

Analysing the impact of the GCRF Neglected Tropical Disease Network on early career researchers to promote leishmaniasis and chagas disease research.

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## Abstract

International collaborations enhance research outcomes by providing partners with increased access to resources, training, and multidisciplinary expertise. These partnerships facilitate knowledge exchange and infrastructure development, promoting sustainable research ecosystems. The development of ECRs is particularly important in strengthening research capacity within international research networks, however literature regarding their experience is limited. Here is a qualitative study of one international research network, the Global Network for Neglected Tropical Diseases, and its impact on ECRs. Semi-structured interviews were conducted with 19 ECRs from the Network, these were then thematically analysed. Key themes were identified relating to their experience of the Network. Participants asked questions relating to the impact of the Network on their careers and their experience with both formal and informal elements of the Network. Participants were also asked about barriers to NTD research and the influence of these barriers on their career paths. Here are summarised the key findings from these interviews, giving a voice to ECR experiences. ECRs emphasised the value of opportunities provided by the Network and underlined the transformative impact this can have on both their careers and research capacity. However, ECRs stressed that while the support provided by the Network was highly valued, structural barriers such as insufficient funding and job insecurity limit the impact of the Network and severely affect ECR retention in this area.

## Background

NTDs are a group of bacterial, parasitic, and viral diseases in tropical and subtropical regions affecting more than one billion people (1). Their symptoms are diverse, but they predominantly affect poor populations living in close contact with infectious vectors (2). NTDs result in the loss of 26 million disability-adjusted life years (DALYs) annually (3) and yet have been historically underfunded, representing an underacknowledged threat to global health (4). This costs developing countries billions of USDs every year in healthcare costs and loss of productivity (1), perpetuating health and economic inequities through their chronic effects on health, productivity, and social participation (5). Reducing the burden of these diseases is thus socially and economically attractive (6).

Leishmaniasis and Chagas disease are recognised as being among the most impactful NTDs, with among the highest mortality rates (7). Leishmaniasis threatens approximately 350 million people worldwide (8) resulting in 2.4 million DALYs lost annually (9). Similarly, more than seven million people are infected with Chagas disease (10), resulting in an estimated annual economic loss of 7 billion USD (11).

Both leishmaniasis and Chagas disease lack effective diagnostic tools and therapeutic interventions (12). Current diagnostic methods have a range of strengths and weaknesses with many limited by sensitivity, speed, and affordability (13). This is especially problematic in endemic settings which are often resource limited (12). Likewise, therapeutics face problems related to efficacy, toxicity, and increasing drug resistance (14). As such novel therapeutic and diagnostic solutions are sorely needed (15). However, the development of solutions is held back by structural barriers, most notably a lack of research funding (2).

As leishmaniasis and chagas disease cases are distributed across diverse ecological and socio-economic environments, researchers must develop solutions that are adaptable across endemic regions. This poses an additional challenge. As part of a growing global push to identify and implement best practices for delivering maximum impact from development associated research (16), international research collaborations have been recognised as an effective way to address such challenges (17). As such these Networks can act as an invaluable platform to advance NTD research.

International research networks do this by enabling resource sharing and facilitating the exchange of knowledge, methodologies, and interdisciplinary expertise between endemic and non-endemic partners based in both LMICs and HICs (18). Indeed, by bridging geographical, disciplinary, and institutional divides, international research networks enhance research outputs (19). As such they are uniquely positioned to strengthen NTD research capacity, somewhat mitigating the funding barriers facing leishmaniasis and chagas disease research.

Within international research networks early career researchers (ECRs) play a critical role (19). While ECRs may be in the early stages of their academic careers, they represent both the immediate workforce driving research forward and the next generation of scientists. To establish a successful academic career ECRs need to develop both knowledge and technical skills and soft skills such as writing (for publications and grant applications), independence, team working, as well as expanding their professional networks. However, ECRs often struggle to access training, mentorship, and resources (financial or otherwise) (19). These challenges threaten ECR retention (19), undermining research ecosystems in both LMICs and HICs.

