

**Considerations in Virtual Community Building**  
**Fiona Tracy, Cornell University**  
**Advisor: Erin Raymond, University of Virginia**  
**Technical Report BI-2023-243**

**Introduction**

While many organizations found it necessary to shift from physical to virtual space due to the COVID-19 pandemic, some organizations, such as the NSF-funded PREPARE (Pandemic Research for Resilience and Preparedness), were designated as virtual from the very beginning. The PREPARE team was charged with facilitating communication and collaboration among scientists involved in pandemic research, encouraging the sharing of research results in a way only possible with a concerted effort. The depth and breadth of multi-disciplinary collaboration enabled by PREPARE has been extended to include researchers, educators, and students interested in general topics related to pandemic planning and resilience. Utilizing a variety of dissemination platforms, PREPARE aims to harness the synergies of these research programs to facilitate scientific developments and advance public health in the US and around the world. The final deliverable is a Research Roadmap that can offer insight to NSF leadership on funded research directions that can lead to effective methods to prepare for and recover from future pandemics.

Since its inception in October 2020, PREPARE has made great strides in collecting input from a variety of constituents, and has produced a Research Roadmap that they will present to NSF in September 2023. The team has hosted eight virtual events, created a popular podcast and YouTube channel, and provided a forum for interaction. The one aspect missing from the project is a tangible sense of community. After grappling with what it means to be a member of a virtual organization, the team decided to work with Fiona Tracy, Cornell University, through the 2023

UVA Computing for Global Challenges (C4GC) summer internship program. Tracy completed a literature review and offered the team five areas of recommendation regarding the most effective way to build and utilize membership in their virtual community.

### **Member Directory**

Across the literature, many suggestions regarding virtual community building indicate the benefits of a member directory. A member directory is an organized list of the community members, their contact information, and occasionally a short description of themselves and their work. Member directories are crucial for identity creation in a virtual space which helps to build trust among members (Blanchard & Markus, 2004). This is beneficial due to the mediating role trust plays in the relationship between the sense of virtual community and knowledge-sharing (Lyu et al., 2019). Additionally, member directories are relevant to diversity, equity, and inclusion efforts due to the relevance of identity creation for inclusive community interaction (Hughes, 2007). Finally, presenting members of an organization, specifically notable members, may provide incentive to join. This is due to the prestige-based social learning construct, which explains how individuals are biased to perform similar acts to those they view as prestigious (Jiménez, 2019).

Recommendations:

- The creation of a member directory that includes the following: names, biographies, a photograph (optional), contact information
- The member directory should be easy to navigate, searchable, and have filtration options such as sorting the directory by discipline or organization

- The member directory should be open access in order for non-members to view who their peers would be if they were to join
- Notable members should be presented at the top of the directory or on another page of the website to increase incentive to join the organization

### **Diversity, Equity, and Inclusion**

In both virtual and traditional spaces, Diversity, Equity and Inclusion is best achieved when the organization creates a space for both commonality and diversity to be present. The ability to actively listen to members in the organization is also emphasized as a key component of diversity, equity, and inclusion (Hughes, 2007). Relating DEI specifically to virtual communities, there is significant literature on the benefits of holding virtual conferences. They increase overall participation, various forms of diversity such as gender and geographical diversity, and they have raised early career scientist attendance as well (Skiles et al., 2021, Sarabipour, 2020). In addition, virtual conferences are more equitable financially and they decrease personal life burdens, such as travel time or childcare (Fu & Mahoney, 2023).

Recommendations:

- Member biographies should be present in a member directory to aid with identity creation
- PREPARE should continue holding their conferences virtually, however clarity should be provided regarding cost of attendance and privacy concerns such as screenshots taken for social media purposes (if applicable)
- The creation of an intentional statement to be displayed or disclosed at the start of conferences/workshops regarding respectful engagement is recommended to serve as a reminder prior to discussion

