Virtual Data Help Desk Planning Tips

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This document outlines tips and lessons learned from hosting Virtual Data Help Desks in conjunction with scientific society meetings for others who wish to host similar events. Emphasis is placed on virtual events, though much of this information is useful for planning physical Data Help Desks as well.

Data Help Desk - What is it?

Whether held virtually, in-person, or in a hybrid fashion, the Data Help Desk provides researchers with opportunities to engage with informatics experts familiar with their scientific domain and to learn about skills and techniques that will help further their research and make their data and software open and FAIR.

The Data Help Desk enables researchers to ask data-related questions, view recorded demonstrations of relevant tools and platforms, as well learn about key data-related issues such as citation of data, creating a data management plan, and how to find a suitable repository for research data. Some Data Help Desks have also included software-related resources and even a

Coding Help Desk component. Whether to include these components is up to the discretion of the organizers and careful thought should be given to what topics the informatics experts on staff may be able to address.

Components of a Virtual Data Help Desk

Just as the in-person Data Help Desks have a place to walk up and ask data-related questions, as well as a place to view demos of tools and resources, the virtual events include similar components:

- Place for researchers to ask questions
- Gallery of contributed demos, tutorials, and one-pagers

Past Virtual Data Help Desks

To date, more than 15 Data Help Desks have been held, including the following virtual events:

- http://bit.ly/DataHelpEGU20 (May 2020)
- http://bit.ly/DataHelpGSA20 (October 2020)
- http://bit.ly/DataHelpAGU20 (December 2020)
- http://bit.ly/DataHelpAMS21 (January 2021)
- http://bit.ly/DataHelpEGU21 (April 2021)
- http://bit.ly/DataHelpGSA21 (October 2021)
- http://bit.ly/DataHelpAGU21 (December 2021)
- https://bit.ly/DataHelpAMS22 (January 2022)

What Makes Virtual Data Help Desks Successful?

Based on observation, the following ingredients are very important to the success of a virtual data help desk:

- Dedication of a core group of organizers, who meet regularly for planning and advertising purposes, is essential. This planning should start at least 2 months out from the event. If the meeting the Data Help Desk is associated with has a certain domain focus, it is best to engage a group of organizers who are experts in that area. For example, the Data Help Desk hosted at the Ocean Sciences Meeting in 2020 was successful in large part due to involvement of the members of the ESIP Marine Data Cluster.
- Diversity of volunteers to staff the Help Desk, both in terms of organizations and topics represented. This is helpful because researcher questions can vary widely.
- Established and active relationship with key contacts at the organization hosting the meeting. For example, a good relationship with key personnel at AGU along with clear and common goals has helped us in all aspects of planning, executing, and maximizing the impact of each event we hold together at an AGU Fall Meeting.

- A solid communication plan both prior to and during the event:
    - Presence on main meeting website and, if possible, mention of the event in any daily emails sent to meeting participants
    - Ambassadors – section chairs, scientific session presenters, etc., who actively talk to others about the event during the meeting in as many places as possible by tweeting, by sharing email advertisements, by mentioning the event in their posters and oral presentations, town halls, and more.
    - Lots of active Twitter champions
- Advertising not just on the meeting website, but in a prominent place.
- Solicit and share asynchronous content, such as recorded demos and tutorials that can be accessed at any time and can be a lasting resource. Researchers are often busiest around scientific meetings, so recordings can enhance potential impact and access.
- Keep in mind especially early career professionals and students: we have observed over time that the younger generations tend to visit the Data Help Desk and ask questions. They also seem more open to doing things in new ways, so it makes sense to develop content in line with their interests and concerns. Of course, it helps to also equip them not just with the ways to, for example, manage data more effectively, but also why it matters so that they can also promote these practices amongst their colleagues and supervisors.
- During the event: find commonalities with researchers – sharing not just informatics, but also science expertise of volunteers is important for establishing trust and starting conversations. Experts should not talk down to researchers, but instead explain how they came to understand why, for example, it's important to have sound data management practices.

