

# Moore Year 2 Annual Report Narrative

## NARRATIVE

### 1. Description of project's progress (August 2016 to December 2017)

In the past year, we have increased or expanded our **(I) workshops and assessment, (II) curriculum development, (III) instructor training** and **(IV) community engagement and communication**. We have also presented our work through **(V) publications and presentations** and pursued funding and new opportunities through **(VI) grants and collaborations**. Our membership model continues to be successful, and we have brought on new memberships, a significant contributor to our **(VII) sustainability**. This past year, Data Carpentry and Software Carpentry Steering Committees have made the decision to merge into one organization to better support their growth and the next steps in **(VIII) governance and operations**. Progress in each of these areas is outlined below.

#### I. Workshop and Assessment information

The number of Data Carpentry workshops has increased from 31 in 2015 to 58 in 2016 and now 73 in 2017. Between August, 2015 and July, 2017 these workshops have trained over 4000 learners on 6 continents. We have reached new areas including South Africa, Kenya, Mali, South Korea and Thailand. These also have included workshops using our newer curriculum, Genomics and Geospatial data.

Our [report](https://zenodo.org/record/165858) (https://zenodo.org/record/165858) on our post-workshop surveys shows that our learners are reporting increased confidence and ability in their data management and analysis skills. Additionally, learners have increased appreciation for these skills

(i.e. scripting) to improve and promote reproducible research. 95% of learners agree or strongly agree that they would recommend our workshops to a colleague.

This year we also redesigned our survey to have paired analysis, so that we can directly compare individual pre and post survey responses. We continued to focus our learner assessment on perspectives on working with data and on reproducibility, and on confidence and self-efficacy, rather than skills-based questions, as these are more predictive of skills adoption. This effort was lead by Kari L. Jordan, Deputy Director of Assessment. The [blog post](#) about our assessment strategy includes how the community was engaged throughout this process.

Our focus has always been on long term change, including:

- Improving learners' confidence and motivation to use computational tools.
- Changing behaviors around reproducible research and effective computational work.
- Increasing the frequency and types of computing skills used.

Therefore, we launched our first long-term assessment survey in March 2017 to gather quantitative evidence about specific behaviors our learners have adopted and continue to embody six months or more after completing a Carpentries workshop. Using this data, we could see what concrete changes people are implementing in their computational research practices as a result of completing a Carpentries workshop. Our long term survey report shows that two-day Software or Data Carpentry workshops are effective for increasing skills and confidence, and the adoption of reproducible research perspectives. We see gains in our survey measures for learners' motivation to continue their learning, change in reproducible research behavior, and frequency of use of computational skills and tools.

Software and Data Carpentry have taught workshops to over 27,000 learners in 35 countries around the world. Post-workshop survey reports for Software Carpentry and

Data Carpentry have consistently shown that people like the workshops, that they know more about importing data sets into R and Python to work with data, write functions, and initialize repositories in git, and that they think they can apply skills immediately to their work.

Assessment specialists on staff and in the community developed an instrument, based on existing instruments, for collecting information regarding learners confidence and motivation to use the tools they learned, and behaviors they adopted after attending a Carpentries workshop. Rather than focusing on learners' skills in particular tools, we focused on assessing learner confidence, motivation and adoption of good research practices, as these elements represent the primary goals of our workshops. Confidence and motivation are important factors for learners to have to continue their learning. They also promote community building, a significant focus area of the Carpentries.

The final survey instrument included items for self-reported behaviors around good data management practices, change in confidence in the tools they learned, and other ways the workshop may have impacted learners (ex. Improved research productivity). Over 530 people who took a Software or Data Carpentry workshop 6 months or more ago responded to our long-term survey. These results show that workshop respondents had a positive impression of the workshop and the majority felt their skills and perspectives have changed as a result of attending the workshop. Results also show that these two-day impactful workshops are effective for increasing skills and confidence. The impact of these workshops is apparent in respondents' coding practices. The majority of respondents (70%) reported having improved their coding practices by using programming languages like R or Python or the command line to automate repetitive tasks, by reusing code for other purposes, or by using databases to manage large data sets. Respondents have continued their learning and incorporated use of these tools into their weekly or daily work. Additionally, 69% of respondents have made their

analyses more reproducible as a result of completing a Carpentries workshop by reusing code and making their data and analyses available on public repositories.

