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The Competitive Edge: Writing a successful HBHL Fellowship application

January 15, 2024

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McGill University is on land which has long served as a site of meeting and exchange amongst Indigenous peoples, including the Haudenosaunee and Anishinabeg nations. We acknowledge and thank the diverse Indigenous peoples whose presence marks this territory on which peoples of the world now gather.

Today, we will discuss:

- The HBHL Fellowship application and evaluation processes
- Instructions, tips and activities for the research project proposal and letter of motivation
- General writing strategies



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HBHL Fellowship application and evaluation process



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HBHL Fellowships are \$10K (Master's) or \$15K (PhD) for 1 year.

- Full-time McGill student (as of the award start date) with a project aligned with HBHL's goals and research themes
- Cannot concurrently hold federal or provincial funding, or another McGill-internal fellowship



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Important dates:

- Registration deadline: January 29, 2024, 5:00 pm EDT
- Application deadline: February 26, 2024, 5:00 pm EDT
- Results announcement: June 2024
- Award start: September 1 or October 1, 2024



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Registration:

All applicants must register online by January 29, 2024, 5:00 pm EDT: <https://www.mcgill.ca/hbhl/funding-opportunities/hbhl-graduate-student-fellowships-competition>

The registration form includes:

- Identification of applicant, supervisor(s) and advisory committee (as applicable)
- Project keywords and HBHL research theme

An electronic certificate of completion, showing your name, from at least one of CIHR's [Online Training Modules on Integrating Sex and Gender in Health Research](#) must be submitted along with the registration form.

You will not be eligible to submit a full application if you do not register on time.



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Application:

All applicants must submit their application package online by February 26, 2024, 5:00 pm EDT:

<https://www.mcgill.ca/hbhl/funding-opportunities/hbhl-graduate-student-fellowships-competition>

It is the applicant's responsibility to ensure that the application package is submitted through the above form by the deadline. No late, incomplete or emailed applications will be accepted.



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The application package must be a single pdf file including:

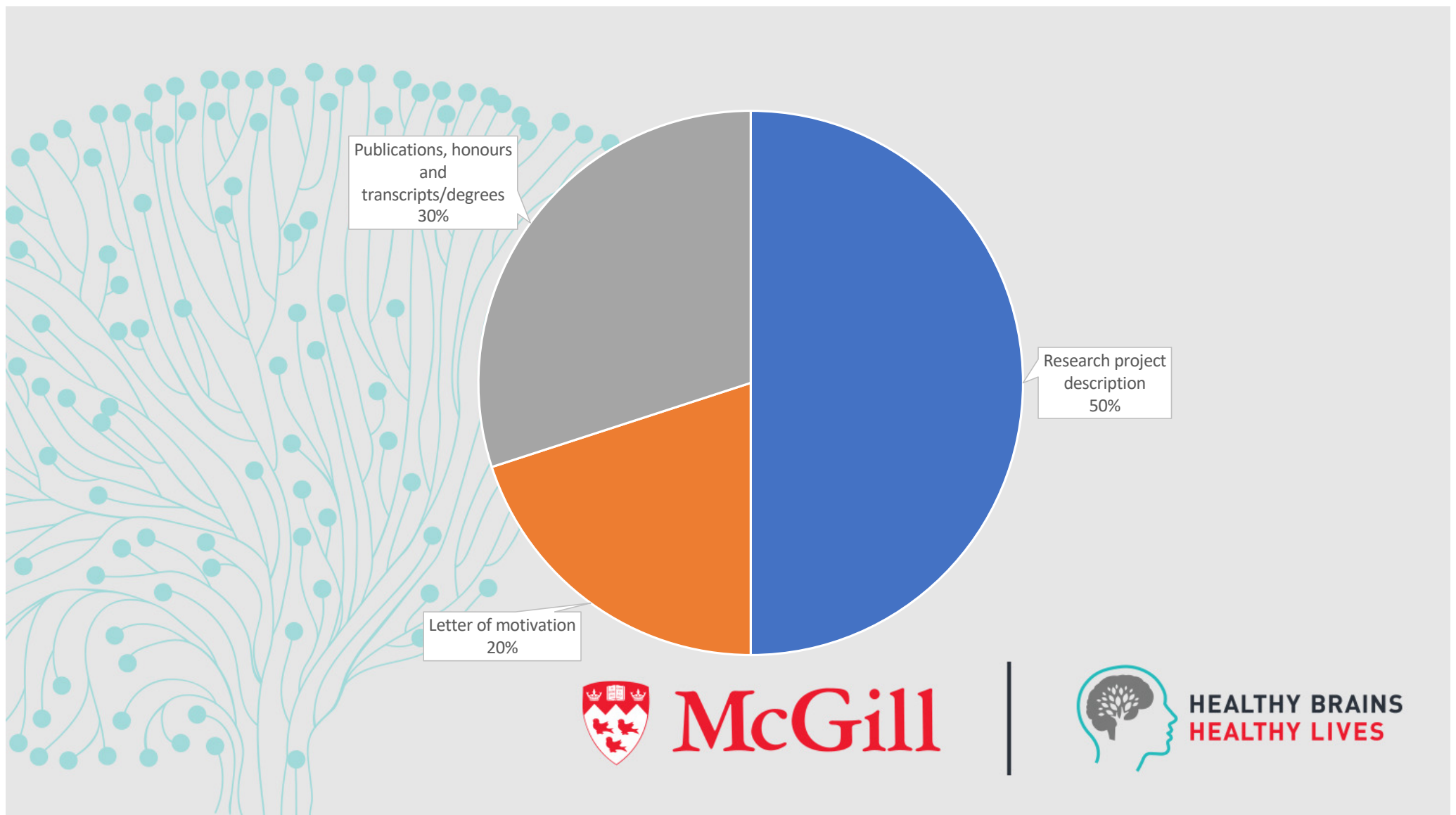
1. Applicant Information Form (word document linked in the application guidelines on the HBHL website)
2. Research project description
3. Letter of motivation
4. Description of the impacts of the COVID-19 pandemic (optional)
5. Explanation of leaves / interruptions / other personal circumstances (optional)
6. Official transcripts (and admissions GPA for any non-North American transcripts)
7. Demonstration of completion of training in research ethics



