



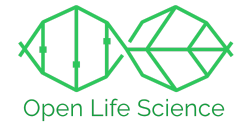
Open Life Science

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Open Life Science Proposal for the next phase of funding and support from the Chan Zuckerberg Initiative

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Program Overview

Open Life Science (OLS)'s vision is to create a future where science and research is shared openly and responsibly, created by equitable teams that represent and are led by the populations affected by their work. We see research as a community-driven and community-oriented process that values all types of contribution, from the scholarly paper, to the technical implementations, to the "glue" work of maintaining, nurturing and mentoring individual growth, respecting privacy, and balancing individual needs and abilities with the needs of healthy and inclusive communities.

[Open Life Science](#) is a 16-week training and mentoring program that enables researchers to develop and lead their research projects and become open science ambassadors in their communities. Through three cohorts, we have trained 147 participants from 6 continents, across 45 low- and middle- (LMICs), and high-income countries (HICs). With the combination of practical training by experts and the conceptual knowledge of our mentors, we guide our participants to reflect on and apply open practices in the context of their socio-cultural environment where they conduct their research. Participants join as individuals or in groups working on a project that they are either working on or want to launch in near future. They meet with their OLS mentor and join the cohort call on alternating weeks, learning [hands-on skills](#) centred around open, equitable and inclusive development and community practices.

Co-led by Yo Yehudi (Open Source Technology Lead, Wellcome Trust), Malvika Sharan (The Turing Way co-lead, The Alan Turing Institute), Emmy Tsang (Community Engagement Manager - Open Science, Technical University of Delft) and Bérénice Batut (Postdoctoral researcher and Galaxy Training Network co-lead, University of Freiburg), OLS currently runs on volunteer time and minimal funding to cover infrastructure and participant support needs. For the next 1.5 years, a grant from the Open Research Fund at the Wellcome Trust will enable OLS to hire a research project manager (1 FTE), who will administer the day-to-day operational tasks in the program. Longer bios are available at the end of this document in the key personnel section.

Overview of the next phase of funding and support

In this proposal, we request funding and support from the Chan Zuckerberg Initiative (CZI) to effectively execute ongoing operational activities and establish long-term sustainability in OLS. CZI funding for the activities and deliverables described in this proposal for the next two years (2022-2023) will support four iterations of the program that we **refer to as the 'next phase' in this document**. We propose 0.6 FTE funding for an executive director and 0.1 FTE funding for three



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program directors. By serving in a paid capacity and reducing the reliance on volunteer labour, OLS directors will dedicate their time in the research and development of the program through the expansion and marketing of the services we offer. Delivery of an additional dedicated open-source software track for the program will allow open science software funders and research institutes to refer employees and current or potential grantees who are open-science and open-source curious to the program. To guarantee program quality, cohort sizes are capped at maximum 30 participating projects (Figure 2), with up to 50% being funder-referred spots, and the remainder reserved for general applications. Through strategic alliances with other organisations, OLS will offer customisable curriculums tailored to support researchers and industry professionals in the current open research climate. There will also be opportunities to establish a self-sustaining business model (through workshops and consulting services) to support the program after this funding period.

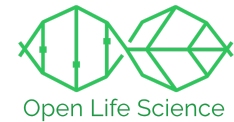


Figure 1: OLS's 16-week programme schedule with curriculum (*browse online - [OLS-4 Schedule](#)*)

Program format and activities

Each project lead (i.e. mentee) begins their journey in OLS with their application to participate in a cohort.

- **Developing their vision for open science:** The project leads join the program with their specific research-related (including open software, hardware, community building, documentation, events) project they are developing/would like to develop and lead. The OLS application prompts our applicants to establish where they are in their projects, what



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aspect of their research they want to develop through open research practices and what changes they want to impact in their communities.

