

# Caltech | Funding Memo

**Title:** Lysosomal Biomarkers Program - Pre-proposal

**Funding Agency:** Michael J. Fox Foundation

**External Deadline(s):**

01/17/2023 12:00 PM PST (Pre-Proposal)

05/11/2023 02:00 PM PDT (Full Proposal)

**Cognizant Office:** Office of Sponsored Research/Office of Foundation Relations

**Description:**

The Michael J. Fox Foundation (MJFF) funds research to better define, measure and treat Parkinson's disease, while also supporting critical tools and other resources to advance that research. In recent years, we have seen an explosion of drug development around lysosomal targets, despite the fact that the ways to measure this pathway remain limited. Given the role of lysosomal & protein clearance dysfunction in PD more broadly, a robust toolbox of lysosomal biomarkers will enable identification of patient populations as part of a precision medicine approach, while also supporting known and emerging lysosomal targeted therapeutics. The purpose of this Request for Applications (RFA) is to advance lysosomal pathway biomarkers, which are currently a critical gap across all intended uses.

**Frequency:** First-time opportunity

**Total Award:** \$350,000

- Up to \$350,000. Requested support should be commensurate with the work proposed.

**Indirect Costs:** 15% of Direct Costs

- **Caltech's minimum overhead rate is based on the award's annual gross funding. Please refer to the [FY23 Annual Rate Memo](#) for applicable minimum overhead requirements. Applicants must work within their division to account for the required overhead via an approved MORA form.**

**Duration:** 1-2 years

**Discipline(s):** Biology and Biological Engineering; Chemistry and Chemical Engineering; Engineering and Applied Science

**Eligibility:** Research Faculty, Tenure-Track Faculty, Tenured Faculty

- Applications may be submitted by researchers or clinicians in:
  - U.S. and non-U.S. biotechnology/pharmaceutical companies, or other publicly or privately held for-profit entities; and U.S. and non-U.S. public and private non-profit entities, such as universities, colleges, hospitals, laboratories, units of state and local governments and eligible agencies of the federal government.

- Post-doctoral fellows are eligible to apply as co-investigators with the designation of an administrative primary investigator who directs the laboratory in which the fellow will conduct research. The administrative PI will be responsible for assisting in providing all institutional documents required for the project and will be required to sign any award contract. Training or mentoring-only proposals will not be considered.
- Caltech researchers other than tenure-track faculty will need to obtain approval from the Division Chair and Vice Provost for Research prior to submitting an application.
- The Foundation encourages applications from diverse investigators representing groups historically underrepresented in the research enterprise.

### **Research Areas of Interest:**

- MJFF will consider applications spanning all stages of the biomarker pipeline, including development, optimization and validation. Applicants are encouraged to get creative and think outside the box when considering how to address challenges surrounding measurements of this pathway.
- The Lysosomal Biomarkers Program seeks to develop, optimize, and validate biomarkers related to lysosomal function, protein clearance/autophagy and lipid homeostasis. Funding will support projects to:
  - Develop, optimize or validate molecular bioassays (ex. mass-spectrometry or immunoassay approaches) for autophagy or lysosomal analytes;
  - Investigate imaging approaches in the brain or other areas (ex. lipidated microtubule-associated protein 1A/1B-light chain 3 (LC3), autophagosome number, lipofuscin, lysosomal content, glucocerebrosidase (GCase) tracer, etc.);
  - Measure functional endpoints, dynamic measures, in vivo activity or lysosomal flux (ex. heavy labelling approaches);
  - Analyze existing datasets (including non-PD human data) to identify molecular measures of lysosomal function in normal and disease states towards identification of patient enrichment markers for lysosomal targeted therapies.
- This program welcomes biomarkers to specifically support lysosomal targeted therapies (ex. TMEM175, TRPML1, GBA, etc.) and also those geared towards quantification of lysosomal dysfunction or lysosomal dysfunction states more broadly.
- When considering submissions to this program, MJFF will prioritize those that:
  - Have potential to directly inform ongoing or upcoming clinical trials;
  - Directly inform precision medicine approaches for patient selection & stratification;
  - Include clear indication of how the proposed biomarker will be used to inform PD diagnosis, prognosis, monitoring, prediction, susceptibility and/or pharmacodynamic response.
- Due to the lack of available antibodies to measure many relevant analytes, antibody generation may be considered with relevant justification for why new development is necessary for the proposed assay work. Proposed novel antibody generation to support assay development should consider long term access for relevant assay work such as the use of monoclonals, path to commercialization & scalability, any IP considerations and etc.

**Working with MJFF to deposit the resulting antibody in an MJFF-designated repository for community access is a requirement of the program.**

### **Research Exclusions:**

- For this round, MJFF will not consider proposals focused on the following:
  - Non-lysosomal associated biomarkers;

- New unbiased discovery data generation efforts which may identify lysosomal ‘hits’;
- Basic biology projects to better understand lysosomal pathway/dysfunction without a clear link to translatable biomarkers.

**Post-Award Obligations:**

- TBD

**Recent Caltech Recipients:**

- None, New Opportunity

**Guidelines & Other Information:**

Overview: <https://www.michaeljfox.org/sites/default/files/media/document/Lysosomal%20Biomarkers%20RFA%20Overview.pdf>

Details, Deadlines, and Link to Download Application Template: <https://www.michaeljfox.org/grant/lysosomal-biomarkers-program>

RFA Instructions: <https://www.michaeljfox.org/sites/default/files/media/document/MJFF%20RFA%20Pre-Proposal%20Instructions.pdf>

MJFF Administrative Guidelines: <https://www.michaeljfox.org/news/application-guidelines?administrative-guidelines=>

MJFF Open Access Publication Policy: [https://www.michaeljfox.org/sites/default/files/media/document/MJFF%20Open%20Access%20Publication%20Policy\\_0.pdf](https://www.michaeljfox.org/sites/default/files/media/document/MJFF%20Open%20Access%20Publication%20Policy_0.pdf)

MJFF Funded Research (All Programs): <https://www.michaeljfox.org/funded-studies>

Please notify the Foundation Relations team if you anticipate making a submission or if you have any questions regarding this opportunity. We are here to help ensure that Caltech’s proposals are competitive. We can assist with proposal development and advise you on the routing of your paperwork. Interested researchers should work with their division grant manager to prepare the budget, the MORA form, and the Division Approval Form (DAF). Submissions and awards for this grant program will be processed through the Office of Sponsored Research.

Opportunity ID: 1365