Timestamp	Please type question number	Please type your answer	Summary	Category				
QUESTION 1: What are the roadblocks to moving forward?								
3/3/2022 11:51:07	1	not enough personnel hours to get tephra data into repositories; this is careful work and takes a lot of time, but takes personnel and paid hours	time	time				
3/3/2022 11:51:43	1	it would be great to be able publish datasets. sometimes the interpretation is only possible with way more extensive time and resources and not everyone manages to get to a publishable stage so lots of data gets lost	time, resources	time				
3/3/2022 11:51:45	1	Difficulty to find support for internationally coordinating and building interoperability among data systems.	funding	funding				
3/3/2022 11:52:09	1	its a lot for individuals to keep up with -- all the registries and repositories and standards they should keep up with to make their data FAIR and accessible, and this work is not often rewarded	time, shifting/complex methods	time				
3/3/2022 11:52:13	1	Making FAIR data part of the research culture (easily and as part of the research workflow)	cultural shift	cultural				
3/3/2022 11:52:15	1	Variation in data format in available published datasets	format variation	format				
3/3/2022 11:52:19	1	Time is limited and especially for those trying to get permanent positions we really have to dedicate our time to publishing/networking/job-hunting rather than data curation...	time	time				
3/3/2022 11:52:39	1	Lack of Standardized Data collection (comparing apples to oranges)	lack of standardization	standardization				
3/3/2022 11:52:45	1	How to deal with highly altered (devitrified, zeolitized, bentonite) tephra along with better-preserved glassy materials.	altered tephra	altered				
3/3/2022 11:52:46	1	Other disciplines need to know they can join the system and view data and share their knowledge.	other discipline participation	other disciplines				
3/3/2022 11:52:48	1	Not enough time to get everything into repositories while also doing all of my other work	time	time				
3/3/2022 11:53:00	1	publishing just a dataset needs some kind of reward rather than just an anti-reward of being scooped	reward system	reward				
3/3/2022 11:53:09	1	Time consuming process entering data etc in correct format	time	time				
3/3/2022 11:53:13	1	unified tephra database that includes the data i'm interested in (physical parameters).	unified database with physical parameters	physical parameters				
3/3/2022 11:53:13	1	connection of nonmarine and marine records	nonmarine <-> marine	marine				
3/3/2022 11:53:16	1	Time needed to do this "extra" work to present data	time	time				
3/3/2022 11:53:23	1	it would be nice to develop more interoperability between databases (a little like eartchem is able to pull in data from georock...) it would be nice to have a portal capable to compile info from different tephra databases.	database interoperability	interoperability				
3/3/2022 11:53:25	1	I consider strandarizacion is fairly easy but the main problem is time. Monitoring ash, collection, preparation, component analyses,chemical and texture analyses. I suggest a student bring together all published analyses also.	time	time				
3/3/2022 11:53:30	1	Different requirements for different journals. No standardization	journal standardization	standardization				
3/3/2022 11:53:35	1	Researchers not publishing raw data with secondary standards to allow data quality assessment	secondary standards	secondary standards				
3/3/2022 11:53:41	1	Not enough time	time	time				
3/3/2022 11:53:45	1	Agree with road blocks listed . Would add funding can also be a road block.	funding	funding				
3/3/2022 11:54:04	1	Complexity in requirements for data (and metadata) submission	shifting/complex methods	user friendly				
3/3/2022 11:54:08	1	time, time, and time. Also templates for data entry are good (and applauded), but also labor intensive to populate.	time	time				
3/3/2022 11:54:11	1		NA	NA				
3/3/2022 11:54:12	1	I analyze a lot of samples for other people's projects so I don't want to put things in data repositories before they get a chance to publish them, but that means it just doesn't happen because the workflow is disjointed	workflow disjointed doing others' samples	workflow				
3/3/2022 11:54:43	1	integration of IODP/ODP/DSDP marine core data sets	marine cores poorly integrated	marine				
3/3/2022 11:54:46	1	length of time required to add in all previously collected samples	time	time				
3/3/2022 11:54:55	1	Lack of examplars that show the advantage of sharing datasets to solve common problems or develop common understandings that can be the bases for solving common problems.	lack of exemplars showing advantage of data sharing	examples				
3/3/2022 11:55:06	1	US focus of funding for these platforms so often not widely known outside of the US and they are in English and in some cases require kit such as iPads (not widely adopted).	US focus	US focus				
3/3/2022 11:55:11	1	Input of data in a database is a time consuming process not enough awarded by journals	time	time				
3/3/2022 11:55:13	1	Community consensus on presentation of data	standardization (presentation)	standardization				
3/3/2022 11:55:14	1	Standardization in data collection! It's great to be able to have all data FAIR and centralized in nice tidy databases, but if the data are not comparable how useful is it really? Donovan recently brought this up in the EPMA world, atleast the need for better standards. But coming to a consensus about standard ways to analyze things and also having standard and widely available secondary standards is a huge roadblock to progress.	standardization (analysis)	standardization				
3/3/2022 11:55:21	1	Coordination, adoption, and funding. Group has idea, develops solution but must now roadshow it themselves and to various stakeholders for buy in (be it systems, researchers, or educators) and its on a volunteer effort. This sort of effort should be formalized.	difficulty of getting potential stakeholders to adopt a solution	advertizing				
3/3/2022 11:55:31	1	Multi-disciplinary vocabularies-- in order to maximize multi-disciplinary cross-referencing for big data, and we need to establish standardized vocabularies to best enable searches and create more scientific inclusion.	nonstandardized vocabularies in different disciplines	standardization				
3/3/2022 11:55:32	1	the last one on the slide -- that individuals are meeting their own local research and funding environment requirements but also trying to fulfill global data needs is huge -- need funding and incentive to do the extra work that making data accessible and interoperable requires	lack of funding and incentive to make data accessible	funding				
3/3/2022 11:55:42	1	How do we make sure that people who may analyse tephra purely for dating purposes and are not really part of this community (e.g perhaps for a palaeoenvironmental study) know to add the tephra data to this system, so that that valuable data is not invisible?	those outside tephra community don't know of community FAIR efforts	other disciplines				
