



**Science Gateways Community Institute  
Gateways 2020 Conference Survey**

**PY5**

Prepared by: Stephanie Simmons

<b>Total # of conference registrations</b>	221
<b>Total # of QiqoChat accounts created</b>	213
<b>Total # of participating accounts</b>	200
<b>Participating response rate</b>	40/200 = 20%
<b>Total # of Survey Items:</b>	26
<i>Likert-style:</i>	13
<i>Limited choice:</i>	10
<i>Open-ended:</i>	3

**Analysis:** Tables and/or figures are used to summarize the responses to the Likert-style responses. Percent, mean, and standard deviation are provided for each item unless otherwise highlighted. Multiple and/or limited response items are summarized in figures, tables, or narrative. Open-ended items were qualitatively analyzed. Results are summarized using tables, figures, and/or bulleted lists.

## Summary

Gateways 2020 was hosted online over a two week period in October. Week 1, October 12-15<sup>th</sup>, featured daily tutorials including topics such as XDMoD, ColdFront, “How to Build and Engage with Your Community” and others. Week 2, October 19<sup>th</sup>-23<sup>rd</sup>, was the main conference track that offered participants multiple activities to interact with and learn about the science gateway community. Each day featured a variety of topics, some highly specific to the science gateway field, and others broadly applicable to science in general, such as the keynote discussion with Dr. Roger and Amy Aines. In total, Gateways 2020 had 221 registrations and 200 active participants with QiqoChat accounts. Overall, these conference attendees were satisfied with their conference experience and reported in the *agree* to *strongly agree* range that their conference expectations were met.

Gateways 2020 enabled conference attendees to learn, share, and connect with other gateway creators. Survey respondents reported in the *agree* to *strongly agree* range that they learned something at the conference that they could apply to their work. Additionally, evidence of sharing was present in survey responses that highlighted presentations, learning labs, posters, and mentoring as ways that attendees shared their work at Gateways 2020. Survey respondents indicated that they attended Gateways 2020 with a desire to meet people who build gateways (60%) and/or meet people who use gateways (48%). Respondents reported in the *neither agree nor disagree* to *agree* range that they made social connections at the conference that will be beneficial to their work. This may simply be a symptom of a virtual conference and the individuals preference for social interaction. SGCI provided networking and opportunities to connect via QiqoChat features such as shared documents, networking lounges, learning labs, and other virtual event spaces. Additionally, responses to open-ended questions provide qualitative evidence that Gateways 2020 was successful in enabling connections. One respondent noted three connections, “I got an email address for a National Association of Mathematicians affiliated person who might be a good match for some of my gateway’s activities. I also got to see [name omitted for confidentiality] in person. I also got put into a breakout room with [name omitted for confidentiality], who I had corresponded over Slack with previously but not met in person.”

Evidence is also present that returning Gateway conference attendees (46%) are beginning to help shape the future of gateways. Respondents cited multiple reasons why they have returned to the conference including interesting content (topics, sessions, workshops, presentations and plenaries), “friendly community”, “opportunity to present my work”, and opportunities to network with other gateway developers and users. Survey respondents reported in the *agree* to *strongly agree* range that previously attending the Gateways conference increased their ability to create and/or support science gateways.

