



## Making a difference

Impact of the Outreach Fund (2020-2022): a summary report

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## **The Impact Report**

In 2023 the RSC commissioned its first external review of the Outreach Fund, focusing on projects that were awarded funding over three years of investment: 2020, 2021 and 2022. The review was delivered by Ondata Research, an independent consultancy with specialist expertise in public engagement with STEM and STEM engagement programme evaluation.

This document builds on the data, findings and recommendations of the Impact Report, complemented by internal data analysis. It draws out learnings from the Outreach Fund for the public engagement and outreach community, and outlines how we will strengthen the Fund in the future.

#### The summary findings are outlined below:

Outreach Fund aims	Outreach Fund outcomes	Finding
Develop science communication skills of chemists – building capacity and opportunities for chemists and chemical scientists to engage with schools and public audiences.	RSC members have opportunities to develop and/or use their engagement skills.	The Outreach Fund facilitates personal and professional development opportunities for chemists.
Engage with school students – inspiring and raising aspirations of student audiences to nurture a future generation passionate about the chemical sciences. Engage with public audiences – involving a wide range of people in relevant contemporary issues in the chemical sciences.	Audiences are engaged with issues around sustainability linked to chemical sciences. Families connect with chemistry in fun, creative and participatory ways.	Projects inspire and raise aspirations among diverse audience groups.
Engage with public audiences – involving a wide range of people in relevant contemporary issues in the chemical sciences.	Audiences are engaged with chemistry in and through local contexts.	Project topics help individuals relate chemistry to their lives, emphasising its relevance.
Provide under-represented audiences, communities and places with inspiring chemistry engagement opportunities, delivered or coordinated by skilled people.	Under-served audiences are better connected with or represented by chemical science.	Grant holders effectively engage under-represented audiences within chemistry.

Table 1: Impact Report: summary findings<sup>1</sup>

The report also highlights core findings on practice, partnership and longer-term impact beyond the duration of the grant:

- Funding from the Outreach Fund enhances the quality and professionalism of projects.
- Projects foster new partnerships and collaborations, enhancing networking opportunities.
- Projects leave lasting legacies, impacting individual attitudes and organisational strategies.

## **Public engagement**

### Why public engagement?

Public engagement and outreach can play a vital role in the chemical science ecosystem, from improving policy and strengthening research and innovation to supporting a diverse chemical science community in the student body and the workforce. During our 2021–2025 strategy period the Outreach Fund has contributed to the Royal Society of Chemistry's priorities in education, voice and influence, inclusion and diversity, and sustainability.

The Outreach Fund contributes to the Royal Society of Chemistry's public engagement and outreach objectives:

- 1. Inspiring and empowering young people to develop their own science identity and capital, increasing awareness and recognition of the pathways to chemical science education and careers.
- Enabling inclusive access to the chemical sciences, including increasing our impact with communities that are under-represented in chemistry education and careers.
- Supporting chemistry-using professionals to understand and contribute to the impact of the chemical sciences on people's lives and wider society.

### What is public engagement?

Public engagement is an umbrella term and describes the many ways organisations, teams and individuals seek to involve the public in their work.<sup>2</sup> Public engagement practitioners and projects can:

- inspire, involve, and inform the public.<sup>3</sup>
- actively listen to the public's views, concerns, and insights.<sup>4</sup>
- work in partnership with the public to solve problems, drawing on each other's expertise.<sup>5</sup>

The term outreach is sometimes used interchangeably with public engagement, or applied more narrowly by audience or purpose. In the context of this summary report, the term outreach is used to describe a subset of public engagement work that seeks to inspire the public, young people and their families.

## **The Outreach Fund**

### What is the Outreach Fund?

The Outreach Fund is a competitive fund that invests in the full range of public engagement activity, funding work in higher education institutions, public bodies, science centres, heritage organisations, charities and community interest companies, as well as independent freelancers.