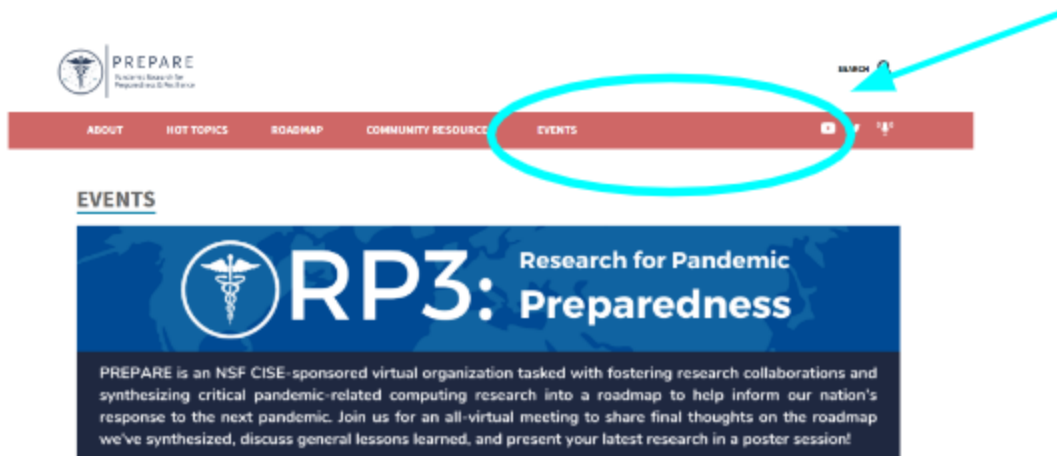
- The creation of an anonymous form to report any uncomfortable language and suggest alternatives is recommended to ensure the terms used in the community create a comfortable and safe environment
- A statement regarding awareness of audience context should be sent out in invitations to speakers in order to remind them to define all terms and concepts due not fully knowing every audience member's background

### **User Interface**

User interface is important in a virtual space because it can determine whether or not an individual chooses to interact with the content provided, or even to ultimately join the organization. Some characteristics of quality sites include usability, functionality, reliability, and efficiency (Olsina et al., 1999). Usefulness and ease of use have also been determined to be important factors when assessing the acceptance and use of information systems (Keil et al., 1995).

Recommendations:

- It is recommended that PREPARE creates a new “membership” tab at the top of their website (circled below) in order to make it clear to users that this is an organization they are able to join
- PREPARE should include a clearly labeled “Join Us!” button linked to a form under the membership tab for complete clarity on how to become a member



## Forums

Forums are an essential part of a virtual community because they allow for personal identification beyond a member's biography, as the individual is speaking in real time with their voice. Identification leads to trust, which mediates the relationship between a sense of virtual community and knowledge-sharing, both of which are important for a thriving virtual organization (Lyu et al., 2019). They create a space for member–member communication as well as organization–member communication. Within the forum, it is important for the organization to provide prompts or information, as people most often engage in forums to seek information rather than provide it (Pendry & Salvatore, 2015).

Recommendations:

- The creation of a forum is recommended because it is crucial for identity building, fostering relationships, and willingness to share knowledge
- The forum should be embedded on PREPARE's website for ease of use
- PREPARE should post discussion prompts or information on the forum to increase engagement

- The forum should have a notification system that would let members know when someone has responded to their comment, or when a new post is made

### **Content Library**

Content libraries increase engagement in a virtual community (Porter et al., 2011). They are accessible ways for non-members to see what the organization is currently working on, which could provide incentive to join. Additionally, content libraries could give members the opportunity to contribute content they have produced, such as papers or videos.

Recommendations:

- The content library should be clearly labeled and have simple navigation
- All resources should be available in one space (YouTube channel, podcast, etc.)
- The content library should include an event calendar with an RSVP feature embedded for ease of use
- PREPARE should allow members to submit their own events to be added on the calendar; this provides incentive to join for two reasons. First, it would be a way for members to increase attendance to their own events, and it would also display to non-members many diverse events they would be able to attend

### **Conclusion**

The PREPARE team was very receptive to these recommendations and plans to incorporate them in the coming year. With these recommendations in place, PREPARE should be able to best facilitate membership within their virtual organization.

## **Acknowledgement**

This material is based upon work supported by the National Science Foundation under Grant No.

CNS-2041952.

