

Panel Discussion

Mentor, Mentees & Public Engagement

Authors:

Edward Duca

Centre for Entrepreneurship and Business Incubation, University of Malta, Malta

Annette Klinkert

European Science Engagement Association, Europe

Clayton Cutajar

Esplora Interactive Science Centre, Malta

Heather Rea

The University of Edinburgh, United Kingdom

Siddharth Kankaria

Simons Centre for the Study of Living Machines, National Centre for Biological Sciences,
Tata Institute of Fundamental Research, India

Introduction

The public engagement with science profession has expanded worldwide with different theories and approaches being developed across continents. Various institutional and country-wide efforts are being encouraged through initiatives such as the EU's embedding of institutionalised RRI (Responsible Research and Innovation) and the UK's REF (Research Excellence Framework) programme to increase research impact, societal involvement, and best practices in the field of public engagement with science.

Public engagement is a field with many entry points and career paths for individuals. Public engagement with science scholars and practitioners come from a variety of backgrounds. As the importance and value of public engagement becomes more widely recognised and professionalised, it is important that the institutions with already established programmes support those with less experience in the field of public engagement with science. One mechanism for this support is institutional mentorship, either for public engagement as a whole, or in one or more aspects of a public engagement programme. A mentoring relationship with someone more experienced in the field can advance an individual's self-confidence, knowledge and career. This relationship can provide impartial encouragement for the mentee institution, and offers the mentor institution the opportunity to reflect on their own practice. But, such mentorship also needs to embrace and learn from cultural differences across fields, institutions and locations, in order to achieve its intended impact.

A roundtable discussion about "Mentor, Mentees & Public Engagement" was organised as part of the Public Communication of Science and Technology (PCST) 2020+1 Conference, held virtually between the 26th to 28th of May 2021. Moderated by Edward Duca and Annette Klinkert, the roundtable included science engagement professionals with a diversity of mentorship experience and cultural contexts including Heather Rea, Siddharth Kankaria

and Clayton Cutajar. The roundtable session discussed the importance of mentoring relationships for increasing research impact as well as social participation within public engagement with science initiatives. The session discussed mentee-mentorship relationships at a personal and institutional level across the cultural boundaries of Europe and India and emphasised on a variety of informal and formal mentoring relationships through the speakers' case studies and personal experiences.

Contextualising the mentee-mentorship relationship in Science Communication & Public Engagement (SC & PE)

The roundtable discussion aimed to specifically discuss the contexts and challenges surrounding the practice of science communication and public engagement, and the critical role that mentorship can play in helping practitioners within these fields. The session began with an open discussion around people's experiences of the mentee-mentorship relationship in the field of public engagement and invited the audience to share their stories and experiences (both positive as well as negative) with the panellists. The session then showcased a variety of informal and formal mentoring relationships through each of the panellist's personal experiences and case studies, while also highlighting the diversity of cultural norms and practices of these experiences.

The roundtable session next deliberated on ways to recognise, encourage and formalise mentee-mentorship relationships, along with potential barriers in achieving these outcomes. This led to a discussion on the need for formulating more global and international structures for mentorship, potential ways of shaping these frameworks, and the diversity of potential mutual learning and knowledge exchange opportunities they could help create.

Furthermore, the roundtable discussion emphasised the need for institutionalising mentee-mentor relationships through avenues like professional networks, funding calls and international collaborations, and how this could benefit the field of science communication and public engagement.

Lastly, the session discussed frameworks, approaches and best practices to make mentoring relationships more effective, global and inclusive, while also encouraging a broader understanding of what mentorship entails.

Case Studies & Personal Reflections from the UK, Germany, Malta and India

Heather Rea explained that her first experience of mentorship was with the UK EPSRC (Engineering and Physical Science Research Council)'s PPE (Partnership for Public Engagement) funding programme. In addition to funding, the scheme also provided an evaluator who acted as a mentor for the duration of the project. Rea was involved in a number of PPE projects and made that journey from researcher to public engagement professional because of this mentorship program. The mentors demonstrated the professionalism required and taught her many aspects about public engagement.

Heather went on to become a manager for the Edinburgh Beltane Beacon for Public Engagement and worked closely with the National Coordinating Center for Public Engagement (NCCPE) and the other UK Beacons for Public Engagement in 2008–2012, when they were establishing the UK's culture change journey. The Beacons and the NCCPE worked together in a peer mentorship system, as they were all learning together. As part of the Beltane public engagement network, Heather established the Beltane Public Engagement fellowship scheme which provided funds to buy academic's time to develop their public engagement portfolio (Daly, 2011). As part of the scheme there was a requirement that the fellows were mentored by Heather, which worked really well. The fellowships were awarded to people who demonstrated a willingness to learn. These fellowships were different from many schemes which simply provide the fellow with money for a specific, well-defined project. The Beltane Fellowships were awarded based on the aims and intentions of the individual. The Beltane fellows were also encouraged to develop peer-to-peer mentor relationships. Fellows have developed innovative engagement projects over the last decade including work on dialogue and citizen assemblies, novel engagement practices involving patients-in-residence (in hospitals) and mentored younger academics to engage.