Between 2020 and May 2023 the Outreach Fund supported 162 completed projects with awards as small as £750 and as large as £10,000. The majority of projects began and completed during the COVID-19 pandemic, navigating complex restrictions, wider organisational and financial uncertainty of grant holders, and audience hesitancy to return to face-toface engagement. Working with a range of audiences including but not limited to young people from low socio-economic backgrounds, people in supported settings and minoritised communities, the projects reached over 50,000 people face to face and over 1.9m online.

During the review period, completed projects brought in over £1.1m of co-funding to the programme in addition to an estimated £729,000 in volunteer time and resources.<sup>6</sup> Thanks to the Chemists' Community Fund, additional investment ringfenced to support activity with under-represented and under-served audiences in the chemical sciences has significantly expanded the number of projects the programme has been able to support.

# Why does the Outreach Fund matter?

Professions across the chemical sciences are experiencing a skill and worker shortage.<sup>7</sup> Demand for workers in chemistry using sectors is projected to grow by 6% over the next decade with academic and vocational routes essential to meet this need.<sup>8</sup> Access to science remains impacted by your background, location and your teachers' training, increasing the importance of alternative routes to science engagement.<sup>9,10,11</sup>

The Outreach Fund improves access to science activities, curriculum enrichment and personal development opportunities for participants and volunteers by supporting programmes that:

- develop the science communication skills of chemists – building capacity and opportunities for chemists and chemical scientists to engage with schools and public audiences.<sup>12</sup>
- engage with school students inspiring and raising aspirations of student audiences to nurture a future generation passionate about the chemical sciences.<sup>13</sup>
- engage with public audiences involving a wide range of people in relevant contemporary issues in the chemical sciences.<sup>14</sup>
- provide under-represented audiences, communities and places with inspiring chemistry engagement opportunities, delivered or coordinated by skilled people.<sup>15</sup>



### Where do we fund?

The Outreach Fund provides funding to organisations located across the UK and Ireland. Based on funded organisation location the Outreach Fund supports projects across the UK and Ireland. Assessing the location of audiences is more challenging as the level of detail varies by the intention of the project.



Figure 1: National and regional distribution of organisations awarded funding by the Outreach Fund<sup>16</sup>

### Who do we fund?

The Outreach Fund is unusual in its open eligibility criteria, which centre equity not only in its principles but in its delivery. There are increasing calls for the democratisation of public engagement and outreach funding, in recognition of the fact that power dynamics can form around money: who is eligible, who is awarded, and who controls the money. These power dynamics often favour larger lead partners. As such, the open eligibility of the Outreach Fund demonstrates the value of funding small delivery organisations directly.



Percentage of funding awarded 2020-2022

Figure 2: Proportion of grants awarded by organisational type<sup>17</sup>

### Who do funded projects work with?

The Outreach Fund does not have a prescribed audience. However, resource is ringfenced within the Fund to support audiences who are under-served/under-represented in the chemical sciences community.

The Impact Report identified that projects worked with a wide variety of audiences including those identified as under-represented.<sup>18</sup> The flexibility offered to projects to identify their priority audiences has been highlighted as a strength of the Fund.<sup>19</sup> By allowing applicants who are closest to their communities to define their audiences and make the case for support for chemical sciences engagement, the Fund is able to avoid unintended consequences of tight audience prescription. This translates into the top-level ambitions of projects as well as the practical delivery. Award holders report that this flexible approach benefits them when working with audiences with complex needs, by supporting tailored and thoughtful approaches to delivery:

From a monetary perspective, they want just SEND children. Of course, a parent might have one child with autism, but that doesn't mean all of their children have autism. So, then the parent has to provide care for their neurotypical children separately. This creates all kinds of messy scenarios. So, we get funders to agree to making it more open for that event and we support the whole family. And the feedback we get from families is really positive.