- **Training on open practices:** They receive training on methods and best practices in open science over the online cohort calls, which feature collaborative group discussions and networking. Diverse experts from various international initiatives are invited as expert guest speakers to share their insights from working on open science topics. These topics include methods such as open source software, open hardware, open data, citizen science, and technical training. They also learn about open science dissemination methods such as preprints, preregistration, open peer review, open access scientific publications, and archiving of research components. Additionally, participants are introduced to hands-on skills such as collaboration on GitHub, open communication and community building that encourages bringing in new contributors from their local communities and creating inclusive pathways for them to engage with the project in the long term.
- **Mentorship and expert consultation:** Project leads are guided by mentors from the program who are matched based on the specific skills and accessibility requirements. Assignments and worksheets offered in the program ensure that our participants systematically develop and lead collaborative and community-oriented projects, and ask for specific support from mentors and experts in the program.
- **Participants engagement, progress and impact:** We maintain several communication channels to ensure that participants are kept up-to-date and provided with pathways for networking. We assess participants' progress and the impact of each cohort through pre-, mid- and post cohort surveys. Direct and anonymous feedback from participants is regularly encouraged to ensure additional support can be offered in a timely manner.
- **Teaching & learning materials:** Our materials are shared via the project website, GitHub repositories, YouTube and Zenodo. All **resources are published under a CC-BY** (or OSI License) for community reuse.

Spotlight on the software track in the next phase

Based on the activities described above, in the next phase of the program, OLS's executive director and programme directors will coordinate the OLS community to design and develop supplemental modules on open source, with deep dives into software good practice, including documentation, infrastructure support and maintenance, credit and citation (including [JOSS](#) and [rOpenSci](#)), metrics (such as [CHAOSS](#)), and collaborating with community growth programs like [Outreachy](#), [Google Summer of Code](#), [Hacktoberfest](#), and [MLH fellows](#). Special attention will be



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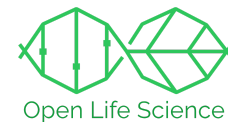
paid on contextualising software development, management and sustainability practices to local research cultures, environments and digital infrastructure.

Leadership and accessibility

OLS broadens access to open science practices, methods and skills, and empowers researchers through opportunities for capacity building in three aspects: (1) offering structured and accountable platform for highlighting, supporting and rewarding grassroots open research projects, (2) promoting participation and leadership from diverse members from communities historically underrepresented in open source/open science, and (3) expanding the scope of their project and scaling efforts through collaboration with international projects.

Leadership roles: As a leadership program, OLS involves projects and participants from diverse backgrounds and supports them in taking leadership roles. OLS program leads are well integrated into several open science communities and are known for their work in open source and community development initiatives. Participants from both technical as well as non-technical backgrounds are supported to develop skills and projects based on their interest in open science, such as open source software, documentation, training, socio-culture topic and community building. Graduates are offered the chance to strengthen their skills and expertise in open science by rejoining subsequent cohorts in leadership roles of mentors, call facilitators, and expert speakers. We design these roles with cycles of feedback and review to avoid gatekeeping and to encourage inclusive behaviour. Responsibilities of leadership are clearly documented and transparently communicated via our website and personal interactions. Through our active communication channels and with the support of our community members, participants receive timely responses to their queries and notifications on other opportunities from the wider open science ecosystem. OLS graduates have gone on to receive job offers, speaking opportunities, and international collaboration. Several projects have also been awarded grants and fellowships from European Open Science Cloud, Code for Science and Society, Software Sustainability Institute, Open Bioinformatics Foundation and the Lacuna Fund.

In the next phase of the program, in addition to continuing the efforts described above, we will establish a steering committee to involve members from diverse backgrounds and skills who will bring contextual knowledge and equitable approaches to the decision-making process.



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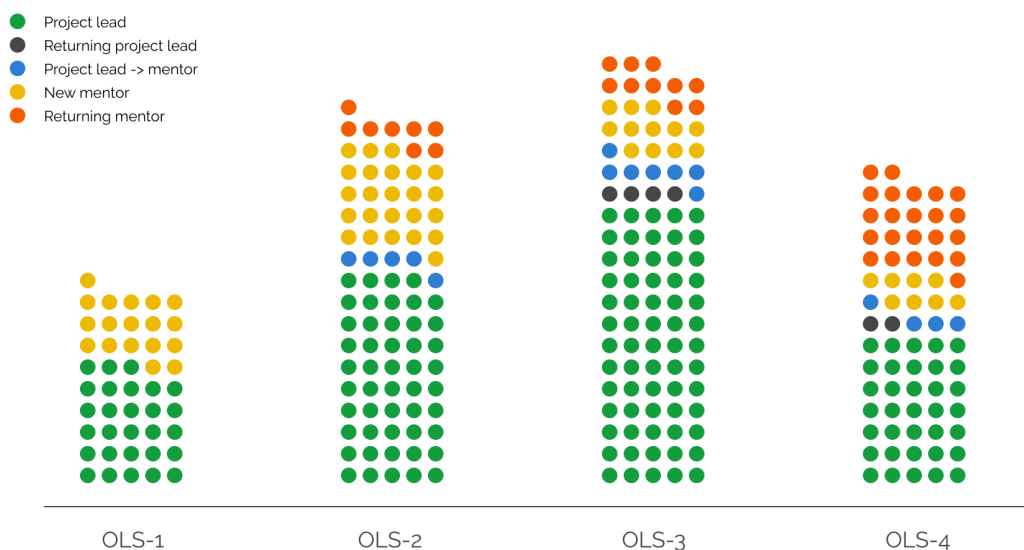
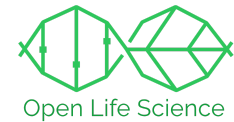