In response to these challenges the Global Network for Neglected Tropical Diseases was established in 2018 (20). Funded by the Global Challenges Research Fund (GCRF), the Network brought together more than 50 academics across 14 institutions and aimed to accelerate the development of novel therapeutic and diagnostic solutions for leishmaniasis and Chagas disease (21). Specifically, the Network sought to address the

lack of robust target validation tools and the shortage of appropriately trained researchers in both endemic LMICs and HICs (21).

One of the ways the Network did this was by supporting ECRs (20). Opportunities provided included fellowships, international research secondments, travel bursaries, hands-on workshops, conferences, and multidisciplinary “sandpit” events (21). This study uses the thematic analysis of interviews (n=19) to assess the impact of the Network on these ECRs, examining how the Network’s support has influenced their career trajectories and contributed to strengthening leishmaniasis and chagas disease research capacity. In doing so, it contributes to broader discussions on how to build a more equitable and effective global research system and considers how the Network might serve as a model for the development of similar international, cross-disciplinary, and collaborative frameworks.

## Methodology

The study used a qualitative research approach to explore the impact of the Network on ECRs. This approach was chosen to capture in-depth, nuanced insights into the experiences, perceptions, and career trajectories of ECRs supported by the Network. Specifically, semi-structured interview questions were designed to include open-ended questions aligned with the research questions to encourage detailed responses.

### Participant selection

34 ECRs involved in the Network were purposively selected and contacted by email. From this initial contact 19 interviews were arranged based on participant availability. All participants were ECRs and had a range of involvement with the Network including Network fellows, PDRs, and PHD students. The sample spanned researchers from all countries involved in the Network including the UK, India, Pakistan, Brazil, Argentina, and Uruguay.

### Interview Data

Semi-structured interviews, lasting 20 minutes to 1 hour, were conducted in July and August 2025. All interviews were carried out over Microsoft Teams in English. Thematic saturation in the data was obtained. Participants were asked to reflect on their experience with the Network and the impact it had on them and their careers.

### Interview Analysis

All interviews were audio-recorded, transcribed, verified by the interviewer and analysed in QRS NVivo. All transcripts were fully anonymised. The transcripts were thematic analysed as described by Braun and Clarke (2006) with key themes and patterns generated through

a six-step process (familiarisation, coding, theme generation, review, and reporting). All data was then summarised based on the themes that emerged.

## Results

Thematic analysis identified three major themes that reflect the experiences of ECRs within the Network: skill development and capacity building, collaboration and networking, legacy and barriers to ECR retention. These themes offer insights into both the strengths of the Network and the challenges limiting its impact. The findings are discussed below.

### Skill Development and Capacity Building

#### *Mentorship and Supervision*

Within skill development, mentorship and supervision emerged as a key sub-theme facilitating ECR growth. All ECRs were supervised by their respective PI(s), though the arrangements varied widely. Some participants described frequent, structured meetings, while others experienced more informal contact. Across these variations, participants consistently highlighted the balance between guidance and independence.

All participants spoke positively about their relationships with their PI(s), which ranged from formal to friendly or a mixture of both. Participants particularly valued the technical advice and problem-solving support provided by PIs but equally emphasised the independence they were given to pursue their research idea. Multiple participants described this as *empowering*, giving them a feeling of ownership over their research.

*“The level of autonomy and ownership that we had to pursue the idea that we wanted was 100%” (P02)*

The accessibility of PIs was highlighted repeatedly. Many participants felt that PIs were approachable to discuss any research-related or personal concerns they may have: *“Any problem, any doubts, any advisement that I needed, [the PI] was always there to give it to me” (P15).*

This helped to balance independence with reassurance. *“You get to be as independent as you want... I mean I like it. How they manage it, because you have to make decisions, but they are always with the door open if you need them” (P11).*

Participants also valued career advice and support provided by PIs. Multiple ECRs described how references provided by PIs were invaluable in reaching interview stages of both job and grant applications. One participant, whose PhD was co-supervised by PIs from two different institutions, described how such advice helped inform their career choices. They particularly noted the importance of interactions with multiple PIs.

