

## Data Carpentry responses to follow-up report questions

We really enjoyed reading your annual report - DC has accomplished a remarkable amount in a short time! Four items we'd like to follow up on:

- Your budget-to-actuals looked great. There's quite a bit of surplus going into year two. Can you let us know what you plan to do with that surplus, in both narrative and budget formats? We expect that you will plan to increase spending in year 2, or extend the award into a third year. In either case, please send us a narrative explaining your future plans, and a revised budget that shows where the surplus funds from year 2 will go.

I've attached an updated budget, putting our budget and expected expenses in year 2 and 3. In year 2, with more staff, we expect to use most of our Year 2 budget for travel and supplies. We also expect to use our full consulting and communications budget in Year 2, with an increased focus on Communications this year. We will use most of our salary budget as well. We are underspending budget on our Program Coordinator and Assessment Director and over-spending for our Associate Director. The salary in the budget will therefore be re-allocated accordingly.

In year 2, we expect to have higher indirect costs, as we are renting office space. We also expect to spend much of our budget for events, as we anticipate having 2 lesson hackathons, and do not yet have collaborators identified as we did for Genomics and Geospatial lessons. If we are able to get additional resources for hackathon events, we will move that budget item to Year 3 to accommodate additional lesson development.

Travel, supplies and salary that was not spent in Year 1, we are moving to Year 3, to continue to pay staff brought on at the end of Year 1, and support their activities.

- Can you provide us with more information on your sustainability plans? E.g., what does the overall budget for DC look like? How much are you bringing in via partnerships or workshop fees now, and what will your income look like moving forward?

In Year 1 of the grant, we brought in \$48,000 in workshop fees. We have now established a Partnership program jointly with Software Carpentry. Partnerships are available at a Bronze, Silver, Gold and Platinum level. That Partnership program was launched in May, 2016, and we have brought in \$50,000 in Partnership fees for Data Carpentry. Fees are shared with Software Carpentry, so the total income has been \$120,000. We have 5 more Partnerships currently in progress, as well as some Platinum level partnerships that would bring in resources above the standard fees for multiple years.

We have also applied for, and continue to apply for grants from the NIH and NSF. Additionally, we provide language and letters of support for institutions who are writing grants, to include Data Carpentry Partnerships or workshops in their grant, as a part of their training and broader impact.

We have received donations through FlipCause and Dr. Jeff Leek is donating 50% of the proceeds from his book 'How to Be a Modern Scientist' to Data Carpentry.

Our overall sustainability plan relies on a combination of workshop fees, partnerships, donations, sponsorship and grants. Workshop fees and Partnerships are currently on target to support current staff, but as the organization grows, additional staff may be required and the demand for Partnerships may change. In Year 2, we are therefore working on increasing donations and developing a Sponsorship program. We are basing the Sponsorship program on that of the National Ski Patrol, which also has volunteer instructors and a community with a clear focus. Tracy Teal is familiar with this model and its benefits to the sponsoring organizations, volunteers and the non-profit, as she was an Assistant Patrol Director with the National Ski Patrol.

We also continue to write grants to support staff time for particular efforts or for development of new materials.

Finally, we will be working with the soon-to-be hired Projects Director of NumFOCUS on overall strategy and properly evaluating the value of our services.

- Can you describe your plans for next year in terms of numbers? You say “scale responsibly” but what does that mean in terms of # workshops, events, materials developed etc.?

Our original goal was to run 100 workshops in 2 years. In year 1, we limited the number of workshops we ran to ensure quality and establish the groundwork. We have expanded our goal for the number of workshops in year 2 to reach 100 this year, as we now have the staff and infrastructure in place to support this scale. In particular, we have established clearer guidelines and support for self-organized workshops, so our staff does not have to be involved in running all workshops.

In Year 1, we experimented with running workshops remotely, teaching a workshop in one location and broadcasting to another location, where there are local helpers at this site. This program has been successful, with positive feedback from both the local and remote sites. We plan to create more infrastructure and guidelines around this delivery model and expand the number of sites that we can reach at once. This is helpful in scaling training while still providing the engaging, hands-on workshop format. It also helps us reach locations where it is more difficult for instructors to travel.

In Year 1, we helped the Software Carpentry Foundation develop the Instructor Training program. There are now multiple people who run instructor training and a curriculum for these trainings (<https://swcarpentry.github.io/instructor-training/>). We have also established a Mentorship program to support instructors past the instructor training event, and as they teach workshops. This allows us to scale instructor training as well. We plan to jointly train ~200 new instructors in Year 2.

We plan to run 2 hackathons to develop new materials in Year 2, although the second hackathon will likely be at the end of year 2. Based on our experience in year 1, we drafted a Lesson Roadmap (<http://www.datacarpentry.org/lessons-incubation/>) and have established that it takes approximately a year to complete a fully developed and tested workshop that we can offer broadly.

Our assessment efforts will increase significantly in Year 2, with the August hire of our Deputy Director of Assessment (DDA). In Year 1, we switched over to use Survey Monkey for surveys and have data from ~400 learners and our finalizing an IRB with UC Davis around this data. The DDA will start by evaluating this data, and producing a publication. She will also use this data and interactions with the instructors and community to update our survey instrument to better reflect assessment best practices.

A tentative goal that we have is to run a ‘CarpentryCon’ at the end of Year 2 that would be a conference focused on bringing Data/Software Carpentry instructors together. An agenda and logistics for such a meeting are still under discussion however.

- Are there any changes to your original stated outputs/tasks? I’ve copied them below for reference.

We do not have any significant changes to our Outputs. As we established infrastructure and guidelines in year 1, we have slightly increased our goals for the number of workshops we can run and instructors we can train.

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Output 1.1: Workshop materials developed for an expanded set of domains, including astronomy, nuclear physics, neuroscience, geoscience, and biodiversity.

- Develop domain-specific materials and curricula for Data Carpentry workshops, at beginner and advanced levels.
- Engage domain experts – domain scientists who are enthusiastic about collaborating on lesson development.
- Run pilot hackathons to develop lessons and content.

Output 1.2: Expanded pool of instructors trained to teach skills for working with the volume, velocity, and variety of data.

- Run a minimum of four train-the-trainer workshops that focus on evidence-based teaching practices.
- Foster and support the pool of instructors through an open, diverse online community.

Output 1.3: Researchers trained in domain-specific data science skills

- Run a minimum of 100 Data Carpentry workshops over two years
- Continuously assess workshop content and delivery.
- Develop new approaches to delivering workshops online.