Not only do these two-day coding workshops increase respondent's daily programming usage, 85% of respondents have gained confidence in working with data and open source tools as a result of completing the workshop.

The majority of our respondents:

- Gained confidence in the tools that were covered during their workshop (85.3%).
- Improved their coding practices (63.1%).
- Received professional recognition for their work as a result of using the tools they learned (64.7%).

Respondents also substantially increased their frequency of use of programming languages (R, Python, etc.), databases (Access, SQL, etc.), version control software and/or the Unix shell, incorporating these tools into their regular workflows. 19% percent of respondents transitioned from using these tools once a month or less to weekly or daily.

Respondents perceive the workshop had an impact on their confidence, as well as their productivity, reproducibility and coding practices. Interestingly, respondents also felt that the workshops had a positive impact on their career as a whole, and some received recognition for their work.

The figure below shows what impact survey respondents felt for several factors including career, confidence, and continuous learning. Respondents were asked to rate their level of agreement (1-Strongly disagree to 5-Strongly agree) with the statements below. The x-axis labels for the figure are in italics, and correspond to the statement following.

Reproducible: I have made my analyses more reproducible as a result of completing the workshop.

Recognition: I have received professional recognition for my work as a result of using the tools I learned at the workshop.

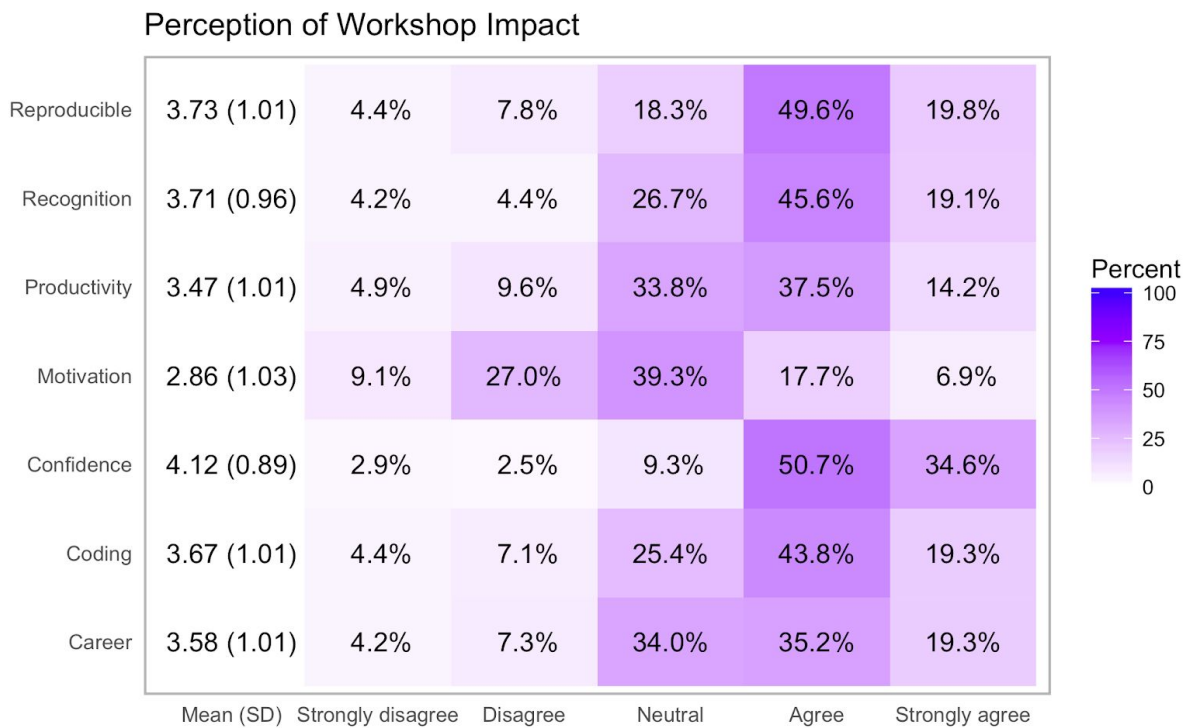
Productivity: My research productivity has improved as a result of completing the workshop.