Figure 2: Throughout the last 2 years, OLS has seen an increasing number of projects and mentors returning to contribute to future cohorts.

Accessibility: Through our training format, activities and inclusive culture, we strive to encourage and recognise the quietest voices, and not just those with the most confidence, and volume. We have a Code of Conduct that is communicated via the web page and training resources, and enforced in all our activities. During the cohort calls, we facilitate breakout discussions and encourage silent note-taking in shared notes. The 1:1 mentor call ensures that everyone feels supported in the program and gets an opportunity to discuss project-specific concerns. Cohort calls are live-transcribed using otter.ai and some breakout rooms are signposted for written (rather than spoken) interaction to ensure that people with varying language skills and/or hard of hearing participants can still get a full experience. We use simple and jargon-free English in our communications, training resources and website. We involve our participants to take notes simultaneously on shared documents during the training calls that are then stored on a cohort-based repository. With the support of our community volunteers, we ensure that the automatic transcriptions are proofread, corrected, and translated (when possible) to publish with the training videos. Our resources are easy to navigate and comply with the W3C accessibility guidelines. We offer microgrants and honoraria for our participants and volunteer leaders to reduce equitable participation barriers due to lack of funds and/or lack of “free” time for volunteer

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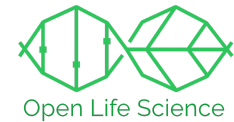
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work. Participants who volunteer for two rounds back to back are encouraged to take a break for at least one cohort. to help prevent unnecessary emotional burden or burnout.

Building on our ongoing efforts in the next phase, we will ensure that accessibility, diversity and inclusion is maintained throughout the program, with a focus on building capacity internationally. We will also work on disseminating program outputs (e.g. recordings, notes) in more diverse formats, to accommodate learners who may want to follow the programme at their own pace and time.



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Project Strategic Progress and Future Scopes

Progress Report: 2019 - 2021

Stage I (2019 Sep - 2020 Aug): OLS started in 2019 with 100% volunteer labor and small infrastructure support. By successfully piloting the program and running a cohort **with 20 international projects led by 29 members from five continents** we proved demand for structured training and mentoring in Open Science. We demonstrated the viability of the project, assessed the impact of the program and openly published an annual report to share the lessons with the community.

Stage II (2020 Sep - 2021 December): Our priority for this round was to ensure that we maintain the quality of our training and the value we create with the support of our organisers, mentors, and expert community. Participants from previous rounds were invited to join as cohort call facilitators, mentors and experts in the program. By the end of 2021, we will have offered training and mentoring to **112 projects with about 300 international participants in the program**.

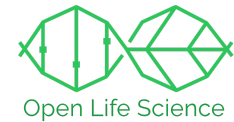
In this phase, we acquired funding through independent funding schemes: EOSC-Life Training, Code for Science and Society Event Fund, The Turing Online Training Grant, and workshop-based fundraising. These grants were used towards infrastructure and community support.

- The microgrant schemes helped cover technical or accessibility-related expenses and offer seed funding for grassroots projects led by members from developing and low-income backgrounds.
- Facilitators and mentors (besides the organisers of the program) were offered honoraria (\$160 - \$500 based on their time) to recompense for their time and efforts.

We used this period to build collaborations with international institutions, local communities, and pursue support from universities and funding bodies to make our program more sustainable over the long term. We end this stage by securing £100,000 from the Wellcome Trust Open Research Fund to hire a research project manager to support the administrative work in the program for the next eighteen months (2022-2023).

