

VICTOR A. McKUSICK FELLOWSHIP GUIDELINES

The Marfan Foundation, Loeys-Dietz Syndrome Foundation, and The VEDS Movement are requesting proposals for the Victor A. McKusick Fellowship Grant program. The fellowship program is designed to support the development of a fellow with a research interest in the care and study of individuals with Marfan syndrome, Vascular Ehlers-Danlos syndrome (VEDS), Loeys-Dietz syndrome (LDS), Ehlers-Danlos syndrome (EDS), and other genetic aortic and vascular conditions. Proposals are being accepted for two-year grants in basic, translational, or clinical research. A two-year grant not to exceed \$50,000/year for PhDs or \$75,000/year for MDs will be awarded from the Foundation's Victor A. McKusick Fellowship Fund.

SCHEDULE

- Application Deadline: January 29, 2025
- Announcement of Awards: June 9, 2025
- Funding Available: July 1, 2025

SPECIAL AREAS OF INTEREST

Special areas of interest are basic research, translational studies and clinical studies in cardiovascular, orthopedic, pulmonary, pain, ophthalmologic and other pertinent disciplines. Studies can consider novel animal model systems, new DNA/RNA technologies, artificial intelligence (AI) innovation, and any synergistic collaborations that may provide identification for new interventional targets and development of new therapies for Marfan syndrome, VEDS, EDS, LDS, and other genetic aortic and vascular conditions.

CONTACT

Please direct all questions and correspondence to:

Lauren May, MPH

Director of Research

Email: lmay@marfan.org



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PROCEDURE FOR SUBMISSION, REVIEW, AND AWARD OF FELLOWSHIP GRANTS

A. INTRODUCTION

The Marfan Foundation's Victor A. McKusick Research Fellowship Grant is intended to provide the opportunity for career development with formal education and experience in research methodologies. The fellow should work in an active and progressive research environment that intimately involves the fellow in the conception, planning, execution, and reporting of research related to Marfan syndrome, VEDS, LDS, EDS, and other genetic aortic and vascular conditions. It is expected that the fellow receives formal education in such topics as biomedical statistics, research design, grant writing, and safety, regulatory and ethical concerns. At the end of the granting period, the fellow should have a firm foundation in the fundamentals that will prepare them to conduct independent research and compete effectively for extramural funding. The goal of The Marfan Foundation's Victor A. McKusick Research Fellowship Program is to advance research in the care of patients with Marfan syndrome, VEDS, LDS, EDS, and other genetic aortic and vascular conditions and to facilitate the academic growth and development of future researchers and clinicians.

B. TYPES OF PROPOSALS SOLICITED

Each application should have the quality of an NIH proposal. The proposal must be based on an identified research project. Special areas of interest are basic, translational and, clinical studies in cardiovascular, orthopedic, pulmonary, pain, ophthalmologic, and other pertinent areas utilizing synergistic collaborations; novel theories; novel animal model systems; AI innovation; DNA/RNA technologies for identification of new targets and new therapeutic therapies. The award is designed to support fellows studying any discipline. Special consideration is given to proposals in non-cardiac disciplines and clinical research areas.

C. BUDGET

Fellowship awards will be available for PhDs at up to \$50,000 per year and for MDs at up to \$75,000 per year.

D. QUALIFICATIONS OF THE FELLOW

The applicant must hold an MD, DO, PhD, ScD, DDS, DVM, or equivalent degree. Fellowships can be offered up to the postgraduate year 6 level. Both U.S. citizens and non-U.S. citizens are encouraged to apply. Fellows should be eligible at their institution for specialty training in the field of Marfan syndrome and related conditions, including but not limited to genetics, cardiology, orthopedics, pulmonary, and ophthalmology. The fellowship can only be held once by any candidate.



E. QUALIFICATIONS AND RESPONSIBILITIES OF THE MENTOR

The mentor must have a proven ability to pursue independent research as evidenced by original research publications in peer-reviewed journals and/or funding from extramural sources. The mentor may be in any department within the applicant's institution. The application must include a statement from the mentor providing:

1. Information on the mentor's research qualifications in the scientific area studied in the application and previous experience as a research supervisor;
2. A mentor's plan describing the nature of the supervision and mentorship that will occur during the proposed award period; and
3. A plan for the transition of the candidate from the mentored phase of their careers to the independent investigator phase during the project period of the award.