Motivation: I have been motivated to seek more knowledge about the tools I learned at the workshop.

Confidence: I have gained confidence in working with data as a result of completing the workshop.

Coding: I have improved my coding practices as a result of completing the workshop.

Career: I have used skills I learned at the workshop to advance my career.



Full results are available in our [long-term assessment report](https://zenodo.org/record/1039944) (<https://zenodo.org/record/1039944>),

We conduct all of our assessment as an open project, publishing all our anonymized data (according to IRB), the scripts we use to analyze the data and generate the reports. All reports are published with DOIs and our assessment information can be found in our assessment repository. (<https://github.com/carpentries/assessment/>)

All of our assessment efforts are supported by our staff, community members, and the virtual assessment network (<http://www.datacarpentry.org/assessment-network/>). This global network meets virtually every quarter and shares best practices and resources for assessment in the data science space.

## **II. Curriculum development**

This year we published our curricula to provide stable identifiers/stable versions and also give credit to all community members who participated in development. To do this, we've developed a lesson publication process which includes days of concentrated community effort around a particular curriculum - an Issue Bonanza for making note of outstanding issues or problems with the curriculum, and a Bug BBQ to fix those issues. We've also developed checklists and timeframes for the lesson publication process.

Using this process, we published the first Data Carpentry curriculum, our Ecology lessons (covering spreadsheets, OpenRefine, SQL and either R or Python). The publication process started in Feb and lessons were published in May (<http://www.datacarpentry.org/blog/lesson-release/>) with over 40 community members contributing during the Issue Bonanza and Bug BBQ. Curriculum published this year includes the Data Carpentry Genomics curriculum and the Data and Software Carpentry Instructor Training materials.

For the Geospatial materials, we've recruited community members to serve as a curriculum advisory committee to help determine future directions for the curriculum and maintainers to continue to maintain and develop the lessons. The Geospatial lessons are scheduled to be published early 2018.

We have also developed pilot versions of two workshops focused on reproducible research - Reproducible Research with R and Reproducible Research with the Jupyter Notebook. Both have had pilot workshops, and a hackathon is scheduled in January, 2018 at UC Berkeley, in collaboration with the Jupyter team, to further develop the Jupyter curriculum.

In addition to focusing on cleaning up and publishing our existing curriculum, we've also begun expansion into new domains. We have signed a contract with the Cathie Marsh Institute for Social Research at the University of Manchester for development of curricular materials for social scientists. These are scheduled to be completed in January 2018 and will include lessons for spreadsheets, OpenRefine, Git, SQL, Python and R. Materials are in development [here](#).

There has been significant interest in working with Data Carpentry to develop curriculum in more domains and topics. With the community, we have begun curriculum and interest groups around atmospheric science, astronomy, image analysis, biomedical data, digital humanities, neuroscience and business . Our [lessons page](#) includes lessons being taught and those in development. There is also a group working on HPC Carpentry, with content for training people to work effectively with HPC resources.

Dr. Ethan White continues to develop the Data Carpentry Semester Biology materials, and those are now being used in courses at UC Davis and Université de Montréal, Département. There is increasing interest in using these and standard Data Carpentry materials as full university courses or as components of existing courses.

With the interest in new Data Carpentry materials as well as the growth of open and collaborative lesson development for other types of computational training, we wrote a proposal to the Sloan Foundation for the Development of data skills curriculum and scalable open and collaborative lesson development infrastructure. This grant was

funded and will support the general development of infrastructure for open, collaborative lesson development, and the development of curricula in Economics, Imaging and Chemistry.

### **III. Instructor training**

Data Carpentry workshops are taught by volunteer instructors who go through a two-day training program to learn about our pedagogical principles and workshop logistics. Since establishing an instructor training program, we have received nearly 900 applications. One priority this year has been to grow our capacity to offer these trainings to be able to expand our instructor pool. In the past year, we've developed a training program for instructor Trainers, who lead Instructor training events, and grown our Trainers group from 20 to 41 members. Another 15 prospective Trainers are currently in the training program and are scheduled to join the group in February.