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Publications, honours
and
transcripts/degrees
30%

Research project
description
50%


Letter of motivation
20%



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**No letters of
recommendation are
required.**

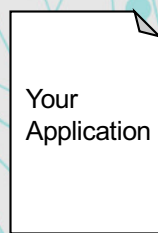


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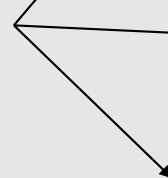


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Your application will be evaluated by 3 neuroscience researchers.



Administrative review



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Evaluation



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The reviewers want an easy read:

- Follow instructions
- Place information where they expect it
- Aim for a clear, concise, attention-grabbing and easy to understand writing style
- Ensure clean, consistent formatting
- Tell a story
- Proofread!



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The core elements of your application

1. Research project description



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The project description must include the following sections, clearly separated with sub-headings:

background and rationale

What's the problem?

research plan and methods

How will you investigate it?

expected outcomes and benefits

Who cares? What difference will it make (to solve the problem)?

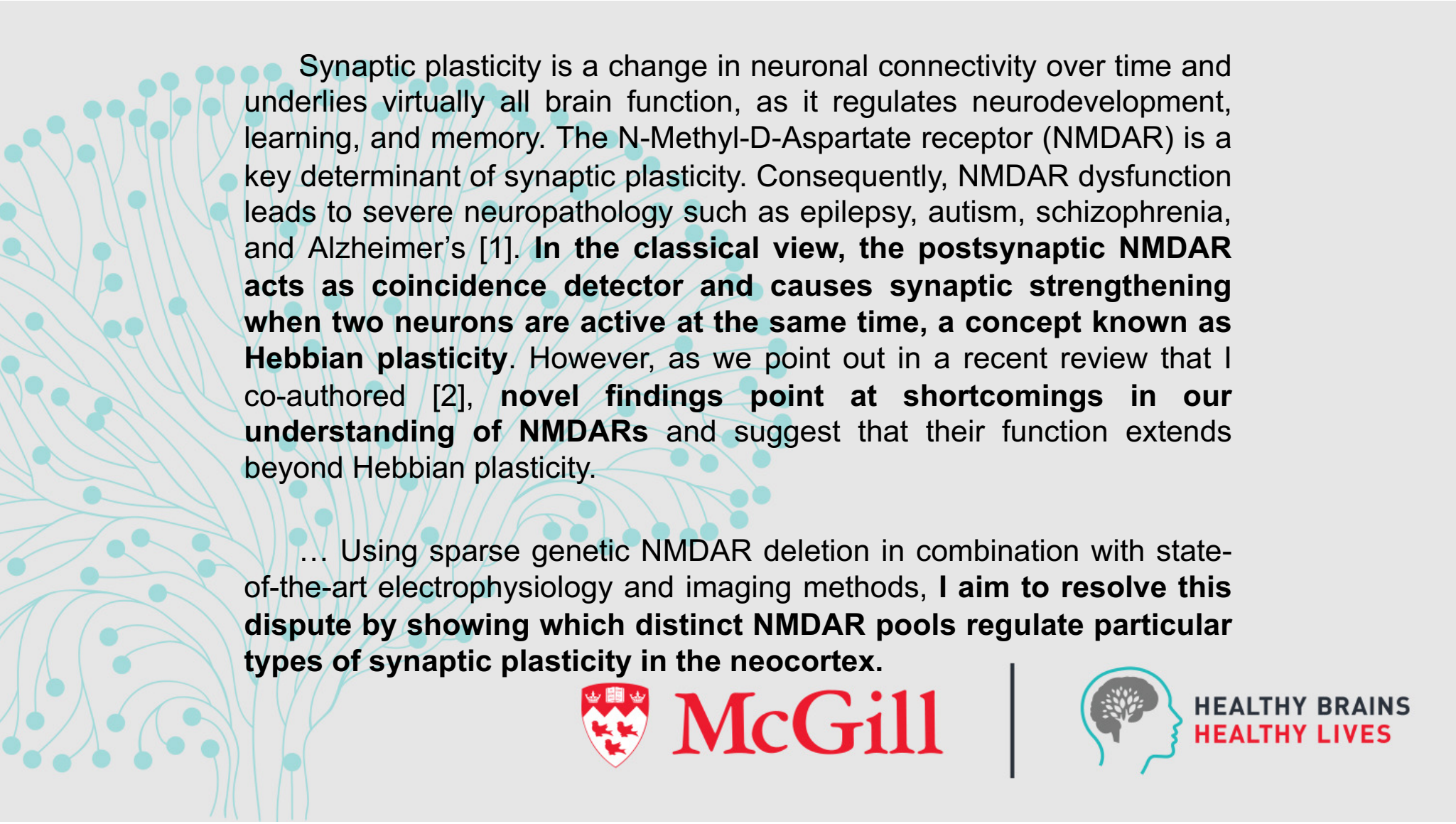
- A description of the project's alignment with HBHL
- A description of how sex and gender are integrated



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Synaptic plasticity is a change in neuronal connectivity over time and underlies virtually all brain function, as it regulates neurodevelopment, learning, and memory. The N-Methyl-D-Aspartate receptor (NMDAR) is a key determinant of synaptic plasticity. Consequently, NMDAR dysfunction leads to severe neuropathology such as epilepsy, autism, schizophrenia, and Alzheimer's [1]. **In the classical view, the postsynaptic NMDAR acts as coincidence detector and causes synaptic strengthening when two neurons are active at the same time, a concept known as Hebbian plasticity.** However, as we point out in a recent review that I co-authored [2], **novel findings point at shortcomings in our understanding of NMDARs** and suggest that their function extends beyond Hebbian plasticity.

... Using sparse genetic NMDAR deletion in combination with state-of-the-art electrophysiology and imaging methods, **I aim to resolve this dispute by showing which distinct NMDAR pools regulate particular types of synaptic plasticity in the neocortex.**



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... Using sparse genetic NMDAR deletion in combination with state-of-the-art electrophysiology and imaging methods, I aim to resolve this dispute by showing which distinct NMDAR pools regulate particular types of synaptic plasticity in the neocortex.

