

SPRING 2022 REQUEST FOR APPLICATIONS PARKINSON'S PATHWAY MOLECULAR DATA ANALYSIS PROGRAM

BACKGROUND

Parkinson's disease (PD) is the second most common neurodegenerative disease that affects over 1 million people in the US with a global prevalence of over 10 million. PD is highly heterogeneous: individuals experience a wide array of motor and non-motor symptoms, many of which depend on disease severity and duration. Though our understanding of PD and its causes is growing, many questions remain. Currently, there are no disease modifying therapies available for Parkinson's that alter the progression of the disease, and current symptomatic treatments provide limited relief but come with complications and side effects.

The Michael J. Fox Foundation (MJFF) funds research to better define, measure, and treat Parkinson's disease as well as critical tools and other resources to advance that research. The purpose of this Request for Applications (RFA) is to identify molecular biomarkers for diagnosis, prognosis, patient stratification, or monitoring of PD through the use of existing molecular and clinical data sets.

OBJECTIVE

Over the last several years, the Parkinson's disease field has dramatically expanded, generating new molecular datasets. Despite this wealth of newly available data, there remains an urgent need for biomarkers of Parkinson's disease progression, phenoconversion, diagnosis, and patient stratification. In addition, these recently available rich molecular datasets remain incompletely explored towards identification of new biological targets, critical pathways that contribute to PD pathogenesis, and novel biomarkers. To identify and address these critical gaps, MJFF is seeking high impact applications to utilize existing data resources to increase molecular understanding of PD, correlate biological changes to clinical/other outcomes, and more deeply interrogate disrupted pathways in PD.

Research applications for this program should focus on approaches to identify and prioritize critical components of pathways significant to Parkinson's, with the goal of expanding our understanding of molecular indicators of PD for diagnostic, prognostic, or subtyping purposes. Such efforts should focus on or leverage existing data to support impactful research aims which are positioned to expand this understanding. Special consideration will be given to applications that thoughtfully integrate findings across multiple available data sets, including both MJFF-supported and non-MJFF-supported studies, to derive new value from combined analysis.

Successful applications will clearly articulate the scientific rationale, goals, approach, and proposed data sets to be used. Applicants are encouraged to review an overview of the data presently available through MJFF-supported data platforms, provided below. Applicants are strongly encouraged to include researchers with specific expertise regarding common clinical features and assessments used in Parkinson's disease care and research.

DEADLINES & REVIEW SCHEDULE

- Pre-proposals Due: September 28, 2021, 5 p.m. US ET
- Full Proposal Invitations: Week of November 15, 2021
- Full Proposals Due (by invite only): January 13, 2022, 5 p.m. US ET
- Anticipated Award Announcement: April 2022
- Anticipated Funding: April 2022

Applicants are encouraged to apply early to allow adequate time to correct errors found during the submission process.

FUNDING AVAILABLE

Duration: 12 to 18 months

Award Amount: Applicants may request budgets ranging from \$50,000 to \$350,000 for projects meeting the application criteria. Requested budget amount will not correlate with prioritization for funding. Requested support should be commensurate with work proposed and must include clear explanation of costs.

These budgets include direct and indirect costs. For academic and for-profit institutions, no more than 15% or 10%, respectively, may go to indirect costs. Additional details about MJFF's indirect cost policy can be found in the [Application Guidelines](#) and [FAQ](#).

ELIGIBILITY REQUIREMENTS

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 co-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.

PROGRAM GOAL

The Outcome Measures Parkinson's Pathway Molecular Data Analysis Program aims to identify and characterize novel biomarkers and critical pathways from existing molecular data sets. This funding opportunity is intended for applications using existing and novel computational, informatic, and data science strategies to interrogate molecular data sets relevant to Parkinson's disease.

