Wellcome Trust Open Research Fund 2021

This funding supports researchers to develop and test incentives for making health research more open, accessible and reusable.

Call for application: https://wellcome.org/grant-funding/schemes/open-research-fund (closed)

This proposal was submitted by the **Open Life Science** team in 2021. Please note that this is not a full application -- all questions/sections with personal information have been removed from this document. Please cite this document with DOI: 10.5281/zenodo.5267934.

Application summary

- Title of application: Systematic evaluation of community development through open science training and incentivising contextual mentorship in health research
- Total amount requested: £100,000.00
- Proposed duration of funding: 2 Years
- Name of Administering Organisation: Open Life Science
- Authors: Malvika Sharan, Bérénice Batut, Emmy Tsang, Yo Yehudi

Team members and collaborators - 700 words

Will you require any team members or key collaborators for this proposal?
Please list your team members or key collaborators (name and organisation) and provide a very brief outline of their role in the proposed research.

Dr Malvika Sharan, Open Life Science
Role: Community assessment research - Dr Sharan will supervise and work closely with the recruited staff member to monitor the engagement and development of OLS participants; coordinate the OLS team to build a governance strategy for healthy community growth. As a primary application of this proposal, she will ensure that practices established in OLS are shared across wider open science initiatives and resources developed in the programme are sustained after the funding period.

Dr. Bérénice Batut, Open Life Science
Role: Content development and data strategy - Dr Batut will develop and maintain a robust and scalable data architecture for the OLS community; establish content and data strategies to showcase the growing body of output and impact of the OLS community.

Dr Emmy Tsang, Open Life Science
Role: Programme sustainability and partnership - Dr Tsang will build a resilient infrastructure that is equitable and beneficial for OLS's diverse member, including establishing a steering committee; explore and establish meaningful partnerships for programme sustainability

As members of the OLS leadership team, Drs. Sharan, Batut and Tsang will bring key skills to the programme from their professional background, areas of expertise and personal networks. Beyond ensuring the strategic development of the programme, they will continue to organise the training and mentoring programme with the support of the new staff member (described in the next paragraph). They will ensure that the cohorts over the next 24 months run smoothly at all stages, from development to delivery and reporting. They will advise on and oversee the impact assessment studies and carry out the research-based improvement of the curriculum subsequently.

To maximise the impact of our project, we will recruit a staff member as a programme coordinator (1FTE) for 18 months during the funding period. They will help the OLS leadership team in coordinating and delivering the cohorts. Working with the OLS leadership team, they will co-lead the impact studies and evaluation of OLS. They will also provide administrative support such as by helping ensure transparent communication with all the stakeholders, participate in outreach efforts, process feedback from the programme and develop reports to share openly. OLS's community of mentors and experts are vital to our success and growth. It is the OLS leadership team's joint responsibility to build mechanisms and pathways for participation that can help sustain and recognise them for their contributions and participation. At each cohort, they will invite new experts from the wider open science community to avoid gatekeeping and ensure we have the right blend of diverse skills and experience needed to meet our vision and goals. Drawing diverse collaborators and representatives from the existing OLS community, they will establish a steering committee. The committee will be engaged in co-creating a sustainability model for the programme beyond the lifetime of this funding as well as beyond the OLS project (potentially in their local communities). The OLS team rely on continuous feedback from the OLS community and support to construct these pathways such that they are and will remain meaningful for them.

We are also looking to establish partnerships with mission-aligned organisations, such as institutions and funders with a commitment to open research, particularly in open health research. Fruitful partnerships enable the growth of OLS by helping explore new impact pathways to reach communities, particularly those currently underrepresented in open science.

I confirm that the team members or key collaborators named above have agreed to be involved, as described, in the proposed research and are willing for their details to be included as part of this application.

Proposal summary: 250 words

Provide an outline of what your successfully completed Open Research Fund activity will look like and what you will have achieved.

Open Life Science (OLS, https://openlifesci.org/) offers a 16-week long cohort-based training and mentoring programme that enables researchers to learn about, reflect on and integrate open science principles in their work. The Open Research Fund will support the continuation of OLS and the delivery of three cohorts of the programme in 24 months. In addition to supporting the volunteer members (up to 30 projects, 30 mentors and 15 experts per cohort), OLS will recruit a full-time staff

(1-FTE) for 18 months to conduct a long-term impact study and provide administrative support to the leadership team.

A successfully completed Open Research Fund activity in OLS after 2 years of funding period will have enabled:
(i) research-based evaluation and enhancement of the OLS curriculum, training materials, mentoring formats and value-based approach to community development,
(ii) incentivised integration of contextual (sociotechnical and cultural) knowledge of mentors and project leads in the open science project they develop in the program,
(iii) enhanced representation and equitable participation of health researchers and community builders from the Global South in a shared vision for the global open science through collaboration,
(iv) assessment of the long-term impact of OLS on the careers of the OLS participants and adoption of contextualised open science practices in research work in their regional contexts across low- and middle-income, as well as high-income countries, and
(v) publication of a series of reports capturing different outputs, building open source evidence base and inviting support for the sustainability of OLS over the next 5 years.