*“Knowing other supervisors around the world was really good for me to have those connections and start those conversations, even about like postdocs or something else for the future. Like after PhD life.” (P01)*

Interactions with PIs from other institutions was appreciated by many ECRs and was described as highly beneficial, with PIs offering additional support and feedback. One ECR noted that these interactions helped fill gaps in support provided by their home institution.

*“I think it was part of the OK, we're following up with the fellows. How are you getting on? Can we help? Can we support? And in that sense that was really helpful to have as I felt that was a bit more limited in the Institute I was at.” (P12)*

Furthermore, ECRs from endemic countries highlighted the particular value of interactions with UK-based PIs, which gave them more confidence in their approaches and the importance of their work. P13 explained that *“when they appreciate our work, it's a kind of... it's a kind of encouragement and bolsters [our] confidence.” (P13)*

However, some participants noted that the frequency of these interactions decreased as the project went on.

*“I think there was a very clear intention to follow up on the research outputs ... and I think this has started very well in the first three years and it was like a little bit after that. The frequency of this kind of interest decayed a little bit.” (P02)*

Participants felt that these interactions were incredibly valuable and when asked what the Network could have done differently multiple ECRs suggested that keeping in contact more regularly would have been very beneficial.

*“I think the major thing that we need is [to be] more [in] touch... for me it was very useful if we have a periodical meeting, for example, one a month [where] we can get in touch. I think for me, I need that.” (P04)*

ECRs consistently framed mentorship as a central part of their experience with the Network and described its importance for their development. Indeed, one ECR was asked whether the mentorship side of the network was as important as the funding and they responded *“100%, 100%.”(P01)*. Another described the benefits of mentorship on their development explaining that *“as a result of all of that mentorship, I gain at least three concrete capabilities... technical autonomy, project management and grant readiness” (P19).*

### *Technical Training and Workshops*

ECRs discussed the training and other development opportunities that were made available to them. Network wide opportunities included workshops (on subjects such as CRISPR, drug discovery, etc.) and research secondments to other institutions. Some participants also had training opportunities within their home institutions.

Workshops were viewed as valuable opportunities by all those who attended them, particularly participants unfamiliar with specific techniques taught in them. One ECR who attended a workshop on the use of CRISPR-Cas9 technology in trypanosomes described it as *“a great experience and a great exposure for all of us, for the people who are not... very familiar with CRISPR technology.”*

Participants also described how workshops reinforced and developed existing knowledge and skills, allowing them to take experimental approaches they are already familiar with and apply them to their research in different ways.

*“We already knew how to do the in vitro assay... but [the trainer] explained each and everything in very detail... it basically caused a very significant effect on our understanding... and made our understanding more strong.” (P17)*

Research secondments were also described as particularly useful. Participants explained that secondments gave them access to different lab equipment and expertise. This allowed them to upskill and learn new techniques which they could then apply to their own work. This increased the quality of their research and enabled them to target higher impact journals. Participants also described how these skills were then transferred back to home institutions, expanding local research capacity.

However, not all participants felt that the training opportunities met their needs. This was in part due to the wide range of disciplines represented within the Network. One ECR explained *“there was a couple [of workshops] that were either very chemistry-based or... more molecular biology based, and it just didn’t coincide well with what I was doing.” (P12).*

Some participants also felt that opportunities weren’t shared equally. One noted that due to an administrative error they were left off an emailing list and therefore didn’t find out about opportunities. These cases were a source of frustration.

### *Soft Skills*

In addition to technical skills ECRs discussed the soft skills they developed. These skills included teamwork, communication, administrative skills, and independence.

Participants felt that developing these was as important as technical skills. Participants who no longer work in parasitology particularly valued the development of these skills as many of them are transferable to their current roles.