Key Tasks/Roles

The size of an event, including the number of volunteers, anticipated attendance, and length of event, should determine how many individuals are needed to perform key tasks. These do not all have to be done by different people, but are somewhat discrete tasks:

- Data Help Desk Designer: an individual who is responsible for the overarching vision of each event in collaboration with a small dedicated organizing committee composed of representatives from all major organizing entities. Serves in all other roles below or delegates them to other individuals.
- Meeting Host Liaison: an individual who works especially closely with the meeting host team to promote the virtual event on the meeting website, in the meeting program, and in regular communications about the event. The Meeting Host Liaison will also explore and pursue additional ways to increase the visibility of the event in collaboration with the meeting host team, including blog posts, social media promotion, and more. For hybrid events, this role is particularly critical, as it will be important to coordinate not just a virtual presence, but also to
- Expert Volunteer: an individual who volunteers to:
    - a) monitor questions asked during a Data Help Desk and provide responses; and/or

- ○ b) share resources related to making data and/or software more open and FAIR.
- Volunteer Coordinator: an individual who manages the process of recruiting and supporting expert volunteers by providing guidance on how to contribute and other support before and during the Data Help Desk.
- Question Referrer: an individual who monitors Twitter and any other platforms where researchers may contribute questions, who quickly refers these questions to experts who may be able to address the queries. This could mean sharing a question asked in Twitter on a Slack channel or retweeting and tagging an expert or even referring the researcher to a specific person via email. The Question Referrer's job is to make sure that all questions are addressed in some way.
- Website Manager: an individual who manages the main event website, including the event description, sponsor/organizer acknowledgement, and information on how to participate, along with the gallery of contributed resources.
- Twitter Champion: an individual who develops and implements a Twitter plan for the event. This includes advertising the event ahead of time and tweeting individual resources during the event using hashtags and other mechanisms to maximize visiblity and impact. Works with the Question Referrer to ensure that all questions asked on Twitter using the hashtag #DataHelpDesk are addressed.
- Workshop Coordinator: an individual who develops and coordinates any workshops or more in-depth side events happening in conjunction with the Data Help Desk on broad topics like how to create a data management plan, how to cite datasets, code, and software, and how to find an appropriate data repository. The most challenging aspect of this role is finding the right presenters for these workshops, those who have the right expertise and who are willing to devote the time to leading and drawing a sizable crowd. Because live attendance may be on the lower side with a virtual meeting, it can be valuable to create resources instead that are recorded on these topics that can be of benefit over a longer time frame.

Virtual Data Help Desk Implementation Specifics

Engaging With the Meeting Host & Other Organizers

Very early on in the planning process, it is important to clarify with all major sponsors (whether in-kind or otherwise), the meeting host organization, and other contributing organizations what their respective roles will be. Key questions to consider are: 1) What are the possible levels of involvement for supporting organizations?; 2) Will you ask all major participating organizations to split any costs or will one fund?; and 3) What does an organization have to do to get their name on the signage? We have often called the data help desk a "program of X, Y, and Z" and further supported by many other individuals and organizations. X, Y, and Z have typically been ESIP, the meeting host (AGU, GSA, EGU) and EarthCube, the organizations that sponsor and/or contribute major effort and resources to the event. Since the volunteer experts typically span a very wide range of institutions, they are counted among the further supporters.

Beyond what each organization will contribute, it is important to establish key contacts at those organizations to work with. With some meeting host organizations, the Virtual Data Help Desk is more closely associated with a specific section or the Career Central component, whereas with others it is not. If society Y is hosting a meeting, it is important to establish who at society Y can help with ensuring that the Data Help Desk receives prominent placement in any digital materials, including the main meeting website. You might also arrange with the host to have a blog post published about the event and/or ask that they include information about the Help Desk in any daily email reminders sent to meeting attendees. Another key role is someone at the meeting host organization who can help with social media coverage of your event, actively re-tweeting as you put out info.

If the entire meeting is happening virtually, you may consider discussing with the meeting host organization whether the Virtual Data Help Desk can and should have a presence in the virtual platform for the meeting - this can be, for example, a virtual exhibit booth. This can do a lot to increase the visibility of the event. Caution should be exercised, however, when considering this option because it creates a private space that only meeting attendees can access and it also creates another place that data expert volunteers have to monitor. For a first go at organizing a Virtual Data Help Desk, simple is often best.