Next Phase: 2022 - 2023 - proposed to be supported by CZI

In this phase of the program, the executive director will establish a long term business strategy and funding model to ensure the sustainability of OLS. The OLS team members are approached



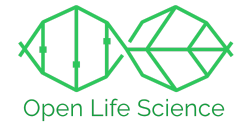
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for consultation and collaboration to provide mentoring and training for graduate students, software projects and research communities. However, as volunteer leaders, they have not had the capacity to respond to most of these opportunities. With the additional capacity provided through paid positions, OLS program directors will explore these new opportunities, as well as offer bespoke and consultation-based open source/science training, and community-building services. This will contribute towards the goal of becoming self-sustaining without grant funds by the end of this timeframe.

The next phase of the program will include the following deliverables:

- **Interactive Open Source Curriculum:** A new addition to the OLS curriculum that will deep-dive into open source software design, development and dissemination. It will cover technical skills specific to open source research projects in biomedical domains. The initial plan will be heavily developed during Q1 and Q2 of year one, with iterative improvements based on participant feedback over the remainder of the grant. Direct collaboration with the open source software communities will ensure participation and direct adoption of materials by relevant projects.
- **Cohort call recordings and documentation (OLS-5 to OLS-8):** Shortly after each call, recordings are reviewed, transcriptions are proofread and deposited openly on GitHub, YouTube and Zenodo (Lesson templates, talk transcripts, code, images, slides) under CC-BY or OSI licenses as appropriate. Expert CC-BY bite-size talk videos are also deposited on the [OLS YouTube channel](#) (translated in other languages by volunteers). This allows individuals to follow along outside cohorts in a self-paced manner.
- **Graduated and incubated projects:** Based on numbers from previous cohorts, we anticipate around 170-200 participants over the two years, across approximately 80-120 projects. We will allocate 50% slots for participants referred via CZI as grant awardees, future applicants or aspirants. Program graduates who demonstrate hands-on skills applications and community building will be encouraged to return to later cohort iterations as mentors and expert speakers themselves, further helping to nurture community-growing skills.
- **Steering committee & community governance model:** Some members of the community have continuously supported the program through mentoring, providing consultations, guest speaking, etc. To provide a new path to OLS leadership and to leverage their diverse experience and contextual knowledge to better OLS and its community, we will establish a steering committee and community governance model. The steering committee will play a



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significant role in developing the OLS sustainability plan and deciding the future direction for OLS' growth, as well as in designing the new open source curriculum and incubator plans.

- **Impact assessment and end of grant report:** Most deliverables (training resources, template, notes, videos, assignments) will be shared in near real-time during each cohort. The success and impact of our proposed activities will be assessed using targeted surveys for mentees and mentors. A dedicated channel to receive anonymous reporting and feedback will be monitored to provide additional support to our participants. Through a parallel research project (part of our recently awarded Wellcome Open Research Fund grant), we will conduct a long-term impact study to specifically report on training and mentoring practices in open science that are successful and transformative for local communities. All these activities will be summarised and published as annual reports. Furthermore, we will prepare an end of grant report and develop documentation describing our services including the following plans:
 - **Micro-grant & project support/incubator plan:** Documentation will include outcomes, financial reports, learnings, program templates, and recommendations for running low-barrier, low-cost, international access-to-training and "bootstrapping for small open source science organisations" programs.
 - **Sustainability plan:** Developed iteratively throughout the grant period, our final sustainability report will publicly share different sources of revenue that have been investigated, and the pathways we foresee for a two-to-five year plan to sustain our program.



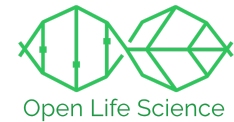
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Roadmap and Budget Overview for the next phase

Project Roadmap

OLS Timeline		2022												2023											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Open source training module	Initial design	x	x	x																					
	Feedback and iteration								x	x						x	x				x			x	
OLS-5 (includes new OSS module)	Applications and recruitment	x	x	x																					
	Program content				x	x	x	x																	
	Final graduations & report							x																	
OLS-6 (includes iterated OSS module)	Applications and recruitment							x	x	x															
	Program content									x	x	x	x												
	Final graduations & report																								
OLS-7 (includes iterated OSS module)	Applications and recruitment											x	x	x											
	Program content													x	x	x	x								
	Final graduations & report															x									
OLS-8 (includes iterated OSS module)	Applications and recruitment															x	x	x							
	Program content																		x	x	x	x			
	Final graduations & report																						x		
Project governance	Interim council nominated				x	x																			
	Establish guidelines						x	x	x																
	Community elections									x	x									x	x				
	OLS activity - yearly report																						x		
	End of grant report																							x	

