

SUSTAIN programme evaluation, 2015-2021

by

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with

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EXECUTIVE SUMMARY

Background

The Academy of Medical Sciences developed the SUSTAIN programme to enable female researchers to thrive in independent research careers. SUSTAIN provides training and support, primarily through professional development training, mentoring and peer-to-peer coaching. SUSTAIN has supported cohorts of 20-24 researchers each year since 2015, funded by the Academy, MRC and the Royal Society, the RAEng (since 2018) and the Royal College of Physicians (2015-2016). The two central aims of this evaluation were to identify the impact of the SUSTAIN programme on participants to date and make recommendations for enhancing the programme in the future.

The evaluation took a mixed method (quantitative and qualitative) approach. Document analysis provided a baseline of information; questionnaires elicited replies from both participants and mentors, making it possible to aggregate and quantify responses; semi-structured interviews drew out insights and lessons learned. Seven vignettes provide in-depth illustrations of benefits and processes.

Conclusions

Striking Success

The SUSTAIN programme is strikingly successful. It does indeed enhance the ability of participating women to thrive in independent research careers. In spite of their initial high level of accomplishment, as indicated by the selection criterion of holding prestigious research fellowships, the confidence-building and supportive networking provided by the programme have benefitted participants significantly. They have developed increased self-confidence, enhanced focus on strategic approaches to career decisions and resilience in the face of difficult situations. Although intangible, the early impacts of the programme indicate an increased likelihood of later more tangible career advancement and indeed some SUSTAIN participants have already achieved such success. SUSTAIN is clearly targeted appropriately at the critical inflection point at which participants advance towards independent status as researchers and leaders.

A Portfolio of Assets

The strength of the SUSTAIN programme is created by a set of key elements.

The mentorship element is central and is indeed much-appreciated by participants. For the most part the mentoring dimension has led to increased confidence and multiple career insights for mentees, also showing them how they in turn could become effective mentors. Significantly, mentors have also benefited from the experience, with some of them taking that learning into their own groups, departments or universities.

Co-coaching has also provided valuable support and an opportunity to discuss problems, ambitions and successes with external peers.

A significant development has been the rise of supportive networks within cohorts, initiated informally during the residential experience. The value of this is seen in the willingness of participants to trust other members of their cohort with both professional and personal issues even after their year together has finished.

Finally, high-quality professional development training workshops have had a considerable impact, with the benefits to individual participants varying according to the different topics. Across the board, however, participants find the topics appropriate and the targeting to their needs helpful.

Together, these four elements make for a resilient, multi-faceted programme.

Effective Organisation

The success of SUSTAIN as a programme is not accidental. It has been thoughtfully planned and well-organised. It is carefully monitored; for example, trainers are vetted and feedback from participants taken seriously. The overall programme is flexible and adaptable; staff are approachable and have put concerted effort into being responsive to participants' needs, as individuals and more generally. Innovations have been tested and adopted, such as the widely-praised 'speed-matching' of mentors and mentees and triads in co-coaching. Furthermore, the SUSTAIN staff have rallied rapidly during the pandemic, providing thoughtful virtual substitutes for as many of the programme elements as possible and offering individual help and support.

Evaluators' Recommendations for Consideration

Current SUSTAIN

For the current SUSTAIN programme, there are only a few, relatively minor, suggestions for possible enhancements. The principal recommendation is to preserve the key elements of cohort-building/networking; co-coaching; training and mentoring. Bringing individuals together across disciplines and geography, and careful matching and training of mentors and mentees, should continue. SUSTAIN alumnae could be offered opportunities to convene and to explore their next stage of leadership roles. A hybrid delivery model could be employed so that the programme reinstates (when it is safe to do so) residential and in-person interactions, while complementing them with the virtual mechanisms developed for training over the pandemic. An improved website could enhance opportunities for sharing stories, resources and training. A light-touch evaluation approach could track longer-term impacts. The programme should be allowed to evolve, as it continues to be responsive to emerging participant needs and changing contexts.

Increasing the impact of SUSTAIN

Given the positive influences of SUSTAIN on a small number of very fortunate award holders, it is timely to consider the bigger picture and the ways in which the impact of SUSTAIN could be enhanced in terms of addressing the needs of a greater number of individuals and indeed larger challenges, including but not limited to culture change in universities. Mechanisms for spreading the influence of SUSTAIN at various levels could include, for example: training of alumnae to become mentors themselves and to take on broader leadership roles in their institutions; developing a handbook for developers of similar programmes; providing advice to institutional 'spin-outs' as well as opportunities for champions to convene and share good practice; encouraging applications by women at the intersection of other under-represented groups; consultation-based development of a parallel programme for another under-represented group; sharing experience as to 'what works' and contributing to current dialogues leading towards long-term change in the UK's research culture.

INTRODUCTION

Background

Consistent with a core strategic objective to develop talented researchers, the Academy of Medical Sciences developed the SUSTAIN programme to enable female researchers to thrive in independent research careers. In order to help participants progress in realising their potential in terms of leadership and careers, SUSTAIN provides training and support, primarily through professional development training (in various areas), mentoring and peer-to-peer coaching. SUSTAIN has supported cohorts of 20-24 researchers each year since 2015, funded by the Academy, MRC and the Royal Society, the RAEng (since 2018) and the Royal College of Physicians (2015-2016).

Objectives of the Evaluation

The two central aims of this evaluation were to:

1. Identify the impact of the SUSTAIN programme on participants to date
2. Make recommendations for enhancing the programme in the future.

More specific objectives included identifying:

1. 'How the support and training they received might have impacted the participants since taking part'
2. 'How their mentors found the experience of mentoring during the programme'
3. 'Whether the situation for female researchers at this stage has changed significantly since 2015'.

Learning from the evaluation has given rise to a range of recommendations which might be considered for any future iterations of SUSTAIN - any alternative training and support that might be offered; how the impact of the programme on the wider community might be increased; and in what ways other groups of underrepresented researchers might benefit from a similar programme.

Approach and Methods

Approach

In order to be as helpful as possible, this evaluation looked both backward and forward in time, not only conducting rigorous analysis toward an assessment of value to date but also eliciting insights as to good practice which might be useful in the future. A mixed method (quantitative and qualitative) approach was taken. Document analysis provided a baseline of information; questionnaires made it possible to aggregate and quantify responses across-the-board from a number of individuals and identify patterns or interesting differences; semi-structured interviews elicited insights and lessons learned; and vignettes drilled down to provide in-depth illustrations of benefits and processes. Using multiple methods made it possible to 'triangulate' findings; further triangulation was achieved by eliciting different perspectives (e.g. participants from different cohorts and fields; mentors; key staff from the Academy of Medical Sciences/other supporting institutions; individuals with 'overview perspectives' such as Reference Group members).

Methods

Framework of Core Questions

A 'Framework of Core Questions' ensured comprehensive coverage of the questions posed by the brief and also acted as a common 'spine' enabling integration across types of findings.

Document Analysis

Document analysis was framed around relevant questions from the Core Question

Framework. Analysed materials included: databases of participants in the programme and mentors; application details; monitoring surveys; independent evaluation reports on the first three rounds of the programme; relevant websites and webpages.

Questionnaires

Clear, concise and easily completed survey questionnaires were designed to address the Core Questions and elicit input. Comparable but tailored online surveys were sent (*via* SmartSurvey) to 1) participants in the programme (from 2015 – 2021, but not including the cohort launched in March 2021) and 2) mentors. Response rates were one side or the other of two-thirds: 55/88 replies were received from programme participants (a response rate of 62.5%) and 47/66 replies were received from mentors (a response rate of 71.2%). It should be noted that the survey was conducted during the pandemic, which has been widely noted as being particularly burdensome on women, including female academics; it is possible that, at another time, the response rate from participants (female academics) would have been higher. Throughout the report, 'respondent' refers to a survey reply and percentages given for each question are percentages of replies to that question.

Semi-structured Interviews

Semi-structured interview templates were developed from the Framework of Core Questions and remote interviews were conducted with seventeen individuals, gathering a spread of perspectives to ground the analysis. These included: 1) current and past participants from different subject areas and cohorts; 2) mentors; 3) key staff and other individuals with overview understanding.

Vignettes

Drawing upon documents and interviews, seven short, focused vignettes were crafted to illustrate various aspects of the programme. Topics include: diversity; building self-confidence; a group within a cohort; the impact of the pandemic; peer coaching and support; mentoring; and spreading the impact of SUSTAIN.

Integrated Analysis

Following analysis of data arising from each method, integrated analysis used the Framework of Core Questions to draw together the various strands of evidence arising from the different methods and generate this evaluation report.

This report provides findings relevant to the programme's aims and objectives overall, as well as about various programme impacts, key elements such as training and co-coaching, mentoring, and informants' insights regarding future-proofing, broadening the impact of the programme and possible similar programmes. The report finishes with the evaluators' conclusions and recommendations to consider.

FINDINGS: AIMS AND OBJECTIVES

Overview of programme

SUSTAIN aims to provide an innovative programme of training and support to develop the leadership and career potential of its participants. The main elements of the programme are: a series of interactive career development workshops; one-to-one mentoring by a senior researcher; peer coaching and support. The programme is closely monitored and evaluated to assess its impact and inform its development.

Participation in SUSTAIN is confined to female researchers who hold an award or fellowship from one of the programme's funders. Successful applicants are selected randomly after stratification to ensure each funder has the appropriate number of places. The random selection process is set up to assign one third of places to clinical academics, as well as achieving a fair distribution around the UK.

Vignette 1. 'A safe space': Diversity and SUSTAIN

Applications to participate in the SUSTAIN programme have been welcomed regardless of marital status, sexual orientation, age, disability, ethnic origin, or religious belief. It is made clear, however, that this information is not used in the selection of participants but is required to monitor the Academy's activities with respect to the beneficiaries of proposals and awards, and applicants. The aim of the selection process is to achieve a split of about one third of places for clinical academics and two thirds for scientists in other fields, as well as a fair distribution around the UK. Gender is not used in the selection process as SUSTAIN is designed to develop the skills that are important to enable *women* researchers to thrive in their independent research careers.

The feedback collected from the first four cohorts reveal some of the sensitivities and complexity around the issue of gender. Although there were few comments as frank as: 'Include men - we would all benefit!', there was some feeling that a woman-only programme implied that women were leaving the profession 'because we can't hack it' and that the underlying aim of SUSTAIN was to provide the skills needed 'to stay in the game' or 'to catch up with the men'. A more positive view was that, although the skills taught were applicable to both male and female, 'the programme simply wouldn't be the same in a mixed environment'. It was recognised that even successful women researchers could feel 'a little bit isolated' and that there were issues that were more of a problem for women and that women tackle better in a different way.

It was a really nice, safe space to discuss pressures and issues that really only females in academia do face, and I think anyone who says that we don't face different pressures to males is a bit naive, because there is a lot of unconscious bias.

I think it probably benefits from being a women-only programme, I think the relationships are stronger. Honestly, we all got a lot out of being able to moan about stale pale males and childcare worries. Common problems we face about people having attitudes towards what women should be doing at home and at work, and that kind of thing. I just think generally a group of women interact more openly than they do with a mixed group.

I do feel that it brings an opportunity for us to share our insecurities and tips for success faster and more openly. Career breaks are, for example, much more common for females than males - I feel that being able to know others that successfully deal with these different challenges is very useful. The fact that we are all brought together by something similar - female leaders in science - allows to develop a deeper bond with other participants. The only con I find is sometimes it is easy to make discussions about gender when they should be about skills and science.

I think a lot of what was holding me back has been psychological and (unjustified as it may be) I think I would have felt less comfortable sharing some of this with men. And, to be honest, it has meant a lot to be introduced to so many fabulous female peers.

More significant than gender issues to many participants was the diversity offered by mixing women at a similar stage in their careers but from different disciplines and areas of the country and with differing experiences of dealing with similar challenges.

It has formed a network of women all around the country who don't work in your discipline and area, so it makes you feel comfortable telling your problems to each other. They all provide different perspectives and proper concrete help how to move on forward. In a sort of a work environment, a day-to-day environment, you don't want to go and share that sort of problem with your colleagues.