Previously, Trainers had been added to the group by invite only. This new group is the first to join by application. By opening up the Trainers group to applicants from our community, we've been able to improve representation of our geographically diverse community. Initially 40% of our Trainers were based outside the US. Now 50% are outside the US with 11 countries represented. We've also increased Trainer diversity with this new cohort, going from 90% to 85% Caucasian (non-Hispanic). All Carpentry staff are now certified Trainers.

Expanding our Trainer group has enabled us to teach more instructors and therefore to expand our workshop capacity. In the past year, we've certified 276 Data Carpentry instructors. We also now share a joint certification process with Software Carpentry in which all instructors certified for one organization are able to teach workshops lead by the other organization. Most of our instructor training events are carried out as part of membership agreements. However, by increasing our capacity, we have been able to



offer more opportunities for training to people not affiliated with member institutions. We are also now able to deliver instructor trainings online, both for groups that are co-localized (member associated) and completely distributed (open trainings). This technological flexibility has enabled us to offer training to many people who would not otherwise be reached. We can run instructor training events completely online and ran these events for cohorts in Mexico and Columbia. Between June and August, we also trained 80 people in four open instructor training events, reaching trainees in 20 countries in the Americas, Africa and Europe.

#### **IV. Community engagement and Communications**

As a primarily volunteer organization, supporting and engaging with our community is a core component of our work. This involves welcoming and supporting new and ongoing instructors and communication with and between our community members. We launched a new programs and communication approaches and hired a Community Development Lead, joint with Software Carpentry, to help facilitate this work.

A new program the Mentoring Subcommittee started this year is a Mentoring program, matching new instructors with experienced instructors and setting up virtual mentoring groups. Nearly 100 Carpentry Instructors participated in the program, with 58 Mentees and 34 Mentors in 18 small groups. Mentoring groups provided the opportunity for experienced instructors to connect with new instructors and help in small groups to develop confidence in teaching, lesson maintenance and community building. This program was set to be a fixed amount of time, so people could change their commitment levels as needed. We started a new cycle in October, where there will be particular focus areas available for mentoring groups, including teaching particular tools, curriculum development and professional development.

We have also worked to establish communication channels, both providing information to stakeholders and providing places for discussion. A blogging strategy has been established, with some key aims - keeping our instructors engaged, and attracting new partners by demonstrating our value to research practice, skills development and open science. A bank of blogging ideas has been set up on the Carpentries GitHub repository to encourage new suggestions. Community calls have been run monthly, with calls in different time zones to meet community need. We now have [links to all calls](#) within the last year so people can revisit discussions. Call outcomes are written up in blog posts and included in our newsletter. The newsletter, now entitled *Carpentry Clippings*, began to appear twice a month from July 2017. We currently have 1,672 subscribers (up from 1,645 in June). We have a 44% 'open' rate which is around the industry average. Tweeting is becoming more systematic, with tweets posted approximately two-hourly to ensure that messages appear in multiple time zones. We have established a Carpentries [Conversations](#) repository to demonstrate our open community building strategy.

We are planning CarpentryCon for May 30 - June 1, 2018 in Dublin, Ireland (<http://www.carpentrycon.org>) and formed a CarpentryCon subcommittee to work with staff to organize this event. The theme of CarpentryCon 2018 is "Building Locally, Connecting Globally". It will be a global conference to will bring together newer and more experienced community members to share knowledge, to network, to develop new skills, and to develop strategies for building strong local communities. This will be our first event of this type, and a great opportunity to bring our global community together and share skills and perspectives on teaching computational skills and supporting people in learning.

## **V. Publications and Presentations**

To share outcomes from our work, raise awareness of our efforts and advocate for the importance of training in promoting reproducible research and good software development practices, we have authored articles and given presentations at conferences and meetings. All presentations are listed in the submitted table of outcomes, but highlights are included here. Papers included *Good Enough Practices in Scientific Computing* (PLoS Computational Biology 13 (6), e1005510), *A vision for collaborative training infrastructure for bioinformatics* (Annals of the New York Academy of Sciences 1387 (1), 54-60), *Skills and knowledge for data-intensive environmental research* (Bioscience 67 (6), 546-557), *The Next Generation of Training for Arabidopsis Researchers: Bioinformatics and Quantitative Biology* (Plant physiology 175 (4), 1499-1509) and *Developing a strategy for computational lab skills training through Software and Data Carpentry: Experiences from the ELIXIR Pilot action* (F1000). We also had an article on the Inside Higher Education blog [How better training can help fix the research reproducibility crisis](#). We also publish all of our survey reports, registering them with DOIs and making them available on FigShare.