F. ENVIRONMENT AND INSTITUTIONAL COMMITMENT TO THE CANDIDATE

The sponsoring institution must define and document a strong, well-established research and training program related to the candidate's area of interest, including a high-quality research environment with staff capable of productive collaboration with the candidate. The sponsoring institution must provide a statement of commitment to the candidate's development into a productive, independent investigator and to meeting the requirements of this award. It should be clear that the institutional commitment to the candidate is not contingent upon receipt of this award.

G. REVIEW PROCESS

The Scientific Advisory Board of The Marfan Foundation, a committee of experts in basic, translational, and clinical research, will review each application. The NIH peer review study section model will be followed. Each proposal will receive a priority score based on the evaluation of the committee. Priority scores will be forwarded to The Marfan Foundation, where award decisions will be made based on the relative scientific merit ranking of the submitted grants and on the priorities of The Marfan Foundation. Grant awards are based on the approval of the Board of Directors. All applications will be held in the strictest confidence, and all decisions by The Marfan Foundation are final.

H. TERMS OF THE FELLOWSHIP

1. Duration

The two-year funding period begins July 1, 2025 and ends June 30, 2027.

2. Changes of Status of Designated Fellow

If the named fellow changes affiliations, the award will follow only after approval of transfer from The Marfan Foundation. If the fellow ceases research in the field for which the fellowship was made, the award will terminate, and the remaining balance will be returned to The Marfan Foundation.



3. Site of Project

Awards are for studies in the United States or internationally at an accredited medical school or institution affiliated with a university teaching program.

4. Budget

Budgets for up to, but not exceeding, \$50,000 per year for PhDs and \$75,000 per year for MDs for a two-year period are acceptable. Payments will be made to the fellow's institution, which will administer the funds. Any unexpended funds shall be returned to The Marfan Foundation upon completion of the granting period unless an extension is approved by The Marfan Foundation. The Marfan Foundation does not pay for institutional overhead; construction, or renovation; purchase of major capital equipment; office equipment or furniture; travel (except as required to perform the project); tuition fees; journal subscriptions, dues, or memberships; equipment service contracts; or salaries for administrative personnel. Funds will be distributed semi-annually.

5. Indemnification of The Marfan Foundation

The fellow, mentor, and any co-investigators and their Affiliated Institution will be obligated to indemnify The Marfan Foundation from any and all liability that may arise from the fellow/mentor/Affiliated Institution's conduct and the Foundation's affiliation therewith due to the grant relationship.

6. Institutional Support

The mentor and fellow assume responsibility for conducting research projects and supervising the work of co-investigators. They must also demonstrate that access to a suitable caseload or patient population will be available for study during the clinical study funding period.

7. Use of Animals and Humans in Biomedical Research

If using mice, it is recommended that preliminary data is derived using appropriate condition-specific models. Fellows must certify that the research facilities, its researchers, and employees adhere to the Animal Welfare Act National Research Council Guide for the Care and Use of Laboratory Animals and any appropriate US Department of Agriculture or National Institutes of Health Regulations and Standards. An Institutional Review Board (IRB), Institutional Animal Care and Use Committee (IACUC), or its equivalent must approve research involving human subjects or animals, and a copy of the approval or pending approval must be sent with this application. Copies of annual IRB renewals must be forwarded to The Marfan Foundation. IRB/IACUC approval must be documented prior to dispensation of The Marfan Foundation funds. The application must include letters of support if the proposed project uses facilities not routinely available to or directly under the supervision of the sponsoring program.



8. Publications

All discoveries resulting from work supported in part by The Marfan Foundation should be made available to the public and scientific community through approved scientific channels, such as national meetings and peer-reviewed publications. Publications will acknowledge the support of The Marfan Foundation. A PDF copy of each publication must be forwarded to the Foundation.

