

# ICYMARE - Online networking and its potential for early career researchers

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## Abstract

Virtual networking opportunities are becoming increasingly important as alternatives or add-ons to offline conferences to lower the academic carbon footprint and make academia more inclusive. Virtual conferences improve access to networking opportunities and knowledge exchange for researchers, e.g., from the Global South or those with disabilities or caregiving obligations. Virtual conferences may be especially important for early-career researchers (ECRs), who are more often excluded from the expensive participation in offline conferences and associated networking opportunities. Our study presents the outcomes from the 2020 online edition of ICYMARE (International Conference for Young Marine Researchers, [www.icymare.com](http://www.icymare.com)), which will use an innovative approach for online networking. ICYMARE is an ideal case for this study as it is organized by and for ECRs. With around 350 participants during the on-site meeting, ICYMARE has great potential to conduct a comprehensive survey on its online alternative and its focus on marine sciences is of high relevance. Following the 2020 online edition and the outcomes of this study, the approach of this conference series may be widened to a mixed conference approach where online participation is fostered in a live conference event (e.g., through live streams, video on demand, TED talk formats). Currently, most online substitute conferences are held in various online seminar formats that focus on sharing information from keynote speakers. ICYMARE will be using a different approach, focused on networking and creating personal connections. There will be online sessions in virtual meeting rooms of around 10 participants, which include scientific presentations and moderated discussions. Additionally, an open space for general networking and free exchange is provided. As this is an innovative format, no research has been done to determine the networking potential and success of such an alternative online format and we aim to address this gap. We will use a mixed-method approach using qualitative and quantitative methods, covering aspects about the advantages, disadvantages, and challenges of online conferences for ECRs. Our presentation will provide an overview of the preliminary outcomes from this study as well as the lessons learned during this first online edition.

# ICYMARE - Online networking and its potential for early career researchers

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**Introduction**

1. How does Covid-19 influence the working situation and personal well-being of ECRs?
2. Do online conferences help ECRs to cope with the Covid-19 situation?
3. What is the networking potential of satellite online conferences for jointly career development within marine research?
4. How should online conferences be designed to best meet the needs of ECRs?

Satellite conferences are essential for developing professional networks

**Organisation and Background**

ICYMARE, the International Conference for Young Marine Researchers, by The European Society for Marine Sciences, is organized jointly by the up and based on voluntary work. Network opportunities are between the professional as well as many in life in atmosphere. Results are presented and discussed in expert sessions initiated and organized by session chairs. More info: [www.icymare.com](http://www.icymare.com)

**Lessons Learned & Conclusion**

**Conclusion:**  
 When designed appropriately, online events can serve as important networking opportunities that are more inclusive. Online events provide a different set of opportunities and can be important especially where in-person meetings are not possible or restricted. However, they cannot replace in-person meetings. This study shows that online conferences can strengthen the network of ECRs and support their emotional well-being.

**Lessons Learned**

1. How does Covid-19 influence the working situation and personal well-being of ECRs?  
 Covid-19 has negatively affected the working situation and emotional well-being of the ECRs present at ICYMARE 2020. Feelings of isolation, loss and loss while working under high pressure to be productive left many ECRs feeling stressed, nervous and overwhelmed. The often highly sensitive personal situation of ECRs often exacerbated these feelings as participants were stuck in another country, had severely missed or had difficulties dealing with differences in the Covid-19 situation and associated restrictions between different countries.
2. Do online conferences help ECRs to cope with the Covid-19 situation?  
 Exchange with other ECRs in similar situations helped participants cope with the increasing emotional difficulties of the Covid-19 situation. Meeting feelings of connection, emotional connection with others and high attendance was an important element that also contributed to a perceived ICYMARE feeling better by connecting participants from previous ICYMARE events. This sense of recognition and community helped to build a feeling of inclusion by creating a sense of belonging to the ICYMARE network.
3. What is the networking potential of satellite online conferences for jointly career development within marine research?  
 Participants were able to expand their professional network. Participants also reported a high willingness to share and learn. Successful connections with others. However, this strategy depends on different personality types as introverts appear to be able to strongly benefit from virtual networking opportunities, while other personality types may not.