Staff and community members regularly present on Data Carpentry and the need for data and software skills and perspectives in research. Dr. Tracy Teal gave talks at many domain meetings including American Astronomical Society, Entomological Society of America and Society for Industrial and Applied Mathematics. She also was a keynote speaker at the National Science Foundation Software Infrastructure for Sustained Innovation Pls meeting, speaking on “Software Not As a Service” and the importance of software development in research, the speaker for the Diversity Lunch at SciPy and the keynote speaker at the University of Puerto Rico Replicathon. Dr. Kari Jordan has spoken on training as a pathway to diversity, giving a talk “Learning to code isn’t enough: Training as a pathway to improving diversity” at JupyterCon. Dr. Erin Becker presented in the Berkeley Institute for Data Science Data Science Lecture Series and at the csv.conf conference. Maneesha Sane presented at PyCon Philadelphia. Our community members have also given talks and tutorials on Data Carpentry, including at

UseR!, the SACNAS annual meeting and at the Workshop Towards an African Open Science Platform Infrastructure Framework.

## **VI. Grants and Collaborations**

While we support core operations with membership and workshop fees (see below section on Sustainability), we have been a part of grant submissions to support new work and memberships from interested universities. We have been PIs or key personnel on 5 National Science Foundation (NSF) grants and 1 National Institute of Health grant. Two of the NSF grants have been funded and will support the development of lessons in meteorology and weather and the assessment of curriculum in genetics. As mentioned in Curricula Development section, we also have also recently been awarded a grant by the Sloan Foundation to fund development of lessons in Economics, Imaging and Chemistry and the general infrastructure for open, collaborative lesson development.

Additionally, many researchers are including Data Carpentry workshops, Memberships or lesson development in their grants as core to achieving the goals of their proposal and expanding training in their domain or region. We provided 14 letters of support for these activities in grants.

We continue to work with Amazon Research, where they provide AWS credits for our Genomics workshops and offer opportunities to learners to apply for credits for their own research. We also have started a pilot program with Data Camp for potential online delivery of lesson exercises. Data Camp has developed a platform for the interactive delivery of coding exercises. Their platform is based on Github and Markdown files, the same back end as our lessons, and Data Camp will offer any course for free that is put into their platform for that purpose. Data Camp staff have used some of their 10%

research time to put some Data Carpentry exercises into the platform. We first will try this out in the context of a workshop. The development of this would need further work and a consideration of its effectiveness, but it may be a way for us to deliver mixed model workshops, with online teaching, for those who cannot attend a local workshop. The advantage of this collaboration is that we can utilize existing infrastructure without having to develop our own, a challenge we highlighted last year. Also, because exercises are being done on line, data is automatically collected, so it can be a way for us to do formative assessment integrated into normal workshop activities, to evaluate the effectiveness of the teaching.

We are also working with centers and organizations to reach new communities with opportunities for instructor training and workshops. In particular, the South Big Data Hub, Midwest Big Data Hub and West Big Data Hub have received supplements from the National Science Foundation that included workshops and instructor training for underserved colleges and universities in their region. We've also done several training with the National Society of Black Engineers (NSBE) as a part of Google Code Success @ NSBE, a Google grant program aimed at increasing the number of black engineers in the field of Computer Science.

In other countries, we have collaborations with the Software Sustainability Institute in the UK, Compute Canada in Canada, and New Zealand eScience on workshop coordination activities and have been working with North West University in South Africa to expand training in Africa. We will also be signing an agreement with ELIXIR Europe to bring workshops and instructor training to their 21 member organizations.

