

FINAL REPORT

EVALUATION OF MOZILLA SCIENCE LAB



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This is an evaluation of Mozilla Science Lab programs, commissioned by the Science Lab of the Mozilla Foundation. The evaluation was conducted by Dr Maliha Khan and S. Hadi Tirmizi of Daira Ltd from September 2017 to February 2018. The process of the evaluation was supported by the staff of the Science Lab, and made possible by the time generously given by the participants of the Science Lab programs.



This evaluation was conducted through funds generously provided by the Helmsley Charitable Trust.



For questions about this report or the evaluation broadly, please contact info@daira.io.



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FOREWARD

1 October 2018

The Mozilla Science Lab started in 2013 as a program to foster support and innovation for open science within the research community. We sought to create linkages across projects, run experiments, and build a community around openness. Since then, we have learned a lot about meaningfully and thoughtfully working alongside members of the research community to further open practice and how to build and sustain momentum. And we have sharpened our focus as an organization, building on what Mozilla does best: connecting communities, mentoring and training open leaders, running global campaigns, and providing expertise in the development of technology policy that maintains [internet health](#).

In late 2017, with funding from the Helmsley Charitable Trust, the Mozilla Science Lab contracted with [Daira Ltd](#) to perform an impact evaluation of three of its key programs: Working Open Workshops, Mozilla Fellows for Science, and Open Leadership Training. This report is a result of that evaluation.

In late 2018, we made the [strategic decision](#) to continue to support those working on open science and research under the auspices of our Open Leadership & Events Team and Fellowship Team and wind down the Science Lab and other thematically focused initiatives. During that process, this report provided valuable insights on community building and engagement, program design and growth, and recommendations for the future of open research. In the spirit of openness, we are releasing this report in hopes that it can serve as a resource for others, as well.

Our sincerest thanks to Daira, those who participated in the evaluation, and all of you who made this work possible. A special thanks to the funders who have supported the Mozilla Science Lab and continue to work with Mozilla and its community to promote open approaches in science: the [Leona M. and Harry B. Helmsley Charitable Trust](#), the [Alfred P. Sloan Foundation](#), and the [Siegel Family Endowment](#).

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■ Executive Summary

The Mozilla Science Lab was founded in 2013 to preserve and expand open practices and principles in science. Though the Lab has many programs, this evaluation will focus on three: Working Open Workshops, the Open Leadership Training Series, and the Fellowship. The evaluation's objective is to assess these program's impact in creating a cultural shift towards open practices among participants, their networks, and their home institutions. Mozilla initially provided us with a modified version of the OECD/DAC program assessment criteria focused on relevance, efficiency, impact, and sustainability, along with key questions for each program in each category. We opted to integrate this approach with Kirkpatrick's training model, as the latter was specifically designed for programs which train individuals to develop their skills and networks. Kirkpatrick's model includes reaction, learning, behavior, and results levels. For practical reasons, we opted to measure the programs' impact on these levels using feedback from participants and other stakeholders (rather than, say, a physical observation of participants or their institutions).

This data was collected through three methods: an online survey of program participants, individual interviews with participants, Mozilla staff, and funders, and a group discussion with Mozilla staff. The online survey collected both quantitative data (numerical responses to Likert-scale questions, aggregated into averages out of 5), and qualitative data (open word responses). There were 17 interviews in total, conducted both remotely and in-person. The group discussion was face-to-face and had nine participants.

The participant profile generated by answers to demographic questions in the online survey had some interesting results. There was a high proportion of women at 55%, relative to a STEM average of 35%. About a third of respondents identified as members of a minority group or marginalized community. The participants were also older than expected.

The program assessment included measures of efficiency, fit, and effectiveness. In terms of efficiency, the programs were unanimously regarded as well-run, which speaks to the competence of the relevant Mozilla staff. There were similar results for program fit, with the participants reporting a high level of fit between the programs and their needs (4.60 out of 5.00).

Program effectiveness was measured at Kirkpatrick's four levels. In terms of Kirkpatrick's reaction level, results found a very high level satisfaction among program participants (4.59 out of 5.00), a finding that was also borne out in enthusiastic qualitative feedback. At the learning level, the programs generally facilitated a process which helped participants meet their learning goals (4.50 out of 5.00). At the behavioral level, participants were usually able to form networks, became less risk-averse, became more aware of and committed to 'open', and developed a variety of leadership skills. The vast majority also created products related to 'open' while a slightly lower proportion engaged in 'open' advocacy, with the difference likely attributable to an imbalanced focus on technical skills in the programs. At the final results level, there were some small reported changes in the culture of participants' home institutions towards 'open'. We can also infer greater impact at the results level in the future due to the evidence indicating impact at the three lower levels, which naturally feed into results over time.

Recommendations were produced for three areas: present program design and delivery, additional activities for present design, and possible future strategy. For present program design and delivery, many participants desired a greater focus on 'soft skills' relative to technical ones. Some participants also desired more opportunities for relationship building during WOWs. There was disagreement between participants on the appropriate level of institutional focus within the programs; some viewed institutional embeddedness as key to the program's models, while others believed institutional bias excluded potential participants and rendered the programs too narrow.



Multiple additional activities for present design were requested. Some participants desired changes in the fellowship application system to expand eligibility to those outside of institutions or those on H1-B visas. Other participants requested the creation of some kind of ‘ambassadorship’ to function as an additional tier of involvement and legitimacy between ‘Mozilla program participant’ and ‘Mozilla Fellow’. This would both incentivize and recognize those individuals who are deeply committed to the Science Lab mission and model but have not received a Fellowship, and could increase their influence in their home institutions through that recognition. Finally, there were many requests for the expansion of mini-grants to incentivize and enable more grassroots ‘open’ programs.

Future strategy was analyzed in terms of two central issues, scaling and objectives. The nature and effects of scaling Science Lab programs was heavily contested by various stakeholders. Some stakeholders articulated the potential benefits of scaling in increasing the visibility and impact of successful Science Lab programs. Others, largely participants, expressed concerns about scaling too quickly or strongly and thereby potentially alienating existing communities and undermining replicability. On this issue, the power of communities was frequently mentioned, with many attributing the success of Science Lab programs to the effective curation of particular communities. Scaling must therefore be conducted with deliberation, sensitivity, and community curation to be effective. In terms of objectives, the Science Lab’s overarching objective is clear: to preserve and promote open principles and practices in science. However, the Science Lab and the Mozilla Foundation more broadly need to articulate a specific Theory of Change and accompanying intermediate objectives that can be used to guide progress towards the highest objective. These intermediate objectives can be analyzed along timeframe (when do we need to see the metric realized?), quantifiability (how measurable and quantifiable is the metric?), and magnitude (what size of impact do we desire for a given objective?). There are trade-offs at all three dimensions, so the relevant stakeholders need to engage in a concerted process to decide the exact nature of these intermediate objectives.



■ INTRODUCTION

Through its Mozilla Science Lab, the Mozilla Foundation seeks to promote and protect the quality and health of the open Internet with multiple programs that bring together budding leaders in the relevant fields. These leaders develop their skills and networks so that they can better contribute to stronger open internet community. Under the broad auspices of the Mozilla Science Lab, specific programs include the Fellowships for Science, the Working Open Workshops, and Open Leadership Trainings. Broadly, these programs seek to identify, support, and develop a group of emerging leaders and provide them with the platform and tools to be more open and collaborative.

The Mozilla Foundation commissioned Daira to conduct an evaluation to determine what impact the Science Lab program have on the participating individuals, their home institutions, and the communities in which they operate, as well as the open internet community itself.

We gratefully acknowledge the input of all the stakeholders whose time was required for this evaluation, including program participants, Mozilla staff, and funders. In addition, we would like to specifically thank Mozilla staffer Stephanie Wright (the Science Lab lead), as well as Arliss Collins and Abdul-Kareem Coulibaly from the Insights Team for their invaluable contributions to every step of the evaluation process.

The Science Lab

The Mozilla Science Lab has been part of the Mozilla Foundation since 2013, when it was founded in order to promote ‘open’ practices in science and knowledge production. The Science Lab began with community calls (monthly calls open to the public to discuss all aspects of open science) and Software Carpentry workshops (short workshops to teach basic computing skills to researchers). Since then, it has expanded to include a number of further programs (the totality of which are listed in section 1.3), and undergone several transformations in structure and strategy. This evaluation will focus on three Science Lab programs:

Working Open Workshops (WOWs) are short two-day workshops in which researchers, librarians, and other members of scientific institutions and the knowledge production field as a whole undergo training in open practices, with a focus on technical training in GitHub. WOWs are in-person events held in specific locations, with past WOWs in Montreal, Berlin, Austin, and the University of Kansas (Lawrence), among others.

The Open Leadership Training Series (OLTS) pairs mentees (usually graduate students and researchers) with mentors (Mozilla staff, former mentees, and others) in an online training program to help them develop some kind of open project which usually requires recruitment of participants and collaborators and therefore the development of the mentee’s leadership skills.

The Fellowships are the Science Lab’s flagship program, which selects emerging leaders in science and provides them with a year of generous funding, numerous networking opportunities, and training in advocacy, collaboration, and open practices.

Why the Evaluation

The main objective of this evaluation was to assess the impact of the Mozilla Science Program in creating an enabling environment and culture shift for open collaboration among participants, their institutions and their network. More specifically, the evaluation seeks to:

1. Provide the Mozilla Foundation with learning on different approaches to promote open collaboration in looking at what works and what failed as an opportunity to build upon;

2. Understand the challenges faced by the program and provide recommendations to address them in the future;
3. Understand to what extent participants in the open science program have developed new skills and a network to advance collaboration and advocate for open science practice;
4. Assess the synergy between these different components of the Science program (Fellowship, Open Leadership Training and Working Open Workshops).

THE EVALUATION

In order to conduct the evaluation, we had to determine what was to be evaluated, what determined a positive assessment, how to apply that to the nature of the program that we are evaluating, then finally, what questions we need to ask. The first step was to select the key elements of the broader Science Lab that would be the focus of the evaluation. After selecting the program elements, the evaluation needed to determine the criteria against which to assess the program elements, in order to see if the program was successful or not. However, assessment criteria are usually quite broad, and do not provide us with a framework that can be applied directly to specific programs. Therefore we also need to have a conceptual framework that has been developed specifically for the type of program, and been legitimized in different contexts. This allows a framework to analyze the data that is collected. Finally, we need to have the set of questions to ask in order to collect the data for the evaluation.

