2021 FUNDING PROGRAM
PIPETTE: 4R TAU AND ALPHA-SYNUCLEIN PET TRACER DEVELOPMENT

BACKGROUND

The PIPETTE Consortium (Philanthropic Investments in PET TracErs) is a funding partnership formed in 2017 by The Michael J. Fox Foundation and Rainwater Charitable Foundation (conveners of the Tau Consortium). The partnership's goal is to support the development of novel positron emission tomography (PET) tracers for tau and alpha-synuclein. As a collaborative effort of leading non-profit organizations, the PIPETTE Consortium seeks to pool ideas, expertise, and resources to enable improved diagnosis and treatment of multiple disorders.

While aggregated alpha-synuclein is a pathological hallmark of Parkinson's disease (PD), the presence of neurofibrillary tangles of the tau protein is associated with the development of Alzheimer's disease, and primary tauopathies such as progressive supranuclear palsy and frontotemporal dementias. There is a critical need for disease and pharmacodynamic biomarkers for drug development for these neurodegenerative diseases. High resolution CryoEM fibrils structures of these different proteins has revealed a heterogeneity of structures, but with some shared structural elements. These structures create an opportunity to synergize the development of selective imaging agents for tau and alpha-synuclein as potential specific biomarkers for these diseases.

DEADLINES & REVIEW SCHEDULE

- Pre-Proposals Due: October 22, 2020, 5 p.m. US ET
- Full Proposal Invitations: December 21, 2020
- Full Proposals Due (by invite only): March 18, 2021, 5 p.m. US ET
- Anticipated Award Announcement: Week of May 31, 2021
- Anticipated Funding: July 2021

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

FUNDING AVAILABLE

Duration: One- to two-year grants
Award Amount: The total amount of funding available for this program is $1 million, with the possibility of additional follow-on funds for projects that show promising results during the initial funding period. 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 **not** eligible to apply as principal investigators.

As imaging programs may require many kinds of expertise, the sponsors encourage industry and academic collaborations when appropriate.

PROGRAM GOAL

The PIPETTE 4R Tau and Alpha-synuclein PET Tracer Development program seeks to accelerate the development of selective 4R tau and alpha-synuclein PET tracers. The ability to image brain neurofilaments of 4R tau, the predominant tau isoform associated with progressive supranuclear palsy and related disorders, would be a game-changing achievement for the field. Similarly, the ability to image alpha-synuclein in Parkinson's would likely have a significant impact on research and therapeutic development. The PIPETTE Consortium has prioritized 4R tau and alpha-synuclein PET imaging as the most likely approach to have an impact for therapeutic development given the hypothesized contribution of these proteins to neurodegeneration. *In vivo* imaging of 4R tau and alpha-synuclein pathology could be useful as biomarkers of the presence of disease and disease progression and as pharmacodynamic tools for drug development for tauopathies and synucleinopathies.

PROGRAM PRIORITIES

The PIPETTE Consortium encourages multidisciplinary teams to apply to this program and is particularly interested in collaborations between academic and industry groups with expertise in *de novo* design of brain penetrant PET ligands. In particular, teams are encouraged to propose structure- and ligand-based drug design approaches that use state-of-art computational methods using the high resolution Cryo-EM structures of disease-relevant tau and alpha-synuclein fibrils and existing Structure Activity Relationship (SAR) on known tau PET ligands or alpha-synuclein PET ligands that are in development. Access to structural-diverse compound libraries is desirable and a strong medicinal chemistry plan is required. We are especially interested in projects to develop alpha-synuclein and tau tracers in parallel.

Projects plans should clearly delineate a compound triage or screening cascade that includes primary compound screening, tissue binding studies, hit-to-lead, lead identification and optimization, radiochemistry, *in vivo* testing in appropriate animal models and first-in-human testing of candidate tracers. Funding prioritization will be given to those teams that show the greatest promise for delivering a selective tracer for human testing at the end of the funding period.

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.

DIVERSITY, EQUITY, AND INCLUSION

In pursuit of our mission to accelerate the development of better treatments and a cure for Parkinson's and related neurodegenerative disease, MJFF aims to support a rigorous research agenda reflecting a wide and diverse range of perspectives 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 and related diseases are complex problems; the more angles from which we attack, the greater the chances of finding innovative scientific solutions to benefit everyone living with these diseases. 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 September 2, 2020, at 12 p.m. US ET to clarify and explain the goals of this funding opportunities and answer applicant questions. The webinar will be available to view on-demand after the live airdate. To register, please visit the PIPETTE: 4R Tau and Alpha-Synuclein PET Tracer Development webinar webpage.