Siddharth Kankaria first provided a brief summary of the science communication ecosystem in India. He explained that India has had a long and celebrated history of communicating science and engaging people with technical knowledge and expertise. These range from successful public health communication campaigns like the polio vaccine drive, participatory science engagement initiatives like the People's Science Movements, and various successful radio and TV programs covering different aspects of agriculture, health, sanitation and energy needs. Kankaria mentioned that the emergence of science communication as a coherent and organized field of practice has only come about in the last decade or so in India, but with a limited number of formal efforts to study it systematically.

India lacks institutionalised mentorship programmes, with mentoring often being informal. Some organisations like the DBT/Wellcome Trust India Alliance have been advocating for mainstreaming public engagement with science in India, but these still aren't fully formalised mentorship structures yet. India's informal mentorship is thus based on an open culture of reaching out and collaboration. This approach has a more bottom-up structure that allows people to engage in various forms of mutual learning, skill-sharing and knowledge exchange.

Kankaria has helped set up some formal structures. For example, he runs a discussion, networking and mentorship forum called the SciCommSci Club, which he founded in August 2019. The club is an informal space for engaging with the 'Science of Science Communication'. As part of the SciCommSci Club, Siddharth has been running some feedback and mentorship sessions called *SciComm Unplugged*, where he and his colleagues speak to upcoming science communication practitioners, graduate students and even scientists to help make their science engagement efforts more strategic and evidence-based (Kankaria, 2019).

As part of these SciComm Unplugged sessions, Kankaria has been experimenting with a mentorship framework that uses guided prompts to elicit critical self-reflection from the

participants, rather than offering them prescriptive feedback. These mentorship sessions often began by asking mentees simple questions such as “What is your goal? Who is your target audience?” and gradually progressed towards more involved ones such as “Why is this particular approach the best fit for your SciComm effort? What’s in it for your audiences to engage with you?”.

Kankaria stated that this approach helped mentees think of their efforts more strategically, focus on long-term optimisations rather than just short-term problem solving, and equipped them to troubleshoot potential future issues. These approaches also helped improve the quality of the mentorship he has received and given.

Clayton Cutajar explained that he leads Malta’s National Interactive Science Centre, Esplora. Esplora works within the scopes of international networks of science centres and museums within the non-formal education context to promote and action public engagement with science. He explained that as a centre they have often applied and tapped into Erasmus+ funding for job shadowing opportunities abroad. Such opportunities work on the basis of mentor-mentee relationships and as such can be considered as a case study. Funding is available under the Vocational and Educational Training programmes of Key Action 1 (European Commission, 2019).

Given that Cutajar comes from the domain of science centres highlights a sharp contrast with the field of science communication practice. For science centres, the exchange of staff and training programmes is institutionalised and backed by funding. However, for science communicators from universities and freelancers, the approach has not been embedded as part of their practice. Cutajar also emphasised the importance of cross-pollination of such ideas to attract funding for supporting these programmes, and the importance of mentorship through professional networks.

Annette Klinkert talked about being mentored by Susan Wallace (Wellcome Genome Campus) to embed the concept of RRI (Responsible Research and Innovation) in a German University. The mentorship helped put into practice a long list of processes and policies Klinkert wanted to implement. Apart from being a mentee she could also observe the mentorship provided to 9 other institutions, which greatly helped develop her skills as a mentor to others. It was her first mentoring experience, because Germany lacked a tradition of having mentors and mentees.

Klinkert emphasised the need to broaden the concept of mentorship. For example, she has often mentored others but has also learnt greatly from her team. Younger team members often mentored her on digitalisation within public engagement with science. She emphasised a need to balance opening up the concept with maintaining a professional and institutionalised approach. Like Cutajar, she emphasised the need to embed mentorship in funding proposals in order to financially support the development of rewarding and effective mentor-mentee relationships.