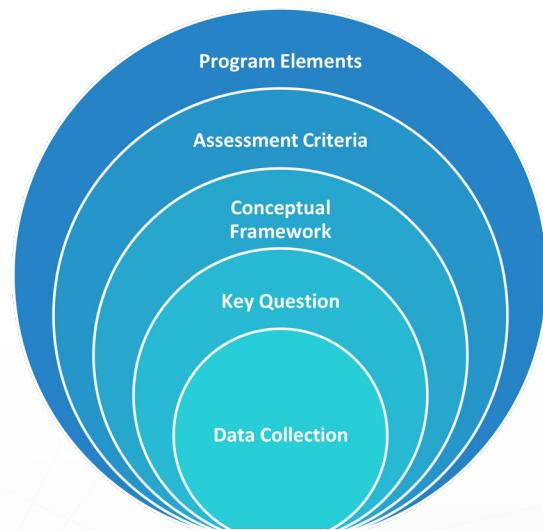


Figure 1 The Evaluation

Program Elements

The Mozilla Science Lab as a whole includes the Mozilla Fellowships for Science, study groups, mini-grants, Working Open Workshops, Open Leadership Training, Friendly Intro to GitHub workshops, open data training, the Global Sprint, Community Calls, and Twitter Book Chats. While all the programs are important, the evaluation was focused on three - the Fellowship, the Working Open Workshops, and the Open Leadership Training, though some parts of the evaluation touch on other components of the Science Lab. This selection was made based on strategic considerations as these elements were considered the most important going forward, so learning from them was important.

Assessment Criteria

The initial approach to the evaluation was based on the OECD/DAC (Organization for Economic Co-operation and Development - Development Assistance Committee) model for assessing development programs. The evaluation was designed on a modified version of the OECD-DAC evaluation criteria, and excluded the traditionally 2nd level of effectiveness as it was felt that it was too early and beyond the scope of the evaluation to determine if the program objectives have been met. The assessment criteria used for the evaluation were:

1. Relevance: is the program suited to the priorities and needs of the target group?
2. Efficiency: does the program have a feasible return on investment/is it cost-efficient?
3. Impact: what are the total effects, positive/negative, direct/indirect of the program?
4. Sustainability: will the program benefits continue after its end?

Conceptual Approach

The Science Labs elements are similar in that they are all training programs, generally construed. Like any training program, they seek to develop the knowledge, capacities, and capabilities of their participants. When determining which methodology would be appropriate for evaluating these programs, we therefore initially began by examining the methodologies used to evaluate training programs broadly.

Kirkpatrick's model

Kirkpatrick's training model, first proposed in the 1960s, has been extremely influential, forming the basis of measurement frameworks for training program efficacy across multiple fields (Kirkpatrick 1959). Kirkpatrick's model originally consisted of four levels of measurement: reaction, learning, behavior, and results.

Various further levels have been proposed, including a level measuring return on investment, as well as a level measuring long term benefits to the target groups and social systems that the trainees' institution seeks to impact (Rotem et. al. 2010). However, for this evaluation, we will only be considering the original four levels.

Kirkpatrick's four level model has been employed by a variety of organizations in their attempts to measure the effectiveness of various fellowship, training, and education programs. Prominent examples whose programs bear some degree of similarity to Mozilla's include the Ford Foundation (Ford Fellowship), the United Nations (various fellowships), and USAID (ATLAS/AFGRAD) (Rotem et. al. 2010, Kallick et. al 2017).

Reaction: Kirkpatrick defines the first reaction level as "how well the trainees liked a particular training program" (Kirkpatrick 1979). This level does not include any assessment of increased capacities or the like, and is instead simply focused on the participants' subjective reaction to their training.

Learning: On the second learning level, Kirkpatrick emphasizes objective rather than subjective evaluation. The model construes learning narrowly, as the "principles, facts, and techniques" absorbed by participants (Kirkpatrick 1979). Learning is measured individually, through a before-and-after approach utilizing a pre-training assessment, and ideally the participants' results should be compared to the results of a control group not receiving the training. These test results should then be analyzed statistically.

Behavior: Kirkpatrick does not provide a detailed methodology for assessing changes at the third behavioral level. Instead, he describes a plethora of other studies that have sought to measure behavioral changes in a corporate setting as a result of training. Common between these models is the objective of determining if (a) there has been a change in participant's on-the-job behavior in terms of performance, and (b) if this change can be reasonably attributed to the training in question.

Results: The final results level focusses on what impact the training has had on the participant's institutions. Depending on the type of institution and training, this impact could vary broadly. However, Kirkpatrick concedes in his model that the presence of many confounding variables can make directly evaluating changes in institutions and then trying to attribute those changes to the training program very difficult (Kirkpatrick 1979). The model therefore allows for assessment of results to be inferred from the evaluation of the first three levels- i.e., if participant's have a positive reaction, demonstrate learning, and have improved behavior, then it can be inferred that institutional results will follow.

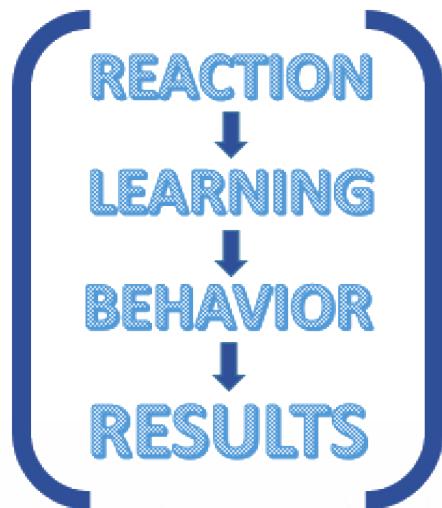


Figure 2 Kirkpatrick's Model



Key Questions

A key step in the evaluation process is to generate the questions to ask for each of the criteria, applied to each of the components that are included in the evaluation. This step was done by Mozilla internally through consultation with key staff. This consultation generated a set of key questions for each category (relevance, efficiency, impact, and sustainability) and for each of the three main focus programs (Fellowship, Open Leadership Training, and Working Open Workshops). For a list of key questions, see the annex of this report.

The Analytical Framework

The evaluation focused largely on Kirkpatrick's first three levels. Measuring actual results for participants' institutions (as well as other potential levels such as return on investment or broader societal impact) was unfeasible due to several important constraints. Firstly, Mozilla's programs have only been running for a few years, and therefore there has not been enough time for organizational results or broader impacts to manifest. Secondly, the evaluation was conducted in a matter of months and it was beyond the scope of the resources to seriously evaluate any potential changes in organizational performance. Instead, we followed Kirkpatrick's lead and inferred potential results from the data gathered at the reaction, learning, and behavior levels.

Furthermore, a modified version of Kirkpatrick's second learning level was used. Mozilla's programs differ significantly from the corporate settings Kirkpatrick studied, and while it may be straightforward to measure a salesman's retention of new techniques, it is not feasible to quantitatively and rigorously measure changes in the priorities and behavior of a leader in the field of the open internet. Therefore, instead of imposing a battery of tests on Mozilla fellows and other program participants, we assessed learning through the same type of subjective questionnaires and interviews that were used to assess reactions.

The evaluation used surveys and questionnaires to assess Mozilla's program effectiveness at all four of Kirkpatrick's levels. The key questions already provided by Mozilla can be roughly mapped onto Kirkpatrick's four levels. For the fellowship program, questions under the "relevance" category correspond to the first reaction level, questions under the "efficiency" category correspond to the second learning and third behavioral levels, questions under the "impact" category correspond to the fourth results level, and questions under the "sustainability" category do not correspond to any of Kirkpatrick's levels.

We then mapped these key questions onto a model that was more specific to learning and fellowships. Below are the essential strategic questions proposed by the Mozilla Foundation following consultation with selected staff, fellows, and external stakeholders.

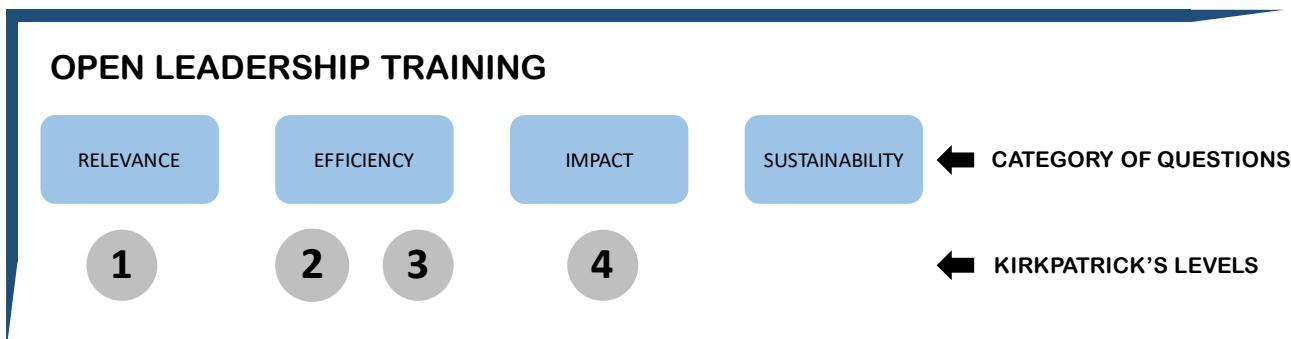


Figure 3 Key questions mapped – Fellowship

Key question categories are mapped onto those same levels for the Open Leadership Training and Working Open Workshops in Figures 5 and 6 respectively.