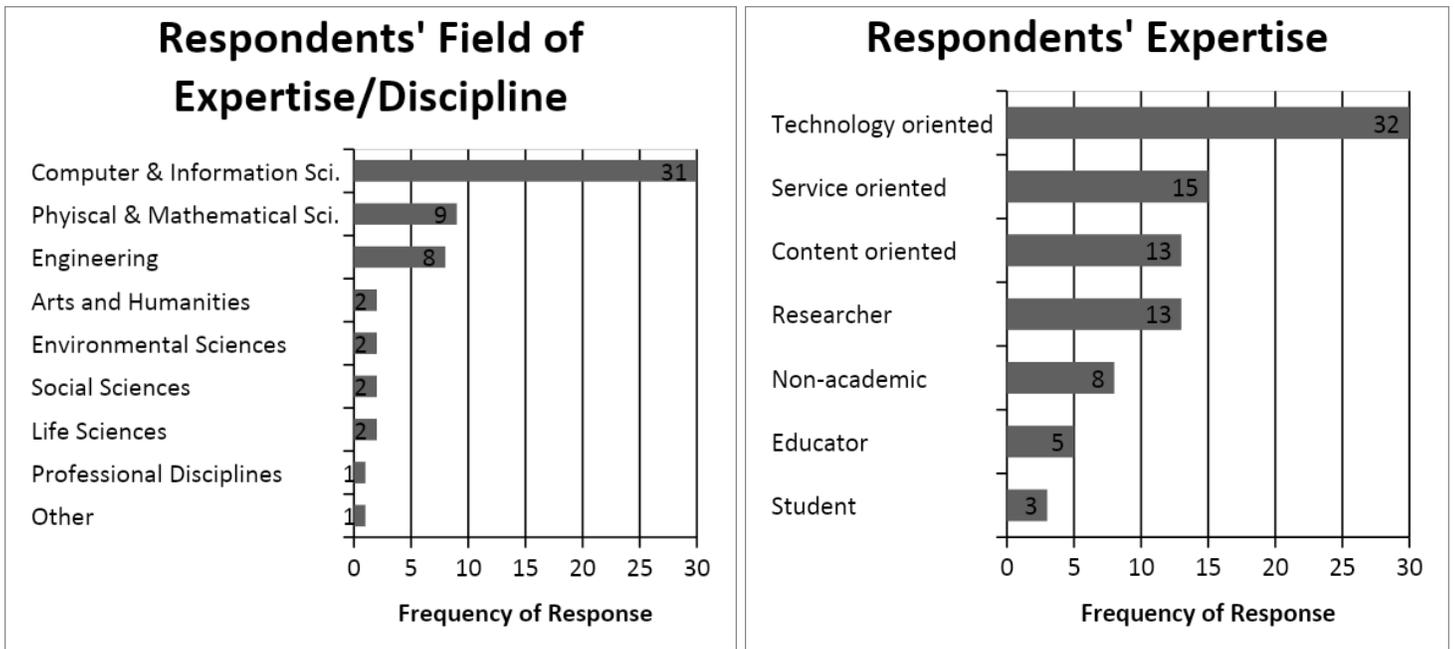
Furthermore, respondents were asked to rank their involvement within the gateway community using the Net Promoter Scale. There were six individuals who are considered “promoters” as they ranked their gateway community involvement at a 9-10 on the 10 point scale. Respondents are participating in the community via a variety of pathways including: conference participation, gateway/software development, educational activities (webinars, online content & resources), Workforce Development activities (internships, Coding Institutes, Hackathons, mentoring, workshops), Focus Week (formerly Bootcamp), Gateways Community Google Group, and community programs (Partners, Affiliates, Ambassadors). As SGCI continues to provide a high quality annual conference it is expected that the number of promoters, or highly active community members will also grow and help develop the science gateway community.

## Survey Respondents

The Gateway 2020 Conference Survey was advertised on the final day of the conference via QiqoChat and a survey link was emailed to all participants. A reminder email was sent on November 5<sup>th</sup> and the survey was closed on November 13<sup>th</sup>. Gateways 2020 had 221 registrants and 200 active participants with a QiqoChat account. The survey response rate was 20% which was determined from the number of survey responses over the total number of active participants as this is a more accurate representation of the conference population.

The conference population was mainly computer and information scientists with expertise that is related to technology (e.g., programmer, software/hardware or service provider). Other areas of expertise were service oriented (e.g., provide gateway expertise that is neither technology nor content centered, such as management, outreach/marketing, design, usability, administration, etc.), content oriented (e.g., based in a discipline that uses gateways, design content for gateways), or research oriented (e.g., use or would like to use gateways in their research) (Figure 1).

Additional demographic information was collected on gender and race. Roughly half of the respondents identified male (49%), and slightly less identified female (43%). The remaining population preferred not to say (5%) or identified as other (3%). The majority of respondents are white (69%), but Asian (13%) and Hispanic (5%) individuals were also represented in the survey responses. Some respondents preferred not to identify their race (13%).



**Figure 1.** Most respondents are from the computer and information sciences background with expertise that is technology oriented.

