CALL FOR PROPOSALS

McMaster Institute for Research on Aging

**Biology of Aging Catalyst Grant**

McMaster University has identified aging as a research priority, focusing its research strength on addressing the most pressing questions facing the aging population and creating the **McMaster Institute for Research on Aging (MIRA)**. MIRA’s mission is to optimize the health and longevity of the aging population through leading-edge research, education, and stakeholder collaborations, while upholding the values of integrity, excellence, interdisciplinary collaboration, and transparency.

**Purpose of this funding call**

The **MIRA Catalyst Grant in the Biology of Aging** offers the opportunity to conduct collaborative and interdisciplinary research focused on aging. This grant is intended to stimulate **new collaborations** and allow McMaster researchers to **collect preliminary data to support future proposals** for full-scale studies.This funding opportunity seeks to support investigating the aging-related molecular and cellular mechanisms that are candidate risk factors and drivers of common chronic conditions and diseases associated with age.

The aging process represents a major risk factor for the development of numerous chronic diseases and conditions, including **neurodegenerative diseases, diabetes, many cancers**, **cardiovascular disease, arthritis, reproductive aging,** and **frailty**, among others. Furthermore, aging is associated with metabolic changes, which may be associated with age-related diseases. Growing evidence in animal models indicates that interventions at the level of the biological mechanisms of aging could lead to the very early prevention of many chronic diseases associated with aging, and that several biological pillars - **inflammation**, **adaptation to stress**, **epigenetics**, **metabolism**, **macromolecular** **damage**, **proteostasis**, and **stem cells and regeneration -** may represent the potential drivers of the aging process. The incorporation of basic aging biology, chronic disease and clinical research, or **geroscience approach**, can identify specific processes of aging and inform future targets for therapeutic interventions to prevent or delay the onset of chronic diseases in aging.

MIRA seeks to support research that embraces a systems approach that includes end users at the outset of the project, will generate practice- and policy-relevant high-quality evidence, as well as educational methods for determining products, services, and environments that improve the health and quality of life of older adults in Canada and beyond. Further, the grant seeks to promote the exploration of aging as a dynamic, transactional process through which the biology of the individual and the demands and opportunities within the environment interrelate to influence function- and health-related outcomes.

This funding opportunity may support proposals focusing on:

* Comparative aging approaches, focusing on basic science that is fundamental to our understanding of biological processes involved in aging, for example comparing different aging model systems (e.g., flies, worms, rodents, humans)
* Neurodegenerative disease progression, investigations from basic mechanisms to clinical implications
* Developmental origins of disease, impact of peri-conception/early life experiences on molecular mechanisms of aging and disease risk
* Inspiring novel and innovative clinical and public health interventions for the prevention of chronic diseases

**Value and duration of awards**

**$40,000 over one year.** These grants require matching funds of at least $5,000 (of which up to $2,500 can be in-kind contributions) from alternate sources (e.g., team members’ Faculties, departments, other grants, industry partners, etc.) to support the project.

**Eligibility, team, and project requirements**

Project teams must include researchers from **a minimum of three different McMaster Faculties** as meaningful contributors to the project. Meaningful contributions may include: providing insight at the project outset, helping to contextualize the problem or solution, providing technical expertise, knowledge translation and implementation strategy, and academic end-user roles. External participants, and participation from additional departments/Faculties beyond the stated minimum are welcome. The submission should outline the role of each researcher in the project, and how the integration of the distinct disciplines offers a unique and sustainable approach to studying the research question. Researchers identified as the Principal Investigator (PI) on a currently open Biology of Aging Catalyst Grant cannot be the PI on a 2024 proposal; however, they may participate as a co-investigator.

Research teams are encouraged to employ **design thinking** or user-centred approaches in the formulation of the idea, refinement of the research question, implementation of the project, and development/execution of knowledge translation strategies (additional details below). **User-centred approaches integrate the perspectives of end-users** from the project outset to ensure that the outcomes are best positioned for successful implementation. Stakeholders and end users may include, but are not limited to: **older adults, clinicians, health care practitioners,** **industry partners, policy makers, the media, educators and learners, and academics in other disciplines.**

User-centred approaches integrate the perspectives of end-users from the project outset to ensure that the outcomes are best positioned for successful implementation. Design thinking is an iterative, user-centred method of solution-focused thinking that starts with a goal and explores multiple, alternative solutions from different perspectives. It is an especially useful method to investigate ill-defined problems where many factors may be unknown. MIRA will offer tools to support researchers who wish to use these approaches, including resources listed on [MIRA’s Design Thinking webpage](https://mira.mcmaster.ca/research/research-approach/design-thinking-resources) and connections to end-users and stakeholders.