**Qualitative Analysis**

**Findings**  
 One key driver of the sub-patient sessions was how valuable ECRs were considered in terms of Covid-19 due to the flexibility of the personal situation (Fig. 2). Participants also shared several "coping mechanisms" that helped them with the working challenges.

**Quantitative Analysis**

**Findings**  
 The total number of hits in the satellite sessions and the average number of hits per participant reported by 10 online conference participants are listed in Table 1. The number of hits per participant is listed in Table 1. The participants' perception of the network of ICYMARE 2020 online participants was first through the survey the network between hits, shared and how many were connected. Participants from the satellite sessions perceived more isolated or more connected e.g. participant 2, a master student (Fig. 3).

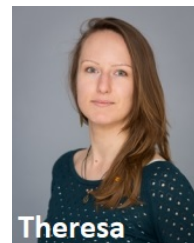
**Table 1: Preliminary online survey results (total hits)**  
 reported by 10 participants before (Pre) and after (Post) the ICYMARE online networking event in August 2020.

	Pre Conference	Post Conference
Number of hits	59	108

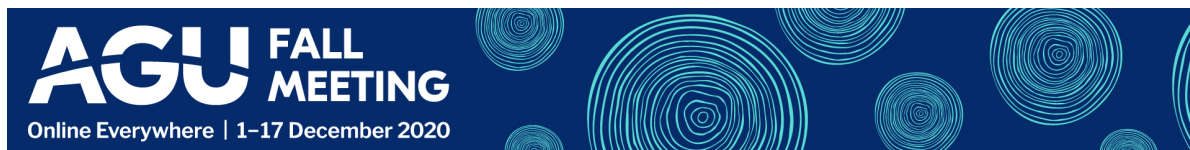
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ENTER NAMES OF AFFILIATED INSTITUTIONS



PRESENTED AT:



# INTRODUCTION

- 1. How does Covid-19 influence the working situation and personal wellbeing of ECRs?**
- 2. Do online conferences help ECRs to cope with the Covid-19 situation?**
- 3. What is the networking potential of scientific online conferences for (early) career development within marine research?**
- 4. How should online conferences be designed to best meet the needs of ECRs?**

Scientific conferences are essential for developing professional networks and career opportunities which is especially important for early career researchers (ECR) and researchers from marginalized backgrounds (Davis & Warfield, 2011). However, there are still major research gaps in the question of how the presentation of one's own research identity through exclusively virtual communication in a conference setting can be successful, especially for ERCs (Neustaedter et al., 2018). Marine researchers depend on worldwide interactions due to travel activity for sampling, data collection, and international cooperation as the marine environment is globally connected across borders. Making meaningful connections was traditionally thought not to be possible via online meetings (Oester et al., 2017). On the other hand, already before the recent Covid-19 pandemic, there has been growing concern about the sustainability, accessibility, and inclusion of scientific conferences held in the global North (Neugebauer et al., 2020; Parsons, 2015).

# ORGANISATION AND BACKGROUND

ICYMARE, the International Conference for Young Marine Researchers by The Bremen Society for Natural Sciences, is organized purely bottom-up and based on voluntary work. Network opportunities derive from the professional as well as easy-to-talk-to atmosphere. Results are presented and discussed in topical sessions initiated and organized by session hosts. More info: [www.icymare.com](http://www.icymare.com) (<http://www.icymare.com>)



**Fig 1.** The ICYMARE family during ICYMARE 2019 BREMEN.

ICYMARE 2019 BREMEN had 20 sessions, 11 workshops, and the Icebreaker, plenary discussion, evening activities being as important for networking as coffee breaks. 350 participants were coming together in Bremen (Fig. 1), originating from 34 countries and 112 institutions.

ICYMARE as new digital format in 2020 had 16 video conferences organised as topical or open sessions. Each conference session lasted for 3 hours and consisted of 10 participants. Each participant could give a short introduction about themselves and their research interests, results or ideas. The channel-based messaging platform 'Slack' was used to connect all conference participants via chat before the conference and resulted in conversations that also lasted beyond the conference itself. During ICYMARE 2020 ONLINE, 180 participants joined from 40 countries and 110 institutions (Fig. 2).