## Conference Satisfaction

Gateways 2020 offered a variety of ways for participants to interact including keynote speakers, plenaries, tutorials, demonstrations, learning labs, concurrent sessions with presentations and posters, and opportunities to network in an online setting. Week one of the conference featured 5 days of tutorials including topics such as XDMoD, ColdFront, “How to Build and Engage with Your Community” and others. Week two was the main conference track. Over five days, participants were exposed to a variety of topics, some highly specific to the science gateway field, and others broadly applicable to science in general, such as the keynote discussion with Dr. Roger and Amy Aines. The main reason that people attended Gateways 2020 was to learn more about gateway technologies. Additionally, respondents indicated a desire to meet people who build or use gateways, and share their own expertise / experience with science gateways or related topics. More than half were also interested in better understanding how they can provide services to gateways (Table 1).

**Table 1.** Why were you interested in attending the conference?

Item	%
To learn more about gateway technologies.	73%
To learn more about gateway development in general.	63%
To meet people who build gateways.	60%
To better understand how I can provide services to gateways.	53%
To share my own expertise / experience with science gateways or related topics.	48%
To meet people who use gateways.	48%
To learn how I can start a gateway project.	15%
Other	5%

Gateways 2020 was successful in achieving short-term and intermediate conference outcomes. Overall, conference attendees were satisfied with their conference experience and noted their expectations for the conference were met (Table 2). Additionally, survey respondents reported in the *agree* to *strongly agree* range that they learned something at the conference that they could apply to their work ( $\mu= 4.46 \pm 0.55$ ). Respondents reported in the *agree* to *strongly agree* range that they would attend the conference in the future ( $\mu= 4.88 \pm 0.55$ ), they would recommend the conference ( $\mu= 4.43 \pm 0.59$ ), and recommend that others watch the recordings on YouTube ( $\mu=4.31 \pm 0.69$ ) (Table 2). These data indicate that SGCI is providing a medium for conference attendees to learn and connect with other gateway creators.

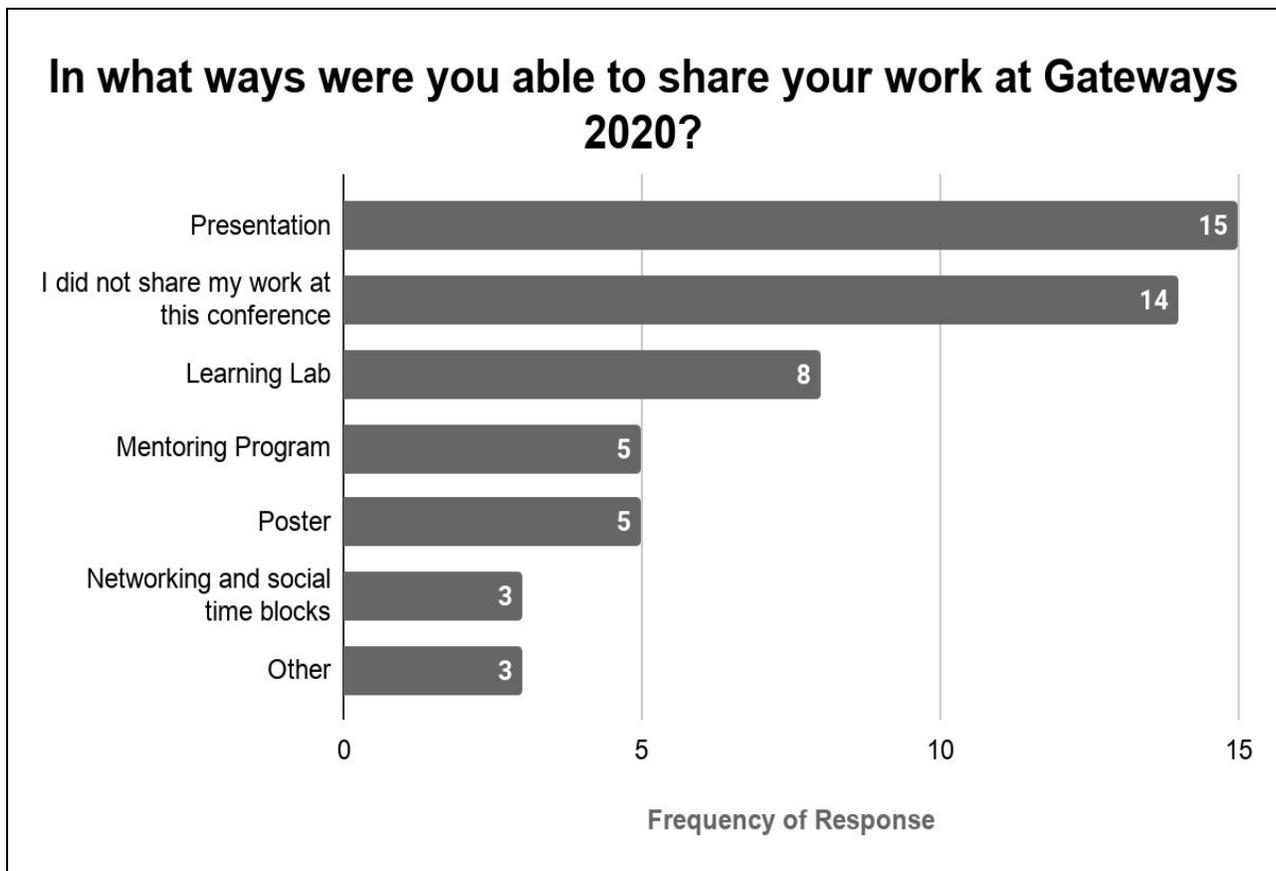
**Table 2.** With regard to this conference, indicate the extent to which you agree with the following statements.