Teamwork was described by multiple ECRs as being developed. It was felt by many that collaborative research produced more outputs of a higher quality and that teamwork was essential to ensuring the productivity of such collaborations. Being part of a Network increased the scope of collaborations that ECRs were involved in from those within home institutions to collaborations with both other institutions in the same country and transnational collaborations. International collaborations brought a different aspect to teamwork that many ECRs hadn't experienced before and was one they were keen to develop and continue into the future.

Strong scientific communication skills were seen as essential not only to increase quality of publications, but also to communicate findings at conferences. One ECR from an endemic country described how exposure to an English-speaking audience at one of the Network conferences helped to build their confidence in communicating in a second language.

*"It also helped me get rid of that initial [fear] to ask [questions in English] and it connected me to the English-speaking audience" (P09)*

They then explained that this experience made them realise that it is their research that matters the most when they are discussing their work, rather than trying to sound like a native. Explaining *"you don't require too much knowledge of on this language. It's your science which is the strongest way of delivering your message"*. This confidence helped them secure a position in the United States, demonstrating the impact such skill development can have on career trajectories.

The opportunity to develop lab management and administrative skills was something that many participants had no previous experience of, yet many ECRs welcomed the opportunity to develop these skills as they were seen as an essential part of the process to establish themselves as independent researchers. Network fellowships came with different pots of money that ECRs could apply to. One ECR described their experience applying to these to these smaller grants, explaining it helped develop not just their understanding of how to apply to grants but also develop a better appreciation of how much things cost. This helped them *"with the process of thinking, you know, how do you write a project, how do you get an idea that is feasible to execute? (P11) How much will it cost?"* They noted that such skills helped develop their independence and they explained that *"now feel I can manage my own lab when the time comes" (P11).*

Of these soft skills ECRs felt developing independence, and the confidence that comes with it, was perhaps the most important factor to advancing their careers. As outlined previously, mentorship and supervision arrangements that gave ECRs ownership over their projects were central to this.

### *Funding and Resources*

In addition to skill development, providing funding and resources was vital to capacity building. Participants described multiple benefits from the funding. Without funding from the Network many ECRs would not have had the opportunity to work on NTDs. This was especially true in resource poor endemic settings such as Argentina where grant funding is extremely sparse.

Participants appreciated the travel money, without which they would not have been able to afford the international travel needed to attend conferences and workshops.

*“They provided very flexible travel money. I could attend all the conferences because of this GCRF support and the day the GCRF stopped, my international travel stopped.” (P13)*

Not all ECRs shared this experience, with one explaining that they only had opportunities to attend conferences in their home country and would have liked opportunities for international travel. Many participants noted that they had to return travel money due to the impact of the pandemic and travel restrictions, with many expressing their frustrations that due to lockdown restrictions some of these events weren't able to go ahead.

Participants also noted the impact that the funding had on the quality of their research. Some institutions were able to buy new equipment, such as PCR machines, and funding allowed them to buy more expensive consumables. This expanded local research capacity, helping participants to pursue research ideas. One participant noted that their colleagues were able to access higher impact journals *“because the fellowship [gave] them the consumable money part” (P13)*, which has been beneficial for both the visibility of their research and their careers.

## Collaboration and Networking

### *Importance of Networking*

Participants consistently described Networking as an extremely important and valued part of their experience with the Network. Participants especially valued being connected with peers at a similar career stage, explaining *“because we are in the same stage of our career... you can interact and talk about many other things, we can support each other” (P02)*. Participants were able to share experiences and help each other prepare for

interviews and this was seen as particularly useful: *"I could get input for the preparation of these interviews from my colleagues, and I [could] also share part of my experience with them"* (P02)

Such peer-to-peer interactions gave ECRs confidence, as many felt more comfortable talking to other peers than senior researchers. One ECR described these interactions as *"very enriching, you don't feel so behind sometimes... When you're talking always to researchers above you. It's like, oh, yeah, I will never get to that point"* (P11).