**Fig 2.** The ICYMARE family during ICYMARE 2020 ONLINE.

# LESSONS LEARNED & CONCLUSION

## Conclusion

When designed appropriately, online events can serve as important networking opportunities that are more inclusive. Online events provide a different set of opportunities and can be important especially where in-person meetings are not possible or restricted. However, they cannot replace in-person meetings. This study shows that online conferences can strengthen the network of ECRs and support their emotional wellbeing.

## Lessons Learned

### 1. How does Covid-19 influence the working situation and personal wellbeing of ECRs?

Covid-19 has negatively affected the working situation and emotional wellbeing of the ECRs present at ICYMARE 2020. Feelings of isolation, fear and loss while remaining under high pressure to be productive left many ECRs feeling anxious, uncertain and overwhelmed. The often highly unstable personal situation of ECRs often exacerbated those feelings as participants were stuck in another country, had recently moved or had difficulties dealing with differences in the Covid-19 situation and associated restrictions between different countries.

### 2. Do online conferences help ECRs to cope with the Covid-19 situation?

Exchange with other ECRs in similar situations helped participants cope with the uncertainty and emotional difficulties of the Covid-19 situation by creating feelings of connection. Repeated interaction with others and high relatedness was an important element that also contributed to a perceived 'ICYMARE family feeling' by connecting participants from previous ICYMARE events. This sense of recognition and community helped address feelings of isolation by creating a sense of belonging to the ICYMARE network.

### 3. What is the networking potential of scientific online conferences for (early) career development within marine research?

Participants were able to expand their professional network. Participants also reported a high willingness to share and foster meaningful connections with others. However, this strongly depends on different personality types as introverts appear to be able to strongly benefit from virtual networking opportunities, while other participants distinctly prefer offline meetings and stated not being able to obtain the same depth of connection that in-person meetings can facilitate. ICYMARE 2020 also demonstrated a higher accessibility for participants regarding travelling, time and costs. Even though there were less participants than during the ICYMARE 2019 BREMEN event, the composition was more international during the virtual conference.

### 4. How should online conferences be designed to best meet the needs of ECRs?

The professional networking at ICYMARE 2020 was enabled via the topical sessions. Overall, the easy-to-talk-to atmosphere was achieved due to small groups, sensitive moderation by early-career hosts, individual presentation slots, and the chat-function enabled via Slack. It was also recognised that online events should not be seen as a replacement of or should aim to mimic in-person events, but instead be approached from a different perspective. Therefore, it was recognised that it is not necessary to have several continuous full conference days, which has led to the creation of the 'ICYMARE Online Forum'. This is a new monthly meeting of the ICYMARE family with a changing topical focus that is open to everybody.