Details of proposal

Provide details of your Open Research Fund proposal, including: (i) the vision for your proposal, including aims, target audiences, activities; (ii) how your proposal will influence open research practices in your field or more broadly.

Vision: Open Life Science (OLS) broadens access to structured training and mentoring in open science for a diverse community of researchers across health science and research worldwide. By incentivising integration of contextual knowledge by both mentors and project leads, OLS will enable equitable participation and leadership of members from marginalised communities in open science and health research.

Aim: As OLS has rapidly grown since 2019, it has become essential to systematically evaluate, document, and share recommendations for open science training and mentoring learned through the three iterations of this programme. Over the next two years, we will study the long-term impact of open science training in health research as we continue offering our training and mentoring programme.

We will draw specific attention to often-neglected areas such as sustainability of existing resources that require funding and institutional support, and accessibility that affects how people with a range of abilities and disabilities participate in health research. By ensuring that the scientific narrative is global rather than western-centric, health researchers will be in an empowered position to apply open science practices in ways that are sustainable, contextually relevant and impactful for their communities and careers.

Audience: To date, OLS has supported three cohorts with 89 different projects across 6 continents led by 146 mentees and mentored by 90 open science practitioners. These members represent

researchers with diverse domain knowledge, including in healthcare, from both the Global South and North.

We will recruit individuals and teams interested in open research related to human health to develop scientific projects that they are either already working on or would like to launch in the near future. Participant selection is application-based: applicants provide details on their project -- what they plan to achieve, who their target audience is, what mentorship support they need and how applying open principles will help them and their area of work.

In delivering training and mentoring, we involve open health research advocates and practitioners, including OLS graduates, who provide real-world examples and help integrate contextualised knowledge to design and lead open research in local communities. Following the existing framework, they are onboarded as mentors, experts, consultants, researchers and advisors in the project. We will ensure that the selected participants represent a diverse mix of background, identities, country of residence, domain expertise and research communities.

Activities: The overarching goal of this proposal is to empower diverse researchers to use evidence-based practices to build community-driven self-sustaining resources in health research in their regions. We have planned the following activities in the programme to meet our goals:

1. Community infrastructure and governance: Embed transparency, openness and resilience in the programme.

- Recruit one FTE staff member to carry out administrative tasks and help conduct research and impact studies in OLS. This position will allow the leadership team, who work in a volunteer capacity, to broaden their reach and build evidence for delivering contextual mentoring successfully.
- Establish a steering committee to bring resilience to the OLS programme and build an infrastructure that is equitable and beneficial for its diverse members. Enhance representation in decision-making positions by bringing individuals from different socio-technical and socio-cultural backgrounds, identities, career stages and research communities.

2. Programme participation: Intentionally invite and support participants from traditionally underrepresented groups in open science.

- Offer three cohorts of open science training and mentoring in the next 1824 months, with an average of 30 diverse projects in each cohort.
- Connect participants across different cohorts and offer support funds for online participation of members from low-resource backgrounds
- Share research-related information and opportunities (funding, fellowships, events and projects) to enable participation in the broader open science movement.
- Facilitate engagement and communication, actively invite feedback and inspire health researchers to apply open science practices sustainably and impactfully for their communities and careers.

3. Evaluation and impact study (research): Understand the strategic long-term impact of hands-on training and contextual mentoring.

- Build evidence for effective practices in open research communities, transformational impact, and open science practitioner career progression.
- Conduct quantitative assessment using community health metrics built upon CHAOSS guidelines and Mozilla Science Lab for human health research.
- Qualitative assessment to develop interview-based case studies on projects from different health domains, career stages, and countries, analysing common themes and concerns affecting open or open-curious scientists and health researchers.
- Continue to nurture a peer-learning and train-the-trainer style network where researchers can teach and collaborate.
- Assess how our participants carry their knowledge beyond OLS, for example in building community-based sustainable infrastructure locally, specifically in the Global South.
- Leadership from members who represent diversity in terms of their ideas, research interests, and experiences, will reflect the success towards embedding inclusivity, sustainability and resilience in the global open science and health research.

4. Incentives and acknowledgement: Ensure a mutually beneficial value exchange for our volunteer members.

- Offer honoraria for our volunteer mentors to recognise their contribution to the programme.
- Develop pathways for our graduates to assume leadership roles in OLS and within the broader open science ecosystem with the support of existing community members.
- Offer personal development opportunities through professional training in technical health research skills and transferable skills such as mentoring, coaching, communication and community building.

How you will monitor and evaluate the success of your proposed activities in making health research more open, including approximate targets: 300 words

1. Targeted survey: Our participants start their training with a self-assessment survey to set personal and project-related goals in the programme. We conduct mid- and post-cohort surveys to check-in and report on where participants are at in their project since their training started. These surveys allow participants to reflect on their progress and the OLS team to make appropriate adjustments.