In-person events, such as conferences and workshops, provided extended opportunities for informal discussions that deepened these connections: *"everyone is in the same hotel, so you can chat in the afternoon, chat during dinner time"*. (P07). For some these more informal interactions sparked fresh ideas that led to new research directions.

*"That networking stuff, I think that just gave me different flavour of research ideas and then I was able to use the same tool which I knew before ... to answer different questions in a more innovative way."* (P09)

Through these exchanges, particularly at conferences, participants were able to develop a wider appreciation of NTD research happening both in different disciplines and different countries. One ECR described this as having a *"major impact in my career... to increase my view of what is going on in neglected tropical diseases in different parts of the world."* (P07)

Participants explained how exposure to new perspectives helped them develop and solve problems in their own research. As one reflected, *"you see a need for things. You can't do it how you would have done it yourself, and so you speak to people and try different things that's really where the network came in handy."* (P12).

Exposure to different disciplines also impacted the career directions of some participants. One ECR explained, *"I am actually a chemist and now I'm doing research on biology. So it allowed me to move between areas."* (P11). Participants explained that these moves felt less daunting when they had already established relationships with other researchers in that discipline.

ECRs who were able to attend multiple conferences and workshops felt that such regular interactions gave them *"more chances to like build collaborations because you're in contact and discussing ideas all the time"* (P07).

These experiences were not universally shared, with some participants noting that they didn't *"think we had the opportunity to actively engage with establishing relationships and collaborations with bigger labs"* (P14). Another felt that while there was *"a lot of interaction between the PIs, but there definitely there was not too much between the*

students or postdocs.” (P15). These participants explained that they would have really valued these interactions had they had the opportunity to experience them.

### *International Collaboration*

The Network facilitated international collaborations, offering participants opportunities that many had not previously experienced. For some, this was their “*first exposure to work with all these international groups*” (P13). There was a general view among participants that “*collaborative research is much more productive than working by yourself in your lab or if [it’s] just your students*” (P07). Indeed, one ECR described the “*idea of this networking for different countries [as] genius*” (P15).

Participants felt that the “*Network was a very good place to explore new avenues of synergy because at the end we were receiving funding from the same source*” (P02). Participants described the mutual benefits collaborations brought and it was universally felt that such collaborations were “*good [for] both sides.*” (P01). Participants described how collaborations benefited both sides as by “*putting together people from areas where the funding and the resources are less accessible than in the UK, for example, but they have other resources like access to the clinicians, access to the patient samples*” (P02) researchers were able to both increase the scope of their studies and reduce the limitations.

These collaborations were described as game changing, opening doors to new contacts and opportunities.

*“I have contact with people in Brazil, people in Argentina that we can share papers with, discuss ideas. Also they exchange with GSK or with the team in Durham and York... I never had this kind of opportunity before, so that was for me a big game changer”* (P04).

Participants described how international collaborations broadened ECRs understandings and perspectives with regard to their research area. At conferences ECRs “*had the opportunity to discuss the limitations of each country and handling the diseases and what research need to be done to increase the chances of have better medicine or better diagnostics*” (P07). One ECR based in the UK explained that looking “*towards Latin America and India and Pakistan, it’s been really helpful to understand what they are doing there and how they are working*” (P12). It was felt that understanding local realities was fundamental to developing research that was transferable and would have an impact on those suffering from these diseases.