9. Publicity

The Marfan Foundation shall be permitted to use the fellow and mentor's name, image, and likeness, as well as the name of the Affiliated Institution, in connection with all statements, printed materials, or electronic media related to the fellowship award or related to The Marfan Foundation's Research Program. At the Foundation's request, the fellow will provide the Foundation with appropriate photographs and biographical information to be used in connection with this award.

10. Intellectual Property

Pursuant to the Foundation's established policy, inclusion of the IP provisions is a condition for the Foundation making a grant and entering into all research agreements. See Exhibit I.

11. Progress and Financial Reports

The fellow and mentor must provide a progress report and a financial report no later than 45 days after the completion of the first 10-month period and at the completion of the grant. Failure to provide such reports will preclude the fellow and mentor from obtaining further funding. Consideration for future funding will be dependent upon the completion of these progress reports. An additional and final questionnaire will be forwarded to the grant recipient after the completion of the grant to describe any publications and subsequent funding received based on research performed using the Foundation's funds.

12. Liability of The Marfan Foundation

The Marfan Foundation assumes no financial liability for patient care responsibilities of any kind undertaken by the fellow or mentor. The mentor and the mentor's institution acknowledge that The Marfan Foundation is not legally liable for the conduct of the fellow or the mentor and associate investigators.

I. CONTACT INFORMATION FOR CORRESPONDENCE

Lauren May, MPH
Director of Research
Email: lmay@marfan.org



J. DETAILS OF PROPOSAL

The application must be submitted electronically, including the application forms, additional pages, and appendices, as a single PDF file, via The Marfan Foundation website, Marfan.org. Please name your application using the following format:

McKusickFellowship_LastName_FirstName.pdf
Example: McKusickFellowship_Jones_Taylor.pdf

The application forms may be completed using the free Adobe Reader program. If you do not already have it, you can download it at www.adobe.com/products/reader.html. The Title Page form requires dated signatures; you may either insert a digital signature and date or print the form and then scan it to include in your application PDF.

Pages should be numbered at the bottom. Appendices should not be used to subvert the page limitation on the grant; however, figures, tables, diagrams, and photographs can be placed in the appendices. Please present the proposal in the order that follows.

1. **Title Page:** 1 page
Application form provided
2. **Table of Contents:** 1 page
Application form provided
3. **Project Abstract and Layperson Summary:** 1 page each
On a single page, describe precisely and clearly the nature, objective, methods of procedure, and significance of the proposed research project and how it relates to the goal of providing a better understanding of Marfan syndrome, VEDS, LDS, EDS, and other related conditions and/or improving the treatment or diagnosis of Marfan syndrome, VEDS, LDS, EDS, and other related conditions. *Limit 300 words.*

Include an abstract in terms suitable for presentation to laypersons. *Limit 500 words.*
4. **Research Plan:** 3 pages maximum, 11-point Arial font, one-inch margins
 - a. Include Goals and Objectives; Rationale; Methodology; Evaluation; Justification of Sample Size and Statistical Analysis Plan. *Figures should be placed in the appendix.*
 - b. Please comment on the importance of funding.
 - i. Will this funding allow you to pursue studies that would otherwise not be performed? Is funding meant to supplement other sources of support?
 - ii. Do you anticipate that this funding will increase your competitiveness for other funding sources?



- c. Please comment on the significance of the work you propose.
 - i. Is it similar to or a direct extension of work that has been or is being performed elsewhere?
 - ii. Does the work complement or extend other studies that are being performed at your institution?
 - iii. How novel are the studies that you describe?
 - iv. Would such a proposal be competitive for NIH funding in its current form, or would you require additional preliminary data?
 - v. Do you anticipate that the support would lead to the generation of physical resources that might be useful to other investigators in the field?
 - vi. If so, would you be willing to make them widely available?

5. Career Development Plan: 3 pages

The plan can be written by the candidate and/or mentor.

- a. Describe the resources and facilities that will be available to the candidate.
- b. Describe how the institutional research environment is particularly suited for the development of the candidate's research career and the pursuit of the proposed research plan.
- c. In a clear statement, provide assurances that the candidate will be able to devote a minimum of 75% of their effort in developing their research program, that the remaining percent effort will be devoted to activities related to the development of their research career, and that the candidate will be released from normal clinical, teaching or administrative duties. Candidates who will use the resources within a General Clinical Research Center (GCRC) during the award should include a letter of agreement from either the GCRC program director or the principal investigator with the application.