## **VII. Sustainability**

We have built a financial sustainability model on our core programmatic offerings that are integrated with our mission and vision of building communities and building local

capacity to teach data skills. We have two primary sources of revenue, workshop coordination fees and Organizational Memberships. Workshop coordination fees are for workshops that are requested by organizations, where we handle the logistics for finding instructors and coordinating the workshops. The fees for these workshops continue to be the same as they have been since 2015, \$2500/workshop.

Self-organized workshops, where instructors initiate a workshop and do the planning and coordination have a \$500/workshop fee to support the self-organized workshop infrastructure. Fee waivers are available for both self-organized and coordinated workshops where there is a need-based reason for the waiver.

Organizational Memberships are to support an organization's local capacity for training. These were established in 2016 and continue at the same levels of Bronze, Silver, Gold and Platinum. Organizational memberships include instructor training, coordinated workshops and unlimited self-organized workshops. In 2017, we added new Organizational Members to bring the total to 61. We also have in-kind Memberships where an organization provides staff time for workshop coordination or lesson development. We have these memberships with the Software Sustainability Initiative, Compute Canada and Manchester University.

This last year we also established guidelines for working with for-profit organizations. Workshops and memberships for for-profit organizations have higher fees and 50% of any revenue for work with for-profit organizations is committed to workshops and instructor training in under-served communities.

This sustainability model includes the financial aspect that is important for the support of core operations, and it also helps grow and support a robust community of instructors, learners and other engaged stakeholders which are key to the sustainability of the project.

We continue to apply for government and foundation grants for programmatic activities. We also have some funding from donations. While currently a small portion of our revenue, we are exploring low-overhead options for increasing donations from individuals and companies. We have been successful with industry sponsorship for CarpentryCon.

## **VIII. Governance and Operations**

This past year Data Carpentry and Software Carpentry Steering Committees voted to merge the organizations. Several staff positions were already shared between the organizations, including the Workshop coordinator and the new Community Development Lead. With some staff changes, Dr. Erin Becker, the Data Carpentry Associate Director is now the lead on Instructor Training, a program that was previously run by Software Carpentry. Instructor training and workshop coordination efforts are shared by Data and Software Carpentry.

The process for the merger has been approved, with a new Steering Committee structure that will include appointed and elected members, agreement on future staff roles and a process of Requests for Comments to facilitate discussion with the community about different operational aspects of the merger. The merged organization will be The Carpentries. Dr. Tracy Teal, the current Data Carpentry Executive Director, will be the Executive Director, and Jonah Duckles, the current Software Carpentry Executive Director, will be the Director of Business Development and Technology. With this merger, we also will be changing fiscal sponsors to better match the scale of our operations. In February, 2018 The Carpentries will become a fiscally sponsored organization of Community Initiatives.

A merged organization will not only streamline governance and operations, but will also be an umbrella organization that supports new curriculum efforts in teaching

computational skills, with a different focus on the goals of the training. Where Software Carpentry teaches better software development skills, Data Carpentry trains researchers in how to work effectively with data. The likely first new 'Carpentry' will be Library Carpentry whose goal is to train 'data savy librarians' who can both use data skills in their own work and train researchers working with the libraries. We have already been engaged with Library Carpentry around their efforts, and the California Digital Libraries has been awarded a grant from the IMLS to support this work and better align with existing Software and Data Carpentry efforts. We are working with IMLS on a hire for the Library Carpentry coordinator position funded by this grant. This person will work jointly with The Carpentries and IMLS.

## **2. Challenges and opportunities encountered**

A key challenge this year has been the support for the development of new curriculum. We have had many people interested in developing curriculum in their domain, even with initial efforts. What we have realized is that we lack the personnel and infrastructure to support this increasing demand. We need to train interested people in how to do curriculum development, things such as writing learning objectives and how to write exercises, as well as make it easier to do new development work, including lesson templates. We also need to provide guidelines not only for the development, but for the ongoing maintenance. When a lesson is hosted with us, we are committing to its maintenance while it continues to be relevant. This includes an ecosystem of lesson maintainers (like open source software maintainers), contributors who feel welcomed to contribute and oversight committees or people who can guide the overall direction of the lessons. We have been working on all of these factors, and have piloted a maintainer and oversight committee model with the Genomics lessons, but it has yet to be fully



developed and each curricula does require staff support. The Sloan grant funding will help significantly with this work. With this funding, we will be hiring Dr. Francois Michonneau as the Curriculum Development Lead. Francois is a long time Data Carpentry contributor, active R developer and developer and maintainer of the Data Carpentry R Ecology lesson. His already active engagement with Data Carpentry and combination of technical expertise and community engagement perspective means that he will be able to immediately begin working on these elements of curriculum development and maintenance from a technical and community perspective.

