What research fields are you in? (25 words)
Data science, computational neuroscience, scalable computing, connectomics, pipeline engineering, neuroimaging, graph theory.

What is your research focus? (50 words)
I develop scalable, open, accessible, and reliable computational tools and infrastructures for performing, visualising, and analyzing data in computational neuroscience, neuroinformatics, and computational medicine. I'm particularly concerned with the reproducibility and reliability of scientific findings, and lowering the barrier to entry for performing and replicating analyses.

Describe to us your current research team. (50 words)
The McGill Centre for Integrative Neuroscience is a multidisciplinary team of developers and scientists funded in part by a significant portion of the $84M Canada First Excellence Research Fund. The 70-member team is comprised of principal investigators, a chief operating officer, software developers, post docs, trainees, and scientists.

Describe to us how open science advances your research. (100 words)
Mental illness is the leading cause of disability globally, afflicting 1 in 5 people throughout their lifetime (NIMH, NIH, 2015). With increasing awareness and acknowledgement of the impact and seriousness of mental illness, neuroimaging studies collecting information at the brain across a range of scales and disease populations are more abundant than ever before. However, a limitation of stand-alone studies is the inherent bias present in small samples. Sharing data, resources, tools, and analyses, is essential for enabling researchers to evaluate and overcome this bias, enabling meaningful progression towards both understanding the healthy brain, and intervening with the diseased brain.

Are you leading any projects related to open science? (100 words)
Since entering the neuroscience community three years ago, I have become increasingly involved in efforts to democratize the field with open source tools. My primary effort was building NDMG (https://github.com/neurodata/ndmg), a one-click structural connectome estimation pipeline for human brains. To further increase its accessibility, I developed SIC (https://github.com/neurodata/sic), an extensible framework for performing and communicating interactive science in the cloud. I am also involved in the Organization for Human Brain Mapping special interest group for Open Science, planning both the presence and activities during an annual conference and teaching a course, BrainHack101, for researchers entering the field of computational neuroscience.

How do you see Mozilla advancing your work? (50 words)
The Mozilla Science network facilitates a mission for collaboration, openness, education, and accessibility across the globe. Leveraging these resources and training, I will become an ambassador for open neuroscience, and demonstrate by both example and interaction the importance, impact, and benefit of the open web and accessibility on scientific discovery.

What do you see as the opportunities for impact around open research at your university? Could you leverage this opportunity in a potential project? (50 words)
The Montreal Neurological Institute, to which my lab belongs, has committed to an experiment in which all research results and data products collected over the next 5 years will be publicly released. Leveraging this commitment I could facilitate the storage, analysis, communication, and dissemination of this knowledge to the world.

What do you think needs to change most immediately in scientific research? (100 words)
In order to efficiently push the frontier of scientific discovery we must minimize the burden of scientific replication. A shift in funding agencies and journals towards prioritizing reproducibility, replicability, and reliability in science is required so that not only is scientific novelty rewarded, but thorough and meticulous analysis and tool development as well. Maximizing the applicability or generalizability of results, as well as providing sufficient evidence and resources that these claims may be tested, would greatly reduce the complexity of building upon previous works. Incentivizing so-called accessible and applicable science enables researchers to more effectively stand upon one another's shoulders.

What project in the field do you find most inspiring to further science and the web? (50 words)
I am inspired by the Neurovault (http://neurovault.org/) initiative, which publicly shares and distributes atlases, parcellations, and statistical maps of the human brain. Neurovault democratizes data-tools and rapidly decreases the time from development of these tools to the sharing and adoptions of them, as compared to traditional strictly publication-based sharing.

Why is the the open web important to you? (25 words)
The open web shortens the feedback loop between individuals and the community, enabling the acceleration of technical innovation, scientific discovery, and philosophical inspiration.