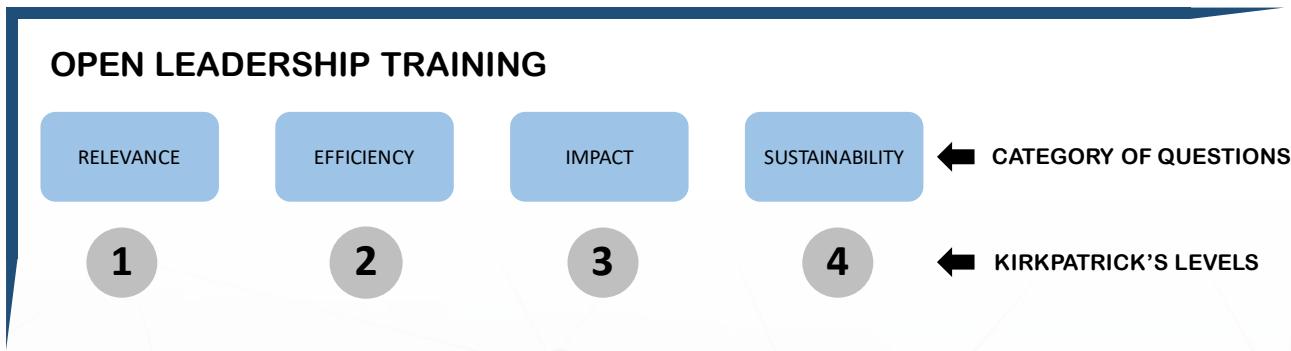


Figure 4 Key questions mapped – OLT

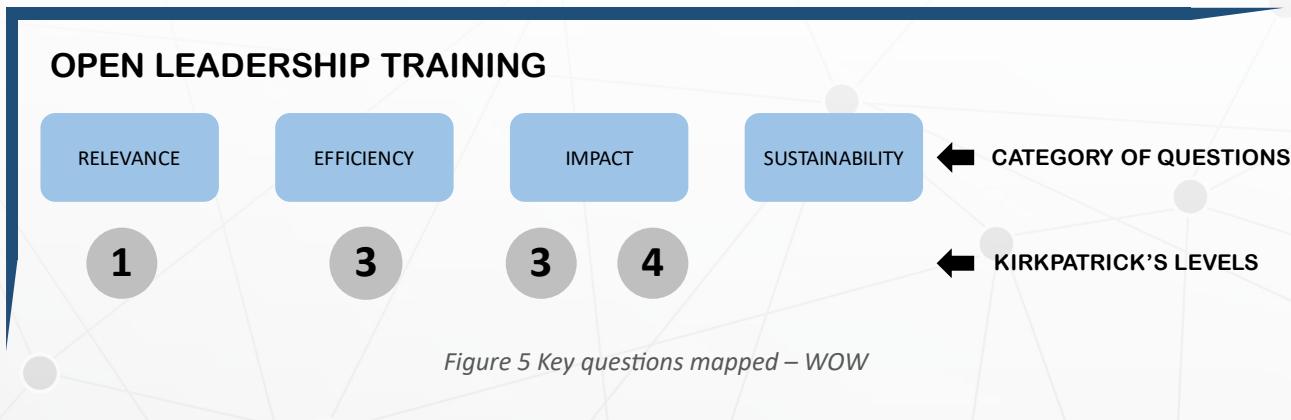


Figure 5 Key questions mapped – WOW





Data Collection

The evaluation utilized two primary data collection instruments.

Online Survey was sent to all the participants of the three programs of the Science Lab. It was used to collect both quantitative data (largely in the form of numerical responses to Likert-scale questions, which will be presented in this report as averages out of 5.0) and qualitative data (in the form of written responses to open questions). The online survey was sent to 100+ participants across all three Science Lab programs, and received 45 responses, of which 27 were completely filled. The survey considers all the answers given to a particular question, even if the respondent did not complete the rest of the questions in the survey. Most questions had between 20-30 respondents.

Individual interviews were conducted using an interview guide, and the questions followed the same general flow as those in the online survey. The interviews were done with 17 individuals, 4 were participants in the Open Leadership Training, 6 were fellows, 5 were Mozilla Foundation staff, and 2 were funders. The ten participants had all also attended at least one Working Open Workshop each, so the interviews provided qualitative insight into all three programs. The interviews were largely in-person though some were remote.

It should also be noted that a group discussion was conducted at 'All Hands' in Austin, Texas on December 15th. Nine Mozilla Foundation staff were in attendance, and the discussion centered on a preliminary findings from the data analysis of the other two instruments. Feedback and insights from the discussion were not incorporated as qualitative data in themselves, but were used to shape the structure and priorities of the final report.

EVALUATION FINDINGS

In this section we will present the findings after analyzing the data that was collected from the three tools that were used. Some of the interesting findings are summarized here, while the details are presented in the sections below.

In terms of demographics, more than half of survey respondents were women. However, this may be a result of certain selection effects and cannot necessarily be extrapolated to the participant population as a whole. The respondents also tended to be slightly older, on average, than the general graduate school populations, though again this finding might not be applicable to the participant population generally.

In terms of efficiency, the programs were generally seen to be very efficient and well run, with the participants very pleased with the competence of the Science Lab team and all the other stakeholders. The programs were also generally well-fitted to participant needs. Program effectiveness was evaluated at Kirkpatrick's four levels. In terms of reaction, the participants were generally very satisfied with the program. At the learning level, participants were generally successful in meeting their learning goals. At the behavioral level, participants gained benefits across multiple areas, including networks, risk-taking, awareness, commitment, and empowerment to protect 'open', and leadership skills. The vast majority also created 'open' products and engaged in 'open' advocacy. At the results level, there were surprisingly some improvements in institutional culture with regards to open. Furthermore, we can infer impacts at the results level in the long term from the positive findings at the reaction, learning, and behavioral level, which are likely to filter into the results level over time.

PARTICIPANT PROFILE

Of all survey respondents, 55 percent of survey respondents were women. This is a high proportion relative to the proportion of women in STEM generally, which is about 35 percent in the United States (Munoz-Boudet 2017). 30 percent of respondents identified as members of a minority or marginalized group, most on the basis of their racial, ethnolinguistic, or migrant status. In terms of age structures, about half of the respondents were aged 30-39, while another third were 21-29. The findings on age were surprising, given that many of the programs recruit from graduate and PhD programs where most students are in their 20s. All of these findings on demographics are potentially subject to selection effects and can't necessarily be extrapolated to all program participants. Comparisons to the general participant population are not possible because Mozilla does not collect such data on participants for privacy reasons.

REACTION

Reflecting back on the program's lasting impact for you, how satisfied are you with the program?

On a scale of 1-5, there was an average of 4.59



The quantitative and the qualitative data gathered from the participants showed that they had a very positive reaction to the programs that they participated in. Overall, the vast majority of participants thought that the programs were excellent, well run and fit their needs well. In addition to the average, it should be noted that no individual scored their satisfaction below 4.0, indicating universal program satisfaction.

Select quotes on satisfaction:

- 'Mozilla is really amazing'
- 'Mozilla has been genuinely life-changing'
- 'I'm grateful for the place that Mozilla pushed me to'

- 'Changed my life'
- 'Path-changing and instrumental in me becoming who I am'
- 'I was completely satisfied with the program... [and] I'm hoping to continue giving back'
- 'IT WAS THE BEST'
- '[T]he best experience I've ever had'

For some stories of specific participants in Science Lab programs beyond those in this report, please visit: [https://storyengine.io/?s="Mozilla+science".](https://storyengine.io/?s=)

LEARNING

List your important learning goals for the program.

Practices Research **Github** Program **Project Management**
Wanted **Learn** Connect Communications Share Open Source

Figure 6 Learning Goals Responses

Did the program facilitate a process that would help you meet those learning goals?

Average of 4.50



How successful were you in meeting your learning goals?

Average of 4.12



How much did the program contribute to you meeting your learning goals?

Average of 4.31



Overall, the programs scored very highly on meeting the individual learning goals of the participants, all the scores being over 4, which is very high. The program helped to facilitate their learnings around the goals, the participants generally met their goals and the program was a major contributing factor in the participants success.

Building on the feedback in section 3.2, a consistent desire for further 'soft skills' learning emerged in the qualitative feedback. In addition to advocacy and leadership, participants specifically desired further development in their project management and conflict resolution skills. Within the technical training, participants found lessons on the construction of 'ReadMes' and codes of conduct/contribution guidelines most valuable.

BEHAVIOR

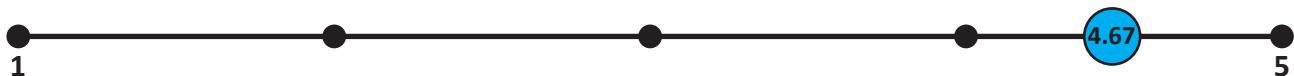
The previous two levels of Reaction and Learning are important, but without subsequent changes in the behavior of the participants, few results can be expected to happen. Therefor the evaluation identified 6 areas of behavior change in the participants: creation and maintenance of networks across and between participants, an increase in risk taking, a stronger relationship with the ‘open’ field, an increase in leadership skills, a change in their role within their home institutions, and an increase in the products and advocacy in support of the open field.

Networks

One of the main objectives of the programs, and also an area that has been very successful, has been to form networks of “Open Science” practitioners and advocates. While the data showed that all the programs were successful in building these networks, the qualitative data showed that the Fellowships were particularly successful in creating strong and well connected networks.

Did participation in the program give you access to a wider open network?

Average of 4.67



To what extent were you able to capitalize on this access?

Average of 3.80



What part of the program was most useful for network-building?



Figure 7 Usefulness for Networking Responses

Has participating in the program helped integrate you into a wider ‘open’ community?

Average of 4.14



Select quotes on networks:

- ‘The most important [role for Mozilla] is to curate this network of like-minded people’
- ‘It’s so powerful to find your tribe, to find others that help you in your work’
- ‘Basically anything you’re interested in, you can immediately be connected with world experts’

- ‘Mozilla validated my work and attracted attention so I got talks with funders’
- ‘The face-to-face workshops were essential in establishing a network.’

The average for participants’ ability to capitalize on the network access provided by the programs is lower than the averages for other network questions (3.80 out of 5). This could potentially reflect the fact that most of these programs are still at an early stage, and perhaps greater network capitalization is possible in the long-term.

Under the responses for which aspects of the programs were useful for network-building, ‘breaks’ are mentioned. These ‘breaks’ refer to unstructured free time within the program schedules in which participants can informally build relationships.

WOW Networks

Are you still in contact with other WOW participants?

Out of 27 respondents, 25 were still in contact with other WOW participants.

How frequent is that contact?

Have you continued to exchange best practices, skills, or knowledge?

For network-building in WOWs, many participants stated that they desired more ‘breaks’ and unstructured time to socialize with other participants in order to better develop relationships in a face-to-face context.

OLTS Networks

Are you still in contact with your mentor?

Many interviewees found the initial WOW induction to be the most helpful part of the program for networking, face-to-face interaction key to forming relationships. Community calls were useful to many participants for maintaining (though not initially forming) relationships.

Fellowship Networks

Are you still in contact with other fellows?

All the fellows were still in contact with other fellows at least once a week.

Have you continued to exchange best practices, skills, or knowledge with other fellows?