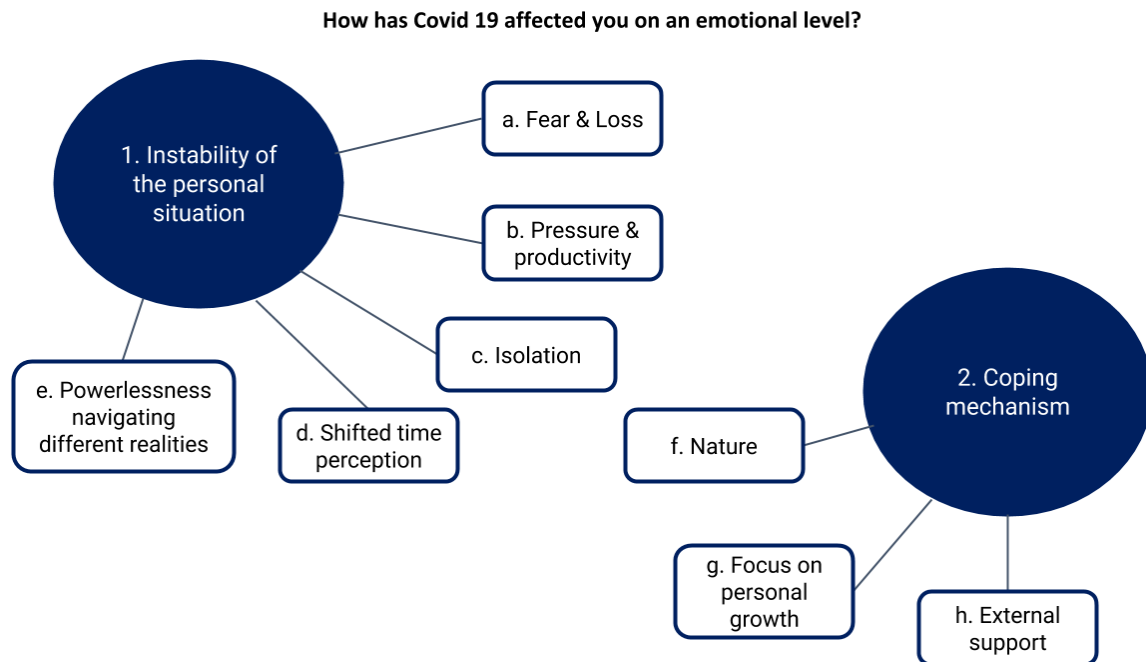


A peer-reviewed article on this study will be coming soon - follow us on [www.icymare.com](http://www.icymare.com) (<http://www.icymare.com>) to get the full publication as soon as it is out!

# QUALITATIVE ANALYSIS

## Findings

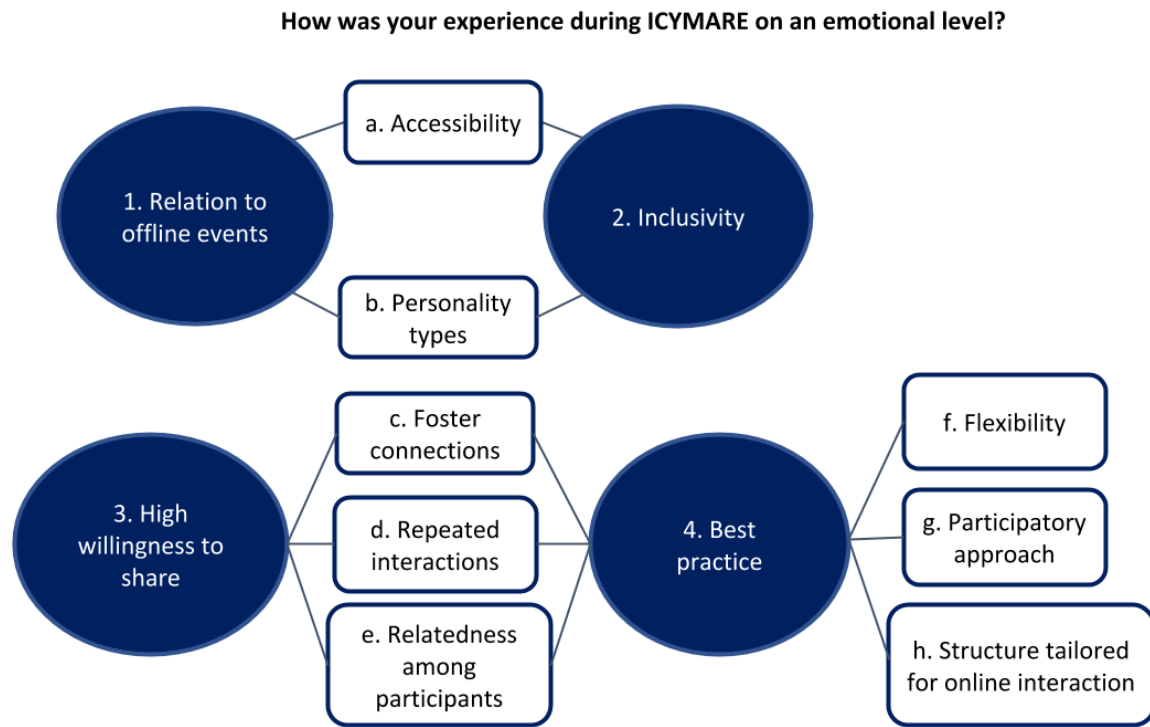
One key theme of the rich picture session was how vulnerable ECRs were to numerous impacts of Covid-19 due to the 'Instability of the personal situation' (Fig. 3). Participants also shared several 'coping mechanisms' that helped them with the arising challenges.



**Fig. 3.** Key themes (dark blue) and the sub-themes (white) emerging from the rich picture session.

The key themes of the focus group discussion (Fig. 4) highlighted the 'Relation to offline events' and potential for improved 'Inclusivity' of online conferences. Furthermore, participants felt a 'High willingness to share' and mentioned numerous elements contributing to 'Best practice' for organising online events.