The importance of a network of women in similar situations but with sufficient distance geographically and regarding area of specialisation to offer impartiality ...

Being part of a group of women all at a similar stage but with whom you feel no competition was brilliant.

I think the best thing in the end was the cohort itself, being part of this group of

fascinating women. Everyone has their challenges and no one was shy to share them but at the same time seeing how everyone deals with them so successfully and is a network for support really is invaluable.

Beyond personal relationships, we have gelled as a group - a group where questions can be asked without judgement, where people are supportive of the good and are also happy to help for the bad. I believe SUSTAIN has created a safe space for all of us ... This has happened quite organically.

Enabling female researchers to thrive in independent research careers

Interviewees with overview and/or mentor perspectives regard SUSTAIN as achieving its core aim.

I think it is enabling women to thrive in independent research careers, based on my contact with mentees and people at SUSTAIN meetings and people at my own institution who have gone through it.

There is a strong sense that SUSTAIN is targeted correctly to achieve this aim.

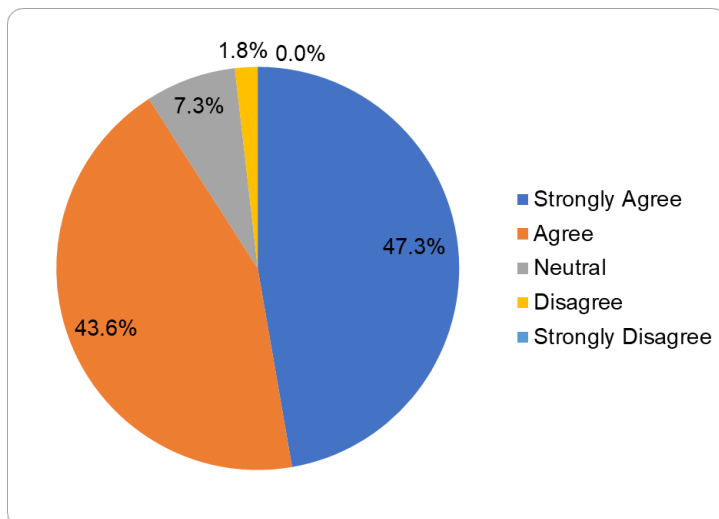
The thing with SUSTAIN - this is a really crucial time in the lives of the individuals. They have put themselves forward to a programme that will be challenging, committing themselves to their careers. It is a very interesting group of people to work with; the programme has a short duration; it is a very important time for them and there is the potential to make a real change.

Participant interviewees were also positive, with one saying, for example:

Thinking about the cohort I was with, they were already quite successful to be eligible for the scheme. In the last few years they have gone on to do great things. I think SUSTAIN probably does help people go on and achieve things, maybe gives us more confidence to go on and gives us skills for independent research.

By far, most participant respondents (90.9%) believe that the SUSTAIN programme has helped (is helping) them to thrive as independent researchers. Four individuals were neutral and just one disagreed.

Figure 1. Participant Survey: The SUSTAIN programme has helped (is helping) me to thrive as an independent researcher. N=55.



Among those participant respondents who replied in free text, it is clear that SUSTAIN is seen as helpful to female researchers as they pursue independent careers.

While I was a SUSTAIN participant, I have consolidated my position in my institution and become permanent. By participating in SUSTAIN, I increased my network and the advice and input I got from people in similar situations. I cannot say that I secured the position only for this, but it definitively helped.

I am a full professor - more confidence

It empowered me to decide to push for my right to apply for promotion, despite being told I couldn't apply because I am on a research contract ... instead of an academic contract. I don't think I would have tried so hard if I hadn't been part of SUSTAIN (empowered by my cohort peers and by things said in the 'Negotiation' workshop). I was successful.

COVID-19 was mentioned as having a negative effect on research and/or career development by several participant respondents. One, for instance, observed:

I participated in SUSTAIN during the COVID pandemic, completely independently to SUSTAIN my career has taken a massive detour.

Others noted that even good advice from mentors and peers could not undo the harm caused by COVID-19.

COVID however has prevented me from making any real moves to advance my career, as I am unable to visit institutions to find a new suitable position. Due to cutbacks there is no opportunity for career progression in my current institution.

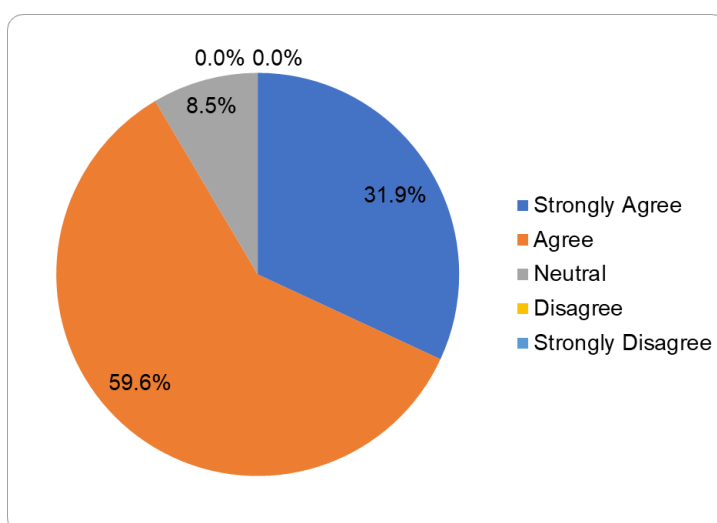
Ironically, given the medical research orientation of many SUSTAIN participants, COVID-19 has actually provided career opportunities for some, with SUSTAIN perhaps giving them the confidence to seize the opportunities. For example,

Advising Parliament on Covid.

The COVID-19 pandemic has caused a shift in my research direction and has enabled much greater visibility for me and my research.

As close observers of career developments, mentors too have seen the SUSTAIN programme help one or more participants thrive as an independent researcher. Nearly all (91.5%) have seen this, with the remaining few respondents neutral, not disagreeing.

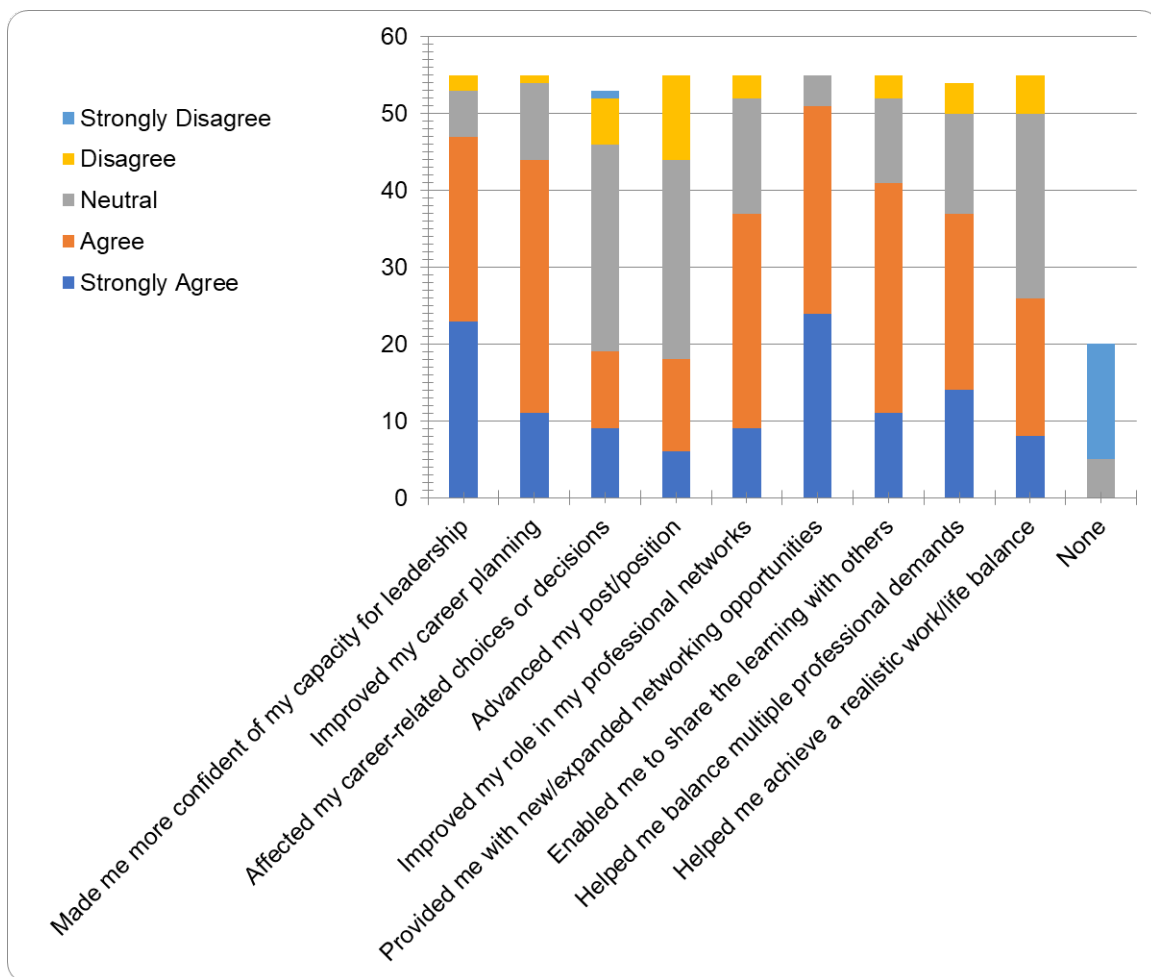
Figure 2. Mentor Survey: I have seen the SUSTAIN programme help one or more participants thrive as an independent researcher. N=47



Participant respondents identified all influences in which the programme did or did not help (is or is not helping) them in achieving an independent research career. The nine possible ways provided in the question were seen by from 32.7% to 92.7% of participant

respondents. With 92.7% of participant respondents selecting it, the most-frequently identified way in which the programme helped was provision of new/expanded networking opportunities. After this, particularly frequently identified forms of help from the programme were: making them more confident of their capacity for leadership (85.5%) and improved career planning (80%). The least-frequently identified forms of help were selected by about a third of participant respondents each: affecting career-related choices or decisions, e.g. moving institutions or not (34.5%, with 6 individuals disagreeing) and advancing their posts/positions (32.7%, with 11 individuals disagreeing). The low proportion noting these significant steps in career advancement is important to note, although it is perhaps due at least in part to the recent status of cohorts, as well as their early career status.

Figure 3. Participant Survey: If relevant, please indicate for each of the influences below your views as to ways in which the programme did or did not help (is or is not helping) you in achieving an independent. N=55.

