

1 August 2017

Dear Fernán,

I was excited to hear about your proposed project “Millennium Institute for Integrative Systems and Synthetic Biology (MISSB)” and that my work on open source microscopy might have a part to play. Over the last two years I have developed a 3D printed design for a microscope, including very high quality translation stage, that aims to be suitable for serious laboratory science. I will be delighted to collaborate with you over the next few years to help you take advantage of my work and integrate it into your larger open-source toolkit of hardware and software to help tackle your ambitious biological challenges.

I am a Royal Commission 1851 Research Fellow and a 50th Anniversary Prize Fellow at the University of Bath, in the Centre for Photonics and Photonic Materials. My career so far has centred on microscopy, both the development of novel instrumentation and the use of automated microscopy in problems in chemistry, biology and nanoscience. I am committed to openness in science, having shared designs for hardware and software, including the popular Red Tweezers control package for holographic optical micromanipulation. I have also successfully commercialized a number of instruments – including a custom microscope and optical tweezers system (the Cube, sold by Meadowlark Optics).

The OpenFlexure Microscope is a compact (~150mm) and frugal (~£10-100) microscope that nonetheless achieves the same optical performance as a lab microscope and mechanical stability that allows week-long experiments – often without even needing to refocus the image. The microscope can be simply motorised, which not only allows a great range of automated experiments (and thus the collection of larger, more consistent datasets) but also makes it an exciting tool for engaging scientists with physical computing and training them to design and run robotic experiments. The design is freely available online under the CERN Open Hardware License and has already been replicated around the globe.

I will be delighted to work with you to integrate the OpenFlexure Microscope into your suite of experimental tools. This will include hosting visits by your team to the University of Bath, and/or reciprocal visits by me or my team to Chile. We will also collaborate on designs (for example optical systems and OpenSCAD designs for microscope frames) through online collaboration platforms such as GitHub. I am excited to be able to contribute to this really interesting project, and look forward to working with you in the future.

Yours Sincerely,



Dr Richard W. Bowman
Prize Fellow & Royal Commission 1851 Research Fellow
Department of Physics, University of Bath