## References

- Blanchard, A. & Markus, L. (2004). The experienced “sense” of a virtual community: Characteristics and processes. *Association for Computing Machinery*, 35(1), 64-79.  
<https://doi.org/10.1145/968464.968470>
- Brand, C. O., Heap, S., Morgan, T. J. H., et al. (2020). The emergence and adaptive use of prestige in an online social learning task. *Scientific Reports*, 10, 12095.  
<https://doi.org/10.1038/s41598-020-68982-4>
- Cheung, C. M. K., & Lee, M. K. O. (2010). A theoretical model of intentional social action in online social networks. *Decision Support Systems*, 49(1), 24–30.  
<https://doi.org/10.1016/j.dss.2009.12.006>
- Daugherty, T., Lee, W.-N., Gangadharbatla, H., Kim, K., & Outhavong, S. (2005). Organizational virtual communities: Exploring motivations behind online panel participation. *Journal of Computer-Mediated Communication*, 10(4).  
<https://doi.org/10.1111/j.1083-6101.2005.tb00272.x>
- Fu, Y., & Mahony, S. (2023). Toward implementing equality, diversity, and inclusion for virtual conferences within the LIS professions. *Journal of Librarianship and Information Science*, 0(0). <https://doi.org/10.1177/09610006231164145>
- Henrich, J., & Gil-White, F. J. (2001). The evolution of prestige: Freely conferred deference as a mechanism for enhancing the benefits of cultural transmission. *Evolution and Human Behavior*, 22(3), 165–196. [https://doi.org/10.1016/S1090-5138\(00\)00071-4](https://doi.org/10.1016/S1090-5138(00)00071-4)
- Hughes, G. (2007). Diversity, identity and belonging in e-learning communities: Some theories and paradoxes. *Teaching in Higher Education*, 12(5–6), 709–720.  
<https://doi.org/10.1080/13562510701596315>



- Jafarian, A. (2022, February 17). Essential features for online communities. *Member(dev)*.  
<https://memberdev.com/essential-features-for-online-membership-communities/>
- Jiménez, Á. V., & Mesoudi, A. (2019). Prestige-biased social learning: Current evidence and outstanding questions. *Palgrave Communications*, 5, 20.  
<https://doi.org/10.1057/s41599-019-0228-7>
- Keil, M., Beranek, P. M., & Konsynski, B. R. (1995). Usefulness and ease of use: Field study evidence regarding task considerations. *Decision Support Systems*, 13(1), 75–91.  
[https://doi.org/10.1016/0167-9236\(94\)E0032-M](https://doi.org/10.1016/0167-9236(94)E0032-M)
- Kozlowski, S. W. J. (2018). Enhancing the effectiveness of work groups and teams: A reflection. *Perspectives on Psychological Science*, 13(2), 205–212.  
<https://doi.org/10.1177/1745691617697078>
- Olsina, L., Godoy, D., Lafuente, G., & Rossi, G. (1999) Assessing the quality of academic websites: A case study. *New Review of Hypermedia and Multimedia*, 5(1), 81-103.  
<https://doi.org/10.1080/13614569908914709>
- Pendry, L. F., & Salvatore, J. (2015). Individual and social benefits of online discussion forums. *Computers in Human Behavior*, 50, 211–220. <https://doi.org/10.1016/j.chb.2015.03.067>
- Lyu, X., Wang, H., Ma, A., Wang, X., & Zhao, L. (2019). The relationship between the sense of virtual community and knowledge-sharing: The mediating role of trust. *Human Behavior and Emerging Technologies*, 1(3), 245–260. <https://doi.org/10.1002/hbe2.157>
- Porter, C. E., Donthu, N., MacElroy, W. H., & Wydra, D. (2011). How to Foster and Sustain Engagement in Virtual Communities. *California Management Review*, 53(4), 80–110.  
<https://doi.org/10.1525/cm.2011.53.4.80>
- Skiles, M., Yang, E., Reshef, O., Robalino Munoz, D., Cintron, D., Lind, M.L., Rush, A., Perez

Calleja, P., Nerenberg, R., Armani, A., Faust, K.M., Kumar, M . (2022). Conference demographics and footprint changed by virtual platforms. *Nature Sustainability*, 5, 149–156. <https://doi.org/10.1038/s41893-021-00823-2>