The roundtable discussion also used Mural, an online collaboration tool, to allow attendees to contribute their own reflections (Duca *et al.*, 2021). Many commented about how positive the experience was, for example AA1 (Anonymous Attendee 1, AA2 later on refers to

anonymous attendee 2 and so on) said “[I] Have done lots of *informal* mentoring on [an] ad hoc / personal basis — very satisfying to 'give back' [the] support I had in the past”. Others also wished they were mentored, AA4 said: “Negative in the sense that I didn't have any mentor when I started in science communication. [It] would have been helpful (especially with regard to switching disciplines [...])”. Duca, one of the facilitators reflected that mentorship helps the mentee know they are on the right track, and that it can provide the validity needed for less experienced colleagues. Mentorship can have many benefits.

Not all mentorship is positive though. Some attendees reflected that “Feedback can be spare or not easy to understand” (AA6) for the mentee, whilst mentors can find the process “time consuming” (AA7). Others had found them irrelevant and disconnected from both their personal and professional interest. Such reflections further highlight the importance of effective mentorship programmes.

Institutionalising Mentorship

The importance of formal institutionalised structures and frameworks for mentorship was a recurring theme in the roundtable discussion. Rea talked about the Nucleus project, a H2020 funded programme that sought to embed RRI within 10 international institutions (Gerber, 2019). In order to formalise the implementation of new policies and programming the consortium (24 partners in 14 different countries) developed a mentorship structure that wanted to take a step from personal interactions towards formalised support. It created a space for institutions to talk to retain personal relationships while attempting to implement institutional cultural change. Duca reflected on his personal experience (Levikov, 2020) as a mentee in this project that helped him setup a Committee of Research Engagement at the University of Malta amongst other activities. His mentors were key for lobbying top governance structures in order to implement this change.

Rea emphasised that in such diverse cultural partnerships respect by both the mentor and mentee are key. She used the example of issues such as non-academics mentoring academics. The mutual respect between those two different professions is not just there yet, and this is why those relationships often failed. What worked was when trust, even friendship, had developed on a very personal level. In Nucleus, they emphasised that even partners who were new in the field could still understand the process of this huge and complex consortium, which is a challenge in itself due to the complexity of European projects. The mentor as a ‘friend’ is key in these scenarios to help support the process on the ground and help build appropriate structures to embed institutional change and effective mentoring outcomes. Funding, time and personal relationships around a formalised structure helped make Nucleus a success story.

Cutajar also emphasised a positive experience when it came to mentorship and relationships. He noted a commendable culture among science centers and science museums that enabled professionals to learn from each other through ‘learning by doing’ approaches. The approach used by science centres included first developing a relationship through networking at conferences, which often have science centres with more experience than themselves, and then setting up job shadowing experiences that enabled mentees and

mentors to develop a personal and professional working relationship. Objectives were developed before the job shadowing, but a degree of flexibility was allowed to make the experience more fruitful. Cutajar commented that the learning was often a two-way process with less experienced science centres also training others—a mentee can become a mentor as well. He emphasised flexibility and two-way communication as key qualities of the mentor-mentee relationship

While a session attendee mentioned that: “at [my] current career stage, I need mentoring about mentoring!” on Mural (AA8), training to become a mentor was amply discussed during the session.

Kankaria also explained that given how young the fields of organised science communication and public engagement were in India, there weren't as many avenues or structures in place for formal mentorship opportunities. However, there were a lot of conversations happening on the policy front that could contribute towards making public engagement more formalized and strategy-driven. For instance, the SciCommSci Club in collaboration with the Science Policy Forum has been actively pushing for a comprehensive science communication policy for India. In 2020, Siddharth and his colleagues helped organise a series of stakeholder consultations with 70+ science communicators in India, based on which they developed and submitted a detailed set of policy recommendations for science communication to the Government of India (Kankaria *et al.*, 2020). Excerpts from their recommendations were also included in a chapter on Science Communication within India's Draft Science, Technology & Innovation Policy published in 2020 (India. Department of Science and Technology, 2020). But, Siddharth felt that there was still a lot to be done in terms of building more structured and institutional frameworks for enabling effective science communication in the country, including the setting up of institutional mentorship and capacity-building structures and ensuring increased funding and infrastructural support.

Duca emphasised that the science communication and public engagement communities need guidelines or frameworks to institutionalise mentorship for them to be effective. Similar to India, Malta is seeking to develop a science communication policy for the whole nation. Part of that policy will need to include formalised training programmes in order to develop effective science communication.

The attendees mentioned many barriers and challenges that echoed the roundtable discussion. One attendee mentioned, “In [an] ideal world, mentoring should [equal] mutual learning: working with more junior and more senior colleagues at the same time” (AA8). Another attendee lamented that mutual learning was rare, “[mentoring] schemes [are] organised in ways that reinforce hierarchy” (AA9). With the Covid-19 pandemic a challenge asserted by everyone in the session was the difficulty of moving everything online.

