Snowmass2021 - Letter of Interest

Science outreach and the underrepresented public

☑ (CEF3) Diversity & Inclusion
☑ (CEF5) Public Education & Outreach

Elements of Interest :

- Participation in science communication is marked by structural inequalities (particularly ethnicity and class)
- Social reproduction in science communication constructs a narrow public that reflects the shape, values and practices of dominant groups, at the expense of the marginalised.
- We need to reimagine science communication's publics by taking inclusion/exclusion and the effects of structural inequalities into account
- We urge a paradigmatic shift in science communication toward an overarching objective of expanding a sense of belonging in STEMM and approaches that embrace varied forms of expertise and ways of knowing.

It's not news that a diversity and inclusion problem exists in the HEP community. Fixing this gap is one of the many reasons that motivate science communicators to engage with the public. We have recently seen an increase in calls for scientists to improve engagement with public communication activities (e.g., Leshner, 2015) yet access to information and to opportunities for substantive public engagement with science are still inequitably distributed.

Underrepresented groups' involvement in science communication is narrow and they experience exclusion due to feelings of cultural imperialism and powerlessness (Dawson, 2018). Marginalized individuals and communities remain largely undervalued in these efforts (Dawson, 2014b; Feinstein and Meshoulam, 2014; Streicher et al., 2014). We need to reimagine the currently narrow and marginalized "public" of science communication (Dawson, 2018). We need research and practical work to identify the effects of structural inequalities and pinpoint locations of exclusion/ inclusion during the process of science communication (Dawson, 2018).

Recent literature identifies that engagement in science communication is influenced by structural inequalities (particularly ethnicity and class) arguing that social reproduction (the process by which a society reproduces itself from one generation to another and also within generations) in science communication constructs a narrow public that reflects the shape, values and practices of dominant groups, at the expense of the marginalised. (Dawson, 2018). With this in mind we need to rethink the way we see science communication whereby inclusion, equity, and intersectionality ground all research and practice. Canfield et al., 2020 defines the term inclusive science communication (ISC) as an intentional and reflexive practice and research approach that:

- *Recognizes historical oppressions, discrimination, and inequities and centers the voices, knowledge, and experiences of marginalized individuals and communities in STEMM dialogue.*
- *Acknowledges that each person's individual characteristics (e.g., gender, race, physical ability) overlap with one another (defined as "intersectionality" by Crenshaw, 1989) and that these intersectional identities affect their status in the world (Shimmin et al., 2017).*
- *Further acknowledges that explicit and implicit biases (historical, cultural, experiential) of science communication practitioners and scholars influence the design and implementation of their work (Reich et al., 2010; Dawson, 2014c).*
- *Rejects the oversimplifications of the deficit model (Trench, 2008; Simis et al., 2016), in which science communicators treat public audiences as lacking relevant knowledge or experience.*
- *Incorporates asset-based methods that respect and value the ideas, experiences, questions, and criticisms that diverse publics bring to conversations about STEMM (Banks et al., 2007).*
- *Aims to cultivate belonging and engagement of audience and collaborator perspectives (Wynne, 1992; Cheryan et al., 2013; Haywood and Besley, 2014; Leggett-Robinson et al., 2018).*
- *Offers a multi-scaled approach to shift organizational cultures and structures and redress the systemic problems of inequitable access to and engagement with STEMM (Anila, 2017; Bevan et al., 2018).*
- *Is relevant across formal and informal learning and engagement settings.*

In summary, the community needs to reevaluate its techniques and implement more strategic communication to reach out to the public that needs the different aspects of science outreach the most. I hope this letter provides enough fuel for this necessary conversation, we need to understand who and why is being currently excluded from the conversation in order to address the problem.

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