Item	N	Mean	Std
I learned something at the conference that I could apply to my work.	39	4.46	0.55
I made social connections at the conference that will be beneficial to my work.	39	3.74	0.83
I would attend this conference in the future.	40	4.88	0.55
My expectations for this conference were met.	40	4.30	0.52
I would recommend this conference.	40	4.43	0.59
I would recommend that others watch the recordings on YouTube.	39	4.31	0.69

\*Likert-style items were scored on a scale of 1 (strongly disagree) to 5 (strongly agree).

## Conference Connections

Gateways 2020 established multiple ways for the community to connect and share content, resources, and advice. Survey respondents were able to select all the ways in which they shared their work at Gateways 2020. Presentations were the most common form of sharing (n=15). Other activities such as the learning labs (n=8), posters (n=5), and the mentoring program (n=5) were also referenced. Interestingly, 26% of respondents indicated that they did not share their work at this conference, and these must have been attendees who did not make any type of presentation (Figure 2). However, it is clear that SGCI is offering the platform to enable the gateway community to share their work, and roughly 75% of the community is buying into that aspect even in an online setting.



**Figure 2.** Avenues for the gateway community to share their work at Gateways 2020.

Other forms of establishing connections and sharing content involved the use of print and social media. The conference organizers mailed individual “Gateways 2020 essentials” boxes to each registrant containing SGCI “swag” such as notepads, pens, dry erase boards/markers, mouse pads, and other fun items like popcorn and mulling spices. Printed flyers containing information on sponsors’ products and services were also included in the boxes. The SGCI Twitter account was referenced and the conference hashtag, #Gateways2020, was advertised in print material in the box to encourage registrants to interact during the conference via social media.

During the conference, participants were observed using the “Way to Go!” signs/dry erase boards to enhance social interactions in a virtual setting, and others verbally recognized that they enjoyed receiving the welcome box. The social media account was also active on Twitter during the conference with 59 total conference tweets including 32

by @sciencegateways, the SGCI account, and 27 by other non-SGCI accounts. Twitter interactions included 28 posts mentioning @sciencegateways, 60 cumulative retweets, and 161 cumulative “likes” on conference related posts. The conference hashtag, #Gateway 2020, was referenced 56 times and #sciencegateways was referenced 17 times on conference related tweets. These interactions on Twitter were initiated by individual conference participants and organizations such as the Hawaii Data Science Institute, CI CoE Pilot, Open OnDemand, GABBs Project, and many more. In the conference survey, 28% of respondents acknowledged that they shared information about the Gateway Conference via social media and 82% of those connected with the institute by tagging @sciencegateways or #Gateways2020 in their own posts or retweets.

The qualitative and quantitative data presented indicates that SGCI has made progress toward the intermediate outcome that conference attendees learn, share, and connect with other gateways creators via the Annual Conference.

