EPFL

Workshop report

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Enacting Our Values - Steps Towards a More Sustainable and Inclusive SEFI Community

J. de Lima [1]
Swiss Federal Institute of Technology Lausanne (EPFL)
Lausanne, Switzerland
https://orcid.org/0000-0001-9235-9704

S. Isaac
Swiss Federal Institute of Technology Lausanne (EPFL)
Lausanne, Switzerland
https://orcid.org/0000-0002-1527-8510

N. Wint
Centre for Engineering Education (CEE), University College London (UCL)
London, UK
https://orcid.org/0000-0002-9229-5728

F. Truscott
Centre for Engineering Education (CEE), University College London (UCL)
London, UK
https://orcid/org/ 0000-0001-9153-2077

T. Kilamo
Unit of Computing Sciences, Tampere University (TAU)
Tampere, Finland
https://orcid.org/0000-0002-9561-1116

ABSTRACT

Our mission of educating responsible engineers requires a diverse and inclusive community where sustainability is a shared commitment. This workshop engaged participants in considering what it means to be a sustainable community and how

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[1]*J. de Lima*
joelyn.delima@epfl.ch

this interacts with Sustainable Development Goals related to addressing inequity of access and experience. Specifically, we considered the barriers that people face to both being a part of the SEFI community and participating in SEFI events, and the potential impacts of these barriers on the sustainability of the community, and thus the future of engineering education. Based on a 2023 SEFI@Work event and survey data collected from SEFI members, this workshop engaged participants in reviewing initiatives, identifying priorities, and establishing recommendations for inclusion at SEFI events. We encouraged people from across the SEFI community, both those that see their concerns reflected in current inclusion activities and those who do not, to attend this workshop.

1   BACKGROUND & RATIONALE

To ensure a socially and environmentally sustainable future, it is imperative that our educational institutions focus on educating responsible engineers. However, developing such professionals requires the work of a community - dedicated engineering educators who leverage curricula and pedagogical strategies intentionally crafted by engineering education researchers. This approach underscores the importance of responsibility not only among the engineers but also within the ranks of educators and researchers who guide their development. Initiatives to make engineering education more inclusive must include both pedagogical aspects (de Lima, Isaac, and Kovacs 2024; 2023; Isaac, Kotluk, and Tormey 2023) and academic aspects (Dixon 2024; Chugh and Joseph 2024). By establishing a community where sustainability is a shared commitment across all these groups, we can more effectively address the challenges of today and pave the way for a resilient tomorrow.

Sustainability as a value also extends to the community, i.e. the SEFI community. What, therefore, does it mean to be a sustainable community? Going back to the 17 Sustainable Development Goals, we see that addressing inequity of access and experience is an integral part of the sustainable development agenda. The SDGs explicitly address inclusivity and equitability in educational experiences (goal 4), equal experiences across genders (goal 5), reducing inequities based on geographical locations (goal 10), and promoting inclusive and accountable institutions (goal 16) (United Nations [UN] 2015). Additionally, "Sustainability" along with "Inclusivity" and "Supporting and respecting diversity, equality and different cultures", are three of the core SEFI values (SEFI, n.d.). This therefore requires us to consider the barriers that people might face to both being a part of the SEFI community and participating in SEFI events, and the potential impacts of these barriers on the sustainability of the community.

Making the SEFI community more inclusive, and therefore more sustainable, will have multiple desirable effects for both the community in particular, but also for engineering education in general. Increasing coherence with our professed values of sustainability and inclusion will allow us to widen our community and further enrich the education we are providing our engineering students. Integrating diverse perspectives and expertise, that might have been traditionally excluded and ignored, will ensure that our students are better equipped to build sustainable solutions and societies (Lucena and Schneider 2008; The United Nations Educational, Scientific and Cultural Organization [UNESCO] 2021). Additionally, this will allow formerly

excluded community members to get access to the resources and recognition they deserve so as to improve engineering education across the globe.

An important aspect of building the SEFI community is participation in SEFI events such as SEFI conferences. Attending such events is beneficial both for community building but also for individual career development (de Leon and McQuillin 2020; Oester et al. 2017). Multiple studies have however shown that access to these events is not equitable (Biggs, Hawley, and Biernat 2018; Débarre, Rode, and Ugelvig 2018; King et al. 2018; Rushworth et al. 2021; Shishkova et al. 2017). As a community it is therefore critical that we identify and address these barriers to ensure that the knowledge we produce and the policies we implement are inclusive and representative of diverse voices (Abernethy et al. 2020). Involved in this work is the identification of potential barriers and subsequently defining key steps towards mitigating issues which run counter to social justice and equity.

2   MOTIVATION & WORKSHOP OBJECTIVES

This workshop built upon a previous SEFI@Work event (SEFI 2023), as well as data from a survey based on barriers to submitting and participating in SEFI conferences. It was intended to facilitate further conversation about what we can do individually and collectively to ensure sustainability in terms of evolution and renewal of the SEFI community and the resultant discourse. Although several initiatives have been introduced for the first time at SEFI 2024, work is required for them to become integral, regular parts of the annual conference, as well as other SEFI activities. We used the workshop to increase visibility and support and help refine future initiatives.

This workshop welcomed all members of the SEFI community, especially those who are interested in fostering a sustainable SEFI community, focusing on making it more inclusive, equitable, and welcoming of a diversity of members.

During this workshop, participants:

- Exchanged perspectives and reviewed survey data from the SEFI community on barriers they encountered to participating.

- Proposed strategies for mitigating and reducing barriers to participating in the SEFI community, including initiatives at SEFI 2024.