For a hybrid event, the meeting host organization can provide guidance on whether a physical Data Help Desk component can and should be arranged. Finding the ideal placement and including meaningful signage within the physical venue can be almost as important as having the right experts present. Sometimes it is best to be located in the Exhibit Hall amongst the flurry of activity hosted by many of the organizations that experts represent. Often, this is a good way to redirect people with questions to speak to an expert from another organization. In other cases, a more separate location outside of the bustle of the Exhibit Hall can be better.

Designing Forums for Researchers to Ask Questions

When designing ways for researchers to ask questions, it's important to think about where they will be when the event is happening and also where they will be most comfortable asking questions. Keep in mind also that the more places you create for asking questions, the more spaces you'll have to monitor and the more you may overwhelm the volunteers you have recruited to address questions. In the past, we have opted for just one public and one more private option:

- Public (Twitter): We ask researchers to post questions to Twitter and include the hashtag #DataHelpDesk. We ask data experts to monitor the #DataHelpDesk Twitter stream and reply directly to any questions they see there via their own Twitter account.
- More Private (Survey Form): We provide a form with just 5 questions on it for researchers to submit questions in a more anonymous way (or at least not as publicly as Twitter). This also works well if they do not have Twitter. The questions on the form are:
    - Please share your question related to any aspect of Earth science data (e.g., finding, sharing, analyzing, publishing, and citing data). Please be as specific as possible.
    - Name (optional)
    - Email (required)
    - Twitter Handle (optional)
    - Career Stage (optional)

Common Researcher Questions (from past Help Desks)

Bishop & Rose (2019) did an analysis of the types of researchers who engaged at the Data Help Desk when it was held in-person, what their questions were, and what their level of satisfaction was. Based on all events that have been held so far, here are some of the most frequently asked questions:

- Where can I deposit my model (or other large) datasets?
- Where can I archive my data?
- Where can I find data?
- Other popular topics
    - How to create a data management plan
    - How to cite datasets, code, and software
    - How to find an appropriate data repository
    - How to process/analyze large datasets
    - What does FAIR mean?

A Note on Questions: At both the physical and virtual Data Help Desks, researchers do not always ask questions. We think this is because they might not know what the Data Help Desk is or what it offers when they first encounter it. It may also be because researchers have a number of other objectives while attending a scientific conference that for them are more important than getting

help on their data-related questions. For these reasons, there is a need for expert volunteers to create a buzz and share resources even if there aren't a lot of questions being asked. Doing so helps researchers understand what types of questions can be asked and exposes them to resources they may not have realized they were looking for. Having a twitter plan that includes numerous tweets each day drawing attention both to the broader event and to specific topics & resources can help with this. Tweets (and retweets) coming from numerous people and organizations using #DataHelpDesk can be very effective and help show that the Data Help Desk is a truly collaborative effort. Having a contact at the meeting host organization (AGU, EGU, etc.) who is willing to retweet anything you send out can also help reach more people.

Designing & Compiling the Gallery of Resources

This gallery has been featured on the main Data Help Desk website for each event (e.g., http://bit.ly/DataHelpAGU20) or, more recently, as a page linked on the main website. The gallery includes primarily short video recordings (typically hosted on YouTube) and one-pagers (typically hosted on the ESIP Figshare Repository at https://esip.figshare.com/Data_Help_Desk). This gallery started at a modest size, but has now grown to nearly 100 contributions, making it difficult for researchers to navigate and drill down into. For some Data Help Desks, we have reduced the gallery to a tailored subset of particularly-relevant content to try to deal with this. In general, there is a growing need for Data Help Desk organizers to identify the best way to present the resources, as well as which resources would be most effective to feature for each event (e.g., marine resources are most important to feature for Ocean Sciences Meeting, while other events may have a broader scope). Organizers must also communicate with contributors to determine whether a resource should continue to be featured in subsequent events or if it has become out-of-date. Because the gallery is a long-lasting output of a Data Help Desk, which may itself only be live for a few days a year, it is one of the most valuable outputs with the potential to reach many more researchers throughout the year. For this reason, the challenges highlighted here are some of the most pressing to address for future Data Help Desks, particularly for virtual events.