For some these collaborations that started with the network have continued and they “*still [feel] like being benefited with that connection*” (P06). Many ECRs explained that now they have seen the impact of such collaborations they “*want to continue to do that, get involved*

*in networks and contact people from different parts of the world and have this collaborative research” (P07).*

ECRs based in the UK felt that Durham was the leading partner in the Network, though they acknowledged that while *“Durham was like let's say organising everything, I definitely see like a lot of flexibility from the other like universities for example from Rio” (P01).*

Participants based in endemic countries did not feel that Durham dictated decisions made in the Network and praised the hub system as *“work[ing] really well because they had like regional leaders” (P07).* One ECR based in an endemic country explained that having these regional leads was important as *“some demands and some necessities... [you] only notice if you are in a place ... it's hard [for] people [to] say what we need and it's hard for us here to say what people in India need” (P07).*

When asked what could have been done differently in these collaborations ECRs expressed a wish that other institutions in more isolated regions could be involved. Participants suggested involving institutions from more countries such as Nepal and Bangladesh, explaining that it is harder from them to have these *“kind of collaborations because they're more as isolated” (P07).* It was felt that these institutions would benefit greatly from such collaborations and that this would help develop endemic research capacity.

### *Industrial Partners*

In addition to academic partnerships, the Network also facilitated some opportunities for industry collaboration. A few participants were able to use business engagement vouchers to develop small projects with industry partners: *“I got some of the business engagement vouchers that allowed me to sort of build a mini project with a protein expression company down in Norwich which was also quite nice to be involved in, like building a industry collaboration” (P05).*

While the importance of working with industry partners was widely recognised, ECRs explained that this was dependent on local R&D capabilities. Indeed, one ECR noted that while they would have liked to develop a collaboration with industry *“they don't have a strong industry of research and development here in Brazil” (P07).*

Many participants described the importance of translation research and the role of industry collaborators in developing this. However, many participants equally stressed the importance of basic research describing this as essential.

### *Supportive*

Alongside formal collaborations participants also described the supportive and collegial atmosphere created by the Network. Having *“friendly faces”* at conferences was

reassuring (P01), and peers were described as approachable and generous with their time: *“I don't think there was a person that when I approached that person... said no, you know, it's not interesting. I don't have time”* (P02).

Participants felt that this created an incredible supportive culture within the Network. ECRs particularly valued this as many described embarking on an academic career as slightly daunting, explaining that *“to [be able to] have a chat with the other fellows and to see how their experience is going... to have a peer which you can say, oh, you know, they're doing this here. Is this normal? ... It's good to be able to ask people how it works and what to expect”* (P12).

## Legacy and Barriers to ECR Retention

### *Funding Landscape and Job Insecurity*

Despite the opportunities the Network created, participants emphasised that the broader funding environment for NTDs remained a critical barrier to sustaining research careers in this field. Several described the absence of long-term funding and grant availability as the main reasons they could not continue working on NTDs after the Network ended. As one participant explained, *“I like working with neglected tropical disease... [but] I cannot do it because no one can pay me for that. So yes, unfortunately I can't continue working with this is for now... just because we don't have funding for that”* (P04).

Others also felt the need to follow funding availability rather than passion or expertise. *“Unfortunately, as an academic, you have to go where the money is and the opportunity at the moment is just not really there”* (P15).

Many participants felt the scarcity of funding also made working *“way more stressful. Like I can remember standing by pieces of equipment or opening certain like data files and like having, like, absolute dread. Like, is this going to give a good result? What's going to come back? Is this going to support the story that we're doing? Is it going to help me get this paper out?”* (P05). Without these results and papers, ECRs felt they would not be able to secure further funding. Indeed, one participant noted that this working environment played a role in their decision to leave academia altogether.

Participants also noted the challenges engaging with industrial collaborators. One explained *“it's difficult for them to leverage any money that isn't going to go to a project that's going to directly affect their current portfolio of drugs. And that current portfolio of drugs are normally really expensive things for Western diseases ... finding money that either a government or an industrial collaborator is going to put in that they might never see*

*any financial return on, it's a hard sell*" (P18). Another described the challenges securing funding for NTD research more starkly, simply stating *"nobody cares"* (P15).

Participants had universally poor views of job security with many feeling that *"there is no such thing as job security in universities"* (P14). Participants felt this was true regardless of candidate quality and one explained that they knew *"brilliant people, very hard workers with an excellent CV and they are struggling to find any stable job or career"* (P01). This environment severely impacted ECR retention, *"without the stability of the funding and jobs, it's difficult for people to commit to just doing this research"* (P15).