UK Unplugged CIC CEO Dr Diana Powell<sup>20</sup>

Three features of the Fund have been identified which facilitate Outreach Fund projects to work successfully with audiences identified as under-represented or under-served within the chemical sciences:<sup>21</sup>

- "The flexibility of the scheme in allowing projects to pivot their delivery mode and extend timelines."22
- "Funding [of] organisations who specialise in working with under-represented groups."23
- "Providing reassurance to grant holders that quality of engagement over the scale of reach was at the centre of the scheme."<sup>24</sup>

Areas of the Outreach Fund that could be strengthened:

• Applicants and grant holders would value a clearer steer on under-represented and underserved audiences in the chemical sciences. This indicates that clearer signposting to the RSC's evidence base on inclusion, diversity and education is required.

### What do funded projects deliver?

The Outreach Fund supports activity which is built on core chemical sciences content: chemistry must be at the heart of the activity. From cutting edge research to highlighting the topical nature of chemistry and its relevance to people's everyday lives, the Fund provides flexibility for applicants to determine the right entry point to the chemical sciences for their audiences. The process of arriving at the topic format and mechanisms of delivery is different for each project, and reflects the expertise and networks of the delivery team.<sup>25</sup>

Outreach Fund projects incorporate chemistry in many different ways, often drawing on the relevance of the topic matter to people's everyday lives or its relationship to the local area. Signposting to Royal Society of Chemistry evidence and campaigns will help applicants and award holders to address RSC priority issues.<sup>26</sup>

The format of Outreach Fund projects varies substantially, using a variety of face-to-face and remote approaches.



Figure 3: Percentage of projects by mode of engagement<sup>27</sup>

The programme has supported a wide spectrum of projects, for example classroom-based curriculum enrichment and take-home activities, circus shows, and activity at international policy forums such as COP26. All projects must draw on the chemical sciences but can be presented in any context, from the everyday chemistry of your favourite pint to the role of chemistry in understanding and addressing the climate change.

### Schools practical workshops: supporting students and teachers

The Country Trust, an environment-related charity, was awarded funding to develop workshops that linked directly to the English primary curriculum topic "rocks and soils".

By bringing in specialist soil scientists they were able to create an activity that was engaging, fun, and rooted in curriculum-relevant science. Every child involved got to meet a professional who was just as interested in the activity as they were. The sharing of knowledge was essential to the success of the project.

Teachers loved it because they, the children, were able to lead the learning. Jill Attenborough, CEO of The Country Trust

For this organisation, what was most important was that the participants went away feeling empowered, and having the scientists involved enabled that. Participants and delivery teams learned together as well as relying on the scientists for knowledge, and the young people went away excited to repeat the activities at home.

The charity felt that the RSC funding provided legitimacy for them when navigating the wider STEM environment but would have loved more access to RSC members or networks to help them find scientists to involve.

The RSC central team were essential to getting the project in place; it was through them that Jill suggested she had been given the "confidence to continue" with establishing this project.

### *Science circus project:* broadening understanding of who is a chemist

Circus 250, an arts-based organisation who use science themes in their work, were awarded funding for the chemistry elements of a wider circus show designed to connect science with everyday life.

The key element for Circus 250 was that everyday tasks be recognised as science, in this case specifically chemistry, so they took a broad lens on where that support might be found. Brewing and distilling were identified as important local industries, and pubs formed focal points for local communities, so this was the natural chemistry connection. As Dr Dea Birkett (director and ringmaster of Circus 250) described, this seemed logical to them, but wasn't always the easiest connection for their communities to make:

They don't call themselves scientists, but they are. They're doing chemistry. Every time they pull a pint, they're doing chemistry.

By joining up a well-understood local practice with the more formal contexts of chemistry and chemists, this project reached large audiences from areas not normally able to access STEM engagement, making chemistry relatable, fun, and a viable future option for all.

They would like to be able to add more academic and RSC member links into future work, to push their chemistry content further. While it's not clear how that can be enabled yet, at least the building blocks for this work are firmly in place.



## *Climate change activities for COP26:* engaging young people with chemistry, renewable energies, and policymaking

# PPL PWR, a small not-for-profit organisation who engage the public about sustainable innovation, were awarded funding for activities with school groups and the public to be held in the run-up to and at COP26 (2021).