### Growing the Community

In the long-term, as SGCI continues to develop, it is expected that conference attendees help shape the future of gateways through a variety of mechanisms. To understand how attendees do this, it is critical to define a returning population. Survey results indicate that roughly half of the respondents are first-year attendees and the other half are returning attendees (Figure 3). (Our own records, comparing registration lists from year to year, indicate 38% returning attendees. This discrepancy may be due to people confusing our conference with SGCI-sponsored events at other conferences, or may represent people who have attended GCE workshops prior to 2016, which we do not track.) Returning attendees were asked what aspects of the Gateways annual conference had made them return. Respondents indicated that interesting content (n=10) including “topics”, sessions, workshops, presentations and plenaries encouraged them to return to the Gateways Conference. Others referenced the “friendly community” (n=5), “opportunity to present my work” (n=2), networking with other gateway developers and users (n=2), sponsorship (n=1), and acting as a member of the steering committee (n=1). Gateways returning attendees responded in the *agree* to *strongly agree* range that previously attending the Gateways conference increased their ability to create and/or support science gateways ( $\mu= 4.56 \pm 0.51$ ).

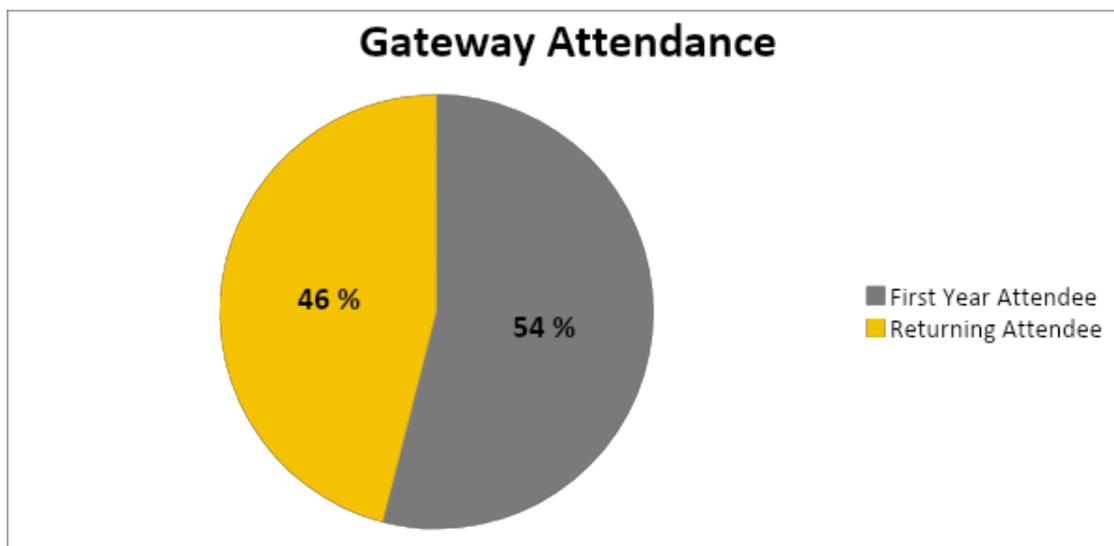
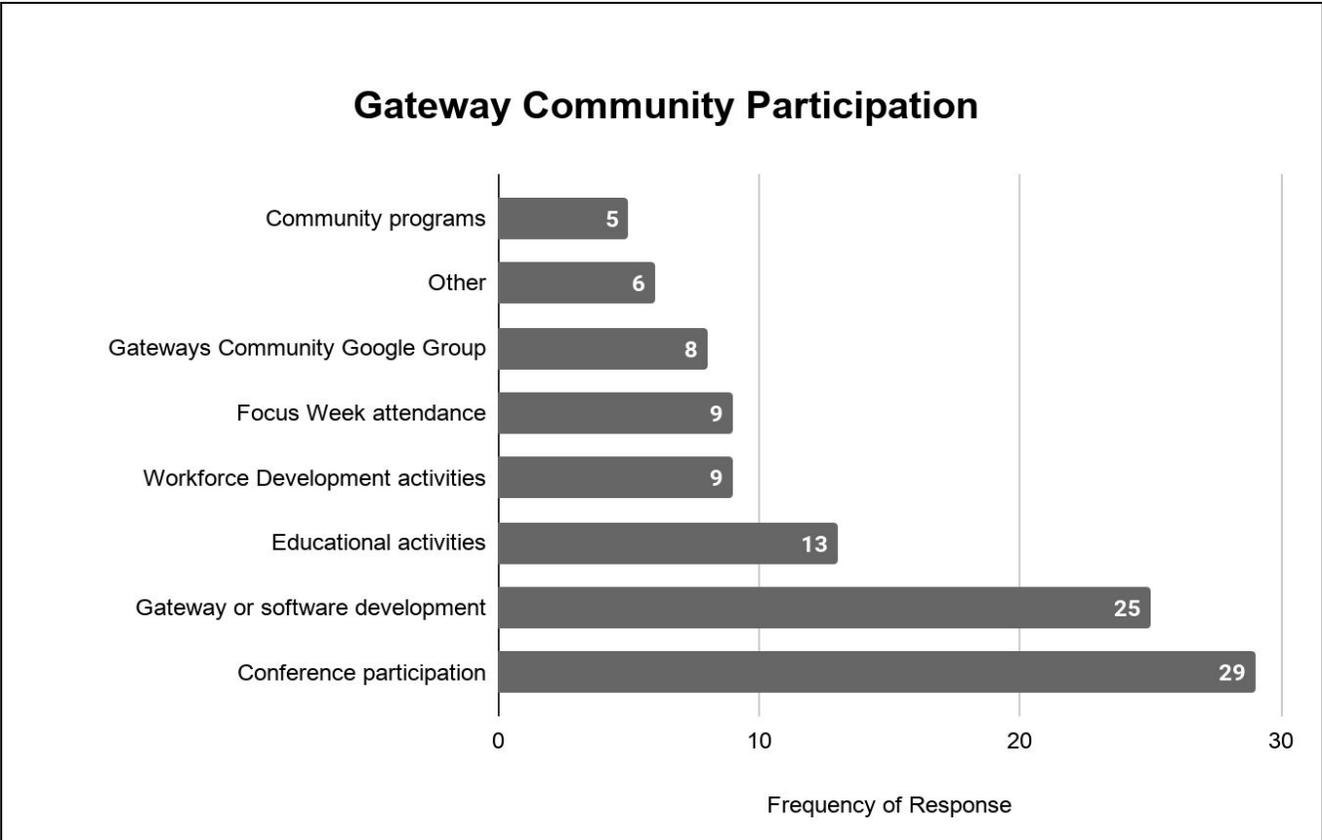