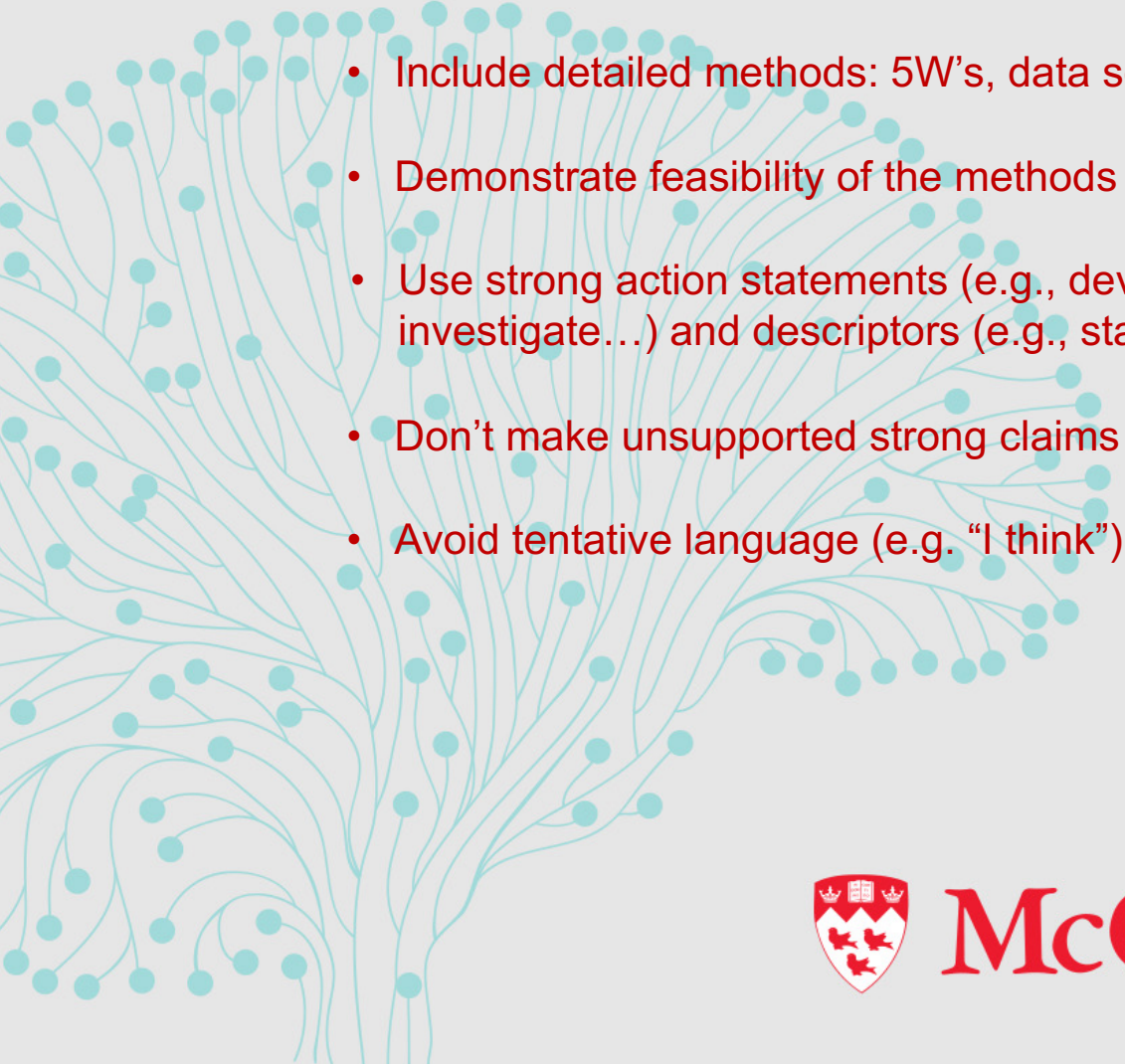
- State knowledge gaps and clearly identify your problem
- Create tension and situate the problem in an easily-understandable context
- Clearly state the project objective(s)
- Demonstrate novelty throughout the proposal



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- 
- Include detailed methods: 5W's, data sources/tools etc.
 - Demonstrate feasibility of the methods
 - Use strong action statements (e.g., develop robust tools to investigate...) and descriptors (e.g., state-of-the-art equipment)
 - Don't make unsupported strong claims
 - Avoid tentative language (e.g. "I think")



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What's the problem?