Select quotes on the fellowship network:

- ‘I know I can always crash on their sofa, I would give them a kidney if they were in need’
- ‘Intense relationships enable the free sharing of

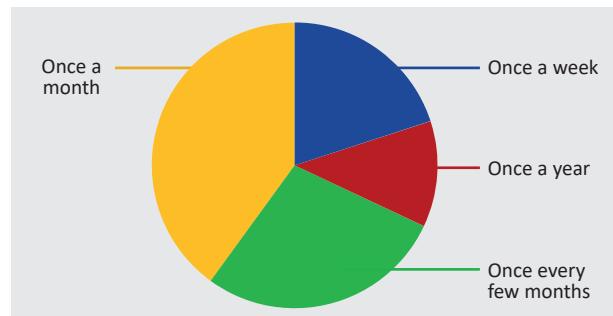


Figure 8 Frequency of Contact - WOW

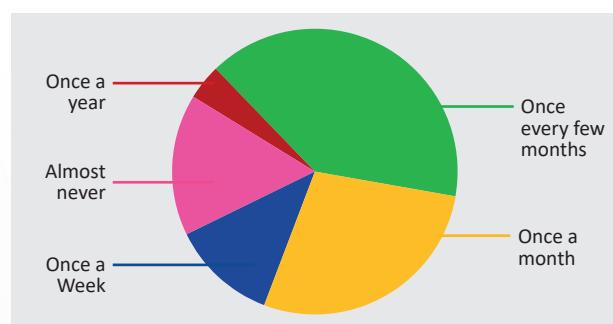


Figure 9 Nature of Network Exchange - WOW

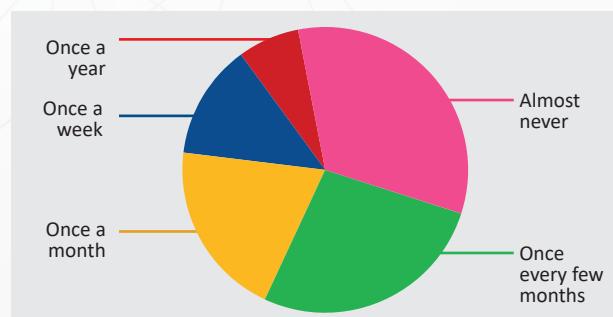


Figure 10 Frequency of Contact - OLTS

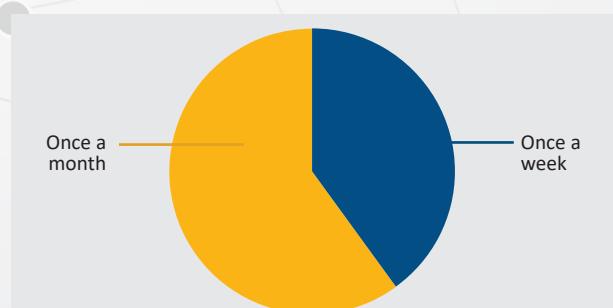


Figure 11 Nature of Network Exchange - Fellowship

- ideas and a safe space to critique them'
- 'I built a family with the other fellows'
 - 'I am very connected with my fellow fellows, I jump on phone calls and talk through issues and get help and support on a regular basis'
 - 'We fellows have a familial connection... we care deeply about each other and our shared directions'
 - 'I talk to the other fellows almost every day, they are some of my favorite people and are influential and inspiring and part of my core support network'



Christie Bahlai, 2015 Fellow

Christie is a quantitative ecologist and professor at Kent State University. She became involved with Mozilla when she helped start Software Carpentry workshops at her previous institution, Michigan State, and deepened this involvement with her participation in the Fellowship program. She used her time in the Fellowship to develop a post-graduate course on open practices, which became very popular at Michigan State and was oversubscribed with 22 students in its second offering.

'I feel deeply connected to my 'fellow fellows' as colleagues and friends, I know I can always crash on [one of] their sofa[s], and I would give [one of] them a kidney if they were in need... I'm grateful for the place that Mozilla pushed me to. I wouldn't be where I am now without Mozilla's contribution to my career path, Mozilla was path-changing and instrumental in me becoming who I am.'

Risk taking

Before the program, how willing were you to experiment with new methods and practices in your work?

Average of 3.80



How willing are you now to experiment with new methods and practices in your work?

Average of 4.75



How much did the program contribute to change in your willingness to experiment with new methods and practices?

Average of 3.88



The results for risk taking are encouraging, given the importance of risk taking for leadership and successful disruption of existing hierarchies and dynamics. Programs might enable risk taking (defined here as willingness to experiment with new methods and practices) by both exposing participants to new methods and practices, and/or by increasing their levels of confidence and ambition.

Table 1: Relation to 'open'

	Before	After	Contribution
Awareness of 'open'	2.96	4.41	4.27
Commitment to 'open'	3.26	4.52	4.48
Empowerment to promote/protect 'open'	2.78	4.19	4.36
Bringing 'open' into the establishment	2.52	4.16	4.15

This table includes results on participants' relation to open across four dimensions: awareness of open, commitment to open, empowerment to act on that commitment, and efforts to bring open practices and principles into the traditional scientific establishment. Participants scored themselves on each dimension over time and, if there was a change in their score, assessed the level of contribution of the program to that change. The largest change by far was in participants' efforts to bring open to the establishment, though interestingly this change also had the lowest contributions score.



Amel Ghouila, 2017 Fellow

Amel is a bioinformatician at the Pasteur Institute in Tunis, with a background in computer science. After attending a Women in Data Science event run by a Mozilla staffer, she became involved in the Science Lab, joining community calls and online study groups. She built on these experiences and helped start study groups in multiple countries across Africa, including Sudan, Nigeria, and Morocco. She then participated in the OLTS before being selected as a 2017 Fellow. Her goal during the Fellowship is to develop 'working open' guidelines and expand awareness of open and open networks within the African context.

'[I had] absolutely no awareness of open science on an individual or institutional level prior to Mozilla... I used to be very shy, but the Fellowship has helped me a lot in my attempts to convince people to join the community.'

Table 2: Leadership

	Before	After	Contribution
Articulating vision	2.93	4.30	4.00
Motivating others	3.19	4.19	3.88
Making a case for 'open'	3.07	4.56	4.31
Bringing 'open' into the establishment	2.52	4.16	4.15

This table assesses changes in participant's leadership skills over time across three dimensions. For clarification, 'motivating others' concerns participants' ability to draw in contributions from individuals who were already 'open' to 'open'. In contrast, 'making a case' concerns participants' ability to convince skeptics and the traditional establishment of the value of open principles and practices.

Are you a leader who bridges the 'open' and traditional scientific communities?

Average of 3.92





Kirstie Whitaker, 2016 Fellow

Kirstie is a postdoctoral researcher at Cambridge University and a fellow at the Turing Institute, where she runs an open lab. Her work largely focuses on adolescent depression. She became a Science Lab Fellow in 2016, and has used that position to spread open principles and practices within Cambridge, especially among graduate students. The Fellowship also helped her make the connection between open science issues and social justice issues and the connection between closed science and traditional power hierarchies.

[The Fellowship] way, way, way raised my profile and increased my sphere of influence... the funding and the Fellowship give researchers a powerful platform to push for culture change... It's [also] so powerful to find your tribe. I'm a leader now, I don't need validation from others.'

Select quotes on leadership:

- 'I am a leader now; I don't need validation from others'
- 'I am now the 'open science point' in my institution'
- 'OLTS helped me learn how to get people from hearing about a project to really contributing'

ROLE

What was your role in your home institution before the program?

Average of 1.86 (between entry level and project lead)



What is your role now?

Average of 2.32 (between project lead and lab director)



If your role changed, how much of that change can be attributed to the program?

Average of 3.22



The effect of the programs on role change was stronger than expected. While the programs, especially the fellowship, could theoretically improve career progression for participants, observing role change effects in this short a timeframe is impressive. Role change is key because placing open advocates into higher positions within institutions is an invaluable method of influencing broader cultural change.

Select quotes on role:

- 'I wouldn't be where I am now without Mozilla's contribution to my career path'
- 'If the fellowship hadn't given me confidence I wouldn't be doing anything important right now'

**Danielle Robinson, 2016 Fellow**

Danielle was a neuroscience PhD student at Oregon Health & Science University when she was selected as a 2016 Mozilla Fellow. Before the Fellowship, she was a co-organizer of Open Insight PDX and Science Hack Day Portland, and a founding member of Women in Science Portland. During her Fellowship, she worked on decentralized data archiving. She is now a co-executive director at Code for Science & Society, a nonprofit which works on advocacy and education around the open and decentralized web, open science, and technology for the public good.

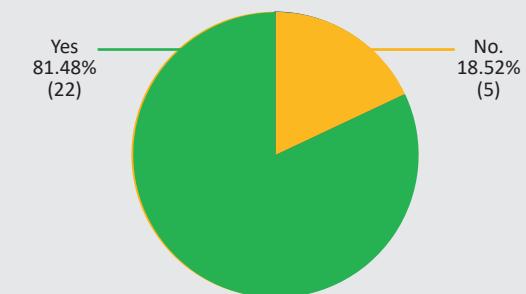
'The Fellowship changed my life, it gave me the confidence, skills, and connections to pursue the career I have now- working at the intersection of the open web and open science... I feel extremely loyal to the community.'

PRODUCTS AND ADVOCACY

Since the program was completed, have you produced any products or hosted any events related to the open internet and/or open science, such as presentations, workshop curricula, new projects, reports, websites, blogs, social media, or applications?

What was the contribution of the program to those products?

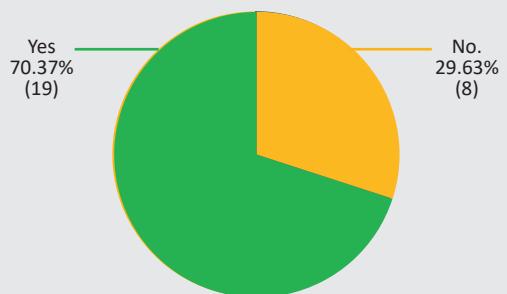
Average of 4.05



Since the program was completed, have you promoted the open internet and/or open science through activities like advocacy, public campaigns, workshops, or contribution to international standards/protocols?

What was the contribution of the program to those activities?

Average of 3.79



Two important patterns in the results here should be noted. Firstly, more participants produced products (81 percent) than engaged in advocacy (70 percent). Secondly, the average for program contribution was higher for products (4.05) than advocacy (3.79). Taken together, these results may suggest that the program better prepared participants for production than advocacy, and as a result more participants created products than engaged in advocacy. This explanation aligns with findings in the qualitative research, where participants stated that programs had a greater emphasis on technical skills than soft skills. Generally, technical skills better facilitate product creation while soft skills better facilitate advocacy. Another explanation could also be where the participants and the networks are in the maturity. At earlier stages, concrete things like products are more



Lucy Patterson, 2017 OLTS mentee

Lucy is an independent freelancer and community manager for DIY science in Germany and Europe broadly, with a background in molecular biology. She first became involved with Mozilla when she attended Mozfest in 2015, and later attended the Montreal WOW in 2017 as a kick-off for her participation in the OLTS. Her central project is the running of the annual Science Hack Day in Berlin, where people do ‘weird things with science’ including physical prototyping. During the OLTS, Lucy’s objectives were to strengthen the networks between various DIY science communities, build a platform for collaboration and advocate for access to public funding. Her project received attention at the Global Sprint, which helped her to secure some extra funding for the Science Hack Day and contributed to her invitation to deliver a keynote speech at the FORCE 11 conference.