Kankaria also emphasised the challenges posed by language barriers in India but also more globally by urban-rural divides, and problems like pseudoscience, superstitions and the spread of misinformation. Any formal mentorship structure needs to account for these barriers and find suitable opportunities to address them.

Role of professional networks

Klinkert mentioned that professional networks such as PCST (pcst.co) or EUSEA (www.eusea.info; European Science Engagement Association) have a big role to play in encouraging mentor-mentee relationships and providing a formalised structure, which was also emphasised by Duca. She reflected on the large crowd of mentors she benefited from when she started working in public engagement. In Germany the field is still young so the EUSEA network was key to meet a wide range of colleagues that helped her obtain information and support on many different aspects of science communication. She emphasised that mutual learning and openness were key, and that the pandemic made EUSEA, the network she's part of, want to engage more than ever. Over the pandemic EUSEA organised many more online meetings to encourage the development of online working groups, communities of practice and mentoring situations in non-hierarchical structures. Kankaria mentioned that even the PCST conference fulfilled the networking goals described by Klinkert and Cutajar in terms of helping develop professional relationships that could lead to effective mentorship.

For mentoring to be institutionalised it needs to be integrated with funding agencies' mandates. Cutajar mentioned that mentoring should be budgeted for in a project, because such mentorship efforts often tend to be highly tailor-made training programmes. The goal is to learn a lot in a small amount of time in a much more fruitful manner than formal training session. His recommendation was that resources need to be allocated for mentorship in project, similar to how engagement is now regularly budgeted for in funded projects. Duca also emphasised the need for formal structures for mentorship. He has been involved in a lot of informal mentorship efforts such as helping mentees write funding proposals, and setting up mock interviews. However the best mentorship experiences, according to Duca, occurred when they were formally built into the funding projects. Other attendees agreed with this key point too.

Making mentorship more inclusive

The roundtable also deliberated on the need for encouraging more global forms of mentorship. Kankaria felt that such global and international frameworks for mentorship could provide mutual learning and knowledge exchange opportunities between stakeholders in the Global South and Global North. Not only could they learn more about science communication theories, frameworks and best practices, but also help address inclusivity and diversity issues, better acknowledge indigenous knowledge systems, and co-create more participatory forms of public engagement suited to different contexts. Kankaria also felt that such collaborative mentoring relationships could help mitigate the lack of local funding and support for mentorship programs within the Global South. Klinkert also questioned the hierarchy between a mentor and mentee in the context of global mentorship formats and stressed on the need for being open to new cultures and socio-cultural approaches in order to enable mutual learning opportunities.

Clayton reiterated this point while highlighting the need for building cross-disciplinary and horizontal mentorship. He added that within any institutional mentor-mentee relationship, the roles of mentor and mentee are bound to reverse, and identifying the strengths of each organization could help enable robust two-way mentorship programs.

Klinkert highlighted that the roundtable discussion described in the paper had a diversity of voices ranging from South Africa, to Austria, to Romania that led to a very cross-cultural discussion during PCST. She had added that we need to learn to be open about qualifications in this field, and stop defining mentors as just the ones representing the Western European experience, hoping that other cultures will also become mentors of European universities.

Duca further outlined the need for developing best practice guidelines & frameworks for institutional mentorship. Professional organisations such as the PCST Network and EUSEA have major roles to play in facilitating such developments.

Klinkert highlighted that mentorship can address issues of social justice such as the power dynamics of gender, sexuality, race, identity and geographical regions. Mentors from other countries can provide much needed support to their mentees especially with top administration. Early career researchers and practitioners need this support, which they might not receive in the institution they are in. Mentors can also help mentees understand inclusivity and how to involve others from different social environments, which can greatly benefit their career. Mentorship relationships can also switch with mentors becoming mentees of the people they are mentoring. She reflected on her own personal experience within her team when she was mentored by people much younger than her on new approaches towards digital engagement. She also mentioned how countries outside of Europe are innovating in ways European countries can learn from, such as South Africa embedding a national science communication strategy in their policies—learning is a multi-directional process.

Discussion

The roundtable also touched upon the need for redefining mentors, mentees & mentorship. Kankaria questioned what exactly do we mean by 'mentorship', since different people used the term 'mentorship' within different contexts to refer to a range of activities such as skill transfer, career counselling and professional (and personal) support. He also stressed on the need for arriving at more encompassing definitions for it, and supporting mentorship avenues within professional interactions such as teaching, training, and capacity building activities.