Figure 3. Gateways 2020 conference population – first year versus returning attendees.

Furthermore, respondents were asked to rate their involvement with the gateway community and how they have participated in the past. The Net Promoter Scale of 1-10 was used to rate involvement with detractors considered  $\leq 6$ , passive considered 7 and 8, and promoters considered 9 and 10. Most respondents were considered detractors (n=22) or passive (n=11). However, 6 respondents are considered promoters of the gateway community with 83% of these individuals rating at a high involvement of 10. Respondents are participating in the gateway community through a variety of pathways including the top methods of conference participation and gateway/software development (Figure 4). Other forms of participation such as educational activities, Workforce Development activities, Focus Week attendance, and the Gateways Community Google Group indicate that respondents engage with the gateway community by utilizing multiple SGCI-sponsored services (Figure 4).

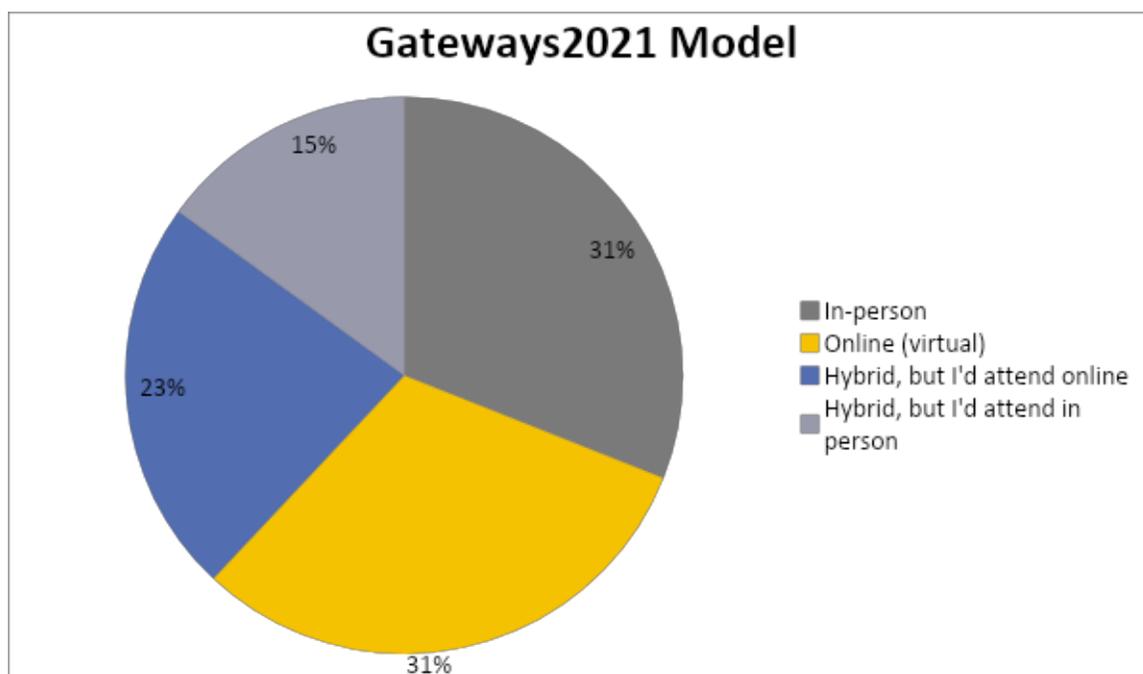


**Figure 4.** Activities for Gateway Community Participation include conference participation, gateway or software development, educational activities (webinars, online content & resources), Workforce Development activities (internships, Coding Institutes, Hackathons, mentoring, workshops), Focus Week (formerly Bootcamp) attendance, Gateways Community Google Group, and community programs (Partners, Affiliates, Ambassadors).

## Gateways 2021 – Suggestions and Guidance for the Future

After attending Gateways 2020, survey respondents were asked if they would prefer an online (virtual), in-person, or hybrid conference next year. Responses were divided almost equally among the three conference models (Figure 5). However, if the hybrid options are divided into their respective form of attendance in person or online, then there is a slight preference toward the online model overall.

Considering the fact that Gateways 2021 may have to be virtual due to the Coronavirus Pandemic, respondents were asked to rate the amount of time provided for various activities to improve future conference experiences. Respondents were able to select less (1), just right (2) or more (3) time for each activity. Most activities including networking and social time, concurrent sessions, and flexible spontaneous sessions were rated in the “just right” amount of time category. Respondents wanted slightly more time spent on tutorials and other hands-on sessions ( $\mu=2.32 \pm 0.47$ ) as also supported through responses in open-ended questions (pages 9-10). Table 3 shows each activity and the respondents’ desired amount of time on average.



**Figure 5.** Respondents’ preferred models for Gateways 2021.

**Table 3.** For each type of activity, how much time should we provide?

Item	N	Mean	Std
Networking and social time, including breaks and scheduled events.	35	2.03	0.45
Plenary presentations like keynotes or panels.	37	2.11	0.31
Concurrent sessions that are pre-scheduled with peer-reviewed contributions.	37	2.08	0.43
Flexible spontaneous sessions like learning labs.	35	2.09	0.37
Tutorials and other hands on sessions.	34	2.32	0.47
Sessions that include group discussions or breakouts.	37	2.11	0.47

\*Likert-style items were scored on a scale of 1 (Less), 2 (Just Right) and 3 (More).

## *Open-ended Questions*

Survey respondents were asked to identify any content or topics that would be useful to them in future outreach events such as conferences, webinars, or Tech Blogs. The topics that were recommended include the following:

- Open OnDemand
- More UX, usability, accessibility content. For example, how to use a wireframing tool with a client to develop mockups of a user interface.
- Information architecture, accessibility, dark patterns
- Best practices on designing gateways.