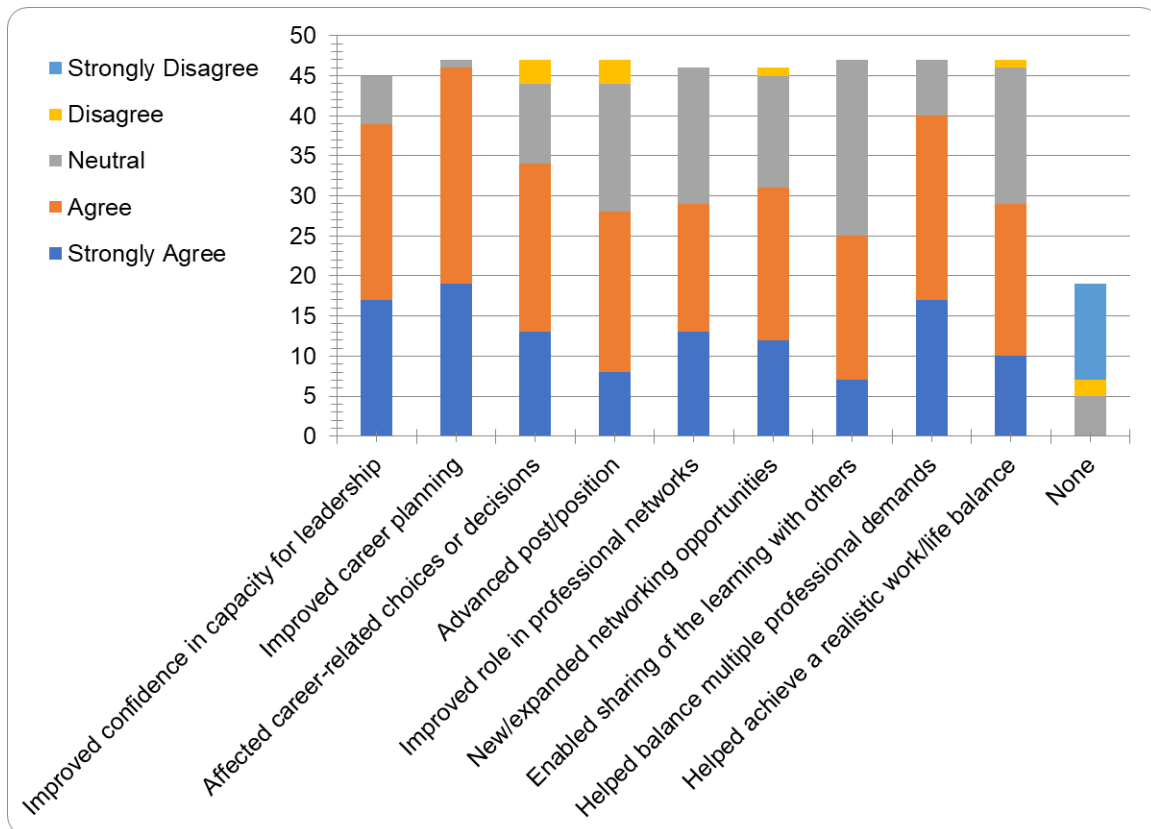


Mentor respondents also identified multiple influences when asked more specifically about ways in which the programme generally has helped participants achieve independent research careers. The nine listed possible ways were seen by from 53% to 97.9% of the mentor respondents. Only a few disagreed with any of the listed possibilities and no one strongly disagreed. Improved career planning was the most universally observed, with all mentor respondents but for one neutral response seeing this (97.9%). The next two most widely seen effects were: help in balancing multiple professional demands (85.1%) and improved confidence in capacity for leadership (83%).

One of the least-often seen ways in which the programme appears to have helped participants achieve independent research careers was the holy grail of 'advanced post/position', although this was still seen by well over half of the mentor respondents (60%)

– a far greater percentage than that of participant respondents (33%). The least-often seen (53%) form of programmatic help was enabling sharing of the learning with others in institutions or networks; many were neutral on this as presumably mentor respondents might not know what the participants did or did not share. In contrast, 74.5% of participant respondents identified this.

Figure 4. Mentor Survey: If relevant, please indicate for each of the influences below your views as to ways in which the programme generally has helped participants achieve independent research careers. N=47



In short, soft skills and intangible changes are important; as one interviewee with an overview perspective described the impact:

'Thriving' is about feeling connected with your own landscape and about feeling confident in your own abilities, at ease with yourself – and I think SUSTAIN does help with all those things.

Indicators

Many of the changes sought by the programme will take years to manifest fully. As one interviewee with an overview perspective exhorted: To evaluate impacts, it is important to look at 'stage-appropriate' indicators, as discussed here.

Indications of the early success of the programme can be found in the feedback from participants on its various elements and in independent evaluation reports on the first three cohorts. Overwhelmingly, participants have found the programme enjoyable, useful and superior to anything offered in their own institutions.

While SUSTAIN cannot take all the credit, some participants offered telling indicators of career success and progress, even including professional moves.

I have been more successful than I could have imagined. I joined my institution with a fellowship and a 9-month baby, with no students or postdocs. I now have a group with 2 postdocs, 5 PhDs, 2 masters students and 3 visiting scientists. I have also secured a

permanent position in another institution.

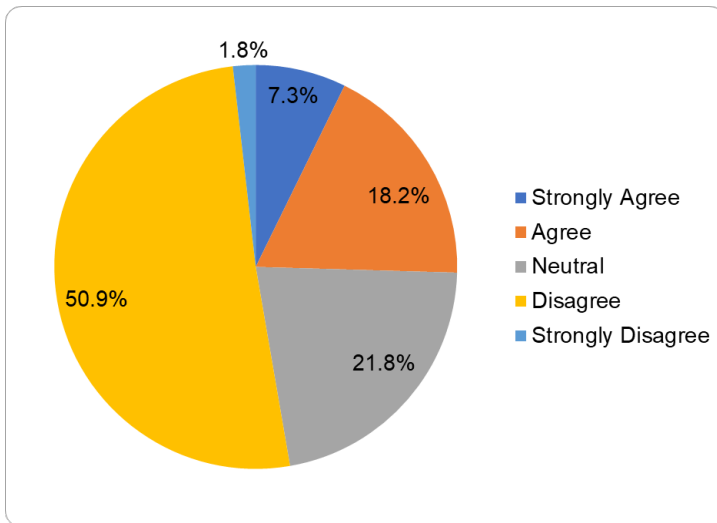
During SUSTAIN I was awarded a personal fellowship and was given a promotion within my institution

I successfully applied for promotion to associate professor. I would not have been confident doing this previously.

Publication output from (university abroad) and new collaborations.

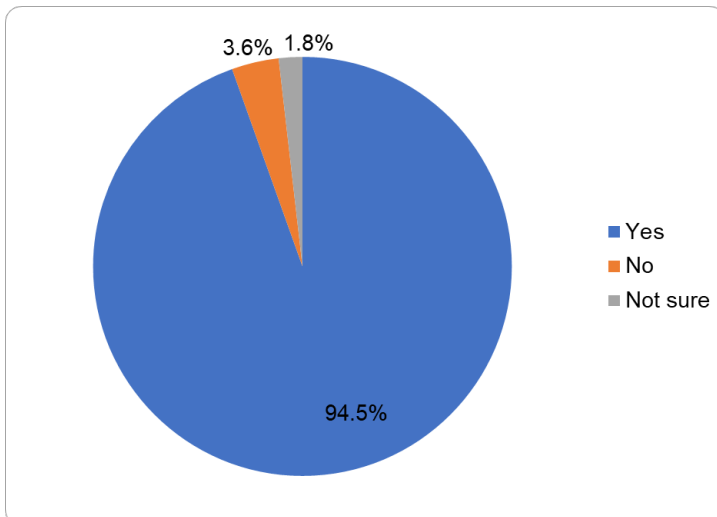
Most participant respondents did not see their career as having turned out differently than they anticipated before participating in SUSTAIN. Only a quarter (25.5%) agreed with this, while over half (53.7%) disagreed, with the rest (21.8%) neutral.

Figure 5. Participant Survey: My career has turned out differently than I anticipated before I participated in SUSTAIN. N=55.



The absence of dramatic career shifts does not appear to be seen as a negative by enthusiastic participant respondents, nearly all of whom (94.5%) have recommended SUSTAIN to other researchers.

Figure 6. Participant Survey: I have recommended SUSTAIN to other researchers. N=55.



FINDINGS: IMPACTS

Impact on careers

Participants were asked in surveys and interviews about impacts on their careers and career decisions, including 'intangible' but important influences.

Some participants felt more 'in control' of their careers, thanks to SUSTAIN.

It put me in the driver's seat of my career.

I feel much more in control of my career than I did before SUSTAIN and have directed my research toward things that I am more interested in rather than leaving it to blind opportunities.

A key impact of SUSTAIN appears to have been in helping participants become able and/or willing to take a strategic approach to their own careers and to the decisions involved.

SUSTAIN has brought a lot of added value to my career, even if perhaps not easily measured with metrics. It has given me the opportunity and tools to think about my career goals and strategies and brought me a support network - which was invaluable to my personal growth as a research leader.

I developed my research vision following SUSTAIN and established how I wanted to run my team.

It gave us good training for career planning, visualising the big picture and how small choices affect it.

Perhaps I was guilty of being a little inward-looking rather than taking a step back and looking at the bigger picture both of my science and the direction of my group, where I want to be and how I want to get there. It is very much a case of me now having a global view of where I want to get.

The process has forced me to think about what I wanted to get out of it; I hadn't thought much about that beforehand. ... And I have been acting on it, for example getting an affiliate position which helped position me and I am actively pursuing a permanent position, hopefully this year.

A key thing that I took away from the training was that 'I' am the project versus the project I am trying to run. It is important to take some time to focus on where I want to be, what I want to achieve, how I will get the support to get there. I never thought of it that way before SUSTAIN.

I think it was a great programme and what I needed at the time. I think the difference was it was a cohort of individuals from different backgrounds, universities, funding streams, all females, and I was physically away from my lab and had time to think about the bigger picture. It is really hard to carve out time to think about the bigger picture, to allow yourself time. SUSTAIN gave me that safe space and time; I think that was really powerful. University training may give me things I need, but not that safe space and time.

Several saw the ability to say no, strategically, as a benefit arising from the programme.

Recognition that not every 'prestigious' invitation is helpful for my career, and that saying no is just as important as saying yes.

Helped me take accept the beneficial opportunities and say no to the less attractive ones.

It increased my focus on what moves my career forwards and increased my power to say no to new projects that are not relevant to my career.

Contributions toward successes

When participant respondents/interviewees spoke of differences made by participating in the SUSTAIN programme, recurrent themes were 'confidence' and 'networking', along with relationship-building.

Confidence

Participant interviewees often linked a sense of self-confidence to an enhanced profile.

We have all been more visible than we would have been, that's for sure. Or at least more heard. A good deal of that is due to the training we got on how to get our message across and part of that is the confidence we developed. We feel 'we have a right to be there and we have a right to have an opinion'.

Participant respondents also cited confidence:

Made me more aware of what I am capable of

I built confidence and saw how other successful women build up their groups/profile.

Enhanced confidence has included willingness to take on roles beyond research *per se*.

I don't think I'd be co-chairing a national network of professionals in my disease area at the moment without the confidence obtained from SUSTAIN. ... Nor would I be planning where and how I want to make moves into senior leadership.

I am doing more policy work, perhaps due to confidence from doing SUSTAIN.

Willingness to 'push' has been strengthened.

Things like promotion have happened quicker and I've learned to push more to achieve those changes.

Thinking about oneself as a 'leader' appears to have been facilitated by SUSTAIN.

It gave me greater confidence in my leadership abilities.

Sometimes SUSTAIN-engendered confidence, or even courage, helped participants find a way out of a bad situation.

I was being badly bullied by my old boss, I couldn't see a way out but SUSTAIN helped me to see that I didn't and shouldn't have to put up with it. It gave me the tools/courage to change my situation

SUSTAIN helped me to regain my confidence in my own abilities when I was in a particularly low period and this helped me to tackle, successfully, the next stage of my career.

Vignette 2. 'I'm more confident I'm doing a good job': An intangible benefit of SUSTAIN

Not all impacts are dramatic or readily visible. Many impacts take time to manifest fully. When considering the ways in which SUSTAIN has addressed its aims in a relatively short timeframe, however, it is already possible to spot a fundamentally important change brought about by the programme: improved self-confidence. This intangible impact, in turn, can form a robust platform for future more visible changes in participants' careers.

In response to Lickert-style survey questions, 85.5% of participant respondents cited 'made me more confident of my capacity for leadership' as a way in which the programme has helped/is helping them in achieving an independent research career.

Furthermore, in participants' free text survey replies, twenty-one individuals, well over a third of the respondents, chose to highlight improved confidence. Positive points about 'confidence' appeared 23 times, with an additional such use of 'confident'. At least two survey respondents connected recent promotions to the self-confidence engendered by SUSTAIN; others have become more active in policy or networks. One, who is now chairing a national professional network, summed up the situation this way:

Confidence and community = opportunities = action = success

Enhanced confidence was described as an important impact – and a contributor to changes in behaviour and thus potential career impacts - during reflective interviews with SUSTAIN participants.