3/3/2022 11:55:43	1	challenges in collecting a storing metadata in a coherent way. Strabospot is a great tool that will help moving forward but what do we do with all of the samples we collected in the past and forgot something.... like did not take a picture in the field or good field notes.... We need to have a way to ingest samples with variable quality metadata	ingestion of data with variable quality metadata	variable quality				
3/3/2022 11:55:47	1	finding detailed chemical data for major eruptions. for instance, we are working on the climactic Mazama layer in OR lakes, and can not find complete published REE patterns for the Mazama eruption. Most analyses were done in the 1980s by Charlie Bacon by INAA, which lacks some of the key REE.	lack of detailed chemical data for major eruptions	major eruptions				

3/3/2022 11:55:54	1	If editors etc insist on data being FAIR, for big datasets which may have multiple uses in papers on tephrochronology, magmatic process, etc needs to be some embargo time to allow the owners of the data time to be sure they can get all they want from the data before releasing it. The "scoop" risk...	needs to be embargo time; being scooped	scooping
3/3/2022 11:55:57	1	Increasing time required post publication to fulfil open access requirement demands, leaves less time for data management and adding already published data to repositories.	time	time
3/3/2022 11:56:13	1	As an ECR fear of being scooped after doing all the manual and time consuming work is def. a road block	fear of scooping	scooping
3/3/2022 11:56:57	1	need to build front-ends, code routines, etc to make it easier to input data into repositories	better front ends for easy data input	user friendly
3/3/2022 11:57:03	1	Lack of standard data processing/collection. tephra data is often collected as one density sample per whole eruptive unit.. but multiple samples would be better and transparency on how the density was calculated will be very helpful since multiple techniques exist.	standardization (processing)	standardization
3/3/2022 11:57:13	1	homogenize data across disciplines and interests	standardization across disciplines	standardization
3/3/2022 11:57:15	1	Time to do what is proposed. Most of us barely cope with doing what we are already doing. Most of are not full time researchers or have big research groups - we teach and do admin etc.	time	time
3/3/2022 11:57:25	1	Stop using NIST glass standards! They are not homogeneous (we've known this since the 90s!)	bad glass (NIST) standards	secondary standards
3/3/2022 11:58:06	1	Bringing more people into the field, (one issue being the lack of funding, to bring more people into the field), and a need of more innovative ideas to bring the field into a new era (was not sure, which question to put this under)	more people in field to foster innovation	innovation
3/3/2022 11:58:10	1	logistics of sample entry: need ONE simple standard workflow to register samples, enter data, etc.	simple sample data entry	user friendly
3/3/2022 11:58:25	1	I find it hard to know where to share the data in an accessible way and it would take some time to set up work flow for getting data in the right format from the beginning.	where to share data in accessible way	user friendly
3/3/2022 11:58:54	1	Some journals require data to be made available on publication - this should be a standard practice amongst peer-reviewed publishers	enforce publisher practices for data sharing	enforcement
3/3/2022 11:59:01	1	Better transparency in concentration calculation for laicpms data (e.g., signal to concentration methods). No more NIST-612 as calibration standards.	bad glass (NIST) standards	secondary standards
3/3/2022 11:59:07	1	Most data repositories do not include the type of data that I produce (physical data)	lack of repositories for physical data	physical parameters
3/3/2022 11:59:21	1	i think what i've really been trying to say with all my responses is "whose job is it, to get tephra data into standardized formats with global registrations in formal repositories?" if its the researcher (and it should be; they know their data best) then the researchers need actual support to do this	need for support (probably financial)	funding
3/3/2022 11:59:32	1	Standardization and proper use of secondary standards / references materials	standardization; secondary standards	secondary standards
3/3/2022 11:59:38	1	Need for easy to find explanations of community approved vocabulary terms to reuse	easy to find community vocabulary	user friendly
3/3/2022 12:00:13	1	More information on appropriate standards if NIST is becoming obsolete	bad glass (NIST) standards	secondary standards
3/3/2022 12:00:20	1	We don't just need comprehensive databases, we also need vetted databases, with higher quality control standards	vetted databases	vetting
3/3/2022 12:00:21	1	`standardisation of data and appropriate secondary standards	bad glass (NIST) standards	secondary standards
3/3/2022 12:00:35	1	Lack of standardization of quantitative tephra morphology parameters with same name for different parameters, or different name for same parameters. Very confusing in terms of data sharing	lack of standardization in morphology parameters	physical parameters
3/3/2022 12:01:06	1	The creation of more sensitive equipment to get more sensitive information such as the geochemistry of cryptotephra, in general and cryptotephra found in ice cores, peat cores, etc..	better instruments to get data from smaller samples	instrumentation
3/3/2022 12:02:37	1	There is a difference in work standards/expectations in government work and academic expectations or work.	differences in government academic expectations	other disciplines
3/3/2022 12:05:37	1	lack of standard in data comparison ie the degree of overlap/clustering between geochemical datasets, often leading to miscorrelations. This also comes back to the standard of data collection and analyses	standardization in collection and analysis	standardization
3/3/2022 12:06:12	1	I also have seen huge changes in comparability of data in the last several years as a lot of labs start using similar standards like Lipari and publishing it - so might be nice to point out that while we still need improvements things have changed MASSIVELY since 2004.	continue to improve secondary standards	secondary standards
3/3/2022 12:16:54	1	Journals limit references... so authors tend to try to avoid citing original data studies. Journals should stop this damaging practice. I'd rather see the sources of data cited than all the gratuitous "idea" papers dumped into the introduction, most of which are not really foundational to the study being presented...	jounals should not limit the types of information that can be referenced, e.g., data	citability
QUESTION 2: What are your ideas for moving forward; What does the tephra research community need?				