An existing schools' network with a focus on sustainability provided access to the young people. Existing connections with academic experts and the organisation's priorities helped establish a critical mass for action. Organisation volunteers and chemistry students trained young people to engage with the public about research and issues related to renewable energy and sustainability.

School students created postcards with art and poetry inspired by sustainability themes to take to COP26. They encouraged members of the public to write to their MPs on these post cards. The young people subsequently met with senior government officials and policy stakeholders, feeding into policy decisions because of their participation at COP26. The students were also supported in media engagements related to the project. Alongside this, the project contributed to an affiliated panel discussion on sustainable finance. The RSC had a presence at COP26 through the use of branding and links to resources.

One of the volunteers went on to move from research into policymaking after their participation, and attending the conference was felt to have had a huge impact on everyone who was part of the project.

The project valued the support they had from the RSC and the fund team, particularly the flexibility shown through the COVID-19 pandemic, allowing them to deliver a successful project as different partner costs and circumstances changed substantially. The team felt they could have further strengthened the project with additional connection to the RSC Communications and Education teams.



## How does the Outreach Fund make a difference?

The RSC's purpose is to help the chemical science community make the world a better place. The Outreach Fund supports this by making a difference to participants, chemistry-using professionals and outreach professionals and organisations, through:

- raising aspirations and enabling inclusive access to the chemical sciences.
- **professional development** of chemistry-using professionals, supporting the development of their competencies and their impact.
- **good practice** in public engagement and outreach: delivering for priority audiences in the places and formats that work for them.
- strategy, partnerships and funding: building the relationships and supporting the capabilities of the organisations and teams that are essential to delivering outreach and engagement.

#### **Raising aspirations**

Inspiring and raising aspirations of young people building their science identity and capital to make informed choices about how they engage with chemistry through education, careers and their everyday life sits at the heart of the RSC's approach to effective outreach<sup>28</sup> and the aims of the Outreach Fund. The Aspires 3 report<sup>29</sup> highlights the importance of the following factors in young people's aspiration to continue with chemistry-related development:

- "liking/interest/passion in pursuing chemistry at degree level was the most important factor (33% of respondents)"<sup>30</sup>
- "feeling good about the subject was the second most important factor (23% of respondents)"<sup>31</sup>

Alongside this,

 "Analyses of the longitudinal qualitative data show how students' choices are influenced by the extent of the fit between their identity, capital and the field in question, which shapes the extent to which chemistry qualifications and pathways are felt to be 'for people like me', or not."<sup>32</sup>

Approximately 75% of Outreach Fund projects were identified as working with schools-related audiences.<sup>33</sup> These projects utilised a variety of approaches to raise the aspirations of participants:

- Building connections between chemistry and everyday life: Our grant holders reported that activity designed to connect chemistry with everyday life "greatly improved pupils' confidence"<sup>34</sup> and supported them to develop their curiosity, a core value that drives behaviour in engagement with science.<sup>35</sup>
- **Promoting diverse role models:** Introducing more diverse role models in the chemical sciences in approachable settings addressed ingrained assumptions that chemistry qualifications and pathways are not for people "like me".<sup>36</sup> Place was important here: some projects connected role models to the place the engagement was happening, linking to local training and employment options. This allowed young people to see themselves in chemistry-related opportunities.<sup>37</sup>
- **Supporting confidence:** Projects report increased confidence in participating young people. In one tutoring project, students reported that the experience had increased their confidence in learning, positively impacting their end of year grade. For some, it helped them identify chemistry as something they wanted to pursue at university.<sup>38</sup>

The ambition to raise aspirations through Outreach Fund projects is not limited to young people or schools-related audiences. One project working with prisoners reported that 3 participants aimed to gain a qualification related to the chemical sciences in the future.<sup>39</sup>

Areas to strengthen include:

- supporting applicants to integrate research-informed frameworks into their project application, delivery and evaluation.
- communication of the successes and learnings of Outreach Fund projects.

### Professional development of chemists/ chemistry-using professionals

As a professional body, one of the RSC's priorities is to support the professional development of chemistry-using professionals. The projects supported through the Outreach Fund provide a wide range of opportunities for chemistry-using professionals to develop their skills, strengthen their networks and support their professional profile.