To view in higher resolution, visit [📄 Two-year roadmap - Gantt - CZI](#)



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Budget overview

	Item cost	Over two years	Comment
MUST HAVES			
Staffing - Operation, Research and Admin			
Salaries and benefits - program executive director at 60% FTE	\$121,650.81	\$243,301.62	Executive director will manage strategic positioning and business, including seeking long-term sustainability with partners, e.g. research institutes, open source organisations, and universities, coordinating build and testing of new OSS curriculum
Salaries and benefits - Research Project Manager at 100% FTE	\$82,440	\$164,880	NOT REQUESTED IN THIS PROPOSAL - Paid by Open Research Fund - Wellcome Trust (see the proposal: https://zenodo.org/record/5267934)
Hardware and office set up (Computer, home office etc.)	\$5,000.00	\$5,000.00	
Cohort support:			
Micro grants + incubator fund	\$3,500.00	\$14,000.00	1) facilitate equitable access for participants and 2) seed funding for bootstrapping graduate projects in their local communities
Call processing support	\$1,000.00	\$4,000.00	Uploading open source/science expert speaker videos & making accessible with captions in multiple languages - see: https://ccglobalsummit2021.sched.com/event/lhME
Honoraria - mentors	\$15,000.00	\$60,000.00	\$500USD/mentor/cohort
Honoraria - experts	\$6,250.00	\$25,000.00	\$250 per expert talk in cohort calls
Cohorts per year	2		Four cohorts total
NICE TO HAVE			



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Plenary meeting - all of OLS leadership team, plus community delegates	\$5,000.00	\$10,000.00	Face to face if pandemic permits, or to sponsor childcare, internet, accessibility for remote plenary
Swag - branded OLS gifts for mentors and participants, once per cohort	\$1,000.00	\$4,000.00	
Outreachy interns	\$6,500.00	\$13,000.00	Working on site infrastructure, lessons, and community governance
Staffing - Sustainability			
Program director at 0.1 FTE	\$20,275.14	\$40,550.27	Formalise a 1/2 day per week of work, currently unpaid
Program director at 0.1 FTE	\$20,275.14	\$40,550.27	Formalise a 1/2 day per week of work, currently unpaid
Program director at 0.1 FTE	\$20,275.14	\$40,550.27	Formalise a 1/2 day per week of work, currently unpaid
TOTAL			
Subtotal		\$499,952.43	
Overheads @ 15%		\$74,992.86	
Total		\$574,945.30	

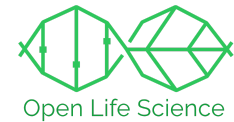
Key Personnel

The Principle Investigator for this activity will be Yo Yehudi (60% FTE executive program director), with 10% FTE support from Dr Bérénice Batut, Dr Emmy Tsang, and Dr Malvika Sharan.

Dr Bérénice Batut

Bérénice is a bioinformatician (post-doc in the [Freiburg Galaxy Team](#)), analyzing (metagenomic) biological data and developing tools for data analysis, mainly via [Galaxy](#). Bérénice is also passionate about training, regularly giving workshops (data analysis, tool development, etc). She is co-founder and a co-lead of the [Galaxy Training Material project](#) and Open Life Science. She is a

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co-deputy training coordinator for ELIXIR Germany ([de.NBI](#)), and a founder of [Street Science Community](#), an outreach program. Bérénice has a PhD in computational biology from INSA Lyon, France.

Dr Emmy Tsang

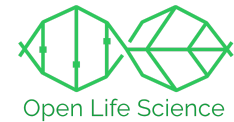
Emmy is co-lead of Open Life Science and Community Engagement Manager for the TU Delft Open Science Programme. She is passionate and curious about open, research culture and knowledge equity. Her expertise is in community design, and open research and scholarly communication. Previously, Emmy worked at eLife as the Innovation Community Manager, running the Innovation Leaders program and a successful international virtual Innovation Sprint at short notice in 2020 during the pandemic. Emmy holds a PhD in Neuroscience from EMBL in Rome.