3/3/2022 12:03:29	2	A global data base with a SIMPLE input option	simple input global database	monolithic
3/3/2022 12:03:32	2	better, NSF funded infrastructure, more user friendly	user friendly infrastructure	user friendly
3/3/2022 12:03:42	2	maybe have funds for datamanagers to help people enter their data	funding for data managers to help with input	fund data management
3/3/2022 12:04:29	2	Working bees/workshops (in person would be so lovely) to find and input previously published data	working bees to input published data	legacy data
3/3/2022 12:04:42	2	Working more with people who already run online tephra databases (if this is a question 2 responses - Resolving Roadblocks)		community
3/3/2022 12:04:57	2	encourage funding agencies to fund projects aimed to rescue data but also help simply enter data in the infrastructure available.	fund projects that rescue data	legacy data
3/3/2022 12:05:41	2	A top down approach to this being the "norm", e.g. supervisors telling our students this is just what the community does	supervisors tell students this is what's done	supervisors
3/3/2022 12:06:08	2	Data curators employed at institutions to deal with issues relating to time-demands (particularly on academics and observatory staffers).	fund data curators	fund data management
3/3/2022 12:06:21	2	Ensure that any data rescue efforts bring the rescued data into long-term curated data collections.	rescue data into long-term collections	legacy data
3/3/2022 12:06:22	2	A tighter and more connected tephra community	tighter community	community
3/3/2022 12:06:22	2	Widespread adoption of best practice guidelines by incorporating them (with explanations & definitions) into easy to use tools for data collection and description.	adopt guidelines through easy to use tools for collection and description	user friendly

Timestamp		Response	Summary	Category				
3/3/2022 12:06:25	2	someone should submit an NSF proposal to get grad students to do data rescue efforts (which can also be a mechanism to teach them how to use modern services and tools in their own research).	fund data rescue efforts	legacy data				
3/3/2022 12:06:28	2	A global website/repository/searchable online resource for all data to be stored on	global database	global database				
3/3/2022 12:06:30	2	Release unpublished data through citable repositories	citable repositories	citability				
3/3/2022 12:07:00	2	Hire people who's role it is to solely manage databases.	fund database managers	funding database management				
3/3/2022 12:07:27	2	someone with a paid position to help researchers sort out the best ways to make their data accessible	fund database help desk staffers	funding database management				
3/3/2022 12:07:32	2	Develop network to facilitate collation and release of legacy data (share the load!)	network to collate and release legacy data	legacy data				
3/3/2022 12:07:34	2	I think a huge legacy data project spinning out from this workshop would be awesome. It could be an example of how useful data sharing is and how we don't always need to fly out to exotic sites to resample a deposit, a lot of data already exists and can be useful.	Huge legacy data project from this workshop would show importance	legacy data				
3/3/2022 12:07:38	2	2. Faster more user friendly updaing ALM	NEED HELP					
3/3/2022 12:07:38	2	Making it standard that reviewers ask/require the data to be FAIR-ly published	standardize FAIR in publishing	standardization				
3/3/2022 12:07:54	2	Find ways of incentivising input of legacy data e.g. by supporting student projects, running specific events	Incentivize legacy data input	legacy data				
3/3/2022 12:08:00	2	Just analyse secondary standards folks, please it is very easy.	Analyze secondary standards	secondary standards				
3/3/2022 12:08:04	2	make gathering (and publishing) metadata the norm	Normalize publishing metadata	metadata				
3/3/2022 12:08:07	2	Legacy projects - making previously published data usable	Legacy -- make previously published data usable	legacy data				
3/3/2022 12:08:13	2	Long term data repositories that emphasise the importance of best practices	Long-term repositories that emphasize best practices	long-term commitment				
3/3/2022 12:08:15	2	use global registrations and keys for everything. samples, eruptions, volcanoes, etc	global registration and keys for everything	global database				
3/3/2022 12:08:15	2	I do think it is really important to get good glass standards with a wide range of chemical compositions and share them in all the tephra community.	widely available good glass standards	secondary standards				
3/3/2022 12:08:30	2	Put the lost tephra in a more general database, that has minimal data, but is user friendly across disciplines. Like the milk carton analogy "Have you seen me?"	lost tephra in its own user friendly database	unknown tephra				
3/3/2022 12:08:40	2	It would be great if data software was more user friendly = less time consuming	user friendly, less time consuming	user friendly				
3/3/2022 12:08:57	2	More workshops, meetings, etc., that involve a wide range of participants. This is the 1st tephra workshop I've known about despite working with tephra for several years	more workshops with many participants	community				
3/3/2022 12:09:01	2	Reduce out expectations of data quality for older eruptions. We will never have perfect GPS points for legacy data collected in the 1960s but if someone records tephra somewhere and you roughly have a location with a tephra thickness, just include it! That information is still very useful.	reduce expectations for older data	legacy data				
3/3/2022 12:09:10	2	Need ONE main webpage with step by step instructions on how to make data FAIR with all necessary links [1] register samples in SESAR/give IGSN number [2] use this spreadsheet to.....and upload it here [3] Do this...	one webpage with step by step instructions	user friendly				
3/3/2022 12:09:56	2	Requires some funding for personnel - e.g. people to have this as a job - website building, data formatting, historic data gathering etc	funding for personnel to build system	fund data management				
3/3/2022 12:10:01	2	Long term maintenance of any database is the big problem - funding, staff etc needed for this to keep it available accessible etc....what the answer is I dont know , but when people move on/finding runs out	need commitment to long-term maintenance	long-term commitment				
3/3/2022 12:10:17	2	To move sharing forward, one solution could be to make data sharing mandatory on grants or publication	make data sharing mandatory on grants and publications	enforcement				
3/3/2022 12:10:38	2	I keep clicking to allow my submissions to be public but always returns to not public. Make this more user friendly.	more user friendly	user friendly				
3/3/2022 12:10:42	2	Widespread adoption of best practices!!	Widespread adoption of best practices!!	community				