EXAMPLE: Novel findings point at shortcomings in our understanding of NMDARs and suggest that their function extends beyond Hebbian plasticity. [...] Others, however, found [...], leading to controversy [...]

How will you investigate it?

Using sparse genetic NMDAR deletion in combination with state-of-the-art electrophysiology and imaging methods, I aim to resolve this dispute by showing which distinct NMDAR pools regulate particular types of synaptic plasticity in the neocortex.

Who cares? What difference will it make (to solve the problem)?

As NMDARs have been closely linked to learning and memory as well as several synaptopathologies [1], understanding how NMDARs signal in synaptic plasticity is of fundamental importance. My project will further our insight into key brain functions and will ensure the eventual development of novel and more efficient therapeutic strategies.



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Who cares?

What difference will it make (to solve the problem)?



EXAMPLE:

My project can increase knowledge of how differently located NMDARs have distinct roles in controlling short and long-term plasticity



My project can impact a specific population (researchers) as NMDARs have been closely linked to learning and memory as well as several synaptopathologies and so, understanding how NMDARs signal in synaptic plasticity is of fundamental importance for many areas of research.



My project can change the world by establishing key principles of brain function, which is the basis for the development of novel and more efficient therapeutic strategies for synaptopathologies.



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The project description must include a brief background and rationale,

describe the research plan and methods,

and the expected outcomes and benefits.

- **A description of the project's alignment with HBHL**
- **A description of how sex and gender are integrated**



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A description of the project's alignment with HBHL's goals and objectives, and how it ties into at least one of HBHL's four Research Themes.

- Neuroinformatics and Computational Modelling
- Mechanistic Models of Neurodegenerative Disorders
- Applied Cognitive Neuroscience of Brain Plasticity
- Population Neuroscience and Brain Health



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Do:

- Start strong!
- Elaborate on the fit with WHY or HOW

Don't:

- Waste space with vague, obvious statements



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Visit mcgill.ca/hbhl/about/research-themes.

EXAMPLE:


- **One research theme in which my project fits is** Applied Cognitive Neuroscience of Brain Plasticity.
- **One relevant priority is** establishing the role of NMDARs in synaptic plasticity
- **My project will contribute to this priority by** exploring how specific NMDAR pools control synaptic plasticity on short- as well as long-term timescales



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A description of how sex as a biological variable, gender as a socio-cultural determinant of health and/or other relevant factors (e.g. race, age, Indigeneity, ability) will be integrated into the proposed project (if applicable). If none of the above factors are considered, provide an evidence-based justification for this decision.

Previous research [9] indicates sex-dependent differences in plasticity, in particular in NMDA receptor-mediated plasticity. Therefore, in this project, I will investigate both male and female animals. By reporting the sex of each animal, I will examine whether my results are impacted by sex and plan further research accordingly [10]. If no sex differences are observed, data from males and females will be pooled, otherwise reported separately. As I will be carrying out my research in mice, gender cannot be studied.



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The core elements of your application

2: Letter of motivation



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The Applicant must describe their career goals for the coming years,

- What is your desired career?
- What short-term goals will help you get there?
- Why does this career path interest you?
- What impact do you hope to have?

**and why this fellowship will assist in attaining those goals.
(1 page max)**

How will the fellowship impact the following areas:

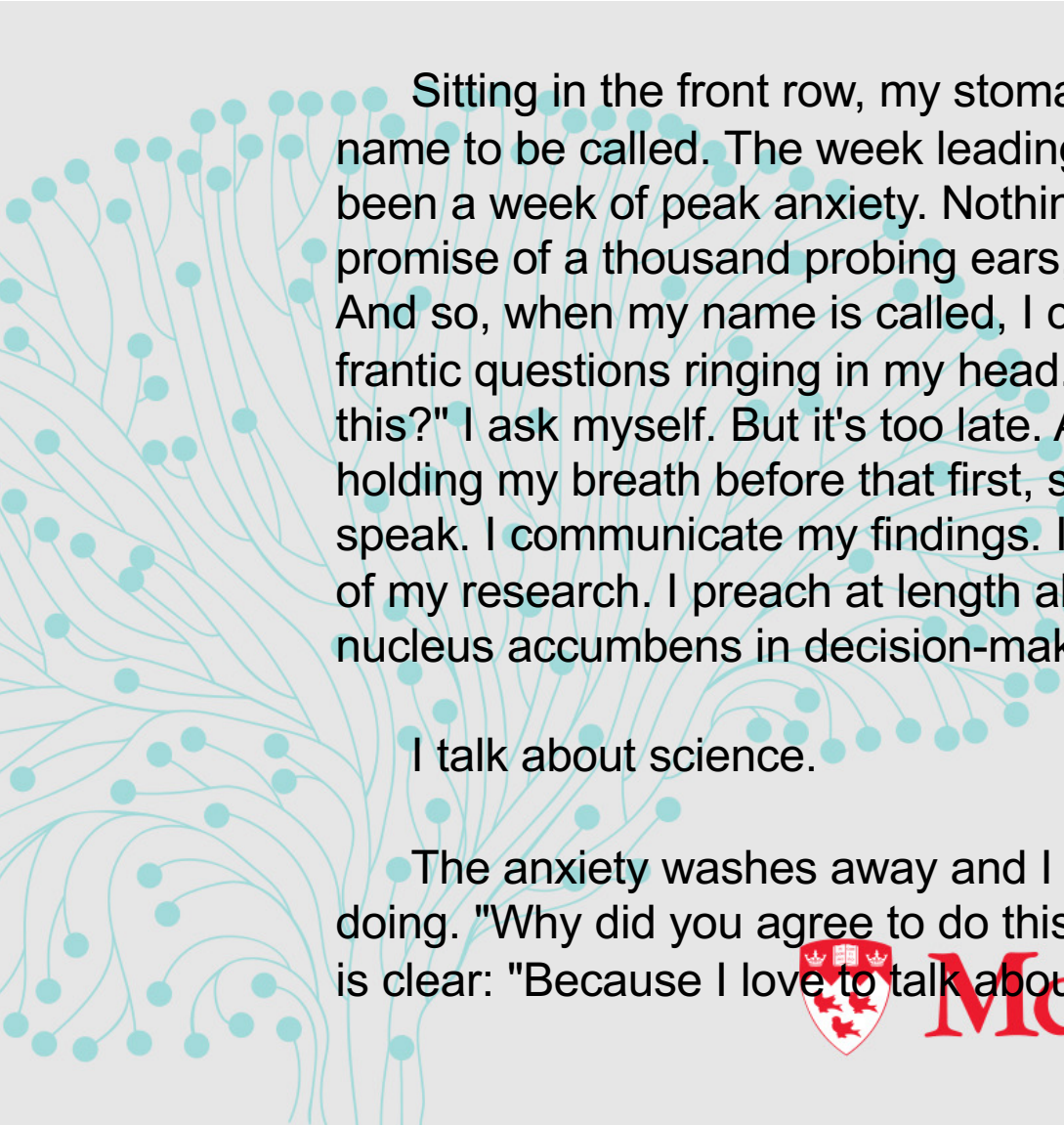
- The quality or quantity of research that you are able to produce?
- Your research training?
- Your professional development and networking?



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Sitting in the front row, my stomach churns, waiting for my name to be called. The week leading up to this scientific talk has been a week of peak anxiety. Nothing frays my nerves like the promise of a thousand probing ears, scrutinizing my every word. And so, when my name is called, I can barely hear it, owed to the frantic questions ringing in my head. "Why did you agree to do this?" I ask myself. But it's too late. As I stand before the crowd, holding my breath before that first, surely world-ending word, I speak. I communicate my findings. I expound upon the importance of my research. I preach at length about the critical role of the nucleus accumbens in decision-making.

I talk about science.

The anxiety washes away and I love every second of what I'm doing. "Why did you agree to do this?" In that moment, the answer is clear: "Because I love to talk about science." ...



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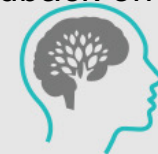
...When I first started my research journey I had concrete aspirations of staying in academia and running my own lab. As I've spent more time in the lab, I've realized that nothing is absolutely concrete in research. Ideas, models, and what we accept to be true are constantly changing; I've allowed my aspirations to change as well.