‘For the first few years [of my work], I couldn’t get any traction with the kind of stuff I was doing, and that has started to change since I got involved with Mozilla... Mozilla has given me a platform to become more of an advocate, and in particular made me more ‘Google-able’.’

likely to be what the participants and the networks focus on, whereas they mature, they may turn to more complex and harder to observe results, such as advocating and learning.

RESULTS

Have you taken any of the following actions within your home institution since you completed the program?

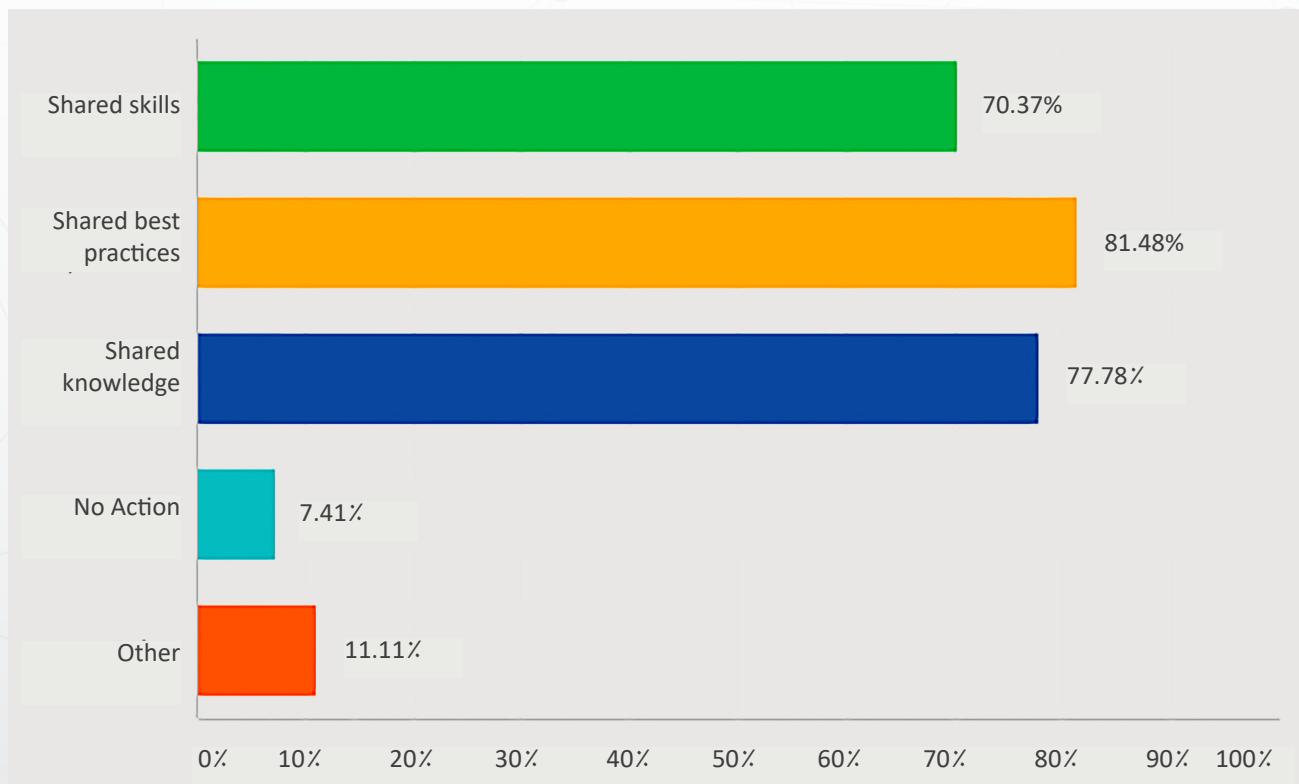


Table 3 Results

	Before	After	Contribution
Awareness of 'open'	2.50	3.29	3.50
Commitment to 'open'	2.19	2.81	3.20
Empowerment to promote 'open'	2.35	2.90	3.46

This table is like the table in the individual ‘relation to open’ section, but concerns awareness, commitment and empowerment at the institutional rather than individual levels. While the changes across these three dimensions are much smaller at the institutional level than they were at the individual level, this is to be expected, given the difficulty of enacting cultural change at an institutional level. Furthermore, given the immense magnitude of institutions relative to individuals, institutional change can generally only be achieved over longer time-frames. Therefore, the mere presence of some change at the institutional level is a positive metric of program impact, given that the Science Lab programs have only been in place for a few years.

Some particular challenges for achieving institutional change were articulated by participants. These include the natural inertia of ‘closed’ practices in the scientific establishment, as well as incentive structures which reward those who employ ‘closed’ practices. The hierarchical nature of these institutions is also a barrier to grassroots change, especially given the junior status of many program participants. It should be noted that for the Fellowship in particular, Mozilla anticipates Fellows who ‘champion change within their university or other institution around open source and data sharing.’ To this end, Mozilla also requires that Fellows have an advisor in their home institution to assist them in their mission. However, at no point in our data collection did any participants mention their advisors. This remarkable absence suggests that advisors are not an influential part of efforts to enact institutional change, a troubling finding given the powerful potential of advisors, especially those higher up the institutional hierarchy, to impact institutional culture.



Bruno Vieira, 2016 Fellow

Bruno is a PhD student at Queen Mary University who works on the population genomics of insects. During his work, Bruno found that the large research databases he was using were very poorly organized, and so began to work on code which could more efficiently extract information from them. This code became collaborative and eventually coalesced into Bio Node, an open source community Bruno founded. He stumbled upon Mozilla in 2013 and attended Mozfest that year. This involvement eventually led to his selection as Fellow in 2016, and Bruno used the opportunity to work on Bio Node, with a focus on community management to ensure sustainability.

‘I already wanted to champion open science, but didn’t have the power to do it. This fellowship gave me time, bandwidth, a spotlight on my work, and the funding to travel for conferences and meet amazing people in person... In Open Science, things are moving in the right direction, we just need to maintain this network of like-minded people making noise. We need to take good care of the Mozilla Science Lab/Open Science community to keep people engaged and create a critical mass for change.’

■ ANALYSIS

ASSESSMENT OF THE PROGRAM

Program efficiency

Virtually all of the quantitative and qualitative feedback indicated that all three programs were run very efficiently. There were no complaints about the organization of the program in terms of schedules, events, workloads, or deadlines. Feedback was almost exclusively directed towards the priorities and structure of the programs rather than their execution. This speaks to the competence of the Science Lab team and all the other stakeholders who contributed to the execution of the programs.

Program fit

What were some of the professional areas you wanted to improve in that led you to participate in the program?



Figure 13 Program Fit Responses

Was the program a good fit for those needs?

On a scale of 1-5, there was an average of 4.60



For the Open Leadership training, qualitative feedback indicated that many participants desired more training in advocacy, leadership, and other 'soft' skills. The amount and type of technical training was more useful for some than others. For a few individuals, the first few sessions were redundant given WOW participation. Some participants wanted more work set, i.e. more assignments.

Staff interviews revealed the varying fit of different WOW programs. Some WOWs were narrowly tailored towards the needs of particular participants because the organizers selected a specific audience. In other WOWs, participants were selected on a more ad-hoc basis so the program was less narrowly tailored.

What were the needs of your home institution in relation to open science?



Figure 14 Needs of Home Institution Responses

How well did the program equip you to meet those needs?

On a scale of 1-5, there was an average of 4.00



Program effectiveness

Findings on program effectiveness were, on the whole, very positive. On the reaction level, participants were generally very satisfied with the program. At the learning level, participants were largely successful in meeting their goals, and attributed much of that success to the program. At the behavioral level, participants were generally able to form networks, became less risk-averse, increased their awareness of and commitment to 'open', improved their leadership skills, and the vast majority created 'open' products and engaged in 'open' advocacy. At the results level, there were surprisingly some improvements in institutional culture with regards to open. Furthermore, we can infer impacts at the results level in the long term from the positive findings at the reaction, learning, and behavioral level, which are likely to filter into the results level over time.

RECOMMENDATIONS

Based on the data analysis of the program, the evaluation can make some recommendations for Mozilla to consider. The recommendations have been put into three categories – focused on the program as it exists today and how to improve it within the same parameters, incremental additional activities that could be added to the program, and alternative future strategies.

Present Program Design and Delivery

Many participants desired a greater focus on 'soft' skills within the program. These soft skills included project management, conflict resolution, and advocacy strategy. These same participants frequently found the technical training to be in some cases redundant and would have preferred that the programs reallocate some of the time devoted to technical skills towards soft ones. This feedback is potentially linked to the findings in section 3.4.3 on Products and Advocacy, where the programs seemed to contribute more towards product creation than advocacy, which could be the result of an imbalanced focus on technical skills relative to soft ones.

Some participants desired more time for face-to-face networking and relationship building within the WOWs. Suggestions focused on designing WOWs to include more unstructured time in which social interaction and relationship formation could emerge organically.

Many participants emphasized the importance of institutional embeddedness within the programs. However, others were concerned by "institutional bias" where the programs systematically excluded applicants who were not attached to institutions, and did not seem tailored to those participants who were outside of formal institutions.

Multiple participants in the OLTS were very happy with their experience as mentees, but encountered problems with later OLTS cohorts when they took on a mentor role. Their mentees were unmotivated and in some cases didn't appear to properly understand the nature of the program or the amount of work required to realize their project visions. These might be isolated incidents, or they might constitute part of an emerging pattern which would indicate flaws with the selection process for OLTS mentees.

Within the Fellowship, advisors must be better integrated into the advocacy process. All Fellows are required to have advisors in their home institutions, but none of these Fellows mentioned such advisors in interviews. This suggests that advisors are not a large part of the Fellows' advocacy efforts within their institutions. Advisors should be utilized more effectively, either through changes in standards for advisor selection or greater

efforts by Mozilla to integrate them into the advocacy process. Advisors have immense potential for assisting in enacting institutional change, especially if they occupy higher positions in the institutional hierarchy. This integration of advisors and improved efforts to enact institutional change might also increase the probability that Fellows remain in their home institutions after the Fellowship and continue pushing for change from within, as currently many Fellows leave their home institutions to pursue their goals elsewhere.