### Legacy

Participants reflected on the legacy of the Network with both optimism and concern. On one hand, the Network was seen as a powerful demonstration of what could be achieved by bringing together researchers across geographies and disciplines. *"It was a nice picture of the possibility that we have, I think that help us to gain knowledge, tools and capacity to solve problems"* (P04). Similarly, another participant emphasised its success in fostering collaboration between high- and low-income settings describing it as *"a very positive experience of how you can put together people from developed and underdevelopment countries that have a very high incidence of these diseases and how you can benefit from interaction of institutions like York or Durham"* (P04).

However, participants stressed that without follow-on funding the momentum built by the Network risked being lost. As one explained, *"without, like, follow on funding... the legacy in that respect is lessened"* (P05). Another reflected more starkly, *"The network doesn't really impact the funding that is available to work on the disease. So in that sense, I don't think the network... had an impact"* (P12).

Multiple participants explained that their research directions had since shifted away from NTDs. *"We haven't done any NTD stuff and that's not because we don't want to do it. It's just that we haven't really had... the opportunity to do it"* (P18). It was universally agreed that funding, not technical know-how or interest, was the largest barrier to ECR retention and NTD research.

### Discussion

This interview data highlights important aspects of ECRs experience with the NTD Network. Here these findings are contextualised within existing literature, before concluding on the broader implications these have on collaborative networks and NTD research.

One of the most valued aspects of the Network was mentorship with ECRs consistently describing supervisors as supportive and approachable. This provided a balance of both technical guidance and independence that many participants found empowering. The dual emphasis on both support and autonomy resonates with existing studies that highlight quality mentorship as a critical determinant of ECR career development and retention (22). The importance of autonomy as part of the supervisory relationship cannot be understated as it gave participants a sense of ownership over their research; essential for academic progression (23).

Interactions with multiple PIs across institutions was particularly beneficial. ECRs felt exposure to supervisors from a wide range of institutions within the Network broadened their perspectives and opened up professional networks that would have otherwise been inaccessible. ECRs from endemic countries especially valued recognition from UK-based PIs, as this gave them confidence in the importance and quality of their work. However, participants also noted that the frequency of contact with PIs decreased over time. Participants explained that the regular contact was really valued and thought it was a shame that it did not continue consistently through to the end of the project.

Technical training opportunities included workshops and research secondments. These opportunities were essential to both ECR development and local capacity building. Workshops introduced participants to cutting-edge methods such as CRISPR-Cas9 genome editing, which many had no previous experience with. Research secondments to other institutions allowed ECRs to access equipment and expertise unavailable in their home institutions. These experiences enhanced research outputs and in doing so facilitated publication in higher impact journals, essential to career progression (24). Furthermore, these opportunities strengthened institutions as on their return ECRs would pass these skills on to their colleagues.

However, some participants felt that the training available did not align with their disciplinary needs. The range of disciplines represented in the Network inevitably meant that certain workshops were more relevant to some than others. Participants felt that future programmes should try to accommodate and provide opportunities for as many disciplines as possible.

Beyond technical expertise, participants also highlighted the value of soft skill development. Collaborations helped develop teamwork skills, communication, and adaptability. Participants also developed administrative skills, scientific writing, and in some cases grant proposal skills. While these skills are often overlooked in collaborative networks (25), they are essential to a successful academic career (26).

However, not all participants felt they had the chance to develop these skills, particularly grant proposal skills. Some participants felt that in addition to having technical training workshops and seminars it would have been beneficial to have workshops on non-

technical aspects of research such as submitting grant applications. It was felt that in future, networks such as this should move beyond a narrow focus on technical skills to include soft skill development as a formal part of the programme.