I have focused in on my underlying interests and less on a job title...I've learned that as much as I enjoy learning and discovering, I enjoy sharing that knowledge. I appreciate writing about science, putting together presentations and figures illustrating findings and models, and talking with people about science. I'm not entirely sure where this will take me in the future – running my own lab and disseminating findings and ideas, science writing, maybe I'll be the next Bill Nye – but I know in order to communicate science, I need to know how to do science...

Holding an HBHL fellowship will allow me to get the most out of my graduate studies and develop not only my research skills, but my communication skills. The increased stability it provides will allow me more time for extracurriculars related to science communication such as... I would also be able to explore writing about and sharing science...through blogging and social media platforms. Finally, receiving the HBHL fellowship would expand my opportunities to attend conferences. This would help me refine my presentation skills, provide opportunities for exchange of knowledge and ideas, and provide feedback on my research...



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Do:

- State specific long-term goal(s)
- Explain WHY these are your goal(s)
- Demonstrate ambition and motivation
- Share unique interests, experiences, and goals
- Be genuine and express pride with modesty
- Use positive language
- Ensure coherence and flow, and separate sections/paragraphs as needed

Don't:

- Repeat your proposal
- State that the fellowship will help you by making your CV look better



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Discuss with the group:

- What is your desired professional goal in life?
- Why? What is your motivation?
- What impact do you hope to have?
- What short-term goals will help you get there?

How will the fellowship impact:

- The quality and/or quantity of research that you are able to produce?
- Your research training?
- Your professional development and networking?



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General writing strategies



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Planning
Pre-writing

- Brainstorming
- Free-writing, mapping
- Outlining

Drafting

- Turn off editing mindset
- Get it on paper, work towards full sentences
- Expect multiple versions

Rewriting and
editing

- Review the instructions and make sure all key elements are there
- Revisit your purpose in the different sections to see if it all tells a coherent story about you
- Use reverse outlining to ensure the logical organization and flow of ideas in your paragraphs
- Look at start and end of sentences for topic (old info) and stress (new info)
- Expect re-writing and not just light fiddling

Polishing and
fine-tuning

- Word choice: I vs We; overuse of transition words (however; furthermore)
- Try for variety in sentence structure. Read it out loud
- Double check that your document conforms to the instructions

[Take breaks to foster idea generation](#)

Get feedback from others:

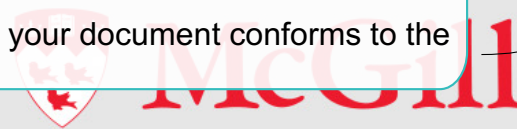
Someone smarter than you in your field

Someone as smart as you in your field

Someone outside your field



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REVISION TIPS: Micro

COHESION	CONCISION	CLARITY
Pay attention to information flow (topic and stress)	Remove wordy phrases (e.g., in order to vs. to)	Avoid adverbs (e.g., very, quite, rather, somewhat)
Use occasional transitional phrases (e.g., by contrast, however)	Eliminate redundancy (fully complete, final outcome)	Avoid negative prefixes and forms (doesn't have vs. lacks)
Parallelism (both...and; not only ... but also)	Favor verbs over nouns (is an examination of vs. examines)	Avoid unclear referents (e.g., This was ... vs. This improvement was)



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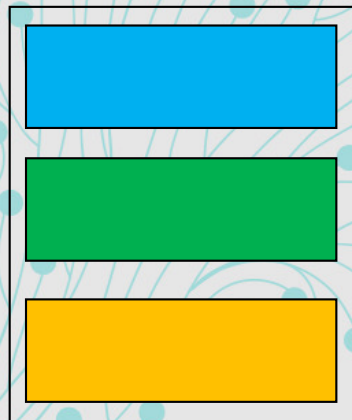


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REVISION TIPS: Macro

Section budgeting

Page Formatting



- Same font
- Comfortable spacing
- Strategic use of **bold**, *italics*, underlining



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If you only remember 3 things...

- Make it easy for the reviewer to evaluate your application: follow instructions, use clear and concise statements, and foster excitement for your project and its potential impacts
- Clearly explain what the problem is, how you will investigate it, and what difference it will make
- Dedicate time and effort to the writing process, including planning, free-writing, editing, polishing and feedback



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