For example, one participant described an important change in their approach:

I do think it has changed my thinking on how to approach the next stage of my career. I definitely think I will be a bit more assertive, in writing and negotiating, in a stronger position now than I was. It has altered the way I look at things, negotiated with my institution and opened my eyes a bit. It is a bit early to say if my career has changed direction but SUSTAIN has definitely changed my approach to what I want to do next and how I will put together my next applications, and balance with other commitments. Historically I thought I had to be given permission to do things; now what has changed is that I need to decide what I want to do, and negotiate for that. I used to ask is it ok if I spend some time here rather than there, now I just say it would be best for me to do x and y, not seeking permission for everything I do. I realised no one is going to tell me so I have to say what works for me. It came from workshops, mentoring, hearing others' stories and realising there is not a single way that works for everyone The confidence to ask for things people are expecting you to ask for.

Another participant described the benefits of the enhanced self-confidence brought about by SUSTAIN, suggesting that this may be especially important for many women:

It's early days yet (regarding impact on career). I think it's more a case of me having the confidence to be just a bit more assertive about what I want and need, whether with my direct seniors or thinking a bit longer-term, about collaborations and things. I have more a sense of self-belief. There is a behaviour change in that I feel more empowered to be more confident in by own abilities and skills. Sounds a bit bolshie doesn't it? Very generally speaking, women in science are a bit more tentative than our male colleagues, we have less self-belief, and often many more balls to juggle - we probably in a very general sense don't put ourselves out there as much as we should. This whole programme gives us that bit of more confidence to do that.

Different participants gave credit for their enhanced confidence to the overall programme and/or to different aspects of the programme, including but not limited to: the validation of having a very senior mentor devoting time to them; developing an array of new skills; realising they were not alone in their battles and being supported by their cohort.

We have all (In the cohort) gained confidence from knowing - 'it is not just us'. Sharing doubts and strategies for dealing with them has been really helpful, almost more than anything else.

SUSTAIN really helped me make that transition (from postdoc to leading a team), providing me with skills I need for leadership, even time management, thinking about my own career, where the lab was going - those soft skills were really useful; they gave me the confidence to do my job better.

There was a session where we met everyone (prospective mentors); I remember thinking they had some amazing people. These are really busy, well-respected academics volunteering their time. I was grateful, it was a little humbling. They must think we are worth mentoring! That made me think SUSTAIN ... is well respected and that made me feel, 'these people are willing to mentor us - they must think there is something worth mentoring there'; that helped my confidence. It was a good confidence builder.

In short, the causal link between confidence and moving ahead professionally was captured pithily in interviews:

With women, it is more of a personal confidence thing. I feel better equipped so that helps my confidence so I feel more like putting myself forward for things.

It boosts your confidence to just 'go for it'.

Networking

Through survey free text and interviews, participants made clear the importance of networking – most often in a deeper sense than ‘making contacts’ but rather relationship-building and mutual support. The sense of forming strong bonds across a cohort comes

through repeatedly.

Networking with other SUSTAIN members has been great and we have collectively helped to promote and support each other.

The network of like-minded peers has hugely helped inspire career progression and tackle the anticipated challenges in a different way.

I think the main impact has been getting to know my fellow SUSTAIN members and getting their advice and support and networking through getting to know their networks.

One participant interviewee reflected on the importance of this, particularly within the context of competitive academia.

Academia can be very lonely because it is so competitive and so many rewards and recognitions are at the individual level. As a woman, you see less representation at top levels, which leads you to think 'this is not a path for me' but all of a sudden being in a room with women at a similar level, going through similar experiences gives you a feeling of community. There is nothing wrong with you if you are having difficulties. A safe space to share difficulties is also good. It is not just the informal conversations at the time, although those are very important. But also there is a very active WhatsApp group. ... This level of support and encouragement you give each other is invaluable and intangible.

Another participant interviewee described with some surprise the depth of the trust established, as manifested through an ongoing, candid WhatsApp group.

From the very beginning, we had a WhatsApp group of all who wanted to be part; a vast majority of my cohort is on it. Initially, it was more about social aspects but now it is almost a database of knowledge. You talk to a group as if it was to one person. The way we use it - sometimes we post something, for instance if someone gets a prize, we all say congratulations. Sometimes we ask questions – you don't know who you are asking but you just post the question and trust the platform that someone will come back to you. ... That is quite telling about the SUSTAIN programme – I haven't seen another one where people would ask for advice, guidance or views. As a group there is that trust that goes beyond personal relationships.

One participant respondent distinguished between the importance of the network built through SUSTAIN and impact on career progression *per se*.

The greatest impact was the network of people I met, however this hasn't had significant impact on my career progression.

More typically, a participant interviewee cites the cohort as empowering:

The sessions are fantastic, run by brilliant very inspirational people but the most important thing is the peer group and empowering each other, sharing experiences, doubts and understanding that we are all in the same boat. Finding ways to work things out just within the peer group has been fabulously helpful.

There appears to be a 'reassuring' nature to the cohort, such that others' successes are celebrated rather than being seen as competitive.

It was really nice to see others in the cohort have success; they're doing well and that is really motivating me to keep going. It is not all doom and gloom. In academia, you get more rejections than acceptances; seeing other people be successful reminds you to keep at it and you will be successful. That was really powerful. With a cohort you are invested in other people's careers; when they succeed you feel you will be okay.

Networking and confidence-building can be closely linked. For example:

(It is) too early to be able to measure actual outputs, but SUSTAIN has provided a network of like-minded people who are largely dealing with the same issues as me - this is immensely valuable in knowing it's 'not just me' and empowering me to be more authoritative and bolder in my day-to-day and longer term career planning.

One participant respondent noted as a key impact a 're-kindling' of their career motivation.

The course helped to re-ignite my passion for research and to reinforce all reasons why I want to continue in this profession.

Participation in the SUSTAIN programme appears to have contributed to some participants ability to achieve an improved work-life balance.

The greatest impact SUSTAIN has had on me is in enabling me to achieve a good work-life balance.

The SUSTAIN programme gave me the confidence to keep pushing forwards. It made me appreciate that having a happy family and a career in science are not mutually exclusive.

I have learned to drop some of the 'shiny balls' before taking a new one which has helped with work life balance.

Vignette 3. Enduring Friendship and Support: A group within a cohort

A common theme running throughout this evaluation is the immense value conferred by belonging to a cohort's 'community'. Candid sharing of issues, commonalities, mutual support and relationship-building are all seen as outstanding benefits of SUSTAIN.

A particularly telling example is that of a 'group within a cohort'. Four women in the first, pilot round of SUSTAIN formed a strong bond as a group during their year – and are still supporting each other over five years later.

The four specialise in different fields, have different professional roles and live in different places:

- Dr Li Chan is Reader in Molecular Endocrinology and Metabolism/Honorary Consultant in Paediatric Endocrinology, QMUL, London
- Dr Sandra McAllister is a clinician with the NHS - Consultant Plastic Surgeon, Belfast
- Dr Soma Meran is a Clinical Senior Lecturer in Nephrology, School of Medicine Cardiff University and Head of the [Wales Kidney Research Unit in Cardiff](#), with an honorary consultant post
- Dr Zania Stamataki is a Senior Lecturer in Viral Immunology, Institute of Immunology and Immunotherapy, University of Birmingham

The group volunteered to be interviewed together and it was clear from their dynamic that they are mutually supportive and, genuinely, friends.

The initial residential experience was very important for them.

The residential experience was important in creating that sense of a group. It is essential to have enough time to develop trust. And not being with your children! If you had children with you, you couldn't concentrate on the day. It is really good. Also, we were told we were not allowed to check emails; we were supposed to be in the moment and focused on the people around you. It helped develop better reflection. ... And the hotel stay was the only full night's sleep for a lot of us!

For the whole cohort, the unusual diversity facilitated the finding of commonalities, with objectivity and trust.

There are not many forums where we could have got together, coming from different backgrounds and with different personalities. But we found we were facing the same sorts of problems; it brought us together.

One thing that was really useful: we were all from different universities, we were not in each other's networks. We could advise each other in situations where there was no conflict of interest, on issues like going for promotion or difficult personalities. We have had really honest advice for each other, not hampered by personal involvement.

The four reminisced about how, during the first phase of their SUSTAIN year, they had

first found that they 'gelled'. When asked why they had stuck together, they laughed:

We found commonalities; we are all weird in a different way.

One catalyst was exploring common issues of being academics and mothers by setting up a WhatsApp 'splinter group' sharing the challenges of being Mothers in Science in 2016.

We then set up a Twitter account to represent academic mothers. We wanted a voice in and an examination of being academic mothers. We started tweeting on this group, all four of us. That was a trigger and each having two children of similar ages. Li had a baby during the programme - 'our SUSTAIN baby'.

Since SUSTAIN, the group has stayed together.

What is good – we've kept those links as a group. We support each other, us four in particular. We also try to link out somewhat to the others in the cohort, congratulating someone when they achieve something, and supporting each other through rejections. In our closer group, we are still mentally close even though geographically separate.

The four have clearly built trust; they sincerely support each other.

Regarding our advice for each other: our motivations, especially the four of us, in giving advice is based on the fact that what we had at heart was the interest of the one of our group we are dealing with. Our person was 'our person' – and it was others who were the problem. It has been a safe space for a lot of ventilation and just an echo chamber – for instance, asking 'if I say this, does it sound stupid', trying things out.

One member of the group has been supported through career setbacks:

I cannot overemphasise the support and encouragement and positive benefit. ...In SUSTAIN others were struggling with the same things I was and enjoying the things I do. It was a safe space. ... I cannot over-estimate the need for people with a commonality of experience that I can talk to.

Gratitude for the support arising from the SUSTAIN programme is accompanied by a strong sense of 'paying it forward'. One member of the group observed:

We have a sense of duty. Women do not champion each other enough; we need to pay it forward. All of us took that to heart – a sense of duty for making things work for science so that it is better for the next generations.

And another member of the group followed that comment with:

I try to support junior women coming along in the same way as SUSTAIN and my SUSTAIN colleagues support me.

Talking with the group made it clear that the four respect and trust each other, and that they enjoy each other's company. During the interview, they mentioned having spent a recent zoom Friday evening together and decided that they needed to repeat the experience soon!

FINDINGS: THE KEY ELEMENTS

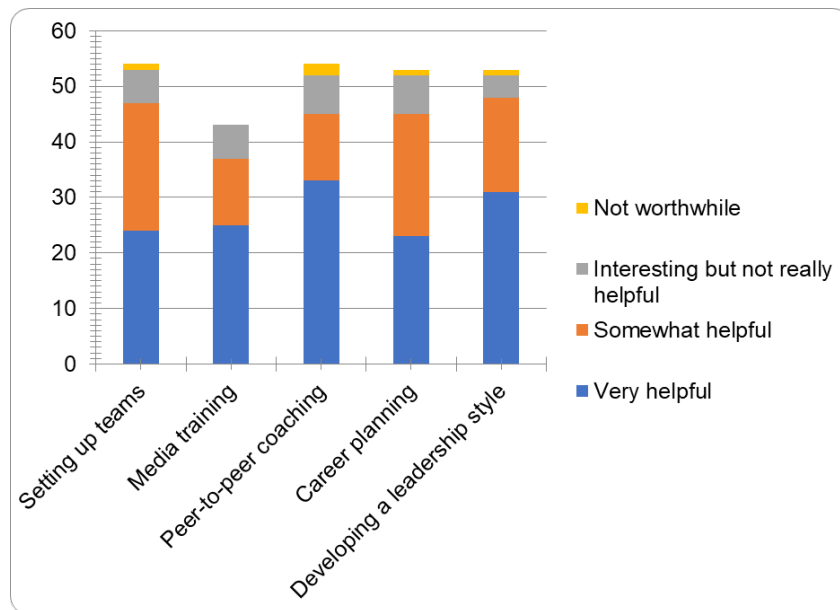
Professional development training

Professional development training is delivered in an introductory residential workshop, followed by two one-day workshops. Each session is tailored to support attendees through the challenges of combining research, teaching, clinical practice and caring responsibilities. Initially topics covered in the workshops included defining a research niche, publishing strategically, developing a leadership style, and finding a work-life balance. In response to participant suggestions, other topics, such as time management, negotiating skills, media training and setting up a successful team were added. Feedback from the first three cohorts found that participants considered the training to be of very high quality, and much superior to courses offered by their institutions. Although responses to individual workshops varied according to the careers stage and experience of the participants, all found the depth and

holistic approach of SUSTAIN to training particularly useful.