Additional Activities For Present Design

Some participants mentioned a desire for more/expanded offerings, including (a) changes to the fellowship eligibility system, (b) the creation of an ‘ambassadorship’ position to facilitate advocacy, and (c) more mini-grants.

The desired changes in the fellowship application system included proposals to expand eligibility to applicants on H1-B visas (who currently cannot participate because they cannot accept payment from parties outside of their home institutions) and to applicants outside of institutions. There may be legal or practical barriers to the first option, but in theory this should give the fellowship access to a wider talent pool. The second option is intriguing but may conflict with the fellowship model, in which institutional embeddedness is currently a key feature. There may be a trade-off between expanding Mozilla’s influence into the non-institutional side of ‘open’ and maintaining the current model which prioritizes influencing cultural change through agents within institutions.

The proposed ‘ambassadorship’ position is intended to create legitimacy and recognition for those whose involvement with Mozilla falls between ‘OLTS/WOW participant’ and ‘Fellow’. Membership as a Mozilla ‘ambassador’ could be expressed through branded accessories or clothing, certificates, or the like. The creation of this intermediate tier would help non-fellows who are heavily committed to Mozilla and ‘open’ have increased influence in their institutions and the wider community, while simultaneously recognizing their work and thereby encouraging continued effort. It would also incentivize participants to increase their commitment to reach the ‘ambassador’ tier.

The request for more mini-grants is not surprising. The fulfillment of this request is obviously contingent upon funding and budgetary constraints, but if possible the expansion of mini-grant distribution could have a large impact. It could enable program participants who are stretched for time and resources to devote more energy towards ‘open’ projects and advocacy efforts, and would be invaluable in building and strengthening the ‘open’ pipeline within and outside of institutions.

Possible future strategy

As the Science Lab and broader Mozilla Foundation move forward, two central issues must be considered: scaling and objectives. Based on the nature of this evaluation to date, we (the consultants) do not feel that we are in a position to make decisive, binary recommendations on future organizational strategy. However, based on our data collection we can present stakeholder perspectives, identify areas of strategy that need clarification, and articulate trade-offs between possible options in order to better inform these decisions.

The nature of scaling of Science Lab programs was a contested issue between stakeholders during our data collection process. The logic of scaling is clear: some of the Science Lab programs have clearly been very successful in developing participants and spreading the ‘open’ message, so these processes should be replicated and expanded in order to multiply their impact. This logic was articulated and defended by several staff interviewees and has already informed Mozilla strategy to date, with several of the Science Lab’s functions being ‘mainstreamed’ into the wider Foundation’s activities. However, the logic of scaling, and its implementation to date, has been questioned by other stakeholders, namely participants in the original iterations of Science Lab programs. Their concerns are that scaling can be done too early and too quickly, jeopardizing the vitality and

sustainability of the communities that have emerged around particular Science Lab programs (in particular, study groups were mentioned specifically by multiple participants). These communities seem to be vital to Mozilla's success and brand, and multiple interviewees described them as the 'special sauce' that makes the Science Lab so effective. Therefore, this dimension of future strategy could be crudely described as 'scaling vs. special sauce'. In an ideal world, the sauce could be scaled perfectly, with program expansion generating equally dynamic and vibrant communities at a larger scale which integrate with existing networks and leave no one behind. To get as close to this ideal as possible, Mozilla must (a) be sensitive to the interplay and trade-offs between scaling and community health, (b) deliberately select the speed and nature of scaling in light of those considerations, and (c) continue to focus on community curation and personal relationships throughout the scaling process.

The second key issue for Mozilla to consider when developing the Science Lab's future strategy is the matter of objectives. Mozilla's high-level objective is clearly articulated: to 'ensure the Internet is a global public resource, open and accessible to all', with the Science Lab focused more narrowly on the promotion of open practices in knowledge production.

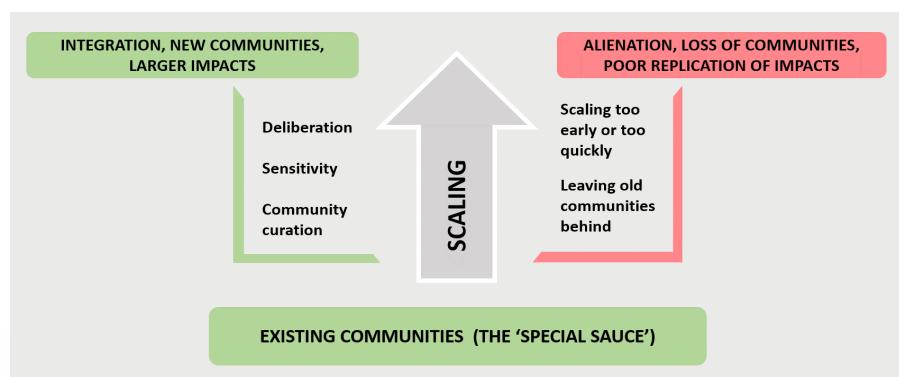


Figure 15: Issues of Scalling

However, this is an incredibly ambitious goal which can only be realized over long timeframes. In order to ensure that the Science Lab's programs are contributing towards this vision, Mozilla needs to articulate intermediate objectives against which program efficacy can be assessed. In addition, Mozilla must develop a clear theory of change which incorporates these intermediate objectives and other organizational goals and values. Developing such intermediate objectives is not straightforward, and different stakeholders have different perceptions of what constitutes 'success' for the Science Lab programs in the short- and medium-term. Some stakeholders want to see program participants produce outputs which directly and measurably benefit large numbers of people in the short-term (for example, the creation of applications to facilitate 'open' with lots of downloads). Others value outputs and magnitude of impact less, and instead favor the cultivation of leaders and networks which will indirectly produce cultural change in the longer-term. Like the scaling dimension, this aspect of future strategy features trade-offs between options. Intermediate objectives which are too focused on the short term and quantifiable, large impacts may be too stringent and result in genuinely useful programs being

deemed 'inefficient' and modified before they can influence fundamental change. On the other side of the spectrum, objectives which are too flexible and ambiguous may allow inefficient and low-impact practices to continue unchanged and therefore reduce the Science Lab's ability to meet its highest objective.

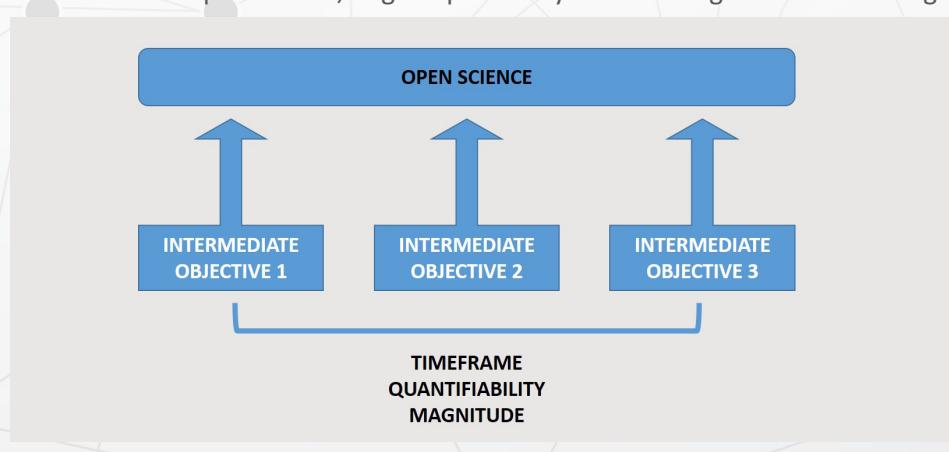


Figure 16: Objectives of the Program

Works Cited

- Kirkpatrick, Donald L. (1979). Techniques for evaluating training programs. *Training and Development Journal*.
- Rotem, Arie et. al. (2010). A framework for evaluating the impact of the United Nations fellowship programmes. *Human Resources for Health*, 8(7).
- MacArthur Foundation (2013). 'MacArthur Fellows Program: Summary of 2012-2013 Review', MacArthur Foundation (Report).
- Kallick, Judith et. al. (2017). 'Social Justice Leaders in Action: IFP Impacts in Asia', Institute of International Education (Report).
- Martel, Mirka and Bhandari, Rajika (2016). 'Social Justice and Sustainable Change: The Impacts of Higher Education', Institute of International Education (Report).
- OECD-DAC (2007) 'DAC Criteria for Evaluating Development Assistance', OECD (Report).
- Munoz-Boudet, Ana Maria (2017). 'STEM fields still have a gender imbalance,' World Economic Forum. Online.

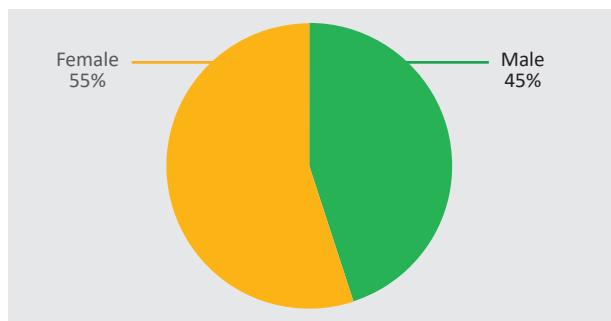
ANNEXES

■ ANNEX

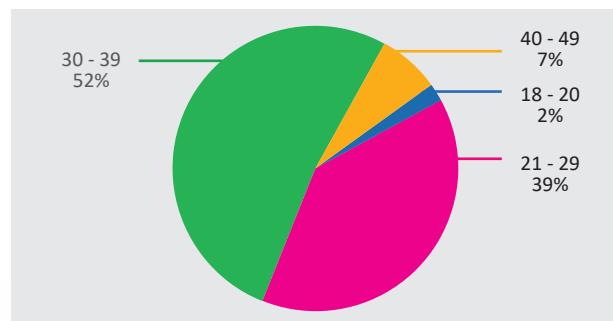
This annex includes details on the demographics of survey respondents, a list of interviewees, copies of the interview guides used for Mozilla staff and participants, and a list of the key questions provided by Mozilla at the conceptual stage of the evaluation. To view the full quantitative data from the online survey, see: <https://doi.org/10.6084/m9.figshare.5941306.v1> The qualitative word responses to the survey cannot be made available for privacy reasons.