**Fig. 4.** Key themes (dark blue) and sub-themes (white) emerging from the focus group discussion.

## **Methods**

To examine the emotional experience of ICYMARE participants on a more qualitative level, a workshop titled "Beyond professional: Exploring the emotional impacts of COVID-19 in Academia" was conducted on the last day of ICYMARE, 28th Aug 2020, before the official closing ceremony of the conference. The workshop consisted of a rich picture session and a focus group discussion. The rich picture session aimed to create an open atmosphere encouraging participants to share and examined the question *"How has Covid 19 affected you on an emotional level?"*. The questions *"What were the key challenges?"* and *"What helped you to cope?"* were also examined. Afterwards, a focus group discussion was conducted that focused on the questions *"How was your experience during ICYMARE on an emotional level?"*, *"How do you feel about the connections you made?"* and *"How was it compared to other (online) conferences or networking events you attended?"*

The workshop was conducted using BigBlueButton in two parallel sessions with a total of 12 participants. For the Rich Picture sessions, participants were further split up into groups of 3-5. The workshop was recorded and transcribed. An example of a rich picture produced during the workshop (Fig. 5). The transcripts were analysed using thematic analysis and the constant comparative method (Creswell, 2004). A communicative discourse between two raters was used to ensure validity of the findings and the emerging themes were checked using peer conversations (Creswell, 2009).



Fig 5. Rich Picture produced by one of the breakout groups.

# QUANTITATIVE ANALYSIS

## Findings

The total number of links in the networks main clusters and the average number of links per participant reported by 18 online conference participants almost tripled. The number of actors connected within the main cluster and the number of connections of the most connected actor nearly doubled (Tab. 1). The preliminary comparison of the network of 18 ICYMARE 2020 online participants shows that through the event the network becomes less clustered and more interconnected. Participants from the networks periphery become more included or even more central e.g. participant 2, a master student (Fig. 6).

**Tab. 1** Preliminary basic main cluster network metrics (excl. isolates) reported by 18 participants before (Pre) and after (Post) the ICYMARE online networking event in August 2020.

	Pre Conference	Post Conference
Number of actors	56	104
Number of links	131	374
Average No. links/actor	1.3	3.6
Highest No. links/actor	22	43

**Fig. 6.** Preliminary analysis of the professional network of 18 participants A) before and B) after the ICYMARE online networking event in August 2020. Dots represent participants and lines links between them. Dot sizes indicate their number of connections. Direct contacts: personal connection, shared workshop participation, colleagueship, co-authorship, shared project development, shared study program. Indirect contact: read a paper of the person, planning to contact the person, a colleague told about this person, through email.

## Methods

An online survey was sent to all registered ICYMARE 2020 participants by email 2 weeks before the event. The survey contained a quantitative part to conduct a social-network analysis. With approval of the participants, this part included the participant list. Each participant was asked to indicate which of the other participants they already knew. Directly after the ICYMARE online networking event 2020 a second online survey, was sent to all participants via email. Here, the participants were asked to state whom they got to know during the event. The survey was designed using lime survey. A preliminary social network analysis, including the survey results of 18 conference participants, was conducted and network maps were visualized using the software Gephi (Bastia et al. 2009).

# AUTHOR INFORMATION

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(<http://www.icymare.com>)