In this current evaluation, participant respondents were asked to indicate the degree to which they had found various elements of professional development training helpful (Very helpful, Somewhat helpful, Interesting but not really helpful, Not worthwhile). Noticeably, two elements received the highest number of Very helpful indications: Peer-to-peer coaching (60%, 33 individuals) and Developing a leadership style (56.4%, 31 individuals). However, when Very helpful and Somewhat helpful indications are combined, all but one of the elements were seen as such by between 81.8% and 87.3%. (The remaining element, Media Training, was still seen as Very or Somewhat helpful by about two-thirds or 67.3% of the participant respondents.)

Figure 7. Participant Survey: Please indicate the degree to which you found each of the following professional development training elements to be helpful. N=55.



Free text survey responses from participant respondents also show that training elements were well-regarded, in terms of impact on careers. For instance, in replying about the greatest impact of SUSTAIN, one participant respondent observed:

It was just a very high-quality training course, absolutely excellent in level, aims and professionalism.

A participant interviewee described how the training continues to be useful:

All the training gave us things we could take away almost like a toolkit and use straight away. ... Once I was back to the lab, I was on the go all the time, but knowing I had something I could use straightaway was really powerful ... I think I am still doing things now and still trying to implement things I learned in SUSTAIN. When I find something isn't working and I am trying to think how to handle it, I often find myself looking back at my SUSTAIN notes.

Another participant interviewee valued the mental framework provided for her future reflections:

It was not so much that I've learned something new, as everything discussed is common sense but it has given me a really good framework for how to think about these things ... so that going forward I can check on myself.

A difference between the 'curated' offerings from SUSTAIN and the miscellaneous options for training within a university was highlighted by a participant interviewee.

SUSTAIN ... is a programme that says ' here are the things we think you need training in and here it is'. Whereas at the university, you pick. Before I did the training I wouldn't

have been able to put my finger on what I needed or what it is called. ... (With SUSTAIN) you know what the training is that you need and you have the confidence to ask for it.

Some participant respondents linked soft skills to confidence and to overall career benefit.

Equipping me with increased 'soft' skills to perform better in my career

Huge benefit in terms of quality of training on research funding, presentation skills and career development. This has helped me to become only the second female Consultant in my department, as well as to be the regional clinical lead for my subspecialty interest. I have also used these skills to supervise trainees' research projects, and am developing a clinical research strategy for the department.

Media training was often cited, often with an acknowledgement that the participant had not expected it to be as useful as it has turned out to be. One participant interviewee, who had been 'really out of her comfort zone' said that the media training makes her more confident agreeing to talk about her work. Another participant interviewee highlighted the media training and follow-up through the Science Media Centre, saying that her involvement with media and public engagement had been noticed and made her known within her university. Another participant interviewee makes use of presentation skills, beyond research.

Media training and presentation skills have been very important, particularly because I am often the only female in the room. I chair a group that I would never have done without SUSTAIN.

One participant respondent observed that the greatest impact of SUSTAIN was in the realm of leadership, that it helped round her as a PI, not just a scientist. Participant interviewees valued the targeted nature of the training:

The leadership training was great. Every time I have joined a programme there has been leadership training, but this was more targeted. The teachers were more able to admit that women lead differently.

There were definitely some lessons I learned and realising how many things I have to say no to. I tell people about that - that idea of prioritisation and what to get rid of. ... I am gradually divesting myself of some things.

Some participant respondents highlighted particular skills, as well as the professional confidence they conferred.

It gave me a lot of confidence in myself plus some useful skills (interview skills I think were most strikingly improved).

It gave us good training in leadership skills.

Several participants highlighted the value of negotiating skills in navigating steps in career progression. One contested a ruling that she was not eligible for promotion and succeeded in being promoted to a reader, at the same time creating a new pathway for others on research contracts. She was in part inspired by a session on negotiating with power and also consulted with her SUSTAIN 'comrades'. She said that if she had not been part of SUSTAIN, she didn't think she would have had the confidence to go for it.

An interesting point is the surprise that some established mentors felt at the need that exists for the various sorts of help provided by the programme. One mentor interviewee captured this surprise while also praising key dimensions of SUSTAIN:

The participants appreciated the practical hands-on advice they could use. I was really shocked by how necessary it was. They all came from good institutions that talk the talk but do not walk the walk. ... Whereas before, in other programmes, the emphasis was on mentoring, SUSTAIN had the added dimension across mentees. That is one of the most striking aspects of the programme. When I talked with mentees, what they found particularly useful was the formal training aspects – recruitment, managing teams, managing difficult staff issues – that was a big surprise to me. I had been slightly sceptical as to if that was necessary. Also, being in a safe independent environment where they could ask questions, of peers with shared experiences but not in the same

institution, was incredibly useful. They told me they had felt isolated, that they were the only person struggling with their issues, but that was clearly not the case.

The pandemic has had multiple influences on participants' lives, including changing the way in which the training elements could be delivered. One cohort experienced the residential experience just before lockdown with subsequent elements delivered remotely, and the most recent cohort is participating entirely remotely. While appreciating both the inevitability of the switch to remote training and the willingness of staff to organise that switch, participants regretted the absence of in-person events, particularly those who did not have the initial residential experience. It was noted, however, that some of the individual elements of training worked very well remotely, with a certain added convenience for busy individuals. In the future, there is clearly potential for a hybrid approach.

Vignette 4. 'If it wasn't for COVID-19 ...': The impact of the pandemic on SUSTAIN

The impact of COVID-19 on participants in the SUSTAIN programme and the response of the SUSTAIN team to the challenges presented by the pandemic reveal remarkable resilience and resourcefulness. COVID-19 took effect rapidly in the weeks preceding the collection of data for the final evaluation report on SUSTAIN 3. Several participants expressed concerns regarding how the virus was affecting their work and longer term careers, although the support network provided by SUSTAIN was helping to mitigate this to some extent.

I am finding it hard to balance both work and home with kids, but knowing that others are also struggling and I am not alone in this, makes me feel much better. I have also got lots of useful tips as to how better to manage my time.

If it wasn't for COVID-19, I was feeling better about my career after this year of SUSTAIN. Being part of this cohort has made me feel empowered, supported, and the training I have received has had direct applications in my daily work.

After the launch of SUSTAIN 4 in early March 2020, all activities went online. Surveys of participants in June and September 2020 and January 2021 reveal varying progress with mentoring and co-coaching. In some cases, the mentoring relationship flourished even online and was providing much needed support.

We are both enjoying our meetings hugely and I find them very useful and look forward to them.

Monthly video chats are much appreciated and very supportive. Discussions are quite informal without a pre-arranged agenda but I think this suits us both.

In others, however, there were difficulties with arranging meetings and establishing rapport:

My mentor is excellent, however, as COVID-19 has increased my workload, I don't have as much time to meet as I would like.

It's hard to find the time (we both have young children) and building the relationship organically has been hard.

The situation was also mixed with regard to co-coaching: some triads had failed to get going at all, while others were flourishing. Although sometimes it had proved difficult to conduct formal co-coaching online, there was considerable enthusiasm for the reassurance offered by informal meetings, occasionally (and especially) even face to face ones.

Due to the current circumstances, we have not started our co-coaching sessions. Personally, I hope to be able to commit to co-coaching sessions when everything returns to a more 'normal' situation (i.e. for example when I can organise for my toddler to go back to nursery).

I don't think any of us have the band-width to coach each other at the moment. So we

Speak from time to time just to say hello.

We have only met once because we have struggled a bit with competing activities and deadlines, etc. However, I've found the triad really helpful so far. They're very nice people and we all have different backgrounds and experiences. The chats (initially in March and recently on Zoom, plus on email) have been very enjoyable and a great way to reflect on work.

After consultation with participants on the form it should take, an online workshop, divided into two half day sessions, was arranged for September 2020. Most of those who were able to attend found the sessions very useful.

Team management and leadership are two of the most challenging aspects of becoming independent so thank you very much for providing this training for us.

The workshops addressed many areas that I was unsure about or hadn't thought about in terms of research leadership. I found the breakout sessions really useful and interactive, and it was fantastic to have the opportunity to discuss all of the areas that were introduced.

I think they were really fantastic considering they were delivered online.

I would have enjoyed them even more if they had taken place in person of course, but at least like this some time was saved.

I can't think of a better way to have run it online. Face to face would have been easier for the discussions but of course that is not possible. It was really nice to have it run over two sessions actually - could fit other work around, didn't have to travel and therefore arrange childcare, but could focus on the workshop.

Splitting the course into two sessions worked really well - discussions didn't tire and the learning curve was great throughout both sessions.

An online networking session was organised in November 2020. Few appeared to have attended due to time and diary constraints but those who did appreciated the fact that it was pretty unstructured and an opportunity just to catch up in small groups.

The support offered by the SUSTAIN team in the form of newsletters, webinars, e-mail updates and check in phone calls was greatly appreciated.

The webinars you are currently organising, e.g. on Time Management, are a great idea and very useful. Even if I am not able to attend them live, I value the fact that the recordings are made available for later viewing.

I've found the monthly newsletter and resources that come along with it useful and it's good to have some contact from the Academy - to remind me that there are others in a similar position and that institutions like the Academy are aware of the difficulties we are currently facing.

Being able to reach out to ask for advice and make suggestions, and being so highly encouraged to do so, is the best support in my opinion.

The cohort of SUSTAIN and the contact we have with you every so often is extremely valuable at the moment. I feel lucky to be part of it.

It was clearly felt that the SUSTAIN team had responded well to the challenges posed by the pandemic and that there were some advantages to delivery of the programme online in terms of saving time on travel and the need to arrange childcare. However many participants missed face to face contact with their mentors and with each other at workshops and other events.

Co-coaching

Interviewees often highlighted the importance of co-coaching or peer-coaching within the programme. Different from the mentoring element, it offers the opportunity to share experiences with others going through the same stage and potentially the same issues.

Comments from interviewees with an overview perspective included observations on how well this element appeared to work:

One of the most striking things was the peer to peer support, which was more of a success than expected.

Key messages from participants seem to be the importance of: peer to peer support; the fact that they are not alone; and that they could take learning and tips from the SUSTAIN programme and apply them to their own careers. One thing that seems very valuable is the peer to peer mentoring, as well as mentoring by more established people.

Vignette 5. 'Three is a good number': Peer Coaching and Support

Co-coaching was introduced at the start of the programme to complement one-to-one mentoring and contribute to building a peer support network. The feedback collected and the independent evaluations conducted over the first four cohorts show how co-coaching evolved and developed into a valued part of the SUSTAIN programme. During the residential experience at the beginning of the programme participants were matched into pairs by a process of 'speed-dating' to 'enable ongoing peer support and discussion of issues/challenges faced during the year'. Participants were given some training in coaching and pairs were expected meet regularly and to participate in small group work at each workshop 'to embed and make learning practical'.

Feedback initially suggested a mixed reaction to peer-coaching by the first cohort. Some participants reported very productive relationships:

I found the co-coaching to be very useful, even when acting as coach you can benefit from the session in terms of similar experiences, etc.

The peer coaching relationship was good. It was supportive and offering help when needed. It feels more like friends who are able to help talk through work problems rather than peer coaching colleagues.

In other cases, peer-coaching appeared to be less successful than mentoring.

Somehow the peer-coaching didn't work for us - possibly because the difference in fields was too much.

I didn't feel that we knew how to do this 'properly'. I met with my co[peer]-coach a couple of times, but just for a general chat about our research, work-life balance, etc. This was nice, but once per month would have been far too often for me. I don't think either of us felt qualified to really 'coach' each other, and we also struggled to think of specific problems to discuss.