SURVEY DEMOGRAPHICS

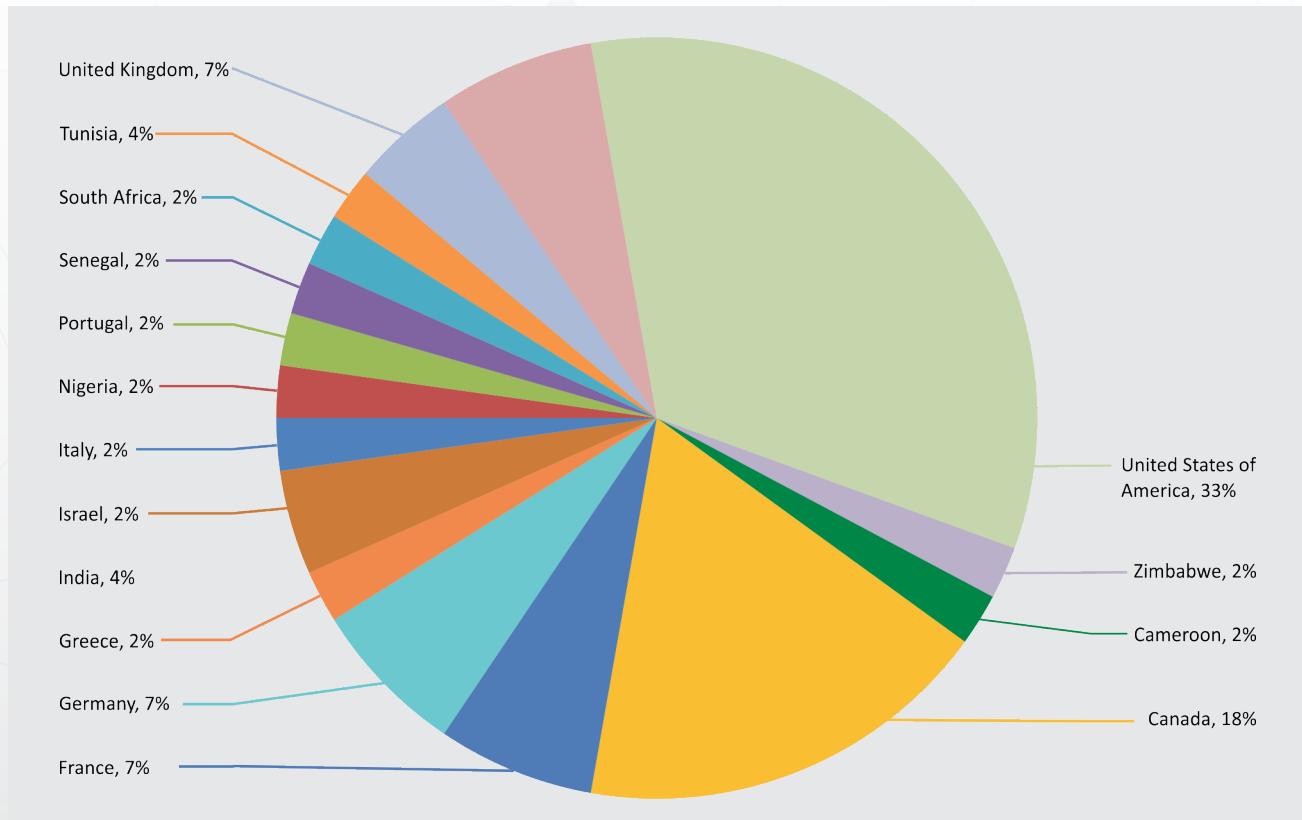
GENDER



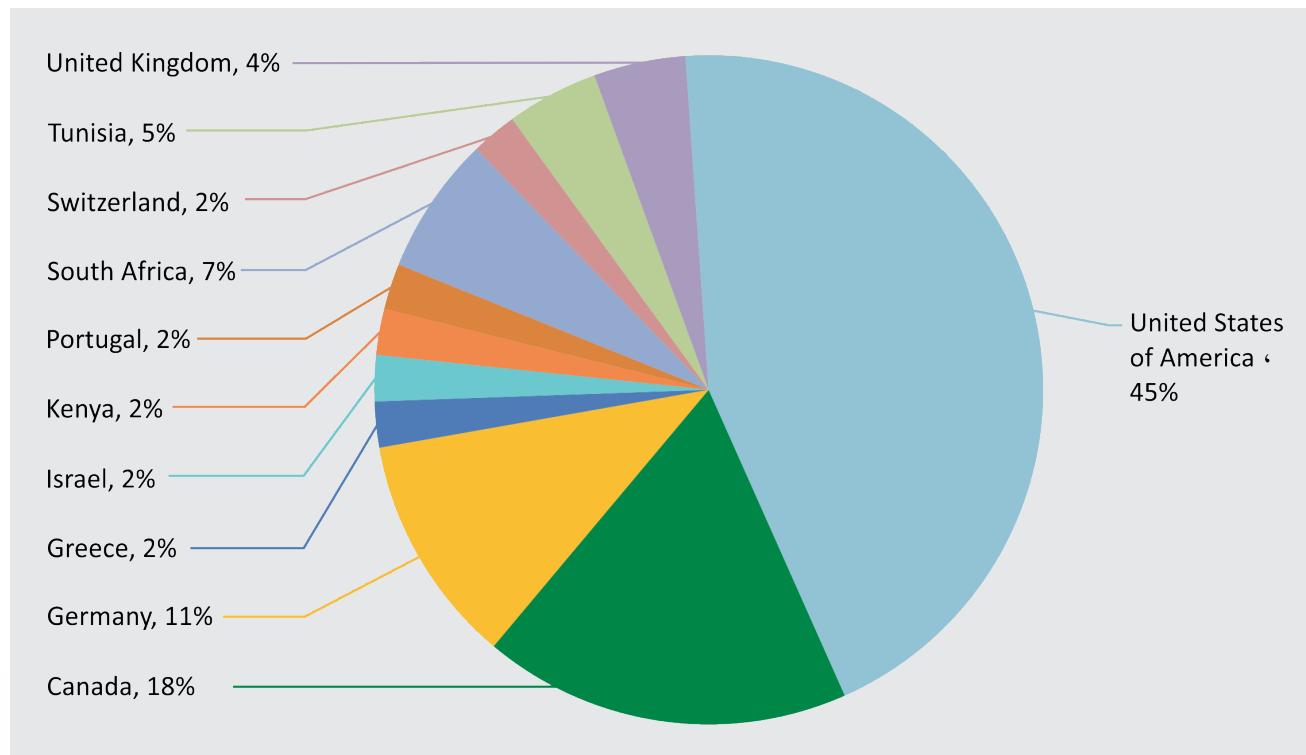
AGE



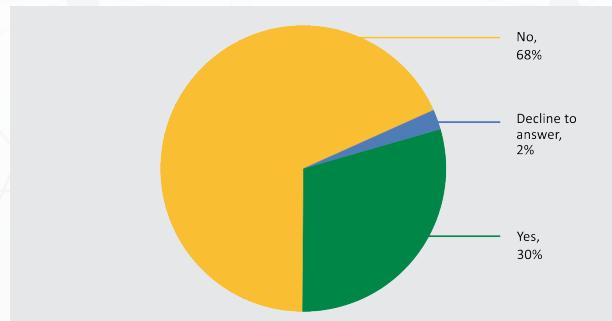
NATIONALITY



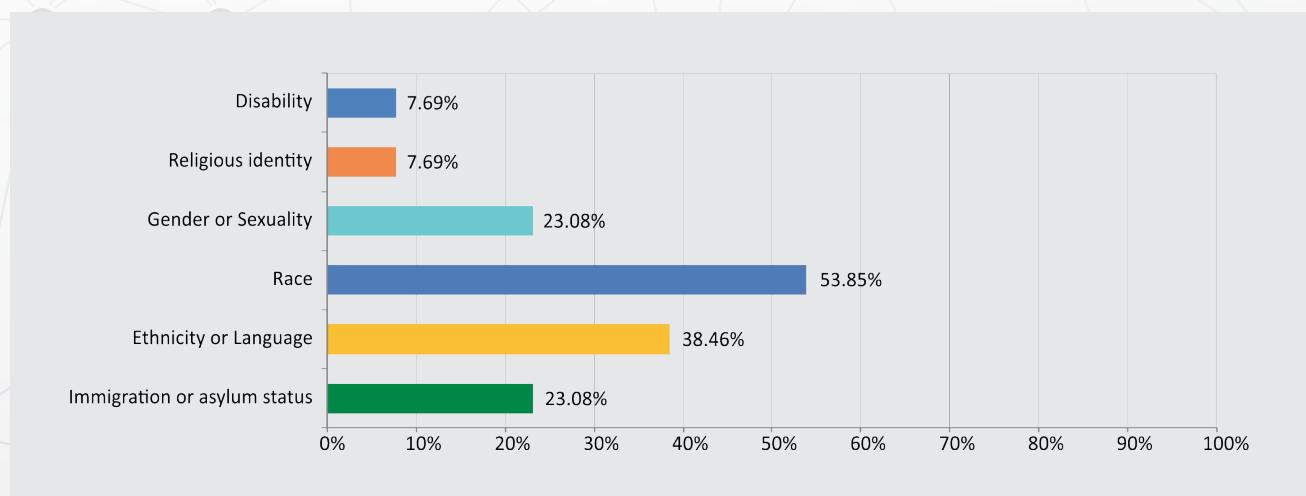
COUNTRY OF RESIDENCE



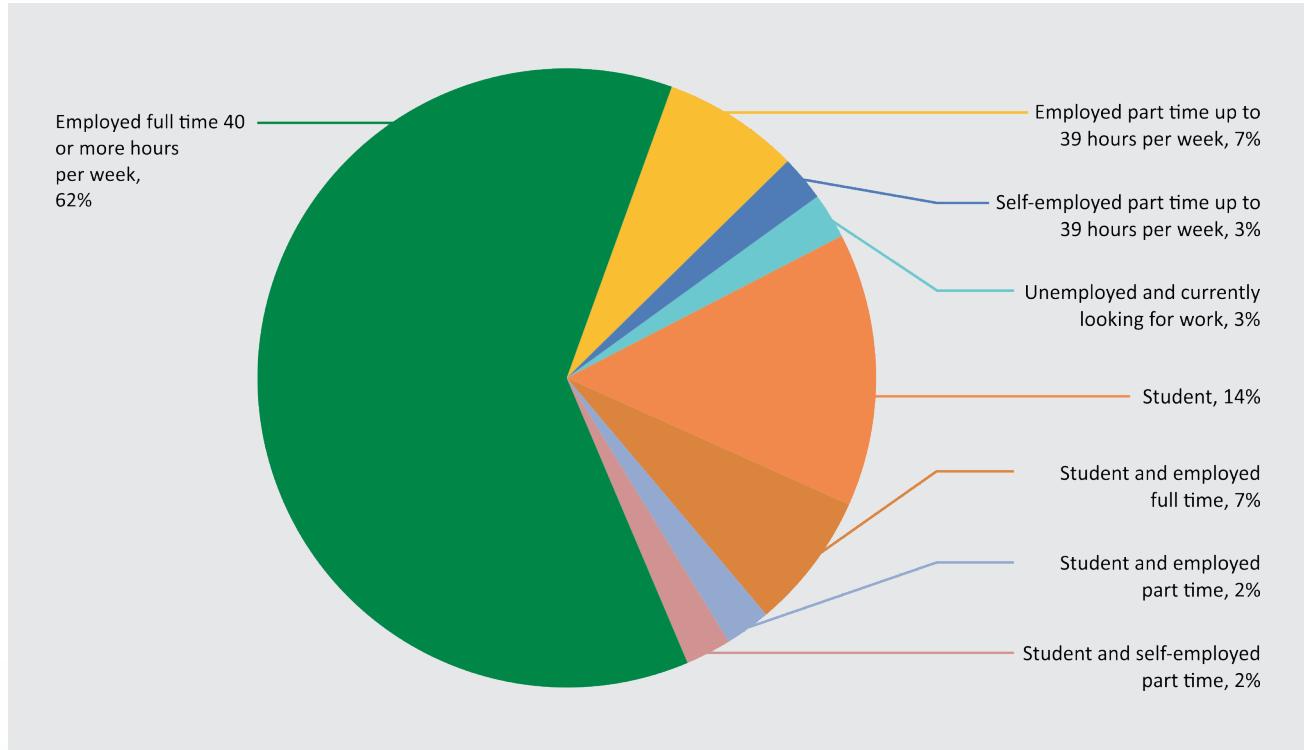
MARGINALIZED/MINORITY STATUS



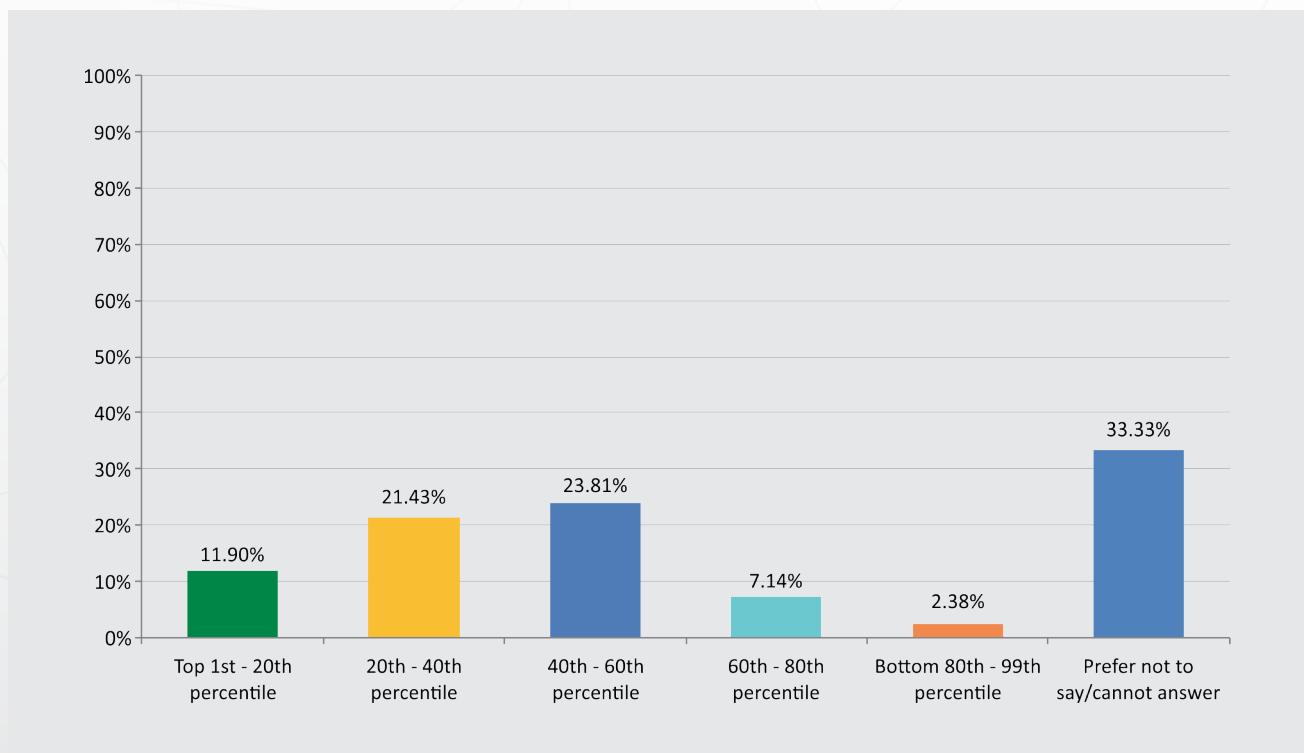
GROUP MEMBERSHIP



EMPLOYMENT STATUS



PARENTAL HOUSEHOLD INCOME



LIST OF INTERVIEWEES

Name	Category	Role
Bahlai, Christie	Participant	Fellowship
Clark, Jason	Participant	OLTS
Coulibaly, Abdoul-Kareem	Mozilla staff	Insights team
Friedman, Robert	Mozilla staff	Science Lab
Ghouila, Amel	Participant	Fellowship
Greenberg, Josh	External stakeholder	Funder
Hindle, Samantha	Participant	OLTS
Marsh, Zannah	Mozilla staff	Science Lab
Patterson, Lucy	Participant	OLTS
Robinson, Danielle	Participant	Fellowship
Saderi, Daniela	Participant	OLTS
Smith-Unna, Richard	Participant	Fellowship
Stankiewicz, Laura	External stakeholder	Funder
Tufail, Rizwan	Mozilla staff	Foundation
Vieira, Bruno	Participant	Fellowship
Whitaker, Kirstie	Participant	Fellowship
Wright, Stephanie	Mozilla staff	Science Lab lead

INTERVIEW GUIDE: OLTS

Background

- Field (home institution?)
- Role
- Project
- Interests and skills

Project needs

Individual needs

Networks

- Contact with mentor
- Contact with others

Learning

- Particular goals
- Impact of training

Open issues (individual)

- Awareness
- Commitment
- Empowerment

Open issues (area of focus)

- Awareness
- Commitment
- Empowerment

Leadership

- Articulating vision
- Motivating others
- Making a case

Satisfaction and project progress

Public engagement

- Advocacy, social media campaigns, work with governments, etc.

Sharing in field

- Skills
- Best practices
- Knowledge

Continued support

INTERVIEW GUIDE: FELLOWSHIP

Background

- Home institution and field
- Role
- Interests and skills

Individual and institutional needs

Networks

Learning

- Particular goals
- Impact of fellowship

Risk-taking

Open issues (individual and institutional)

- Awareness
- Commitment
- Empowerment

Leadership

- Articulating vision

- Motivating others
- Making a case

Role

Satisfaction

Products

- Related to the open internet
- Presentations, reports, websites, applications, blogs, etc.

Public engagement

- Advocacy, social media campaigns, work with governments, etc.

Sharing in home institutions

- Skills
- Best practices
- Knowledge

Continued support

INTERVIEW GUIDE: STAFF

Foundation/Science Lab/program objectives

- List them
- Sufficiently clear?
- Aligned with participants' needs?
- Aligned with needs of participants' home institutions?
- Feasible financially?

Sustainability?

Efficiency?

Continued support?

Appeal to different learning styles?

Collaboration across programs?

MOZILLA'S KEY QUESTIONS

Fellowships

Relevance	<ul style="list-style-type: none"> Are fellows and home institutions satisfied with their fellowship? Does the fellowship respond to a critical need of the home institutions?
Efficiency	<ul style="list-style-type: none"> Did it contribute to increasing their awareness about open science? Have they been able to build a network to advance open science? Have we created a career path for the fellows to advance internet health? Assess the selection process of fellow and the diversity of fellows Have the fellows become advocates of open science following their fellowship?