8. Budget and Justification

List the full budget with the amount requested. Include:

- a. Names, titles, time/percentage effort of all participants, requested salaries and fringe benefits
- b. Supplies required to complete the project.
- c. A statement that the institution or other funding sources will absorb indirect costs.
- d. A written budget justification. The budget justification should be suited to the proposal. If funding from other sources is being used to cover certain parts of the study, please elaborate on what parts of the budget will not be completed with Foundation funding and what the approximate costs of the full project would be. No overhead or indirect costs will be considered. List the additional sources of funding if the budget exceeds the proposal amount.

**9. Other Support: 2 pages**

List other support received by principal and co-investigators for any projects. Include yearly and total budget and duration of any grants.

- a. Current
- b. Pending
- c. Description – In a paragraph, describe each current or pending grant and whether it has scientific or budgetary overlay with the present proposal.

10. Biographical Sketches: 5 pages each

Please provide an NIH biosketch or the supplied form for key personnel. Indicate the total number of publications in each of the (2) categories: referenced articles and invited works.

11. Facilities Description: 1 page

Describe what resources and facilities are available at the project site. Describe how the mentor and/or the institution will provide an experience that combines both clinical and research opportunities if applicable.

12. Appendix

- a. Figures, tables, etc.
- b. Literature cited
- c. Human subjects experimental approval
- d. Vertebrate animal experimental approval
- e. Letters of support

**K. EXHIBIT I to Research Grant Recipient Agreement
Patent, Intellectual Property and Technology Licensing Policy of The Marfan
Foundation (this “Policy”)**

Effective Date: March 15, 2021

Although one of the primary purposes of The Marfan Foundation (the “**Foundation**”) in funding scientifically meritorious research is to advance its mission, the Foundation recognizes that inventions having public health, scientific, business or commercial application or value may be made in the course of research supported by the Foundation. It is the desire of the Foundation that such inventions be administered in a manner that they are brought into public use at the earliest possible time. The Foundation recognizes that this may be best accomplished through patenting, copyrighting, and/or licensing of such inventions.

Certain capitalized terms used in this Policy that are not otherwise defined herein shall have the meanings set forth below:

"Invention" is any discovery, composition of matter, method, process, product, program, software or know-how, whether or not patented or patentable or copyrighted or copyrightable, that is conceived or reduced to practice in the performance of a Foundation award and has an application of value such that its use, licensing, lease or sale can generate revenue.

"Award" is the Foundation funding mechanism and accompanying financial support given to a specific institution to support the work and/or training of a specific Investigator and any Co-Investigators (as defined below).

"Institution" is the entity (university, medical center, hospital, research institute or any other organization) in which the work and/or training supported by the Foundation funding will be conducted.

"Principal Investigator" (and/or **"Co-Investigator(s)"** if applicable) is the individual(s) receiving the award and responsible for the conduct of the research supported by a Foundation Award.

"Collaborating Investigator" is an individual who contributes in a substantive way to the scientific development or execution of the project.

"Inventor(s)" is the Investigator, Co-Investigator(s) and/or Collaborating Investigator(s) (if applicable) who made an Invention.

Inventions are subject to the Foundation's Patent, Intellectual Property, and Technology Licensing Policy as set forth below:

1. All Inventions shall be reported in writing to the Foundation within sixty (60) days of the date when the Invention is disclosed to the Institution where the work was done and prior to any public disclosure. The report to the Foundation should be the initial copy of the Institution's Invention disclosure form and any subsequent versions that have substantive changes or additional information.
2. If the Institution receiving or disbursing the Foundation funds that support the Invention has an established and applicable patent, intellectual property, or technology transfer policy and procedure for administering Inventions, the Foundation will defer to that policy with the following exceptions and requirements, which shall control in the event of a conflict:
 - a. Title to any Invention shall reside in the Institution; and title may be permitted to reside in the Inventor(s) or any other person or institution with the prior written approval of the Foundation, upon advice of the Foundation's legal counsel and science advisors, except that no Foundation approval is required for title to reside in the United States Government.