3/3/2022 12:10:56	2	there are lots of statements about data storage and legacy data, but sample storage and availability can be very useful as well. new analytical techniques can add new data on existing samples. Just like core storing facilities for IODP, having a central facility where ash or pumice samples from some of the major eruptions are available for new analyses would be great. Same is true for ash samples obtained from long sediment cores in lakes, which are rather expensive to acquire, and are often hard to trace what happened to these samples at local universities where the research was done	prioritize sample storage and availability	samples				
3/3/2022 12:11:11	2	We need to stop trying to re-invent the database wheel. There are database specialists who can do this for us. Instead of "budgeting" for more of OUR time.. let's pay for folks who know the computer side's time to join our team. For example, a company like StraboSpot, EarthChem, or smaller companies like Blue Marble Enterprises Inc, can build a custom data base, and also take care of the data entry and the database upkeep and management. We are geologists, volcanologists, biologists, etc.. not computer specialists. we should bring on computer specialists as a paid salaried person/company as part of our grant budgets that can take care of these data FAIR, data management plans, and data searchability needs. A few extra minutes to include a computer specialist/company on the grant proposal is worth the 3-4 years of full time work during the study once funded.	get a company to help, or strabospot, earthchem, etc.	commercialize				
3/3/2022 12:11:13	2	A community project that connects lists of samples to the eruption event; would be a good way to both show the advantage of sharing data to expand knowledge of an event and show how to use legacy data.	community project that connects samples to an event would show advantages of data sharing	community				
3/3/2022 12:11:41	2	How particle size of tephra is related to its REE pattern and correlation over a geographic area.	relate particle size to REE pattern	other				
3/3/2022 12:12:13	2	Re StraboSpot etc, whilst these are great, you can drop your paper notebook on the floor and step on it, but you cannot do that with your tablet....I wouldnt trust an entirely electronic field record	cannot rely on only electronic	other				
3/3/2022 12:12:39	2	Most of the databases proposed are for large eruptions from polygenetic volcanoes but monogenetic volcanoes are also important. We should prepare several databases that can interact (specific fields that can be integrated or separated)	separate interacting databases, and include monogenetic	software integration				
3/3/2022 12:12:49	2	Better integration of data types from different disciplines, so multiple groups can build on existing data sets (like different types of data on a single sample/outcrop/deposit).	better integration of data types from different disciplines	community				

3/3/2022 12:13:16	2	a culture of sharing authorship would be great.	change culture to prioritize sharing authorship	cultural					
3/3/2022 12:13:53	2	Best practice for data use	use best practices	advertizement					
3/3/2022 12:14:30	2	I think projects on a wide scale are needed at least on the most widespread markers with samples that could be shared by the whole of tephra community	prioritize projects on widespread markers	legacy data					
3/3/2022 12:14:31	2	Find opportunities to integrate tools that might be used for different parts of the data collection and sharing processes.	integrate tools from different parts of the workflow	software integration					
3/3/2022 12:14:55	2	Publication of data in trusted repositories makes data citable. We need the culture change to acknowledge data citations in promotions and career advancement.	change culture to acknowledge data citations	cultural					
3/3/2022 12:15:18	2	Teach young researchers do's and don'ts about respectful data sharing and usage to reinforce collaborative efforts rather than a competitive culture	teach young researchers good data sharing practices	cultural					
3/3/2022 12:15:27	2	We really need an "easy template" to fill out to make sure all relevant information is collected by all researchers. i.e. a template for grainsize, a template for density, a template for componentry, a template for each of the various chemical studies, etc. It is much more likely to collect "standardized data" when they have a checklist to remind them of each of the important bits of information.	develop easy to use templates	user friendly					
3/3/2022 12:16:56	2	funding to create interoperability	fund interoperability	software integration					
3/3/2022 12:17:19	2	a universal database with easy-to-use input and output mechanisms that incorporate proper citations	user friendly, citable monolithic database	user friendly					
3/3/2022 12:18:28	2	We need to find a way to better include authors that originally collected the data - a discussion on how to have the conversation of "would you like to be a co author/first author/in the acknowledgements" would be helpful. setting up guidlines on what constitutes authorship is someone wants to use another person's data from these databases would also be helpful. is collecting the data enough? or once it is published then is just the acknowledgements and references enough? basically - what's the best way to make the data collector feel involved and respected instead of scooped?	explore ways to make data collector involved and respected rather than scooped	scooping					
3/3/2022 12:18:34	2	Fight back! We need to stop journal's practice of limiting citations. Authors too often omit data citations but keep in "e.g." lists of broadly general papers in the introduction...	journals shouldn't limit citations	citability					
3/3/2022 12:18:49	2	incorporate summarizing data into your workflow - minimum data templates	minimized, summary templates for workflow	user friendly					
3/3/2022 12:18:57	2	Allow lower 'quality' data to be incorporated easily (e.g. if location information is approximate as its from a pre-gps paper) as its still valuable for some questions	allow for lower quality data to be incorporated	legacy data					
3/3/2022 12:19:09	2	Working on making flexible language choices, so non-native English speakers are not disadvantaged, and so local repositories can be integrated better in global data sets	develop flexible language choices	ontology					
3/3/2022 12:28:24	2	Reach out to instrument manufacturers to discuss customizable data outputs from instruments that follow best practices	involve instrument manufacturers to develop best practices data output	instrumentation					
QUESTION 3: How do we get widespread adoption of the Best Practice Guidelines? How could the Best Practices be integrated into your tools and workflows? Please explain.									