Impact	<ul style="list-style-type: none"> Overall how did their fellowship experience contribute to influencing their environment and promoting a culture of openness? How did the fellowship contribute to the home institution? Particularly in promoting open science practice and culture? How was the program successful in building sense of community among the fellows, their home organization, and the broader Mozilla Science network?
Sustainability	<ul style="list-style-type: none"> To what extent did the benefits of a program or project continue after donor funding ceased? How sustainable is the fellowship program in terms of: <ul style="list-style-type: none"> ➢ Mozilla being able to secure additional funding to support and sustain the program? ➢ Home institution developing sustainable culture shift related to open science practice? ➢ The fellow being a long-term advocate for open innovation and other internet health issues? What were the major factors which contribute to influence the sustainability/lack of sustainability of the programme or project?

Open Leadership Training

Relevance	<ul style="list-style-type: none"> How relevant is the training to participant / discipline? How relevant is the training to fostering a culture of open science?
Efficiency	<ul style="list-style-type: none"> Does participants to the leadership training have changed their mindset regarding open science and open collaboration? Mentorship program - how efficient is the mentorship program in changing the mindset and enforcing a culture of open science practice among participants and their mentees;
Impact	<ul style="list-style-type: none"> How does incremental engagement change behavior? Does the training and mentorship actually change the research practices of the mentees? Does the change in mindset and/or practices actually lead participants to advocate open science to others?
Sustainability	<ul style="list-style-type: none"> How best to sustain researchers' interest and involvement after those bursts of training, to help them continue their learning? How is the open leadership training contributing to grow the community of practitioners?

Working Open Workshops

Relevance	<ul style="list-style-type: none"> • What is value to participants? • Is the in-person nature of the workshop necessary to achieve the objective? (vs online learning) • To what extent does the curriculum and resources developed for the WOW get remixed / used post-workshop?
Efficiency	<ul style="list-style-type: none"> • To what extent was the Working Open Workshops successful in enabling a culture and behavior of open collaboration among scientists. • Does the WOW activate open science advocacy in local communities where they're hosted?
Impact	<ul style="list-style-type: none"> • Are the trainers most likely to continue their training beyond the project? What are the incentives/ lack of incentives to do so? • Do the participants take what they've learned and lead their own trainings / events to promote open science?
Sustainability	<ul style="list-style-type: none"> • To what extent did the benefits of a program or project continue after donor funding ceased? • How sustainable is the workshop program in terms of: <ul style="list-style-type: none"> ➢ Mozilla being able to secure additional funding to support and sustain the program? ➢ Local community developing sustainable culture shift related to open science practice? ➢ The participants being a long term advocate for open innovation and other internet health issues? • What were the major factors that contributed to influence the sustainability/lack of To what extent did the benefits of a program or project continue after donor funding ceased?



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