Additionally, respondents were asked what would make the Gateways conference even more engaging and useful for them. Comments were welcomed on any aspect including conference format, content, communications, and/or social/networking opportunities. Ideas for improvement are as follows (all are direct quotes):

- It might be fun to have a hackathon to either hack on science gateways or on gateway middleware.
- I've been very impressed with how this conference was fun. You struck a perfect balance of sessions/workshops/social time to downtime. In the earlier question about preferring next year's conference to be in-person or online, assuming Covid is no longer a factor, I would like to attend in-person, but I see the benefit in conferences having an online option as sometimes we can't afford to personally attend all the conferences we would like.
- Really liked the 'hold music'.
- Hands on tutorials.
- If virtual, a better online interface than qiqo-one that has the full schedule available from the start (like the PEARC virtual interface).
- Book/authors "table", we hosted a Zoom 5K at the IA Conference.
- I really liked the shared google docs. That means I can save the doc to my google drive or even print it for my own purposes. I found the number of clicks I had to make to get into the Zoom room each day a bit difficult to navigate. It seems like I had to click on a schedule item, then click on the day's listed area, then click into the particular room, then finally click the Zoom link. Can we tighten that up? I wasn't sure what to do with the Sponsor areas. I looked at their literature, but wasn't sure if I wanted to enter a Zoom room with them. I did not try the Networking lounge.
- The thing that resonated with me the most was the "Tech Summit" on gateway interoperability. This is the same issue for Cis (cyberinfrastructures), in my opinion, which I look at as "gateway-like". Many similar issues. Well, my point is this. I attended the NSF-sponsored cyberinfrastructure "workshop" last Feb 2020, in Seattle, and a lot of Cis were presented. They had several sessions of lightning talks, and poster sessions, and it was a great way to exchange ideas. To me, the #1 issue that I took away from that NSF workshop, by a mile, was this: how do we get these Cis to interoperate? Everyone seemed to have their own view, their own investment in their own infrastructure. SO I loved it that your Texas/Indiana/Purdue team talked about this. My second issue for you is this. I thought the discussions were a bit too informal. I like slides. I like seeing points on slides and I especially like seeing graphics of systems, showing components, etc. I thought some of the discussions would have been much more

valuable if people spoke, with slides, rather than just “off the cuff” verbally. It felt like ideas were flying around and I could not write them all down. I think, in addition, it would have provided more structure. But this may be just my limitations in digesting ideas.

- Great high-quality tutorials this year. With the gateway platform landscape evolving there’s always plenty to cover, so the Apache Airavata, Open OnDemand and Container tutorials were extremely useful. Please continue to offer this kind of in-depth, hands-on session. The gateways tech summit was super useful and intriguing as well. High quality learning labs.

### **Magic Moments of the Gateways 2020 Conference**

Respondents were asked for any ideas, connections and/or “magic moments” that were generated at Gateways 2020 that will help them with their work. The following are direct quotes from respondents (some names omitted for privacy):

- The discussion on accessibility was very interesting along with the conversation with the Aines about Championing Science. I appreciated both conversations as they were not focused on the “typical” gateway and sparked ideas on how to extend the community to think more broadly.
- Amy and Roger Aines highlighted the importance of understanding the “what or why” behind a project. Many times we focus on how we are going to accomplish something, but understanding what benefits, what is important and why is often more important. They urged us to ask our audience questions, rather than soak them with a firehose of information.
- I had several during the Plenary with the Aines on communication; that was terrific.
- I got an email address for a National Association of Mathematicians affiliated person who might be a good match for some of my gateway’s activities. I also got to see [name omitted] in person. I also got put into a breakout room with [name omitted], who I had corresponded over Slack with previously but not met in person.
- The container tutorial crew shared a specific example of a conversion from Docker to Singularity containers – including handling dependencies and the works. Not a toy example, a real scientific case, “here’s our Github repo”. Super helpful to see, a repo is worth 10,000 words!
- Background / reading material. Books, videos, and papers.
- Hiram Kuykendall’s learning lab. Excellent synergy with our IA Gateway project.
- SGCI Tech Summit discussion, Airavata tutorial.
- During the tutorials when some software tools for developing and using Gateways were presented.
- Obtained some good reading / background material to work with.
- The TAPIS presentation portion of the Airavata presentation.
- All of the plenaries! Seriously, they were all fantastic and I learned a lot from them all!