- b. Institution and Investigator(s), if appropriate, shall promptly determine whether they desire to seek patent or other statutory protection for an Invention and shall notify the Foundation in writing within sixty (60) days of the decision to seek (or not seek) such protection. The Foundation also will be notified in writing within sixty (60) days of a patent application being filed, and any patent subsequently being issued, and/or of a license, lease, sale, or revenue-generating agreement concerning the Invention prior to their execution. No patent or patent application shall be abandoned without prior notification by the Institution or Inventor(s) to the Foundation and offering to assign to Foundation all right, title and interest to the Invention to the extent permitted by law.
- c. Notwithstanding any other provision of this Policy, the Foundation shall participate in the income derived from the Invention. The Foundation's participation shall be determined, within one year or a reasonable period of time after reporting of the Invention to the Foundation, by mutual agreement between the Institution or other titleholder and the Foundation, with the Foundation's rights hereunder not being affected if such determination is not made within said time period. The amount of the Foundation's participation shall be guided by the principle that the Foundation's sharing of income shall be in proportion to the Foundation's portion of support for the work or research giving rise to the Invention. The Foundation waives receipt of income until the cumulative net income (i.e., net of any direct out-of-pocket patenting costs) from an Invention conceived or reduced to practice from the performance of a Foundation Award exceeds \$500,000.
- d. The Institution or other titleholder, when it licenses an Invention to another party for commercialization, shall include provisions in the license obligating the licensee to commercialize the Invention in a diligent manner and meet appropriate diligence requirements and concrete development milestones to avoid the license terminating, and the Institution or other titleholder shall monitor performance of the licensee relative to these requirements and milestones. The Institution or other titleholder, or its designee or licensee shall take commercially reasonable steps to bring the invention to practical or commercial application in a reasonable time period (based on type of Invention) after issuance of a patent or other clear determination of commercial value. If the Institution or other titleholder, or its designee or licensee, has not taken commercially reasonable steps and cannot show reasonable cause why it should retain title to and all rights in the administration of the Invention for a further period of time, then, if no other parties have superior legal rights, the Institution or other titleholder and the Foundation shall determine a course of action including but not limited to



- i. the Institution or other titleholder's renegotiation of milestones with the current licensee or termination of the current license and licensing of the Invention to another licensee;
 - ii. a non-exclusive right to the Institution or other titleholder to practice the Invention for any non-commercial purpose;
 - iii. a global, exclusive or non-exclusive, non-revertible, royalty-free license to the Foundation;
 - iv. the provision to the Foundation of any additional materials necessary for regulatory filing and the technology's enablement that might be in the possession or control of the Institution or other titleholder, except for intellectual property that was not generated as a result of the Foundation's assistance; or
 - v. any other action appropriate in the circumstances.
3. If the Institution has no established and applicable patent, intellectual property or technology transfer policy or procedure for administering Inventions, title to any invention shall reside in the Institution or Inventor(s) as agreed by them and the Institution and Inventor(s) shall comply with all requirements in Sections 2.b and 2.d and the Foundation shall have all rights set out in Sections 2.c and 2.d.
4. The right of the Foundation to participate in revenue derived from an Invention pursuant to section 2.c is not waived in these situations:
 - a. **Multiple funders.** If any Invention is conceived or reduced to practice from the performance of research funded by the Foundation and by independent funding from another health agency or funding organization, not an agency or department of the United States Government, the Inventors and the Institution will work with the Foundation to negotiate with the other agency/organization in good faith for a mutually satisfactory determination of rights to administer the Invention and determination of the fair share of the royalty or other income to be paid to the Institution, Inventor(s), the Foundation and other parties who independently funded such research.
 - b. **Federal funders.** Notwithstanding any other provisions of this Policy, if an Invention is conceived or reduced to practice from the performance of research funded by the joint support of the Foundation and an agency or department of the United States Government, the Foundation may defer to the patent, intellectual property or technology transfer policy of the United States Government.