Research teams will be required to provide annual progress reports while the project is still active and a brief closed-project report for two years following the conclusion of the project. From time to time, MIRA will check in with research teams for brief project updates. **Teams are also expected to participate in the annual MIRA and Labarge Knowledge Exchange.**

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| Submission and selection process |
| **Deadline:** **August 15, 2024, 4 p.m. ET** | Email applications to [mirafund@mcmaster.ca](mailto:mirafund@mcmaster.ca) |
| MIRA will strike an interdisciplinary review panel who will select the grant recipient(s) based on the quality, feasibility and impact of the research proposal, the value of the interdisciplinary approach, the academic excellence of the applicant team, and the alignment with MIRA’s goals. If a suitable proposal is not identified based on the feedback of the review committee, the award will not be offered |
| Submission requirements |
| Submissions must include a structured research proposal, written in **lay terms that are understandable to an interdisciplinary review panel.** The research proposal (**maximum four pages**) should clearly outline the proposed project and funding request, including how the project addresses the priority theme and integrates cross-Faculty perspectives.  **Please submit the following by email** to [mirafund@mcmaster.ca](mailto:mirafund@mcmaster.ca) with “MIRA Biology of Aging Catalyst Grant” in the subject line, copying the PI’s ADR, and any appropriate administrative support in the ADR’s office.   * **Biology of Aging Catalyst Grant Form** (see pages 4 and 5, below) * **Research proposal** (Four pages, in the following format*)*   1. **Background:** What gap or challenge will this research address? Who are the stakeholders or end users and how will this research contribute to the understanding of the biology of aging and ultimately improve the health and quality of life of older adults?   2. **Team description:** Describe how the integration of the distinct disciplines offer a valuable approach to study the research question, and how the interdisciplinary team will interact; what is the plan or mechanisms for collaboration among co-investigators, trainees, or other research partners?   3. **Methods:** Describe the planned research activities, including a timeline and other milestones and deliverables. If applicable, include a power analysis or justification of sample size. Teams must describe how they will leverage MIRA’s [Voice Canada](https://ca.voice-global.org/) platform (e.g. to recruit participants, engage with stakeholders, and share results and knowledge with the aging research community).   4. **Anticipated results and future directions:** Describe the novelty of this approach and the impact of these findings– indicate why this phase of the research is needed before applying for major funding and outline the anticipated impact on the larger research program or goal.   5. **Knowledge translation plan:** Include plans *beyond* traditional publications and conferences – such as social media, infographics, videos and the use of MIRA’s [Voice Canada](https://ca.voice-global.org/) platform.   *Please also include the following (no page limit):*   * 1. **References**   2. **Budget breakdown**. Table format. Identify matching cash and in-kind contributions, clearly separating from requested MIRA funds. * **Principal Applicant’s CV** (any format) |

Please direct all inquiries about this opportunity to [mirafund@mcmaster.ca](mailto:mirafund@mcmaster.ca)

APPLICATION FORM

McMaster Institute for Research on Aging

**Biology of Aging Catalyst Grant**

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| Principal Investigator Information | | | | |
| First name: |  | Surname: | |  |
| Faculty: |  | Department: | |  |
| Title/Position: |  | | | |
| E-mail: |  | | Telephone: |  |
| Project Title: |  | | | |

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| Lay Summary |
| Describe your project in a way that is accessible to a general audience. |
| Max 200 words |

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| Team Members | | | |
| Please list PIs/co-PIs, co-Is and participating researchers; include Faculty and Department affiliations. The team must include faculty members from at least three different Faculties. | | | |
| Name | Role | Faculty, department | Email address |
|  | e.g., PI, co-PI, co-I, etc. |  |  |
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| Matching Contributions | | |
| These grants require matching funds of at least $5,000 (of which $2,500 can be in-kind contributions) from alternate sources to support the project.  Please list committed or anticipated contributions from other sources (e.g., Faculty, department, faculty member’s grant, start-up funds, etc.) | | |
| Source | Description (if applicable) | Value (indicate cash or in-kind) |
| e.g., Department of Kinesiology | e.g., 10 iPads, or 30 hours RA time | e.g., $5,000 (cash) |
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|  | **Total** |  |

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| Future Funding Opportunities | |
| One of the goals of this initiative is to catalyze a new program of research and position MIRA researchers for success in external funding competitions. Please identify and list anticipated opportunities that will be pursued to continue the research. | |
| Funding source/call | How will the proposed research enhance the position of the team for success with this call? |
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| Signatures | |
| MIRA works closely with each Faculty’s Associate Dean, Research (ADR) to identify and support projects that leverage existing University assets, are strategically aligned with Faculty and Departmental research priorities, and help advance MIRA’s mandate. Please connect with your Faculty ADR before submitting your application to ensure Faculty support and alignment. | |
| Signature of Principal Investigator |  |
|  |  |
| Signature of Associate Dean, Research |  |
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For further information, please email [mirafund@mcmaster.ca](mailto:mirafund@mcmaster.ca)