

Dear colleagues,

Are you working on perfusion MRI post-processing and do you have code to share? Do you feel like you are spending ridiculous amounts of time writing code that other people have written many times before? Would you like to get more out of the hours you spend writing code by sharing it with others? Do you want to help make our science more reproducible?

Then join the Perfusion Open Source Initiative!

What is the aim of the Perfusion Open Source Initiative? We will build an open-source, transparent, well-documented, version-controlled and dynamic library of core functionality for processing MRI perfusion data. The aim is to reduce duplicate development and economise efforts, remove differences between implementations that may affect the comparability of results, and increase the transparency and reproducibility of our research.

How can I join the Perfusion Open Source Initiative? If you are interested, please fill in [this form](#) (5 min) to express your interest and let us know how you are able to help. The deadline for signing up is **1 November 2018** and we will get back to you with next steps shortly after.

Who is coordinating the Perfusion Open Source Initiative? This is an initiative of the ISMRM perfusion study group, and is currently coordinated by the secretary Steven Sourbron and Trainee Representative Laura Bell. The initiative builds on the Perfusion Freeware presentations organised by Fernando Calamante in the meetings in Toronto (2015) and Singapore (2016). The summary slides of the presented packages are still available on the [study group page](#).

What is the scope of the Perfusion Open Source Initiative? We will include all perfusion MRI methods, including ASL, DCE, DSC, and all application areas (brain, body, heart etc). The software will include image processing and model fitting algorithms, visualisations, but also digital reference objects and use cases.

Who can join the Perfusion Open Source Initiative? Everyone willing to invest time and effort is welcome, and we are particularly keen to have involvement from PhD students and junior postdocs. Possible ways you can contribute:

- You have code already that they are willing and able to share (in whatever language).
- Help in writing, structuring and harmonising the library, developing code and documentation.
- You have experience in open source software development beyond the perfusion field and are interested to bring that expertise in.
- Testing software developed by others and offering feedback to the developers.
- “Executive” roles: identifying gaps in freeware development, prioritising development and issues, harmonising language & notations, etc.

How will the Perfusion Open Source Initiative work in practice? We will start by bringing together and harmonising code that already exists and has been tried and tested in previous research. Once the a critical mass of contributors is established we will start a formal process, identify responsibilities, write specifications, decide on licensing principles, define a development plan, define a structure for the library, collect existing tools together, and develop unit tests and harmonised algorithms. Additional events may be organized through ISMRM and perhaps dedicated workshops.

How can I get credit for my work on the Open Source Initiative? All contributors will be recognised through a transparent system of authorship. The software will be made available through a version control system which can assign DOI's so your work can also be referenced directly. We will aim to publish one or more accompanying papers to describe process and rationale, and all contributors will be recognised as authors. The freeware will also be made available via the ISMRM's open access software platform (www.ismrm.org/MR-Hub/).

Looking forward to hearing from you,

Laura Bell and Steven Sourbron