3/3/2022 12:23:54	3	more widespread training on available tools.	training	training					
3/3/2022 12:23:57	3	Workshops at IAVCEI, COV and INTAV conferences. Also then share the course/workshop online (Youtube etc.)	workshops	training					
3/3/2022 12:24:15	3	include training to available tools as FREE workshops at major conferences	training at free workshops	training					
3/3/2022 12:25:03	3	If there were educational modules that can be used in a lab or as a class assignment (which includes tutorials and introduction) that would be great (only if there was adoption from educators).	educational modules	modules					
3/3/2022 12:25:08	3	Promotion, community support to aid newcomers	promotion	promotion					
3/3/2022 12:25:44	3	Get journal buy-in. Provide guidance to journals on minimum standards for reporting data.	journal buy in	journal					
3/3/2022 12:25:54	3	Strongly encourage its use through multiple routes e.g. in reviewer feedback if they haven't used it in the paper, incorporate into any student projects as standard practice (at all levels), keep talking about the guidelines etc at conferences and online forums, so they are updated and current	multiple fronts	multiple					
3/3/2022 12:26:04	3	Just make it more user friendly and get the word out.	user friendly, get word out	multiple					
3/3/2022 12:26:06	3	maybe offer small grants for schools that train field camp students with tools like strabo so that we are training future generations of scientist that have the culture we are seeking	small training grants	training					
3/3/2022 12:26:11	3	I think a lot of people just don't know about the Best Practice Guidelines	get word out	promotion					
3/3/2022 12:26:31	3	Proper credit for when data is submitted to a database than used. A DOI or something that can be tracked and given credit.	enforce proper credit for data	enforcement					
3/3/2022 12:26:33	3	3. We would have to have some more people to help integrate all the data we have to keep up with . At Popocatepetl eruptions have been on going since 1994.	get more people involved	promotion					
3/3/2022 12:26:33	3	make the best practice templates easier to use - rather than needing to retype things in separate spreadsheets, write programs people can use to automate as much of it as possible.	user friendly templates	user friendly					
3/3/2022 12:26:43	3	Better advertisement of the best practices	get word out	promotion					
3/3/2022 12:27:02	3	allocate specific funding for people to do the work of transforming their data into the best practices	funding for people to put in best practices format	funding					
3/3/2022 12:27:14	3	Widespread adoption -- make lots of examples available both on individual templates (collection, analysis, etc.) and on the overall use of them and the end advantages of using them. Especially for cross-disciplinary domains.	make examples available	examples					
3/3/2022 12:27:14	3	I think tools like Strabo are game changer. more community outreach and training would be good. maybe even at the level of training for students	Strabo is good idea; outreach and training	training					
3/3/2022 12:27:17	3	More consistency in Reviewers directing publication submissions to the best practices	get reviewers to direct authors to best practices	journal					
3/3/2022 12:27:48	3	Provide worked examples of workflows for different parts of the data collection process perhaps as videos etc, perhaps including templates for a range of different software packages.	develop more examples	examples					

3/3/2022 12:29:20	3	Better adoption needs to be "easy", "accessible", and "applicable" to a range of field sites and tephra. A checklist is the easiest way to do this. Have major categories with a plethora of the standardized terminology as sub list check boxes. We've already started designing this for physical data at HVO. The checklist is a printable/laminated field card (index card sized) that goes in the sample bag and includes major categories of eruption unit, grainsize, density, molten sample, etc. smaller sub boxes to check include: is the sample wet/exposed to water? for grainsize you can check ash, lapilli, spatter, bombs. for color you can check standard colors at our volcano, but this could included colors tailored to the unit of interest. Density checkboxes include estimated vesicle content, is there a quenched rind, etc. all these observations are usually made, but they may not all be written down. a checklist is the best way to stay consistent and can be tailored from an "all encompassing list" to the terms needed for a specific physical sample and eruptive unit of interest.	checklist, user friendly	checklists
3/3/2022 12:29:26	3	more guidance on how to evaluate peer reviews during the review process based on the best practices	get reviewers to direct authors to best practices	journal
3/3/2022 12:29:47	3	Examples from different sub disciplines, not just field based ~proximal tephra collection	develop more examples	examples
3/3/2022 12:30:38	3	+1 on the examples from different sub disciplines	develop more examples	examples
3/3/2022 12:30:52	3	Providing people with an easy template where data can be added and made comparable with the other datasets	make a user friendly template	user friendly
3/3/2022 12:31:52	3	getting journal/institutional buy-in to reward this type of data publication. maybe they can provide a "data venue"?	reward data publication by journals	journal
3/3/2022 12:32:03	3	People keep saying free resources - unfortunately these things cost money. Tell NSF or other funding agencies that you want them to fund efforts to create these resources.	tell NSF to fund efforts to create the resources. Things aren't free.	funding
3/3/2022 12:32:12	3	Workable FREE online community workshops to practice setup of workflow, collection of data, setup of datasets, practice uploads etc. Something that takes this from theory to practice - preferably in multiple languages	free online, hands-on workshops	training
3/3/2022 12:34:06	3	Getting more people interested in the field itself to want to join the field.	get more people involved in the field	training
3/3/2022 12:34:42	3	This may sound hard - but when reviewing a paper if the actual data isn't provided or information isn't provided that allows the reviewer to assess the quality of the data (e.g., standards), it should be rejected. In other fields (geochronology) this lack of information is not accepted so why should it be accepted by us? Might be worth pointing out….	reject papers if data aren't accessible	journal
3/3/2022 12:36:58	3	Adoption will come if the tools are easy to use, but if they are too much effort people wont use them. "Enforcement" can be problematic - there is a risk of creating a closed/2-tier shop - someone lacks the accepted referene material, so publication is difficult via the refereeing process. Someone hasn't recorded the data in the "accepted way"….. If the community starts to insist that the only "good" data set has field data collected using an app based method, then that starts to get problematic - this may be great in the well-funded academic world, but there are places where its not going to be easy….I think we need to tread very carefully with this that we dont exclude some regions	user friendly; allow for data to be presented in nonstandard way for those with difficult access	user friendly
QUESTION 4: Do you see yourself using StraboSpot / StraboMicro (field & lab applications) or similar tools? If yes, how? If not, why not?					