Dr Malvika Sharan

Malvika Sharan is the community manager of [The Turing Way](#) at [The Alan Turing Institute](#). Malvika works with its community of diverse members to develop resources and ways that can make data science accessible for a wider audience. Malvika has a PhD in Bioinformatics and she worked at [European Molecular Biology Laboratory](#), Germany, that helped her solidify her values as an Open Researcher and community builder. She is a co-founder of the Open Life Science program, a fellow of [Software Sustainability Institute](#), a board member of [Open Bioinformatics Foundation](#), and a contributing member of [The Carpentries](#) community.

Yo Yehudi

Yo is Open Source Technology Lead at the Wellcome Trust's Data for Science and Health team, a [Software Sustainability Institute Fellow](#), co-founder of [Open Life Science](#) and [Code is Science](#), and [EngD student at the University of Manchester](#) studying pathogen-related data sharing and sustainability of open source software. Previous roles include editor for the [PLOS Open Source Toolkit](#), Codefirst:Girls coding instructor, Mozilla volunteer, editor emeritus for the [Journal of Open Source Software](#), board member of the [Open Bioinformatics Foundation](#), and software developer at the University of Cambridge, working on an open source biological data warehouse called [InterMine](#).



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Review of organisations working in the same area as Open Life Science

Open Mentorship programs - Mozilla inspired projects

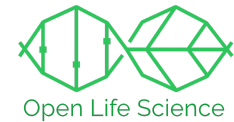
Open Life Science is one of several projects inspired by the [Mozilla Open Leaders \(OL\) program](#), designed to empower leaders in digital technology with open collaboration and project leadership skills. OLS was launched as a part of [Mozilla OLx](#), which incubated ten projects, most of which were designed to run only for one or two cohorts. Two projects with a focus on training and capacity building like OLS that still operate are [Open Hardware Makers](#) and [Open Post Academics](#). Leaders from both programs routinely collaborate with OLS and participate as mentors and experts in OLS cohorts. Another spin-out in this space is [Openscapes](#), which like OLS, offers training in open science leadership skills, but with a focus on data-driven solutions in environmental science compared to OLS that has a wider sustainable open science community focus.

Training programs in the science and open source domains

Below we provide a high-level textual summary to place OLS' work in the context of other organisations in this area. To view an in-depth comparison, please see pages 3-5, or visit

[Mentoring and training programs comparison](#) for a high-resolution excel sheet.

- [The Carpentries](#) offers training in foundational programming skills typically delivered in short 2-3 day workshops. These training efforts focus on data and software skills using small/dummy datasets. Essentially, these skills advance participants' knowledge in reproducibility and nudge them to use open source tools, however, training to explore these concepts are not offered through the workshop. The Carpentries offer mentoring for its instructors to learn about organising their training workshops. The Carpentries events can be considered complementary to the OLS mentorship cohorts -- after attending a Software or Data Carpentry workshop, trainees would be ideally placed to participate in an OLS cohort to deepen and apply their new technical skills to build a project with a clear roadmap, participation pathways, and equitable community inclusion practices. Many OLS



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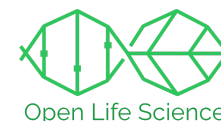
mentors and experts are The Carpentries instructors and contributors and there is a mutually collaborative spirit among the overlapping volunteer community.

- [MetaDocencia](#) offers short-form foundational training in teaching skills in Spanish that builds on The Carpentries 'train the trainer' resources and targets the Spanish speaking communities in education. Metadocencia founders collaborate with OLS and support their community members to participate in OLS to gain a deeper understanding of open science and advance their local projects with open principles.
- [The Turing Way](#) is a handbook to reproducible, ethical and collaborative data science co-led by Kirstie Whitaker and OLS co-founder Malvika Sharan. It has a strong focus on capacity building aspects of Mozilla Open Leadership, but the aim is to build a community of practice around The Turing Way book. The project offers resources, training materials and short-format events for collaboration and skill-building. [The Turing Way collaborates with OLS](#) to facilitate structured mentoring for their community members who develop sub-projects within The Turing Way community.
- [LifeSciTrainers](#) offers a collaborative network for trainers and instructors in the life science sphere but doesn't offer training directly. Like the previous projects, many community members (several of them are The Carpentries instructors and trainers) are also long-term mentors and experts in OLS.