How to Recruit & Support Data Expert Volunteers

- Organizers decide on key topics and specific resources (from their own organizations even) that they would like to see featured. For smaller events, it may be best to hand-pick a set of volunteers, as working with experts prior to the event is often one of the most time-consuming (and rewarding) tasks associated with a Data Help Desk.
- You can also share a volunteer form (e.g., Google Form) with relevant mailing lists to solicit volunteers. Past volunteers should also be invited.
  - **Volunteer to be a Data or Software Expert** for the upcoming Virtual Data (and software) Help Desk, to be hosted during #vEGU21 Meeting (19-30 April 2021). This event, which is a program of the Earth Science Information Partners (ESIP), EGU, and AGU, connects researchers with informatics experts familiar with their scientific domain to learn about skills and techniques that will help further their

research and make their data and software open and FAIR. You can volunteer to take part in one or more of the following ways:

- Answer data (and software) questions (monitor platform and answer where you can)
- Share a recorded demo (share a brief recorded demo of a tool or resource, ideally <5 min)
- Share a one-pager about your tool or resource

To volunteer, please complete this brief form [link to the form], as soon as possible by 1 April 2021. Even more details on how you can contribute are provided in the Volunteer Guidelines.

The Data Help Desk is happening virtually again after several successful virtual and in-person events at professional meetings over the last few years at the AGU Fall Meeting, EGU General Assembly, Ecological Society of America Annual Meeting, Ocean Sciences Meeting, and more. Don't miss this chance to help others with data-related questions and to demo your tool or platform! Questions? Contact megancarter@esipfed.org.

- **Volunteer Guidelines:** Support your volunteers by writing out guidelines and tips to help them prepare and contribute. The guidelines can encourage volunteers to tell others about the event and provide more guidance on how to prepare to answer questions and what types of information to include in one-pagers or and brief recordings. It should serve as the main place to link to any other relevant resources to aid in their participation. This document should also include a link to a code of conduct that applies to their participation in the event. See example volunteer guidelines available here.

Supporting Data Expert Volunteers

No Data Help Desk can be successful without the dedication of a number of data (and software) experts who can address researcher questions, refer researchers to other experts, and contribute relevant resources to the resource gallery. These experts should represent a number of different institutions and ideally be involved in many different aspects of the data life cycle, from those who produce and manage data to those who publish and cite. Valuable responses from expert volunteers include not just answers to researcher questions, but also referrals to other individuals and organizations who may be able to address their question.

Ensuring that volunteers find participation to be a good and productive use of their time is an important undertaking because it increases the likelihood that they will be willing to participate again in the future. Constantly striving to collect and share metrics that show the event is having an impact can help with this. It can be helpful to survey volunteers post-event to get their thoughts on what worked well and what could be improved.

Because not all volunteers may be comfortable using Twitter or want to have to constantly monitor a Twitter feed, it is ideal to set up a separate mechanism for them to identify and address researcher inquiries. A Slack channel has been used in the past that enables discussion amongst

the experts, as well as triaging of researcher questions. The form for contributing questions has even been automatically set up to post questions in the Slack Channel. A moderator can then take experts' responses and share them with the inquirer and also post the thread back to Twitter, so that others can benefit from the exchange. The moderator can also take questions asked on Twitter and post them to the Slack channel. Experts can then either respond directly on Twitter or share their answers in Slack for the moderator to then push back out to Twitter.

Twitter Engagement

As a platform that is increasingly becoming popular amongst researchers, Twitter is a great place to create a buzz and host discussion during the Virtual Data Help Desk events. Generating a robust plan, including a schedule of tweets to advertise that the event is happening, along with example questions, and featured resources is key. The use of scheduling software like Tweetdeck or Buffer can be extremely helpful. Having key hashtags that are used in each Tweet is important. At a minimum, these have so far been #DataHelpDesk and the hashtag for the associated conference (e.g., #AGU21). At some point, it may be better to have a main Twitter account associated with the event, so that hashtags cannot be confused with or commandeered to promote other activities and resources. This account would need to be a shared resource amongst all Data Help Desk organizers.

Data FAIR

Data Fair can be a larger umbrella over the Data Help Desk that encompasses other events, like Town Halls and other Workshops around the general topic of FAIR and open data and software. For some meetings, the Data Help Desk is the only event, but you may choose to also host these other events if the resources exist to make them happen. Our observation has been that these are better attended when the meeting is virtual. However, care must be exercised because virtual meetings can be advertised in a way that increases the likelihood of Zoom-bombing, by which we mean behavior that is unwelcome and very disruptive in virtual sessions. Hosting these events within the larger conference virtual platform with support from the conference hosts can help to lower the risk of these intrusions.