- Skills development: The skills development of participating chemistry-using professionals was not always clear from end of project reports. According to interview feedback, those from non-chemistry backgrounds often believed that chemistry-using professionals had more to offer than to learn. However, interviews with chemists highlighted improvement in project management, partnership development and collaboration and the writing of grant applications.<sup>40</sup>
- **Network development:** Outreach Fund grants were highlighted as providing legitimacy by supporting network development inside chemistryusing professionals' organisations and building partnerships with outside organisations. It was also reported that the grants were essential to leveraging additional funding within those relationships.<sup>41</sup> Networking among the cohort of funded projects was identified as an area for further development.

• **Professional profile:** The review highlighted examples where participating in the Outreach Fund (as a grant holder or a project participant) raised an individual's professional profile. This included work that "resulted in international collaborations and opportunities to leverage further funding".<sup>42</sup>

Areas to strengthen include:

- the awareness and understanding of the benefits of leading, taking part in or advising on public engagement and outreach projects to the professional development of chemistry-using professionals.
- support provided to Outreach Fund projects to connect with and learn from other grant holders within the Fund.

## Outreach projects: good practice and professionalism

The Outreach Fund aims to fund locally responsive, audience-centred projects that are aligned with good practice in public engagement and outreach. Outreach Fund grant holders reported confidence in their understanding that quality engagement is a higher priority for the RSC than reach, allowing them to focus on their specific audience.<sup>43</sup> The flexible approach to funding allowed projects to adapt to audience need and adjust when projects did not go to plan. This strengthened the ability of projects to pivot, ensuring they remained audience-centred and drew on good practice at each stage.<sup>44</sup>

The Outreach Fund was also identified as supporting effective collaboration between disciplines and practitioners, bringing the arts, sciences and community practitioners together to deliver good practice activity and high-quality outputs. For those from chemistry-using backgrounds this offered professional development that is not always available in their role.<sup>45</sup>

The professional development provided through the Outreach Fund and positive experiences of grant holders has strengthened confidence to deliver good practice public engagement with the chemical sciences for chemistry-using professionals and engagement professionals.<sup>46</sup>

The Outreach Fund currently has a flexible approach to monitoring and evaluation to accommodate the variety of projects supported by the Fund. This approach has benefits, however the evaluation of the Fund has highlighted opportunities to introduce some additional areas of standardisation to simplify reporting for applicants and improve the data available for future evaluation.<sup>47</sup>

Areas to strengthen:

- Grant holders highlighted the benefits of connection across the funded cohort, learning from each other about what works and addressing the feeling of "being the only one" which was highlighted by some grant holders.
- Some projects found partnering with a chemical science professional challenging, with accessing someone with chemical science expertise highlighted as the biggest challenge.
- Access to up-to-date thinking on public engagement practice was highlighted as an area that would further strengthen Outreach Fund projects.
- Standardised reporting and data for monitoring and evaluation would help to set expectations more clearly with grant holders and strengthen the evidence base related to the Fund.

### Strategy, partnerships and funding

The Outreach Fund Impact Report has also identified a number of additional impacts on organisations and participating individuals that endure beyond the funded period:

- **Partnerships:** Over 75% of the projects (n=127) intended to continue with the partnership which was involved in the funded project.<sup>48</sup>
- **Shifting delivery:** Being able to test a new approach at pilot scale allowed some grant holders to demonstrate the value of new approaches to impact. For one organisation this led to a significant shift in their model, moving to local community focussed approaches on the back of their RSC pilot, which "demonstrate[d] the power of this approach" (Outreach Fund grant holder feedback).<sup>49</sup>
- Scaling up: Respondents to the Impact Report research highlighted the role of RSC funding in scaling up their approaches, increasing reach and impact.<sup>50</sup>
- **Funding:** Grant holders and project staff/contributors report securing additional funding for further outreach and public engagement activities.<sup>51</sup>

### How do grant holders see the Outreach Fund?

Grant holders' experiences of the application, award and post-award processes were positive. The information and engagement required from projects with the Outreach Fund process and team was proportionate to the grants provided. The flexibility of the Fund was regularly cited as a benefit in ensuring impactful delivery and value for money. Grant holders viewed the Outreach Fund as "an effective enabling fund, one that trusted their expertise and valued their time".<sup>52</sup>



RSC funding increased project teams' confidence and credibility with partners and volunteers, particularly for grant holders from non-chemistry backgrounds.