As described, OLS [collaborates and operates in \(non-monetary\) partnership](#) with many of these organisations and shares an overlapping community of participants (volunteer learners and contributors). OLS' format combines long-term (16 weeks) mentoring, expert-facilitated training, cohort-based knowledge exchange and contextual development of participants' projects. This format is different from The Carpentries short programming workshops, MetaDocencia's 'train the trainer' training, The Turing Way's community-based resource development and LifeSciTrainer's networked approach for community support. As a successfully established mentorship program, OLS is uniquely placed to provide long-term benefits to the existing partners and adjacent open science communities that lack infrastructure or capacity to provide structured mentoring and support for their community members.

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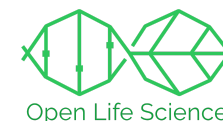
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Supplementary document: In-depth comparison of mentoring and training programs in open science and computation.

	Open Life Science (OLS)	The Carpentries	MetaDocencia	Openscapes	The Turing Way	Open Hardware Makers	Open Post Academics	LifeSciTrainers
Website	https://openlifesci.org/	https://carpentries.org/	https://www.metadocencia.org/	https://www.openscapes.org/	https://the-turing-way.netlify.app	https://openhardware.space/	https://openpostacademics.org/	https://lifescitrainers.org/
Aim	Support individuals and stakeholders in research to become Open Science ambassadors.	Teach foundational coding and data science skills to researchers worldwide.	Share practical tools to help teachers to improve their classes.	Teach open practices in environmental science to help uncover data-driven solutions.	Provide information that researchers and data scientists need to ensure that their projects are easy to reproduce and reuse.	Support new hardware projects in their way of acquiring best practices, building communities and networks.	Community to empower people with a PhD to bring their knowledge and expertise to the world	Connect anyone and everyone who does short-format training in life science.
Training/networking format	Cohort calls for training. Between the cohort calls participants receive mentoring, expert-consulting, peer-based support and professional as well as	Curriculum-based training workshops (2 days) in computational skills. Programs for instructors in organising workshops or participating within The	Online synchronous short-form workshops in Spanish.	Cohort calls for training, seaside chat for the participants between the cohort calls.	Book with guides and chapters. Regular short training workshops, seminars and collaboration events.	Cohort-based training. Curriculum is under development.	Regular workshops and Coffee chats announced for sign-up.	Monthly meetings and Slack-based interaction.

DOI: [10.5281/zenodo.5907922](https://doi.org/10.5281/zenodo.5907922)

Website: <http://openlifesci.org>

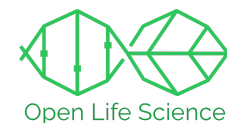


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	technical skill-building opportunities.	Carpentries.						
Entry Criteria	Individuals or groups with a research/software/community project and willingness to learn open principles. Their project can be in any stage of maturation.	Novice learners with interest to gain software or data skills in research, library or beyond.	Teachers who are transitioning from in-person to online teaching settings in Spanish speaking countries.	Environmental scientists with need to analyze data.	People working in research or data science in any sector, domain knowledge or skill-level.	Anyone starting a new hardware project.	Events for people with a PhD. Research-based consulting by the program leader.	Trainers and instructors in life science.
Length	4 months program with 8 cohort calls, 2 skill-up sessions, 2 mentor training, 8 mentoring calls, 1-2 expert consultation, co-working and social calls, and graduation events. Conference workshops and	2 days for computational skills and instructor training, multi-week for train-the trainer workshops.	2-3 hours	2-5 months program, with 4-8 cohort calls and 1-2 clinics. 2-day sponsored workshop.	Bespoke workshops from 1 hr - 1 full day on reproducibility and research collaboration. Weekly co-working calls.	Proposed duration is 15 weeks. Curriculum is under development.	Bespoke workshops from 1 hr to long-term (multi-week) on various research and professional skills.	Monthly meetings in two time zones.

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Hands-on application to current projects	Y	N	N	Y	N	Y	N	N
Language(s) where known	Cohort calls - English with live transcriptions and some Arabic translations, mentor-mentee matching based on preferred language.	Workshops in English, Spanish and Japanese provided by volunteer instructors.	Spanish	English	Primarily English. Translation under progress in Spanish, Chinese and French.	Curriculum is being developed in English. Possible pairing of mentors based on language.	Primarily English. Program leader also provides consulting in Spanish.	English
Learners' geographic location	International	International	Spanish-speaking countries	USA focused	International	International	International	International

A larger format of this table is available at [Mentoring and training programs comparison](#)

The above data is collected by the OLS team and is true to the best of their knowledge at the time of writing this document (10 Sep 2021)