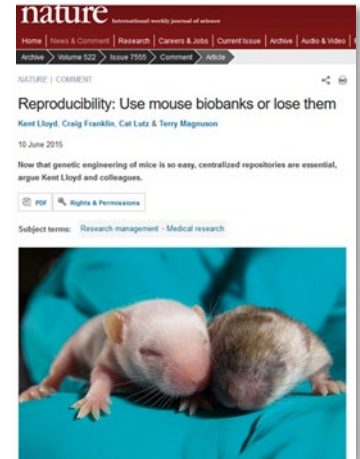
Curated Submissions: Live Animals, Frozen Germplasm, or ES cells



Rigor, Transparency, and Experimental Reproducibility

Ongoing Activities

- Authenticates mice
- Provides an easily accessible website portal; time-efficient, paperless Conditions of Use Statements; and Donor Material Transfer Agreements
- Uses mutually agreed upon, defined standard operating procedures
- Employs Research Resource Identifiers (RRIDs) for citing unique strains
- Organizes and facilitates user surveys, focus groups, and workshops
- Collaborates with other mouse repositories (domestic and international) and NIH programs and initiatives
- Increases the number of vendor status approvals



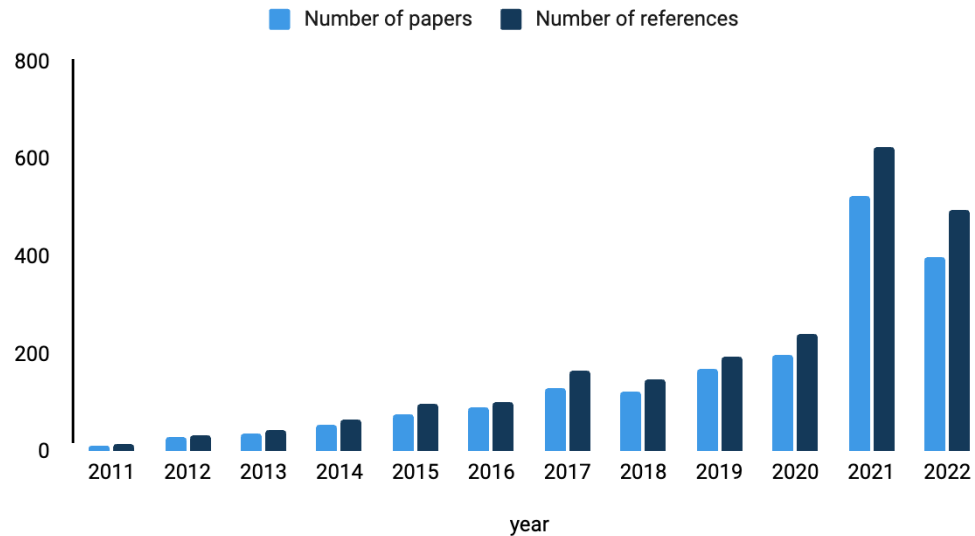
Concept Clearance

***Vote for approval of the concept for
“MMRRCs and the ICSC for the MMRRCs”***



MMRRC Progress and Impacts

Number of Papers and References Per Year



Number of Patents Citing MMRRC Papers Per Year