- Drafted a proposal of inclusion measures for future SEFI events (what is essential? What is nice to have?)

3   OUTCOMES OF THE WORKSHOP

This workshop engaged participants in constructive discussions about how SEFI could be more inclusive. Data from a survey completed by SEFI members between December 2023 and January 2024 was presented to support collaborative discussion. Participants were divided into two groups with each considering either barriers to feeling included in the SEFI community or barriers to participating in the SEFI conference (Table 1). Having shared the barriers identified with the wider group, each group suggested possible actions which could be implemented to address these barriers. Finally, participants were each given the opportunity to vote for 3 votes for initiatives that should definitely be implemented, and 3 votes for 'nice

to have' initiatives. The proposed initiatives and results of the voting are presented in Table 2.

Table 1: List of barriers to 'participating in SEFI events' and 'Feeling part of the SEFI community', as identified by workshop participants.

Barriers to participating in SEFI events (e.g. conference, SIG events)	Barriers to feeling part of the SEFI community
High registration fees (lack of institutional membership and need to pay for individual membership)	Do not look like the rest of the community
Timing / schedule of the conference	Tensions between "engineering" and "education"
Lack of knowledge about SEFI	Different scientific traditions and having to apologise for identity ("I'm not an engineer but…")
Being new the community	Perceived lack of confidence and competence in unfamiliar research methods and quality aspects.
Lack of knowledge about how Special Interest Groups (SIGs) work	Perceived status hierarchy between practitioners and researchers which also results in ambiguity and misalignment in relevant audiences for work.
Language (non-native English speakers)	Not knowing anyone else at the conference
Lack of knowledge about the sessions / scope and thus the value of attending	Lack of community outside the SEFI conference (during the year)
Childcare commitments	
Health issues	

Table 2: Actions proposed by workshop participants to mitigate some of the barriers listed in Table 1, along with the frequency of votes accorded to each initiative.

No.	Initiatives that …	Should implemented at SEFI 2025 + future events	Would be nice to implement if possible

1	Asking for participants to provide keywords that reflect their teaching and research interests during registration. These keywords can then be added to the badges / app and will help people make connections based on shared or new interests.	5	2
2	Code of conduct with consequences	5	2
3	Prepare an informative welcome video "SEFI for new members" which introduces the aims and workings of SEFI including SIGs	5	1
4	Set strategic goal to hold SEFI conference in less expensive location in 4 years -> start now to identify potential locations and build capacity	4	2
5	Do more activities between annual conferences to build community and connections	3	3
6	Create "Faces of SEFI" profiles of community members throughout the year to highlight diversity of the community	2	6
7	Initiate research activities focused on uncovering the hidden curriculum at SEFI (research)	2	4
8	Reduce costs by co-hosting between an institution in less expensive city and an institution with a strong team and/or organising experience	2	1
9	Produce a SEFI glossary - what is a SIG, who 'can be a member' and how to get involved	1	2
10	Introduce more semi-structured/'icebreaker' activities (like bingo activity during the newcomers' lunch) to help build connections	1	2
11	Recommend SIG chairs start their meetings with an introduction to the SIG activities (avoiding jargon)	1	

| 12 | Hold non-SIG SEFI community events | 2 |
| 13 | Creation of a 'diagnostic online quiz that helps people identify with which SIG their interests are aligned and how to get involved | |

Additional items that were not included in the voting activity

- Communicate being mindful that newcomers are in the room
- Promote benefits of SEFI for different target groups (value proposition)
- Different ways of working with engineering education (working across the differences)
- Provide a searchable database for people

From Table 2 it is clear that initiatives 1-3 were the most popular and are all considered to involve relatively low commitment. We would therefore suggest that these be the focus of efforts within the short term. In the case of initiative 2, "**Code of conduct with consequences**", there was discussion around what would constitute a suitable and appropriate consequence and how this would be enforced, something which would involve discussion with the SEFI Board. Initiative 3 "**Informative welcome video**" (and initiative 9, "**SEFI glossary**") would involve prior work into understanding the types of content that would be useful to newcomers but are relatively low commitment with potential for significant benefits.

Although popular, initiative 4 "**less expensive location**" (and initiative 8 "**co-hosting the conference**") involve the support of the SEFI Board at a strategic level and may be more suitable as considerations in the long term. Initiative 5 "**activities between annual conferences**" (which received 6 votes in total) involves understanding the types of events that would be helpful in community building as well as higher levels of commitment, for example support from the wider SEFI community such as SIGs. This initiative should thus be investigated further but should not be considered as the primary area of focus.

Initiative 6 "**Faces of SEFI**" involves relatively low, but regular levels of commitment and, given the total votes (6), it is worth investigating the possible routes to achieving this. Initiative 7 "**uncovering the hidden curriculum at SEFI**" involves high levels of commitment and given the relatively low number of votes, may be considered at some point in future. Initiatives 10 "**more semi-structured activities**" and 12 "**non-SIG SEFI community events**" are fairly low commitment and may be pursued, assuming the availability of willing volunteers. Initiative 11 "**start SIG meetings with an introduction to the SIG activities**" is low commitment and therefore, despite the low number of votes, is worth pursuing. Finally, initiative 13 "**diagnostic online quiz**" received no votes, perhaps because of its aspirational nature.

4 CONCLUSION

The output from the group activity and feedback of participants was used to identify barriers that people might face to both participating in SEFI events and feeling a part of the SEFI community. Together, we also generated recommendations for future SEFI events and conferences to improve inclusion. Participants also had an

opportunity to develop networks with those who are interested in supporting DEI, build their professional networks and learn from the diverse perspectives of their fellow participants.

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