These challenges are also opportunities as we see this increased demand to use this open and collaborative development model for lessons. There is great opportunity not only to expand domains, but also types of lessons and have lessons that are not necessarily a part of a 2-day workshop, but are standalone modules of a few hours, or are components of semester long courses. We are working with rOpenSci to explore the idea of a lesson review system, like they use for R packages, combined with publishing lessons in the upcoming Journal for Open Source Education.

### **3. Personnel changes**

This year we hired three new positions and changed the roles and responsibilities of another.

#### *Deputy Director of Assessment*

Funded by this grant, we hired a Deputy Director of Assessment to lead our assessment efforts. Dr. Kari Jordan has a PhD in engineering and postdoctoral work in education and assessment, focusing on self-efficacy. She has served in leadership positions with the National Society of Black Engineers. Dr. Jordan started in August, 2016 and continues to work in this role.

#### *Associate Director responsibilities and Community Development Lead*

In January, 2017 Dr. Greg Wilson stepped down as Director of Instructor Training for Software Carpentry. Dr. Erin Becker, Data Carpentry Associate Director postdoctoral work was in educational training, and she took over the Instructor Training role. To support the community work that she was doing, Software Carpentry hired a Community Development Lead in August, 2017. Belinda Weaver was hired to this role. She has been a long time Software and Data Carpentry instructor, a Software Carpentry Steering Committee member and been key for the growth of Software and Data Carpentry in Australia. She has extensive experience working with research groups and has a background working in libraries and as a journalist.

#### *Program Manager and Workshop Administrator*

With the increasing number of workshops and workshop coordinators, we needed someone with more opportunities for oversight and developing guidelines. Maneesha Sane transitioned from her role as Workshop Administrator to Program Manager. With this transition, we also hired a part-time Workshop Administrator, jointly with Software Carpentry, for day-to-day coordination for workshops. SherAaron Hurt was hired in October as the Workshop Administrator. She been very active in the National Society of Black Engineers, and has a strong background in logistics, marketing, and training and managing both staff and volunteers. A graduate of Michigan Technological University, she also has a Masters in hospitality management.

## **4. Evidence of awareness and recognition of the project**

Along with the presentations and papers mentioned above, Data Carpentry continues to be recognized in articles and publications, [Developing a strategy for computational lab skills training through Software and Data Carpentry: Experiences from the ELIXIR Pilot action](#). Data Carpentry is advertised on Software Sustainability Institute website - <https://www.software.ac.uk/data-carpentry> and mentioned in the National Science

Foundation guidelines for data management planning and [The Medical Library Association Guide to Data Management for Librarians](#).

As our instructors are highlighted in professional settings and articles, they often include the impact of Software and Data Carpentry on their research and careers, including Dr. Auriel Fournier mentions in [her Nature profile](#).

Along with workshop announcements, many organizations and universities who run workshops and are member organizations include these efforts in blog posts and websites, including ELIXIR's post on [Data Management and Data skills training with Data Carpentry and ELIXIR](#) and on [building campus capacity at the Stanford Library](#).

There is general recognition of our expertise in data skills training and collaborative lesson development, and helping to build a community of researchers working in open source software. We are consistently invited to participate on panels, working groups and advisory groups on data training, including for the Data Science Corp and the Childhood Cancer Data Lab. We are involved in the Journal for Open Source Software and in founding the Journal for Open Science Education.

## **5. Expenditures over the last year**

Expenditures over the last year have primarily been on staff salaries. Our budgeted Deputy Director of Assessment started this year, and we continued support for our Executive Director, Associate Director and Workshop Coordinator. Other primary expenses were on travel for presentations and training opportunities to reach new communities.

We asked for and received a no-cost extension through December, 2017.