On reflection, I got a lot out of it, but it didn't necessarily feel like it at the time. I guess it felt a bit artificial in that we just ended up catching up (which was still valuable) rather than necessarily targeting an issue. I guess it could have done with a bit more structure to it. I know we learned the structure in the residential, but we pretty much forgot all that after we left for when we met up the next time.

Questions were raised about the use of 'speed-dating' to match peer-coaches; some felt it was too early to make judgements and suitable matches could easily have been made based on geography, career stage and background. Rather than risk hurt feelings by taking formal steps to resolve unsuccessful pairings, participants tended to approach other members of the cohort:

We just happened to chat, we both realised we were in a similar position [a non-functioning peer-coach pair] and she had information that she passed on to me which helped me, and I had information that I passed on to her which helped her I think, and we kind of almost co[peer]-coached each other.

In response to the mixed success of pairing, triads were introduced for the third cohort:

I think three is pretty ideal ... It's good from the point of view that, it's not too many, everybody still has a chance to talk and say their bit, and we just rotate who gets to

discuss an issue, who will be the main focus of that meeting.

Three is a good number I think. Not too intense (as it would be with two) and allows some time for listening, without being too diluted (as it would be with four), but it probably depends on personalities.

Three people really worked for us because you get two different people's input, which means coaching is more productive.

Having the three has helped in terms of the depth of experience between us and the way we handle certain situations. It was kind of a pond of more experience between the three of us than there would have perhaps been between two.

Difficulties in finding time and co-ordinating diaries for peer coaching sessions were compounded for the fourth cohort by the advent of COVID-19. Even if formal peer coaching was difficult to arrange, the support available online from other members of the cohort proved to be invaluable.

It's great to be able to check in with my co-coaching triad in particular and talk about the difficulties and challenges we are all facing.

I have found our remote sessions very uplifting and rewarding during lockdown, and feel very grateful for this support and friendship network.

FINDINGS: MENTORING

A central part of the programme is one-to-one mentoring by a senior researcher in the AMS mentoring scheme. Mentors and mentees are carefully matched after they 'rate' each other on the basis of pen portraits and short discussions in groups of four at a 'speed meet' event which takes place at the launch of the programme. Bespoke training on how to get the most out of mentoring is provided to both mentors and mentees and they are expected to meet four to six times during the year. Feedback collected from the first four cohorts in the course of independent evaluation indicates the success of the matching process and deep appreciation of the support and advice provided by the mentors.

Matching

Mentors and mentees might or might not 'click' – much can depend on personalities. As a way of addressing this, the 'speed meets' met with widespread approval, despite an initial uncertainty on the part of some mentors. One mentor interviewee commented *I was pretty nervous, as was every other mentor in the room*, while another observed:

I do like that matchmaking; it works really well - even though it completely wrongfooted me when someone asked me 'what would your superpower be?!'

An interesting view into the human dimension of the speed matching was offered by a participant interviewee who then went on to have a very positive mentoring experience:

The speed dating was a bit intense, but you could see how they acted in other ... you could see the kindness.

While opinions vary on the nature of the optimal 'match' between mentor and mentee, with some mentees looking for insights or contacts from within their field but others valuing a distanced objectivity, most would probably agree with this mentor respondent:

It can be transformative and is really enjoyable for both mentor and mentee; mentors can make a major difference just by listening; there is no need for specialist expertise - a strong personal relationship is more important. The light touch mentee-lead approach works well.

A mentor interviewee acknowledged that some mentees would want to choose a mentor in a similar field or career path, e.g., that of a physician scientist.

As a really experienced mentor, I think that some of these preconceptions are not important - but matches are driven by the comfort of the mentee.

A different mentor interviewee was even more emphatic about leaving a professional distance between mentor and mentee:

One of the things we need to avoid in mentoring is going with people we think are going to advance our careers. That is more 'coaching'; there would be a need to contact and talk with them on that basis. I would feel a certain conflict of interest if I were trying to advance the career of a mentee.

Another variable is that of expectations for contact. Mentors often described differences between mentees as to how frequently and for what reasons they wished to meet. Some mentor/mentee relationships stopped at or before the end of the year; others have been more long-lasting. Recommending that the programme should have a good hard think about longer-term mentorship, a mentor interviewee observed

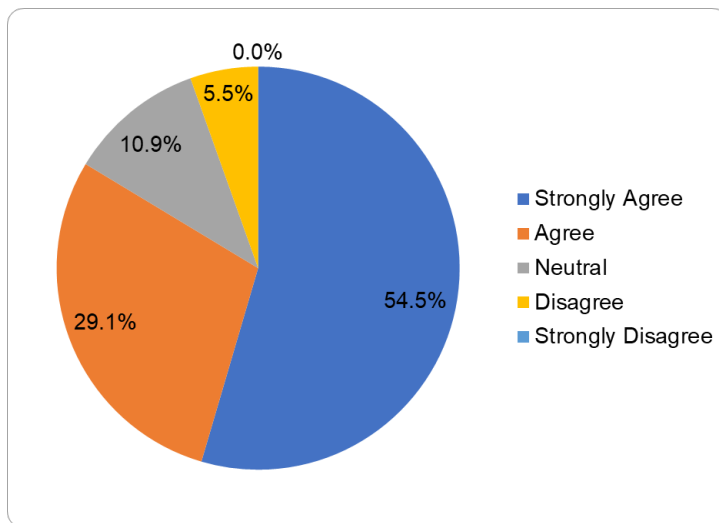
You don't mentor for a year then everyone reaches a sunny meadow where everything is rosy.

Reflections by participants

Value of mentoring

Participant respondents demonstrated a strong appreciation for interactions with mentors. Over half (54.5%) Strongly Agreed that interactions with their mentors were helpful, and a further near-third (29.1%) Agreed, such that, with those combined, 83.6% found interactions with their mentors helpful. Some of the remainder were Neutral (10.9%) and just 5.5% or 3 individuals Disagreed.

Figure 8. Participant Survey: I found my interactions with my mentor to be helpful. N=55



Participant respondents were offered the opportunity to provide a brief example of when mentoring proved particularly valuable OR when they were disappointed by the experience. A great many offered positive examples of valuable experiences with mentoring. At times, mentoring was cited by participant respondents in replying to an open question about the greatest impact of SUSTAIN on their careers/successes. For example:

The peer mentoring and mentoring programmes have had the greatest impact on my career – both have been incredibly useful.

No tangible impacts yet – but I have found mentoring scheme extremely useful.

An excellent mentoring match, which has come at a time when I am managing a recently-expanded research group – has enabled really valuable advice and chance for reflection

Vignette 6. Contributions of Mentoring through the eyes of mentees

Many examples provided by participants included the mentor contributing by being supportive, giving useful advice and instilling in the mentee confidence and/or a sense of self-worth.

I had a brilliant experience with my mentor and genuinely never had a disappointing experience - we are still in contact after the end of SUSTAIN.

I still use the notes from our meetings; he provided lots of insights that were useful

My mentor was incredible. She made me see my worth and when others in my institution were not recognising or appreciating that.

Some participant respondents cited quite specific points of advice or help:

My mentor was able to provide me with advice on which institutions I should consider moving to and who to contact in those Institutions. Without that advice, I felt lost. As my mentor has been on grant review panels, she has been able to provide advice on what they look for and important things to include in my grant applications.

We had a very pragmatic discussion about funding options, with my mentor suggesting some very good options I hadn't previously considered, and together we set some tangible goals with clear timelines.

My mentor gave me some extremely helpful advice on setting up a lab for the first time and managing laboratory staff.

Encouragement from my mentor to travel abroad which I had thought was not possible but with encouragement organised and was in (a university abroad) for six months which was transformative to my mindset and career.

Clearly, a key role of mentors has been to provide help at critical inflection points when mentees had to make career decisions.

I turned to my mentor multiple times throughout critical career decision phases even after the end of the SUSTAIN program which was invaluable. He had a high-level balanced view of the academic landscape in the UK and was clearly supportive of my career and helping me come to a decision on my own.

Support for applying to an associate professor post at another institution and then negotiating this post with my current institution.

Assistance in focusing strategically was frequently cited as a way in which a mentor added value to careers.

It's great to have an external person thinking along with you where your career is headed, including advice where to focus, what to worry (or not) about

Provision of an objective, external perspective was greatly valued by participants.

To be able to discuss specific issues and strategies for career development with someone from outside of my own institution provided a different perspective and helped me enormously.

My mentor was able to give me an external perspective on where I was working and some of the situations I was in. (She was) able to tell me what I would be able to expect in other institutions, and whether my expectations were realistic. She didn't doubt I could achieve my aims, and it was hugely encouraging to hear that.

Other valued contributions were enhanced abilities to say 'no', balance commitments and deal with fraught relationships, points which were cited many times. Examples include:

We have talked a lot about the time pressures we face and not just the importance of saying no, but how to say it in a way that still helps the person asking

I felt pressured to take on an unwanted research collaboration with a senior member of my department and my mentor helped me realise I didn't have to and to negotiate a

way out of the situation - it is okay to change your mind!

My mentor really helped me to develop more effective relationships at work, particularly relationships that were taking a toxic turn.

He helped work though how to deal with a bully.

Balancing of commitments was another arena in which mentors were seen as particularly helpful by participant respondents.

The COVID pandemic has made this an incredibly difficult year, especially for a clinical academic like myself. My mentor, who is similarly clinically trained, has been immensely valuable in discussing how to negotiate this difficult time with additional clinical and home commitments as well as lab members to supervise.

Through a positive SUSTAIN experience with a mentor, participants described a 'ripple effect' of mentees learning how to be mentors – leveraging the impact of the SUSTAIN experience over time.

My mentor was wonderfully helpful and supportive. She gave me the space to talk through the issues that I was facing, asked good questions and also gave excellent practical advice for specific situations. She helped me to navigate an incredibly difficult period in my career. I now try to model her mentoring style when I deal with my own mentees.

Co-coaching and mentoring have definitely helped me become a better mentor. I have staff and PhD students and mentor them directly. ... I definitely feel I do a better job since I'd had the mentoring and co-coaching. You see what works well.

Issues

Only a few disappointments were mentioned by participants in regard to mentoring, greatly overshadowed by positive comments. Participant respondents were sometimes keenly aware that mentors too have problems and/or that they as mentees, perhaps particularly over this last year, may not have made as much use of their mentors as they might have done.

I only met with my mentor once which was disappointing, however the meeting was very helpful and they provided very useful advice.

I got in touch with my mentor maybe once or twice, and they didn't get back to me - which is fair enough in the middle of a pandemic!!

I met with my mentor twice, but I have the feeling that my mentor is going through a difficult time, so I do not feel supported or helped by these interactions

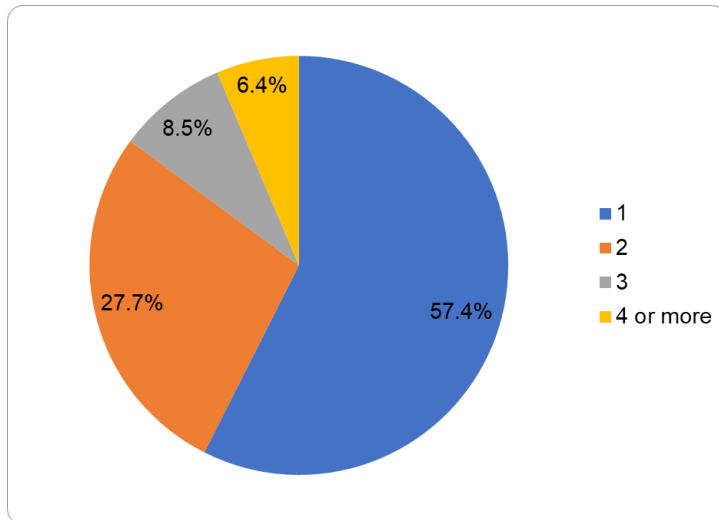
I participated in SUSTAIN during the COVID pandemic, due to this, I've not had the headspace to think about long term career objectives etc and make best use of my mentor.