3/3/2022 12:37:29	4	yes, I would love to. I need to get a tablet though.	yes	yes
3/3/2022 12:38:10	4	I have already tested it out in the field - it was great, and the digital output is brilliant. BUT I found it frustrating that there wasn't an ability to GPS track me when I was out of signal (which would be almost everywhere I would do field work).	yes	yes
3/3/2022 12:38:25	4	No - not so relevant for cryptotephra. Perhaps if developed for Android, it might be useful for other palaeoenvironmental projects.	no, not good for cryptotephra	no
3/3/2022 12:38:27	4	Yes, I was very impressed by your advancement. I work at a small institution and we don't have $$ for tablets. I wish there was a fleet that schools could apply for or $$ available for tablets.	yes	yes
3/3/2022 12:38:30	4	YES, ABSOLUTELY. StraboSpot and Strabo Micro are incredible tools I did not previously know about. I plan on using BOTH… one in the field for structural relationships and stratigraphic columns of tephra, the other for our thin sections on the microscope/SEM for vesicularity studies of tephra.	yes	yes
3/3/2022 12:44:56	4	I'd love to, even though I don't have much time. Possibly my next student will use it and I can learn with and from him/her	yes. Probably a Strabo answer, so changed from (3) to (4)	yes
3/3/2022 12:38:45	4	Will explore StaboSpot for field collection of tephra and see how it works.	yes	yes
3/3/2022 12:38:46	4	4. Probably . It is similar to what we are doing in the field.	probably	probably
3/3/2022 12:38:59	4	I am interested but do not use an Android phone in the field,	will check out	check out
3/3/2022 12:39:20	4	Looks very useful, especially in that it mirrors a typical (and customizable) offline workflow.	will check out	check out
3/3/2022 12:39:21	4	Strabo spot, yes (already using it). Strabo micro not sure yet, it looks great, but TBD if the workflow is efficient enough to move into routine. Need confidence that the tool will not become obsolete and data inaccessible	yes	yes
3/3/2022 12:39:33	4	Yes I would use it in the field if there is a very user friendly template for my IPAD that I can upload later.	yes	yes
3/3/2022 12:39:38	4	A resounding YES! I love how different data types can be integrated. I will be using it for my field campaign of measuring and sampling tephra layers and then hoping to integrate that with the grain size, morphology and imagery data collected in the lab. It would be even more usable if these data could be exported as figures for publications in the future.	yes	yes
3/3/2022 12:39:48	4	Yes, already us it in the field	yes	yes
3/3/2022 12:39:58	4	Yes I see myself using Strabospot and Strabomicro once I get into the field, because it will help streamline workflow and it is an amazing idea to make it easier to include data into broader databases.	yes	yes
3/3/2022 12:40:01	4	yes- useful for keeping all field data in one place	yes	yes
3/3/2022 12:40:41	4	I will check it out. I don't know yet if I will use it	will check out	check out
3/3/2022 12:41:30	4	While already planning to adopt StraboSpot into my future field routines, it would be awesome to have our various stratigraphic column data be able to turn into a fence diagram of the tephra layer's distribution thickness variation.	yes, add fence diagram	yes
3/3/2022 12:41:42	4	Also with my interest in tephra and ice cores I believe both strabospot and strabomicro will definitely be a help with field and lab data documentation.	yes	yes
3/3/2022 12:41:52	4	I found StraboSpot / StraboMicro are very good applications, which I learned only recently, so it is new for me. However, to integrate to my work-flow would be a bit difficult. I may use part of the idea for the future work, but it would be better more simple but more personalize.	probably	probably

Date/Time	#	Comment	Col1	Col2
3/3/2022 12:44:40	4	I will definitely be trying it - looks great to store all outcrop images and other field data in one place/as a back up	will check out	check out
3/3/2022 12:46:13	4	No, I would never rely soley on an electronic method of field data collection. If you drop a field notebook down a cliff you can simply go and retrieve it. Do the same with a tablet and it probably wont work. Too dangerous. Imagine working in an area with no network coverage, and smashing your iPad after 2 weeks in the field....Running this in the lab/combining lab analyses etc would work fine, but wouldnt trust it for field data.	no, too volatile	no
3/3/2022 12:48:47	4	The backup details make this better, but I'll stick with paper notes	no, too volatile	no
3/3/2022 13:03:13	4	Strabo Micro would be nice to use by iPad….since I am using most of the pre-set of the EPMA data (BSE image) via iPad using pencil to point out the each glass shards and put the number quickly, sometime 600-700 points per day at one batch of analyses. This need very quick function of the processes, but Strabo Micro needs more time to put the number for each glass shards…..We have to finish the analyses in very limited time slot, so I have to be quick enough to work.I could compile the data from my iPad to Strabo Micro afterwards, but it also needs time to do it, so I sorted out all the data relatively in simple manner and it is enough at this moment. Who needs these extreme detailed data? Of course, it is only myself in case I have to check the each data after I get the data out, and I just check it agin in my iPad	will check out	check out
3/3/2022 12:44:01	4	Yes, but there are tradeoffs. Nice to have such a thorough way to add field data into a digital format. I plan to try it out next time. However, there is a time commitment in the field that can slow down field work as screens are hard to see.	Originally listed as answer to (2) but clearly about Strabo. Strabo: will try out	check out

QUESTION 5: Do you envision using EarthChem/SESAR (or like systems) for your tephra data? If yes, how? If not, why not? Are there other repositories that could or should incorporate the Best Practices?

