

MMPC MICROMouse Program 2018-2019



Maren Laughlin and Jack Rutledge

October 3-4, 2018

2018 Leaders

- Jack Rutledge (chair) --UC-Davis
- Julio Ayala --Vanderbilt
- Yvonne Ulrich-Lai --U Cincinnati
- Randall Friedline --U Mass
- Christine Bassis --U Michigan

- Rick McIndoe --Augusta University

- Outreach: Dawn Rowe --UC-Davis

What is the MICROMouse?

Pilot and Feasibility projects in mouse metabolic research.

Who can apply?

Eligible Project Directors/Principal Investigators:

- Applicants must hold a doctoral level position.
- Young investigators and post-doctoral fellows are encouraged to apply.
- Applicants can be in or outside an MMPC institution.

MICROMouse Guidelines

\$75K direct costs, 1 year. PI can request 2nd year.

PI sends letter of intent to MMPC, applications reviewed 4x/year (2-3 expert reviewers, scores and comments)
-managed by Jack, Julio, Yve, Randle, Christine

Applications chosen for award by simple majority of MMPC Steering Committee (also decides if they can resubmit)
-managed by Rick

Awards made from the CBU, typically via subcontract. F&A costs negotiated.
-overseen by Rick

Progress report submitted at termination of award period.

Review Process

Proposals are assigned to ~three reviewers

- Members of MMPC external advisors

- External scientists with expertise in area of proposal

- Often use previous MICROMouse applicants

Reviewers are reminded that preliminary data should get less weight in the case of younger PIs

Unsuccessful proposals can be resubmitted by invitation

Competitive renewal possible for 1 additional year

Two Types of MICROMouse:

Resource-development projects

- Develop or miniaturize technologies
- Adapt existing technologies for use in mice
- Provide new tests to phenotype mouse models of metabolic disease
- Establish new types of mathematical models, informatics, databases or products that augment the mission of the center.
- Travel and housing funding to visit and learn MMPC tests
- Funding for short meetings or courses relevant to the MMPC

Two Types of MICROMouse:

Resource-related research projects

- Investigate biological phenomena or parameters that are broadly applicable to metabolic disease research using mouse models

Examples: impact of temperature, physical activity, stress, housing conditions, husbandry issues, microbiota, circadian rhythms, diets and feeding behavior, hormone patterns, growth, surgical models, etc.

- The pursuit of novel biological questions where the information can enrich or inform an MMPC and otherwise foster its mission.

Updates

Encourage young investigators:

“All academic biomedical researchers who have a doctoral-level position can apply. **Post-doctoral fellows and junior faculty are especially encouraged to apply. Applications from post-doctoral fellows must include two letters of recommendation from senior mentors.** Individuals from underrepresented racial and ethnic groups as well as individuals with disabilities are always encouraged to apply for NIH support.”

Police responsiveness regarding the MMPC mission:

“A brief letter of intent with description of the proposed project is due two weeks prior to submission of an application. **The letter will be promptly reviewed by the MMPC MICROMouse committee for responsiveness and for the relevance of the project to the MMPC mission.** Applications will be accepted only with permission from the MICROMouse committee.”

Suggestions from the Committee Chair (Jack Rutledge)

Problem:

- Responsiveness to the MMPC mission is difficult to ascertain from an LOI, particularly for 'Resource-Related' projects.

Suggestion:

- Continue to ask the MICROMouse committee to ascertain responsiveness and forward for review. MMPC SC members can vote against applications they feel have 'fatal flaws'.

Problem:

- What are the criteria for allowing a revised submission of an unsuccessful application?

Suggestion:

- Automatically allow upper 50% of scored applications to resubmit if not funded

New in 2018

Quarter 3: **MMPC Mouse Microbiome Metabolic Research Program (MMMRP)**

- **Deadline: September 4, 2018**
- Competitive grants up to \$125,000 (total costs) for one year
- Pilot and feasibility projects that incorporate microbiome research into mouse metabolic phenotyping studies
- all studies should demonstrate clear potential to advance the mission of the MMPC
- any independent investigator or post-doctoral fellow at a US institution is eligible to apply.

Received 22 applications (4-6 awards)

16 from Universities outside the MMPC institutions

Post doc: 2

Associate Professor: 6

Research Scientist: 5

Full Professor: 7

Assistant Professor: 2

Congratulations to the MMMRP Committee!!

5 Year Award Summary

Year	Applications MMPC/External	Awards MMPC/External	Investigators early/established
2014	18 10/8	4 3/1	2 assist prof 2 full prof
2015	10 8/2	5 5/0	1 post doc 4 full prof
2016	14 9/5	5 3/2	1 post doc, 1 assist prof 3 full prof
2017	18 9/9	5 2/3	1 post doc, 1 instr, 1 assist 1 assoc prof, 1 full prof
2018 Micromouse (Q1,2,4)	14 (so far) 6/8	2 (so far) 1/1	1 assist prof 1 full prof
2018 Microbiome (Q3)	22 6/16	NA	NA

5 Year Award Summary

Year	Resource-Development Research			Resource-Related Research		
	Applications	Awards	Success Rate	Applications	Awards	Success Rate
2014	10	3	30%	8	1	12%
2015	6	4	66%	4	1	25%
2016	7	4	57%	7	1	14%
2017	6	5	83%	12	0	0%
2018 (Q1,2,4)	1	1	100%	13	1	8%

Funded 2017

Resource-development projects

Training in Isotopic Techniques for Metabolic Research
Owen McGuinness/Vanderbilt University

In vivo Imaging of Retinal Hypoxia in a Preclinical Model of Diabetic Retinopathy
Imam Uddin/Vanderbilt University

Maximizing Data to Phenotype Islet Function in Mouse Models with Low Pancreatic Islet Content
Craig Nunemaker/Ohio University

An Open-Source Resource for Analysis of Mouse Energy Balance Experiments
Alexander Banks/Harvard Medical School

Validation of a Novel Mass Spectrometry-based Method for Muscle Glucose Flux analysis in Mice
Ashley Williams/Duke University

Funded 2018 to date

Resource-Related Projects

Effect of Isocaloric Restriction on High Fat Diet Induced Cognitive Impairment
Jennifer Rukowsky/UC-Davis

Resource Development Projects

Coding and Non-Coding RNA in Liver: Feeding and Circadian Rhythm
Jeffrey Pessin/Einstein

2019 MICROMouse FOA Proposal

Proposal:

Funding Opportunity Announcement for original research that uses the MMPC database for at least one specific aim of a project.

Goals:

- Test and improve the public interface
- Provide a proof-of-concept test of MMPC data utility.

Logistics:

- Application receipt date(s)
- Size and duration of awards
- Number of awards