Reflections by mentors

Mentor experience

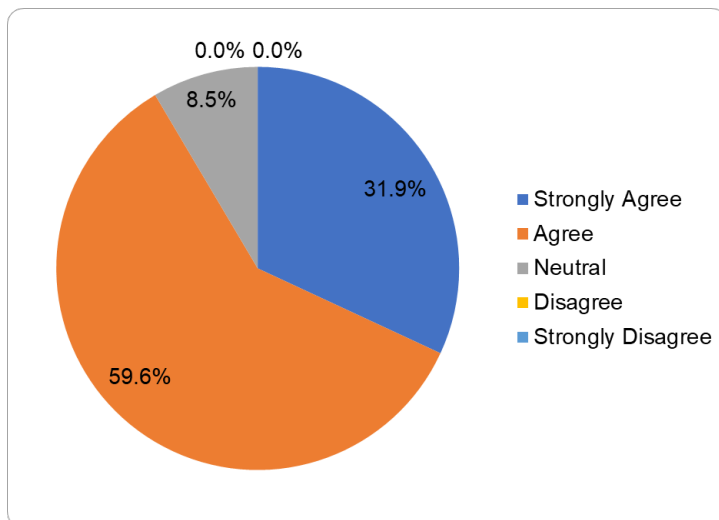
Of the 47 mentor respondents to the survey, well over half (57.4%) had mentored one SUSTAIN participant, while over a quarter (27.7%) have mentored two. Just a few (14.9%) have mentored three or more.

Figure 9. Mentor Survey: The number of SUSTAIN participants whom you have mentored. N=47



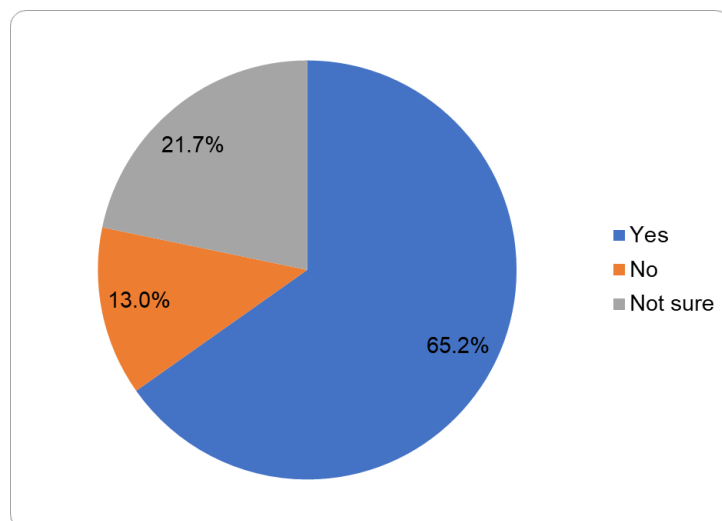
Nearly all (89.3%) of mentor respondents believed that their mentees found the mentoring experience helpful toward the aim of thriving as an independent researcher; nearly a third (31.9%) strongly agreed with this. This aligns neatly with participants' responses (83.6% finding it helpful, with 29.1% strongly agreeing).

Figure 10. Mentor Survey: I have seen the SUSTAIN programme help one or more participants thrive as an independent researcher. N=47



The overall positive attitude of mentor respondents is reflected in their willingness to recommend acting as a SUSTAIN mentor to other colleagues, as at least two-thirds (65.2%) of them have done (an additional fifth were not sure if they had done so).

Figure 11. Mentor Survey: I have recommended acting as a SUSTAIN mentor to others. N=46



An interviewee with an overview perspective highlighted the strong sense of connectedness that many mentors continue to feel with SUSTAIN as a programme.

I thought what is the most telling thing is that many of the mentors have been very loyal. They have really stuck with the programme and that to my mind has been a very positive aspect.

Positive examples from mentors

Mentors also provided examples of ways in which they believed they had helped their mentees. Not unlike the types of contributions cited by participants, mentor responses tended to fall into: overall support; acting as a sounding board to foster strategic thinking; advice regarding career steps - and standing up for oneself, saying no and achieving workable balances; and contributing to mentees' self-confidence.

A mentor interviewee provided a pithy narrative on the influence – and responsibility – of mentoring.

I was fortunate, my individual made a very significant change. The programme played a role in that. She was in a nontenured position and put under pressure to get fellowships, publish, teach – and was driving herself slightly ragged trying to do everything these senior individuals asked. She had taken on a teaching load (in someone's absence). There were a few hard truths to talk with her about in discussing strategies and how to approach meetings so that she was more effective in arguing her case. 'You can't do everything. If the senior person really needs the teaching done, you have a bit of power, to say you are not going to do it if the university is not giving you a job.' I think by standing up to them she earned more respect. Ultimately, she got the funding she needed and she got the job. She was in a deep hole of self-doubt and was on her own at a very pivotal time in her career. It was a huge responsibility for me as a mentor as well.

Another mentor interviewee cautioned about the danger of looking at career progression, when the people selected for SUSTAIN are likely to be doing that anyway, so it is hard to tell what the role of SUSTAIN has been. Nonetheless, they said:

I think most participants would give SUSTAIN a lot of credit and would say 'it has really helped me'. How much they spread the word outside of SUSTAIN I am not sure. I know people from my institution shout about it from the rooftops.

Similarly, another mentor interviewee thought that a clinician scientist mentee would be pleased with the mentoring relationship during this past pandemic year in particular, but acknowledged the lack of a 'control':

I suspect she'd be reasonably positive: – things are still running in the lab; she has been contributing to the NHS in a valuable way without being completely spent. There is no control – she might have made all the right decisions, even without someone to bounce ideas off on.

Some mentor respondents felt their most valuable role was as an objective, experienced sounding board contributing to strategic thinking and effective actions.

I think it provided a 'safe' space to discuss many areas of life including but not exclusively research, allowing mentees to express their thoughts in a way that, I hope, supported them in a holistic way.

The main benefit is providing 'big picture' perspective, to remind them of doing the basics right, to encourage them to raise issues that affect their careers and career trajectory (both of my mentees felt like they were not getting what they deserved at work, but were too afraid to ask), providing insight into ways of making the next step in their careers. ... I have provided insight into what grant committees look for, how to make their applications stand out and what to expect at interviews.

Other mentor respondents provided specific examples of helping mentees stand up for themselves and/or take important career steps in other ways.

I helped the mentee consider promotion application, publication strategy and deal with complex demands and difficult working relationships. Talking it through with a neutral person seemed to help her. I helped craft her ultimately successful application for promotion to professor.

I was mentoring one researcher who was at a real cross-roads in her career. She was unhappy at her current institution as she felt they were not supportive of her development and she had been offered a new position in another university. ... We had two lengthy meetings just going through the possible scenarios of what might happen if she stayed where she was or moved.

Both my mentees had decisions to make at critical transitions in their careers. I hope my support helped them to see the bigger picture and make the right choice. In one case this has been very successful the other still too soon to say but looks encouraging.

(My mentee) was promoted to senior lecturer at the end of that year of mentoring, and she told me that I had made a difference by keeping her focussed on her career advancement, encouraging her to apply for promotion and providing advice with the paperwork.

Some mentor respondents cited fostering the ability of mentees to stand up for themselves and say 'no' strategically and/or to achieve important balances.

I can see clear examples of giving individuals support in turning requests down that allowed them to more effectively work on and deliver their goals.

I felt one mentee was experiencing unacceptable behaviours from others in the workplace and encouraged her to speak out. Undoubtedly this helped resolve the situation. Helped build confidence and self-esteem.

We were able to discuss difficulties with a line manager and the inappropriate expectations being put on the mentee that were overwhelming and distracting them from the key points that were important for their career progression. I believe that being able to discuss this with a third party enabled the mentee to balance the demands being made and decide what was important and what was inappropriate. I believe that this gave the mentee confidence to discuss the matters in a calm and direct manner, leading to a reasonable amount of resolution of the mentee's concerns.

Some mentor respondents were pleased to see intangible changes in confidence or attitude arise as important benefits of the mentoring experience.

I have only been working with my two mentees during this past year so how their careers progress is something for the future. Nevertheless, both have been very engaged and I

feel it has been mutually enjoyable and beneficial in both cases. I have already seen a change in their attitude to planning and leadership - it is gratifying to see my mentees develop and mature.

Mentee realising through our chats that "they are not alone" and that others have experienced self-doubt, etc. Also, I felt I helped her consider other funding options/strategies etc so she feels more positive about her future now.

Issues

Occasionally, mentor respondents took advantage of free text to provide examples of when they were disappointed by their experience. Clearly there is variability in personality of mentor and/or mentee, as well as in the degree of a positive 'connection' achieved or achievable. Mentoring takes time and effort (on both sides).

One of the researchers I mentored worked through how to deal with a difficult research collaboration and certain tensions at work, as well as her work life balance. ... The other researcher found it much harder to make improvements in her research experience, and in her work life balance and was harder to mentor.

I haven't been disappointed by anything but I felt that a personality match is to some extent important and with one of my mentees there was less of a connection.

I set out very enthusiastic about this programme but I felt I could not really engage with it, due to lack of a connection with the individual I was assigned for mentoring and lack of time.

Some mentor respondents found the process challenging, despite the training.

Personally, I found mentoring someone in a totally different discipline with totally different career challenges to be very hard. Following the (brilliant) training ... I think I was able to bring the best out of the mentee and have her find her own solutions to problems/think of new perspectives etc. And I know she was happy. Personally though, I felt I couldn't do enough, I couldn't solve her problems for her and that wasn't great for my mental health in some ways.

Mentor respondents sometimes recognised limits to what they could do (beyond acting as a sounding board) given the intractability of their mentees' problems, including COVID-19.

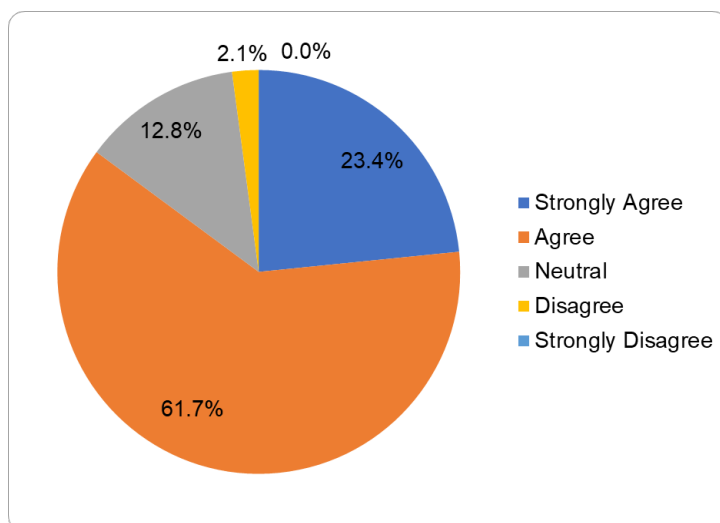
The experience was fine from my point of view and the mentee appeared to benefit from it however her position was difficult and we did not appear to be able to break through the barriers she was facing as a scientist at her institution. ... At least I offered her choices but they entailed risk and may not have worked.

COVID-19 has had a major impact on ability to mentor, both for me and the mentees that I support. The pandemic means people are in a rush and I do not see enough attention being given to E&D (equality and diversity). ... I do worry that it could set any progress back.

Ripple effects

Most mentors felt they themselves got something out of the experience. Interestingly, nearly as many mentor respondents who felt their mentees benefited (89.3%) felt that they too benefited (85.1%), having learned from their experiences as mentors.

Figure 12. Mentor Survey: I myself have learned from my mentoring experience. N=47



Despite being already prone to empathy, a mentor interviewee described significant learning that participation in SUSTAIN had brought him:

I have enjoyed it a lot and have learned a lot. Mentoring has been brilliant, I have learned so much, it keeps you in touch with issues and problems the younger generation feel, it makes you realise many problems are the same as when you were coming through, but some are very different. Working with female mentees has been particularly interesting – I hope I was empathetic to problems women were facing, but there is nothing like talking it through with a mentee to really bring it home to you. ... We all know it is difficult parenting and planning a family as part of a career; when you sit down, you realise just what a challenge it is. And you learn about micro-aggressions toward women that are still present, unfortunately, and the assumptions people make when they walk into a room and see a woman rather than a man - lots of things came up and I learned from it.