Funding provided by the Network was another enabler and included fellowships, travel bursaries, equipment and consumables. Participants described how funding allowed them to undertake research that would have been impossible otherwise. This was particularly true in resource-poor settings such as Argentina where local funding streams are extremely limited. Travel bursaries allowed ECRs to attend international conferences, access training, and establish collaborations, demonstrating how even modest financial support can have an disproportionate impact on career development.

Funding for equipment and consumables was particularly valued in more underfunded institutions as this allowed those ECRs to expand the scope of their projects and conduct greater quality research. In turn, participants were able to target higher impact journals, which described as essential to their career progression. These outcomes show that funding for equipment and consumables should be provided alongside technical skill development as in many cases ECRs already have the skills to conduct impactful research just not the opportunity.

Nonetheless, the broader funding landscape for NTD research was seen as precarious. Participants repeatedly emphasised that short-term funding cycles and limited opportunities made it difficult to remain in this field. Indeed, without stable funding and job opportunities many ECRs had to move into different research areas or leave academia altogether.

The Network facilitated collaborations across geographies and disciplines; these were both formal and informal. Peer-to-peer networking was particularly valued by ECRs as it offered a space for them to share experiences, advice, and build confidence. Informal interactions during conferences and workshops often led to new research ideas and collaborations, demonstrating the importance of in-person engagements in such networks for fostering creativity and trust.

Many participants had never experienced international collaboration and found the experience transformative, exposing them to diverse perspectives and realities. ECRs in HICs developed a better understanding of the challenges faced in endemic regions, which many felt was essential for developing research with real-world impact. For those in LMICs, access to global networks and industry partners expanded opportunities for translational and higher impact research. These findings align with other studies that show how equitable international collaborations can help bridge resource gaps and enhance research outputs (19).

However, not all participants experienced these benefits equally. Some felt opportunities to engage with larger labs or industry partners were limited, though in some cases it was

acknowledged that the COVID-19 pandemic played a role in this. Participants also suggested involving a broader range of institutions, particularly those in isolated or underrepresented regions, as a means to further enhance capacity building as these institutions are often the most in need.

The Network provided a powerful demonstration of what can be achieved through resource-pooling and collaborative research yet despite the many positive outcomes listed above, there was concern about the Networks long term impact. While many participants highlight continuing collaborations and networking opportunities as a result of the relationships developed during the Networks funding period, but many feared that its impact would be short-lived without continued funding. Similarly, others explained that despite the development opportunities they took advantage of during the Network they are no longer working on NTDs due to the funding landscape and the difficulty of accessing grants.

## Study Limitations

It should be noted that the study was conducted in 2025, three years after funding for the Network had concluded. Many participants had completed their work with the Network prior to this, and as a result several struggled to recall precise details about their experiences. While the interviewer had no prior contact with any of the participants, he was associated with the Network's director Professor Paul Denny. It should be acknowledged that this may have influenced participants' responses or perceptions. The interviews and subsequent analysis was conducted by an undergraduate researcher, and this may have influenced the depth and interpretation of the findings.

## Conclusion

To conclude, this study set out to explore the experiences of ECRs with the GCRF NTD Network. The study demonstrates both the role that international research networks can play in developing ECRs and in advancing and accelerating NTD research. By providing mentorship, training, collaboration, and access to resources, the Network empowered ECRs to take ownership of their research and develop their independence. At the same time the findings underscore the impact of the funding landscape and the insecurity of academic career pathways on NTD research. Without systemic change, there is a real risk that these challenges will erode the gains achieved by the Network, leading to attrition of talent from a field already constrained by chronic underinvestment.

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## Conflict of interest

The author(s) declare no conflicts of interest. Although the interviewer was associated with the Network's director, he had no prior contact with any of the participants, and this relationship did not influence the study's design, data collection, analysis, or reporting.

## Ethics Statement

Ethical approval for the study was obtained from the Durham University Ethics Committee. Participation in the study was optional and participants provided consent following receipt of a participant information sheet.

## Availability of data and materials

The datasets generated and analysed during the current study are not publicly available due to maintaining the confidentiality of individual participants. Anonymised data may be available on request.

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