Other Considerations

- Language is important - the 'Virtual Data Help Desk at AGU' implies something different than 'AGU Virtual Data Help Desk.'
- Volunteer satisfaction is important - we want volunteers to feel like their time was well spent and that they would like to participate in subsequent years. Being able to track views or use of their resources during the event or likely as a result of their event is one way to show this value.
- Additionally, it is good to try to be as inclusive as possible both with respect to volunteers and with respect to inviting questions from researchers. Careful thought should be given to creating a welcoming environment both in-person and virtually.

Metrics of Success

With in-person events, the number of interactions with researchers can be a key metric to understand the reach of the event, along with the qualitative metrics of how engaged those individuals were (did they ask questions and did they feel like they received the help they were looking for?). Metrics for a virtual event are certainly quite different, though. With an event held primarily on Twitter, there are a number of different metrics that can be tracked using simple and fairly cheap applications. These metrics include:

- **Impressions:** Number of times twitter users have seen posts containing the tracked hashtag (one user can make multiple impressions and this may only mean that it showed up in their Twitter feed)
- **Posts:** Number of posts that used the hashtag
- **Reach:** Number of unique users who have seen a post containing the tracked hashtag (posts with this hashtag showed up in the feed of this many people)
- **Engagement:** Number of intentional interactions (retweets and likes) with a post containing the hashtag
- **Users:** Number of users who posted with the hashtag

While the metrics above can demonstrate that the event had a broad reach, none of them capture how engaged individuals are with the resources they see - this is something that could be at least qualitatively assessed at an in-person event. In addition, the organizers of past Data Help Desks do not weigh heavily the number of questions asked at the events because we believe that it will take time for researchers to understand what questions the Data Help Desk can help them address and it may take them time to realize what questions they should have. The value of raising awareness of FAIR concepts and techniques cannot be overlooked and can be of great benefit to funders, publishers, journal editors, data facility professionals, and others looking for a mechanism to share leading practices.

One final note on metrics: you will want to track metrics for the volunteer experts to try to assess their overall satisfaction with the activity and to find ways to maximize the return on their investment of time. The number of volunteers can be telling, as can a post-event survey shared with them. Tracking engagement related to their contributed resources can also demonstrate value to the volunteers.

Additional Resources
- Carter, Megan; Robinson, Erin (2020): Insights from Engaging with Scientists at Data Help Desks during Scientific Meetings. ESIP. Presentation. https://doi.org/10.6084/m9.figshare.12827582.v1

- Recording of Megan Carter giving the above presentation at the 2020 ESIP Summer Meeting Session on Connecting Informatics to Science Communities: https://youtu.be/B7Nn_cO1dkQ?t=1780
- Carter, Megan (2020): Data Help Desk Planning Tips. ESIP. Online resource. https://doi.org/10.6084/m9.figshare.12827717.v1
- Bishop, Bradley; Borden, Rose (2019): Data Help Desk: Informing Science Data Help Desk Staffing through Transaction Analysis. ESIP. Report. https://doi.org/10.6084/m9.figshare.9699866.v1

Appendix

Specific tasks and resources related to running a Virtual Data Help Desk:

1. Form Organizing Committee
   a. 5-10 key individuals committed to success of event
2. Convene Organizing Committee to agree on general plan for the event
3. Create website
   a. Consider obtaining a bit.ly link - e.g., bit.ly/DataHelpAGU20
4. Develop Volunteer Guidelines that clarify opportunities and expectations for volunteers.
   a. For example, see here.
5. Develop & Share Volunteer Form
   a. For example, see here.
6. Remind & encourage volunteers, including deadlines and support provided via email just after the volunteer deadline.
   a. See email templates
7. Develop Twitter Plan
   a. See template.
8. Advertise Event
   a. See email templates
9. Add resources to website
10. Execute event by implementing Twitter plan, monitoring and referring questions, and encouraging volunteers.
11. After the event, thank the volunteers and follow-up on any lingering questions. Consider running a post-event survey to gather volunteer feedback on how the events could be enhanced in the future.