Grant holders also reflected on the benefits of access to the experienced and knowledgeable team<sup>54</sup> at the RSC, who were critical to teams having to adapt their projects. This was a common requirement during the review period, which covered the COVID-19 pandemic and a move from face-to-face to online provision and back again.

Grant holders reflected on funding levels as part of the research, and although some expressed the desire for larger awards, others reported that the level of funding was itself an enabler.<sup>55</sup>

The biggest gap in support identified by grant holders was a lack of connection to peers. Grant holders are often trialling new to organisation approaches and can feel like they are the "only one". There is also a vast array of practical and operational challenges in public engagement and outreach work, from transport to curriculum, where peer problem solving would be valuable.

Areas to strengthen include:

- supporting community and peer knowledge sharing within the funded cohort.
- strengthening monitoring and evaluation, balancing evidence with proportionate burden.

## **Building on success**

### Is the Outreach Fund a success?

The Outreach Fund supports projects that are locally responsive, audience-centred and demonstrate good practice, consistently meeting its objectives to:

- develop the science communication skills of chemists – building capacity and opportunities for chemists and chemical scientists to engage with schools and public audiences.<sup>56</sup>
- engage with school students inspiring and raising aspirations of student audiences to nurture a future generation passionate about the chemical sciences.<sup>57</sup>
- engage with public audiences involving a wide range of people in relevant contemporary issues in the chemical sciences.<sup>58</sup>
- provide under-represented audiences, communities and places with inspiring chemistry engagement opportunities, delivered or coordinated by skilled people.<sup>59</sup>

The Fund delivers for participants, projects (host organisations and partners) and chemistry-using professionals in the following ways.<sup>60</sup>

### Participants

- Supporting projects that inspire and raise aspirations among diverse audience groups.
- Supporting projects that help members of the public to relate chemistry to their everyday lives.

#### Projects

- Supporting the development of new partnerships and collaborations for public engagement and outreach.
- Enhancing the quality and professionalism of public engagement and outreach projects.
- Supporting grant holders to effectively engage underrepresented audiences within chemistry.
- Leaving lasting legacies, impacting individual attitudes and organisational strategies.

### Chemistry-using professionals

 Facilitating personal and professional development opportunities for chemists.



## Can the Outreach Fund do better?

Yes, it can. The public engagement and outreach landscape is constantly evolving. The Outreach Fund has been operating for 10 years and our recent Impact Report has highlighted a number of opportunities for refinement that fall into five broad areas:

- Refining Fund guidance
- Data, evidence, and evaluation
- Supporting good practice
- Connectivity across Royal Society of Chemistry priorities
- Access to RSC members

### **Our Action Plan**

In response to the Impact Report, the Royal Society of Chemistry will:

- **make it easier** for eligible organisations to apply and report to the Outreach Fund, clarifying our expectations and providing clearer guidance to applicants, grant holders and completing projects.
- signpost applicants more effectively to Royal Society of Chemistry priorities, evidence and resources, including research-informed good practice frameworks, to strengthen applications, projects and impact.

- strengthen Fund data collection and evaluation to support learning from what works, contributing to the sector's understanding of impactful engagement.
- **improve the sharing of good practice** and strengthen the support we provide to funded projects through cohort support, working with them to create a community of practice.
- continue to support the scheme with knowledgeable and engaged staff, working closely with applicants and projects to ensure the scheme is accessible and to deliver the best outcomes for participants.
- **improve access to Outreach Fund Volunteering** from September 2024, through a coordinated volunteer opportunities board for members.



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