2. Monitoring and feedback: We monitor the engagement and development of our participants to assess if they complete their training as planned while engaging actively, building skills, establishing connections and experiencing a positive learning environment. Our mentors provide regular feedback to help us adjust our training resources and provide additional support as per the needs of their mentees.

3. Long-term impact study: We will conduct formal, IRB-approved qualitative research on the long-term impact of our programme on our graduates and their local communities where they lead

their open research projects. We will continue to collaborate with different non-profit and research programmes in helping them develop mentoring opportunities for their members and collaborate with them in our study. We will specifically report on context-specific support, resource requirements and formats of training and mentoring in open science that is successful and transformative for local communities.

4. Transformative impact of open leadership: We will extend our study to understand how transformative open leadership practices create impact beyond OLS. Participants not only learn about technical aspects of open science but are also exposed to the people-first approach that OLS prioritises. They are encouraged to involve diverse members in their communities and projects, and are supported to collaborate within international open science projects. We will assess if our participants find their learning transformative, meaning, if they lead their projects openly and inclusively, prioritise contextualised knowledge and advocate for these values in their work beyond OLS.

Outputs management and sharing: 700 words

Below, we describe the outputs and management plan for different kinds of data, materials and research objects that will be produced as we carry out the project plans described in this proposal in Open Life Science:

Training programme:

All training outputs will be made publicly available as they are created. Individual calls have both blank "call templates" and completed post-meeting call notes, which will be deposited online on GitHub and Zenodo, under a CC-BY 4.0 licence. Slides from presentations are deposited on Zenodo. The calls are recorded, except for private group discussions in breakout rooms. All recordings are deposited on Youtube, again with a CC-BY licence and full English transcriptions to facilitate hearing, screen-reading and language accessibility. Where code and scripts are used to manage the programme, all code content will be stored on GitHub under a permissive OSI Licence. Code content is accompanied by detailed documentation such that others can contribute to it. We also teach and encourage all project leads to license their project output under a CC-BY/permissive OSI license, and to document their work and plans openly and inclusively.

Impact study:

The impact study will produce case-study data which may be in the form of interview transcripts or survey responses. We will share the survey protocols and methods openly on protocols.io, including recruitment advertisements, interview scripts, and survey questions.

Where ethically appropriate and safe we will share impact study response data, either anonymously or containing identifiable data, where consent is given by the individual projects. Raw data will be stored securely on cloud-based servers (such as dedicated Dropbox for Business or GSuite) until processed (i.e. anonymised where necessary). Raw data will be retained for a minimum of five years unless ethics review or institutional repository requirements stipulate otherwise.

Once processed, data will be deposited on an open repository such as Zenodo or Dryad, alongside metadata "README" files that describe the shape of data and the meaning of specific columns.

Where qualitative data analysis occurs, codebooks will be deposited, including an explanation of the codes and their meanings. Where possible, data will be stored in re-usable formats, i.e. CSV and JSON rather than proprietary formats, to facilitate re-use without the need for expensive or proprietary software. For tools where there are no competitive open alternatives, such as NVivo for qualitative data analysis, we may need to store data in proprietary formats, but every effort will be made to maximise non-proprietary content.

We may use codes and scripts to analyse data, tidy the data, and produce visualisations. Where this occurs, the scripts and clear running documentation and dependency data will be stored on GitHub under a permissive OSI licence, and versioned snapshots of the code will be deposited on Zenodo.

Results dissemination:

In addition to sharing the data, protocol, and scripts, we will ensure that all publications associated with our impact study and training programme are posted as preprints to facilitate early comment and distribution, and finally in open-access journals such as Wellcome Open Research.

This proposal:

This proposal will be deposited on Zenodo to get a DOI as well as shared via the Open Grants portal (https://www.ogrants.org/).

Costs requested: 700 words

Salaries: The majority of this budget will be dedicated towards staff research and program delivery time, with the goal of hiring 1 FTE staff member (50% Programme Management and 50% Evaluation and Impact Research responsibility), at a base salary of GBP £40,000 / year for 18 months, with the remainder of the salary costs covering NI, pension, and benefits. We anticipate that it may take a few months to hire for this role, so the program will run over 24 months, but the paid role itself will cover only 18 months.

Equipment: We request a further £2,500 to support a laptop and associated IT equipment for the staff member.

Cohort support: Whilst we typically offer dedicated OLS cohort member funding support in the form of professional mentoring and coaching training for mentors participating in the program, and access to internet, headsets, and other small hardware costs for participants to allow better diversity and worldwide access, especially from lower- and middle-income countries, this will be supplemented from external sources and does not form part of this budget.

Overheads: As Open Life Science is a small non-profit organisation, we also request 15% overheads to cover administrative time, accounting services, and estate management.

Summary of financial support requested
Total (£): 100,000.00