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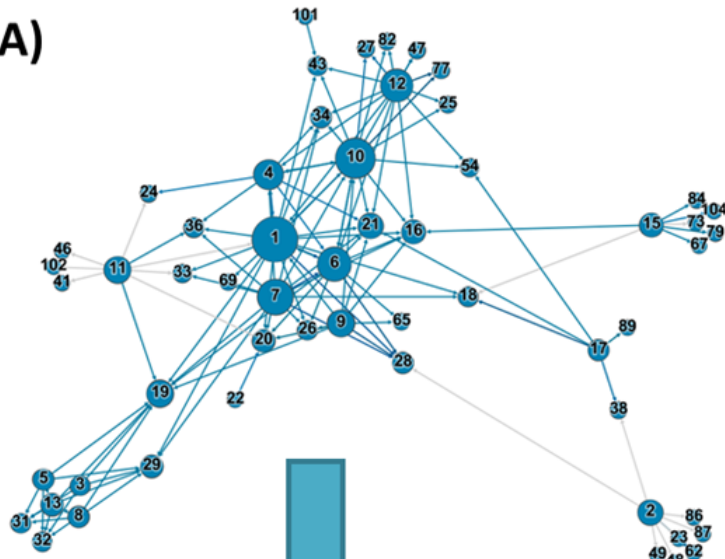
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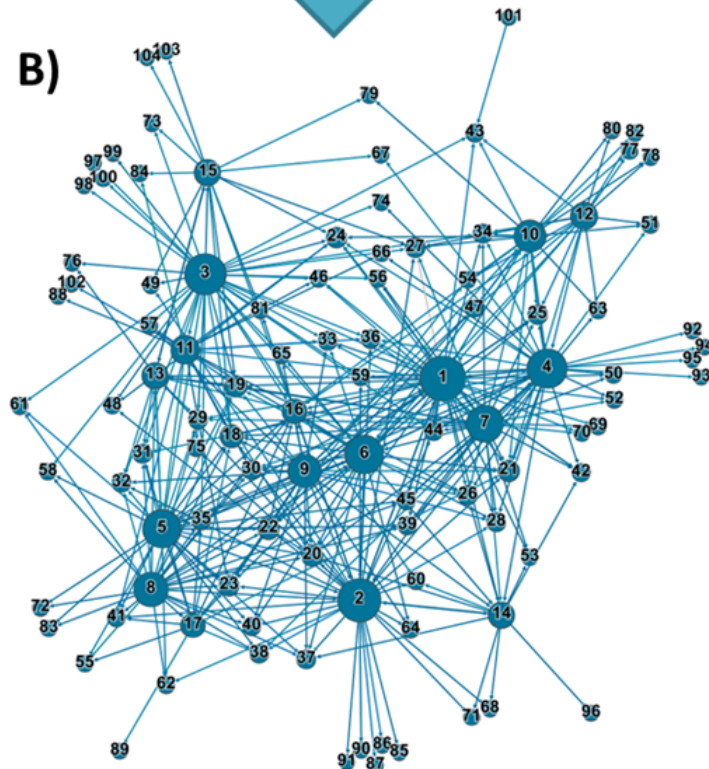
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— direct contact — indirect contact

A)



B)



# ABSTRACT

Virtual networking opportunities are becoming increasingly important as alternatives or add-ons to offline conferences to lower the academic carbon footprint and make academia more inclusive. Virtual conferences improve access to networking opportunities and knowledge exchange for researchers, e.g., from the Global South or those with disabilities or caregiving obligations. Virtual conferences may be especially important for early-career researchers (ECRs), who are more often excluded from the expensive participation in offline conferences and associated networking opportunities.

Our study presents the outcomes from the 2020 online edition of ICYMARE (**I**nternational **C**onference for **Y**oung **M**arine **R**esearchers, [www.icymare.com](http://www.icymare.com) (<http://www.icymare.com>)), which will use an innovative approach for online networking. ICYMARE is an ideal case for this study as it is organized by and for ECRs. With around 350 participants during the on-site meeting, ICYMARE has great potential to conduct a comprehensive survey on its online alternative and its focus on marine sciences is of high relevance. Following the 2020 online edition and the outcomes of this study, the approach of this conference series may be widened to a mixed conference approach where online participation is fostered in a live conference event (e.g., through live streams, video on demand, TED talk formats). Currently, most online substitute conferences are held in various online seminar formats that focus on sharing information from keynote speakers. ICYMARE will be using a different approach, focused on networking and creating personal connections. There will be online sessions in virtual meeting rooms of around 10 participants, which include scientific presentations and moderated discussions. Additionally, an open space for general networking and free exchange is provided. As this is an innovative format, no research has been done to determine the networking potential and success of such an alternative online format and we aim to address this gap. We will use a mixed-method approach using qualitative and quantitative methods, covering aspects about the advantages, disadvantages, and challenges of online conferences for ECRs. Our presentation will provide an overview of the preliminary outcomes from this study as well as the lessons learned during this first online edition.



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