Date/Time	#	Comment	Col1	Col2
3/3/2022 12:53:33	5	Will try depending on time/funds for data entry	Depends on time/funds	Depends
3/3/2022 12:53:37	5	Yes -EarthChem - after being directed to do so by a reviewer, no restrictions for submission from outside of US	Yes	Yes
3/3/2022 12:53:58	5	Yes, I have entered my data in PetDB before.	Yes	Yes
3/3/2022 12:54:58	5	Would love to, subject to finding the time to prepare data for submission!	Depends on time/funds	Depends
3/3/2022 12:55:16	5	Yes, but I'd also potentially also want to upload to other databases (e.g. tephrabase), its not clear to me how or if this would work or cause issues?	Yes, but also others	Yes
3/3/2022 12:55:17	5	I missed the earth chem session but will watch the video. My guess is that they dont include physical data (i dont know of any that includes grainsize AND density), so no i wouldnt use them for my data. I might use them to search for chemistry of the eruptive units I work on incase that chemistry exists in their data site.	No, because no physical data	No
3/3/2022 12:56:21	5	Yes, I will use EarthChem but still have issues getting into the system (hung up page when logging in)	Yes	Yes
3/3/2022 12:58:14	5	We need a physical volcanology master database for grainsize, density, componentry, SEM textural studies, 3D imaging/tomography of vesicularity, porosity, pyroclast fracture strengths, etc. I am happy to help develop this as I mentioned with Kristi in the first session for TephraFusion 2022. The HVO tephra lab is uniquely poised to help set up this database. You can contact me as lab manager - cparcheta@usgs.gov	No, because no physical data	No
3/3/2022 12:58:30	5	No. I don't do geochemistry. I would LOVE if physical parameters could also have a major global database (grain size using different definitions like sieve, spherical diameter, smallest largest grain chord etc, density, vesicularity, porosity, bubble number density, bubble size distributions, morphology data for multiple parameters) (Jo Schmith)	No, because no physical data	No

QUESTION 6: Is there a way to influence funding agencies to make legacy data recovery and reuse a greater priority?

Date/Time	#	Comment	Col1	Col2
3/3/2022 12:58:02	6	Recovering/reusing legacy data is a LOT less expensive than somebody going to the field to collect and reanalyze, which definitely happens.	It's cheaper	cost
3/3/2022 12:58:12	6	Promise a high profile publication	Use strong example of benefits	good example
3/3/2022 12:58:43	6	Get some backing/support/collaboration from a tech company?	collaborate with tech company	commercialize
3/3/2022 13:00:52	6	I am interested in legacy data project. Contact original scientist.	NA	legacy data
3/3/2022 13:01:14	6	I am not sure how we can best influence funding agencies, but that this is a worthwhile pursuit.	Not sure	not sure
3/3/2022 13:04:59	6	I don't know if my answer fits to this question, but I am writing here. Tephra studies could be one of subject, so may be to make propaganda journal ! So more people could join to the system and get more information.	NA	not sure
3/3/2022 13:05:46	6	I don't know but I think it's super important	Not sure	not sure
3/3/2022 13:05:52	6	Tie digitization/legacy data publication into larger community projects on e.g. global distributions etc.	Tie to larger (global) project	legacy data

QUESTION 7: How do we deal with data ownership problems (i.e. citation, embargos)?

Date/Time	#	Comment	Col1	Col2
3/3/2022 13:05:46	7	best practices for authorship should be established and promoted	Establish author best practices	author best practices
3/3/2022 13:06:47	7	if you want to use unpublished data it would be important to communicate with the owner and possibly offer co-authorship	Communicate with owner	involve data owner
3/3/2022 13:07:00	7	I don't care if people want to keep their data private for a few years, but as soon as they start publishing with it, that data MUST be made avaible and there is no excuse for any journal to accept a paper otherwise (although some still clearly do!)	If results published, data must be available	enforcement
3/3/2022 13:07:14	7	Whoever collects the data should always be given credit. Hopefully that is in the form of citing their published data, but if it is not published yet, then the field/data collector MUST be a co-author. I like the suggestion here that if the data is urgently needed and the main source of interpretation in another authors paper, then that collector should be made first author as the publication would not be possible with out their data.	Publish the data or make data holder co-author	involve data owner
3/3/2022 13:07:15	7	If you didn't generate the data, cite where it comes from. End of story. If that is a publication then do that. If it is a repository do that. If it is unpublished, get permission and include the generator on the publication.	Cite, or include data holder	involve data owner
3/3/2022 13:07:25	7	Aren't most embargoes short-term/temporary? Waiting then referencing the dataset would be the prudent thing.	Wait, then reference dataset	author best practices
3/3/2022 13:07:32	7	data owner must give permission and get Big Credit. no permission means can't publish. not sure what to do about datasets where the owner is no longer available.	Data own must give permission and get credit	involve data owner
3/3/2022 13:07:51	7	DOIs for datasets that can be tracked and "counted" just like other citations.	DOIs for datasets	DOIs
3/3/2022 13:07:58	7	Data can be published either as part of a paper or through a repository, thus linking data owner with the data. Once published, the data should be freely available to the wider community (e.g. for comparison) without the need to include the source data. Common practice in palaeoscience.	Publish the data (i.e., others need to wait)	author best practices
3/3/2022 13:08:13	7	Make data scientist owner first author would show that there is a value to the tephra data. May need some care with legacy data unless know origin of collection.	Data owner should be first author	involve data owner
3/3/2022 13:09:36	7	always get permission and always cite the original data	Get permission and cite	author best practices

Date/Time	Q	Response	Summary	Keyword			
3/3/2022 13:10:01	7	It's hard for me to think to tephra data not public. I think that if you don't share them is possibly because you fear they are not good. I give credit to papers that show full datasets, or for which the authors are available to share	Give credit when full dataset published	author best practices			
3/3/2022 13:10:12	7	using someone else's data - don't just include the data in your paper, but cite a DOI for that data, even if that means the publication of their data has to be generated.	DOIs for datasets	DOIs			
3/3/2022 13:10:29	7	Not sure that I'd agree data owners merit first authorship if data are being analysed, interpreted and contextualised - level of intellectual input in analysing data may be small relative to use of data for wider understanding	Data owner included, but according to level of input	involve data owner			
3/3/2022 13:11:32	7	Start recognizing data publication significance (cite data papers the same or even more than idea papers, weight data papers or releases favorably with tenure review, grant review, etc)	Have data papers and cite them	DOIs			
QUESTION 8: What could a global tephra data system look like? What part(s) should it have? What infrastructure is needed to support such a system?							