Rea also shared that it might be helpful to think of mentors and mentees more transiently as someone who has a required piece of knowledge, and someone who is looking for that knowledge. This could make shifting roles between mentor and mentees more fluid and need-based rather than hierarchy and experience-based.

Klinkert highlighted the need for distinguishing between training and mentoring, and why these were not mutually interchangeable. She stressed that early career researchers and

professionals needed systematic training modules and these could not be substituted by mentorship programs. Instead, we needed mentorship structures that supplemented these training efforts, where mentors served dual roles: they could serve as friends supporting their mentee's professional journeys and listening to their personal struggles, but also switching roles to become experts and representatives of larger organisational structures that could really help lobby their efforts. She felt it was important for mentors to play both these roles and switch between them efficiently to be able to support their mentees..

Kankaria added that developing a shared vocabulary and awareness of what is being done well in other countries or contexts was the first step towards developing healthy mentoring opportunities and beginnign to learn from each other! He furhter highlighted that mentoring relationships could easily span across the boundaries of age, nationality, experience, and expertise if we could acknowledge and appreciate how different people's expertise, lived experiences and social-cultural contexts adds value to our mentorship efforts.

Conclusion & Recommendations

This roundtable discussion was only a small effort towards understanding the role of mentoring relationships in the field of science engagement and exploring existing barriers and potential solutions for addressing these. The discussion touched on many important points such as the need for structured mentorship frameworks, the role of institutionalisation of mentorship and integrating these with funding mandates, the importance of developing more culturally-specific as well as globalised mentoring relationships that prioritised mutual learning and knowledge exchange, as well as the benefits of redefining mentoring relationships by developing a new shared vocabulary based on collaboration, learning and empathy.

Such mentoring relationships have the capacity to influence and impact the work of both researchers and engagement practitioners and build stronger working relationships between them. The authors hope that this paper would lead to more inputs in the form of funding, frameworks and support for mentoring relationships. They also endeavour that it will lead to a broader discussion on the importance of structured, globalised and dialogic forms of mentorship.

References and Sources

- Gerber, A. (2019). NUCLEUS Project, European Union's Horizon 2020.
<http://www.nucleus-project.eu/consortium/>
- Levikov, N., Quacinella, D. and Duca, E. (2020). Embedding RRI in a Higher Education Institution: Lessons learned from Malta. International Journal of Higher Education Management, 7(1). Doi: <https://doi.org/10.24052/IJHEM/V07N01/ART-2>
- Kankaria, S. (2019). SciCommSci Club: Engaging with the Science of Science Communication. <https://scicommsci.ucraft.site/>
- Duca, E., Klinkert, A., Rea, H., Cutajar, C., Kankaria, S. (2021, May). Mentor, Mentees & Public Engagement, Roundtable Transcript, Public Communication of Science and Technology Conference 2020+1.
<https://docs.google.com/document/d/1HWDkXclPCaAlbW2s0guiBsNoC2B5ODfDIU1-iRvKm70/edit?usp=sharing>
- Duca, E., Klinkert, A., Rea, H., Cutajar, C., Kankaria, S. (2021, May). Mentor, Mentees & Public Engagement, Mural used during the roundtable discussion, Public Communication of Science and Technology Conference 2020+1.
<https://app.mural.co/t/researchimpactmakeyourselfrr6484/m/researchimpactmakeyourselfrr6484/1621946140663/9543e2d614d5ab4c8989a193ada46b01311076c4?sender=u4c91f7021809a172ed756143>
- Kankaria, S., Singh, V., Champak, S., Basha, C., Anam, Z., Kapoor, Y., Khan, F., Kaushik, A. (2020, August). Policy Recommendations for Strengthening Indian SciComm, SciCommSci Club and Science Policy Forum.
<https://thesciencepolicyforum.org/wp-content/uploads/2020/09/Policy-Recommendations-for-Strengthening-Indian-SciComm-Updated.pdf>
- India. Department of Science and Technology (2020, December). Draft 5th National Science, Technology, and Innovation Policy, Chapter 8: Science Communication and Public Engagement, Ministry of Science and Technology, Government of India.
https://dst.gov.in/sites/default/files/STIP_Doc_1.4_Dec2020.pdf
- Daly, A. (2011), The Edinburgh Beltane Public Engagement Fellows Report.
<https://www.beltanenetwork.org/wp-content/uploads/2012/09/The-Edinburgh-Beltane-Public-Engagement-Fellows.pdf>
- European Union (2019). Mobility for learners and staff in vocational education and training, Erasmus+ Programme Guide.
https://ec.europa.eu/programmes/erasmus-plus/programme-guide/part-b/key-action-1/mobility-learners-and-staff-vet_en