PROGRAM PRIORITIES

Applications should focus on studies that achieve one or more of the following goals:

- Comparisons of analytes across complementary cohorts to identify or evaluate performance of putative biomarkers
- Evaluation of underexplored genetic variants associated with PD risk and correlates with clinical or molecular features of disease-
- Identification of novel molecular indicators of phenoconversion and/or PD subtyping-
- Integrated analysis of multi-omic data sets to identify and characterize critical pathways disrupted in Parkinson's disease
- Identification of novel genotype-phenotype implications on molecular features of disease
- Characterization of molecular indicators of the role of the immune system in PD risk and patient outcomes-
- Identification or evaluation of molecular indicators of lysosomal and endosomal function, dysfunction, or functional diversity relevant to PD risk and penetrance

This program is **not** appropriate for projects to:

- Generate new molecular, genetic, or imaging data
- Support therapeutic development or identification of therapeutic compounds
- Solicit MJFF biosamples to conduct or expand ongoing analysis
- Replicate or review published work without novel analysis aims

Special consideration will be given to applications that integrate findings across data sets. Review an overview of the data presently available through MJFF-supported data platforms below.

Researchers from public and private institutions are encouraged to apply and to collaborate. Applicants are strongly encouraged to include researchers with specific expertise in Parkinson's care and research.

For this program, MJFF **will not consider** proposals focused on prospective data collection.

OVERVIEW OF MJFF-SUPPORTED DATA PLATFORMS

	PPMI	AMP PD	FoxDEN
<i>Available Studies</i>			
Included Study Cohorts	PPMI	BioFIND, HBS, LBD, LCC, PDBP, PPMI, STEADY-PD3, SURE-PD3	Fox Insight
Website	https://www.ppmi-info.org/	https://amp-pd.org/	https://foxden.michaeljfox.org/
<i>Available Diagnoses</i>			
Parkinson's Disease	✓	✓	✓
Healthy Controls ^a	✓	✓	✓
Other ^b	✓	✓	✓
<i>Data Modalities</i>			
Clinical	✓	✓	
ePRO			✓
Genetic (Summary SNPs)	✓	✓	✓
Genetic (Whole Genome)	✓	✓	
Transcriptomics	✓	✓	
Proteomics	✓	✓	
<i>Data Scope</i>			
Variable Count ^c	>1,000	>600	>5,000
Participant Count	>1,900	>10,000	>50,000
Study Duration (Years) ^d	10	Varies	5

<i>Technical Details</i>			
Access Restrictions	Separate request required to access sequestered and raw molecular data	Institutional certification required for individual-level data access	Institutional cybersecurity questionnaire required for full summary SNP data access (limited SNPs available otherwise)
Other Technology Considerations		Requires use of Terra [GCP] for analysis	

^a The definition of a “healthy control” may differ between individual studies.

^b Details on additional diagnoses available in these platforms can be found on the platforms’ websites and associated documentation.

^c Not all variables will be available for all participants, please see individual platforms’ websites for additional detail on available variables specific to your area of interest.

^d Participants’ individual length of participation may be shorter than the overall study duration.

ADDITIONAL INFORMATION

Our [Application Guidelines](#) provide general guidance about applying for funding from MJFF, though the RFA always supersedes information contained in the Application Guidelines. Please note that MJFF updated our publication and indirect costs policies in early 2020. The new [open access publication policy](#) requires articles resulting from MJFF-funded work publish in a preprint repository then in an open access forum with free and immediate readership rights.

Please note, MJFF requires that the Principal Investigator be the primary applicant (i.e., the person who initiates and takes primary responsibility for the application). All application-related correspondence will be sent to the Principal Investigator.

DIVERSITY, EQUITY AND INCLUSION

In pursuit of our mission to accelerate the development of better treatments and a cure for Parkinson’s disease, MJFF aims to support a rigorous research agenda reflecting a wide and diverse range of perspectives on Parkinson’s disease and carried out in diverse populations. Diversity may refer to characteristics including, but not limited to, race, religion, ethnicity, sex, gender identity, sexual orientation, socioeconomic circumstance, nationality, geographic background, ability and disability, political ideology, and age. Parkinson’s is a complex problem; the more angles from which we attack, the greater the chances of finding innovative scientific solutions to benefit everyone living with the disease. As such:

- The Foundation encourages applications from diverse investigators representing groups historically underrepresented in the research enterprise.
- Because research shows that diverse teams outperform homogeneous ones, we urge applicants to share information about the composition of the team that will carry out the funded work.

INFORMATIONAL WEBINAR

MJFF will host an informational webinar on August 24th, 2021, at 12 p.m. ET to clarify and explain the goals of our funding opportunities and answer applicant questions. The webinar will be available to view on-demand after the live airdates. Please register [here](#).

For questions about the application process or project suitability for this call for applications, please email grants@michaeljfox.org.