3/3/2022 13:11:29	8	YES - monolithic is the dream	Monolithic	monolithic			
3/3/2022 13:12:24	8	a common portal to query all the distributed systems, because no monolith will serve every group's needs, and people are motivated to keep data up to date when it is meeting their specific needs. this common portal/query page needs actual long-term funding to support it	common portal	distributed			
3/3/2022 13:12:41	8	Easily searchable with locations, ages, maps, extents, geochem - ideally - you have an unknown ash and you can find some potential correlative for it through age, location, geochem etc.	easily searchable	user friendly			
3/3/2022 13:13:00	8	It will have to be a distributed system networking different existing database through the use of data exchange standards. We have long-term experience that a monolithic system cannot work.	distributed system	distributed			
3/3/2022 13:13:13	8	system needs long term support and personnel, not just individual grants	system with long-term support	long-term support			
3/3/2022 13:13:53	8	Must be searchable using elements. Perhaps even using additional statistics programing so that someone can enter their data and get a report of the closest matches based on some statistic (euclidean distance?)	searchable by element	user friendly			
3/3/2022 13:14:00	8	The best solution for the tephra community is a 'Tephra Portal' that provides access to data in a distributed system of existing data systems.	tephra portal with access to distributed system	distributed			
3/3/2022 13:14:27	8	One larger system- would perhaps avoid problems in consistency/data management later on	Monolithic	monolithic			
3/3/2022 13:14:59	8	Statistical analysis functionality (R plugins?)	statistical analysis functionality	analysis tools			
3/3/2022 13:15:27	8	I would really love to see more opportunity for physical parameter data. Density, and componentry, not just grainsize. Either a big monolithic database or developing a search engine that can pull data from EarthChem, Strabo, etc when looking for a specific eruptive unit. the peace-meal, 25 different mini databases isnt efficient.	needs physical parameter data; monolithic or search engine to pull data from multiple sources	physical parameters			
3/3/2022 13:16:15	8	I'd be interested in hearing more of the pros and cons of small interacting vs large - there must be a lot of technical considerations. It doesn't seem great to have to learn separate input workflows, but maybe different systems could share an input workflow? large monolithic system has a clear advantage in many ways, but how do we get there?	monolithic seems best, but worth exploring small interactive	monolithic			
3/3/2022 13:16:17	8	It would be great if there were a few monolithic repositories tailored for broad fields of e.g. field data, geochem, physical characteristics etc., but then a way for small user-driven repositories with more specific purposes to co-exist and interact/link with the monoliths	few monolithic by data type plus way for small local to interact	monolithic			
3/3/2022 13:17:46	8	In my opinion we must chose a simple one, and all of us have to use the same. If the choice goes on Strabo, Sesar and EarthChem, this is the good one. All of us can evidence the weak points, and eventually some changes can be asked	monolithic, but allow to change	monolithic			
3/3/2022 13:21:37	8	Setting up a physical tephra data base is essential. Something that can contain everything from various grain size expressions, multiple grain morphology parameters, density, porosity, bubble number density, bubble shape data, isopach- isopleth- and mass/area data as well as eruption source parameters like TGSD, volume, total mass etc.	database for physical data necessary	physical parameters			
3/3/2022 13:23:25	8	Companies exist to help us build these databases and maintain them. A company like Blue Marble Enterprises Inc (an others) can build a database from the backend to the front end for exactly your needs. It is tailored to the specific data provided and how the user would like to search, plot, graph, and visualize the data. This allows the option that you are not just paying for a developer for a month, but you also get data entry, database tech support/immediate troubleshooting, upgrades to keep software and hardware current and you can have that for the lifetime of the database. When user needs change, then the company can make that developmental change to evolve with the project, or with the users needs. Paying for an employee form a dedicated database specializing company would give us a year round resource that includes database development, data entry etc, which frees up our concerns about the timesink and is an effective use of cost and expertise.	get a company to set up and maintain a database	commercialize			
3/3/2022 13:23:35	8	Re jupyter notebooks: There are efforts underway to integrate these into scientific writing...Curvenote is one such way https://curvenote.com/. Volcanica is also working on integrating them into their publication format I believe. (from Q&A)	jupyter specifically curvenote notebook to integrate data and writing	workflow			
3/3/2022 13:24:06	8	Making sure data can be accessed using freeware (i.e. not formats specific for e.g. ArcGIS or orther expensive license software)	make sure data can be accessed by freeware, not proprietary	freeware			
QUESTION 9: (Are there) Other topics we missed?							
3/3/2022 13:25:14	9	coding and statistical analysis of data - an potential output for databases	coding and statistical analysis of data - an potential output for databases				