Some mentor respondents offered important reflections.

I think if one is open and honest mentorship is always a learning experience because very mentee is unique.

It always makes you look in the mirror! I have found discussion with other mentors valuable too.

Realising the short period of time in which academic careers are built or lost. Realising that I can mentor across disciplines and that the commonalities and differences offer opportunity.

It has given me even more insight into the problems faced by women in science not only relating to childcare but some persisting attitudes around leadership capabilities.

Increased reflection and empathy have had influences on the roles mentors play, e.g. in direct relationships with other early career researchers.

I have become more empathetic towards early career researchers. I do not place the high demands upon them that I placed on myself during my career.

It has made me reflect on the interactions I have with the ECRs around me

I learned a lot from (my mentee's) experience and this also influenced my approach to other mentees and their challenges.

I have become a better listener.

As broader follow-on influences or 'ripple effects', many mentor respondents have tried/are trying to take their learning into their own institutional environments, whether their own group specifically or the wider context of their department or university. In some cases, this takes the form of mentoring schemes, when the training provided by SUSTAIN has been much

appreciated. In other cases, the influence is more general – enhanced consideration of the issues faced by early career researchers.

It gave me insight into the difficulties young women find in a) developing networks and collaborations and b) trying to maintain a work- life balance. It was interesting to compare what we do in mentoring with how we get the best out of our postdoctoral fellows as line managers and supervisors.

The training and experience, about 'bringing the best out' of the mentee has had a major impact on how I approach similar tasks in my own institution, even within my own group. And I have spoken up a lot (albeit without too much success) on how we 'mentor' PDRAs and ECRs in my own institution. I have spoken out about the overt 'patronage' styles of mentorship that many senior colleagues still favour and tried to bring in the training that AMS provided.

I found the course that I took on being a mentor before I took on the role to be very helpful. I had not had such training at my own university and it really did help me to clarify the difference between being a line manager, a mentor and a coach. I have since put this knowledge in to practice in my own department and now all mentors now get similar training.

I have been able to draw on the feedback from my mentee who found peer-peer mentoring valuable to suggest this is emphasised more in my local mentorship scheme.

Knowing the issues 'up close' can be helpful for other situations (outside of mentoring relationships) where you might be responsible for early career researchers outside your own team (e.g. in head of department role).

By considering the concerns of a junior member of faculty at another institution, I was able to reflect on whether my own junior faculty members had similar concerns. It allowed me to consider how our own processes could be improved to be more supportive of our junior staff.

Seeing the academic world 'from the other side of the table' and seeing how events, funder decisions, policy changes etc. affect my mentees has given me a greater understanding of the pressures on younger academics (and students) which has certainly helped me in working with aspiring researchers in my department.

INFORMANTS' INSIGHTS

Through surveys and interviews, participants and mentors/overview individuals were encouraged to step back and offer reflections on the future, on the interwoven topics of: 1) the future context for female researchers; 2) 'future-proofing' the SUSTAIN programme itself; 3) ways in which the impact of SUSTAIN might be broadened within the wider research community; and 4) how learning from SUSTAIN might be used in similar programmes targeted at other groups of researchers. The insights generously offered by informants are thoughtful contributions that may prove helpful in deliberations by SUSTAIN co-funders.

Future context for female researchers

As individuals with informed views born of experience, some interviewees offered thoughts on the likely future context for female researchers and the relevance of SUSTAIN within that.

We've made a lot of progress, but there are still a lot of issues and problems women face that this kind of programme can help with.

While the pandemic has changed everyone's context, its influences may need to be considered by those running SUSTAIN in terms of the future context for female researchers.

The impact of the pandemic has been massively more a burden on women and other prioritised groups. It is unclear how this will impact things in the future. Will there be different training needs? Lots of awardees are feeling that they are falling further behind. What could SUSTAIN do if these cracks widened over time?

A participant interviewee warned against acceptance of the *status quo*:

In the word 'SUSTAIN', it is implicit that we not going to do any better. It is almost as if the name is lacking ambition, with 'sustain' meaning just to salvage the few women left in the leaky pipeline as opposed to real change.

'Future-proofing' the SUSTAIN programme: Participants' input

Participant respondents and interviewees offered suggestions for the future of SUSTAIN, given the likely future context for female researchers. Comments tended to fall in the following clusters: positive views on the role currently and thus prospectively played by SUSTAIN; involvement of alumni and training appropriate to later career stages; specific suggestions on the key elements of the programme (mentoring, co-coaching, training); and the importance of broadening the programme's impact (these will be captured in a later section). A few participants made 'big picture' comments.

Positive views

Many participant respondents reiterated their positive views of the SUSTAIN programme, implying that its worth will continue on into the future.

I don't think there is anything specific about SUSTAIN that needs to be modified - it's a very successful programme. For future-proofing I guess the key goal is to make sure that funding is available.

I think the scheme is extremely well thought out and is run by a superb team.

Involvement of alumnae, later-stage training

Participant respondents were asked 'in what ways might the Academy enhance support and training activities – either during the programme or for alumnae?' Looking to their own future and the future shape of the programme, a strong recommendation from participants was that SUSTAIN provide a subsequent experience supporting alumnae as they move into later career stages.

Speaking to our peer group from the first SUSTAIN programme, we strongly feel that we could really benefit from another 'SUSTAIN' programme for us to take the next steps into leadership. Very many of us have 'achieved' in the form of grants and promotions. I think the issues we face now and 5 years ago are very different and also the skill sets.

It would be really useful to have step up SUSTAIN training at this point in our careers. The first SUSTAIN was about setting up lab etc but now we are facing new challenges such as really stepping up and taking senior roles, strategies to do that, running a consortium, collaboration.

Participant interviewees underscored the evolving need for this, given changing demographics and also what could be seen as the potential for SUSTAIN to consolidate the return on its original investment.

The goalposts have moved a lot. Then, with SUSTAIN, it was at the early stage of careers that it was difficult to retain female researchers. Now it is more difficult to retain females at the intermediate stage. There is less funding, there are lots of fellowships for early career researchers but not when you come to the mid-career level.

They want us to go into leadership positions to influence change, but we don't have training and support to do that, at this stage. That is definitely something SUSTAIN could help with – pushing us into university leadership roles. A lot of us are on the verge of that, but need to learn strategy and skill sets for influencing and interacting with VPs and so on. That is completely different from what we learned from SUSTAIN at early stage. How do you climb further up?

COVID-19 has highlighted and/or exacerbated key issues that the programme may need to consider in designing future years, as articulated by participants:

We need a SUSTAIN 2 at this point. ...This year, all the energy, positivity and self-building from SUSTAIN has been drained out, between the university and NHS.

There is growing evidence that the pandemic has disproportionately affected women's

careers and work/life balance, and it seem likely that this may have some continuing impact. One example being the reports that while men increased their publications during lockdown, women's outputs dropped right down. For parents, or those with other caring responsibilities, and for clinical researchers, this has been a particularly hard year as other commitments have pulled them away from their research. Delays to projects, and thus to outputs, are also a cause for concern. I think future SUSTAIN cohorts may raise this as a particular issue. If funding becomes more competitive as the financial impact of the pandemic is felt, I think women would be very conscious of how these gaps in their CV or publication record looks.

Most of the participant respondents encouraged the continuing involvement of alumnae, noting the appeal of a continuing community (within and perhaps across cohorts).

I think that finding ways to allow alumni to remain engaged with the Academy and their cohort would be fantastic.

Reunions! Possibly with some structured catch ups/co-coaching and/or personal accountability to aims set during the course (e.g. during career planning session).

Some participant respondents underscored the need for refreshers and ongoing training – potentially made widely accessible on-line.

Continuing to keep programme alumni informed of training offered by the Academy is appreciated. While some training benefits from a longer session/whole day - if there are shorter sessions that can be delivered online (as has been more common during the pandemic) this may be a good way to continue to deliver training for alumni (and others who have not been on the SUSTAIN programme!) as it is more accessible for those of us not based in London and/or those with busy work/life schedules.

I would be very keen to attend a short (1 day or 1/2 day) 'refresher' course on career development or managing a team with my original cohort. Either in person or virtually. This would help to keep us all connected and will allow us to take time out to refocus on the bigger picture.

Suggestions on the key elements

As 'lessons learned', participants often highlighted mentoring and/or co-coaching as positive elements of the programme, now and presumably in future.

I would continue keeping these 2 aspects of the programme (mentoring and co-coaching) as they were useful and allowed for exchange of perspectives and networking.

A structured mentoring relationship made me realise that making time for career planning is critical at every stage. Before SUSTAIN, I had mainly used mentoring relationships to help cope during a crisis situation, rather than looking forward.

Devoting more meeting time to developing productive relationships was recommended.

A dedicated day of activities to foster mentor and co-coaching relationships (after these have been allocated) early in the programme would have been good to speed up the process of building a relationship between everyone.

Most participants praised the initial residential experience and other face to face elements as hugely important, particularly in building up a sense of trust and connectivity across a cohort.

I think that the strength of the programme is in the in-person events, where participants can stay one or two nights and benefit most from the events.

On the other hand, experience with the pandemic led some to underscore the feasibility and convenience of providing some elements (such as some of the training) on-line.

Whilst I strongly believe that face-to-face meetings are needed to help build bonds and networks with other researchers, it would really help people based outside of London, especially those with caring responsibilities, if more of the organised events were to take place virtually.

Many praised the bringing together of individuals from different disciplines and universities, encouraging continuation of that unusual opportunity.

Some participants made specific recommendations for training or related elements. Among these were: a session for those juggling clinical and academic work, and more insight into what measures of success will be.

SUSTAIN is there to change 'us' to be best versions of ourselves. Outside of that, how do you change attitudes, perspectives on women in science or medicine? All we can ask for at the moment is an understanding of what is going on at the top.

'Big picture' comments

While some participant respondents emphasised the importance of covering particular issues for women researchers, a challenging view was also raised: that the current research culture has much to answer for.

I feel there is still a lot to do and the research culture still needs to evolve and diversity still needs to increase including gender but also just carers (whether male or female) and part-time workers. I still feel that having caring responsibilities and taking time for these responsibilities penalises anybody's career and there is still too much bias around this issue. ... I think this programme is fantastic and it gives any early career researcher great soft skills to be a research team leader and navigate academia. However, as I mentioned before inequality still exists and I still see it and experience it myself at my workplace on a regular basis. I feel we would also need to educate the other end, the senior academic who decide on promotions and recruitments or at least our male counterparts should be trained for the future when they also get in senior positions deciding on promotions and recruitments...

An important nuance was raised by a participant respondent, regarding what sometimes seemed to be an assumption that all female researchers have children.

I sometimes felt like the programme used 'woman' to mean 'mother'. This isn't unique to this programme, and I think probably arises because many of the participants are mothers and face unique experiences related to that, and they bring these up frequently in discussions. It can feel quite alienating as a childless woman though. It's easy to feel left out of the conversations and like you don't deserve to be on a women's mentoring programme. Some formal acknowledgment of this at the start of the workshop might help avoid a situation where someone directly asks about a childless woman's situation and then tells her she is lucky.

'Future-proofing' the SUSTAIN programme: Mentor/overview input

Comments by mentor respondents and interviewees, as well as experienced 'overview' interviewees, tended to fall into somewhat similar clusters – including positive views and big picture reflections, albeit with most other observations related to ensuring success of mentoring. Suggestions on broadening the impact are captured in a later section.

Positive views

Many mentors and other individuals with informed overviews praised the multi-faceted SUSTAIN programme, without offering suggestions for significant changes.

I know that all mentors whom I've spoken to very much enjoy the experience of supporting such talents and consider the programme generally very well run and effective.

I have experience being a mentor for several organisations including universities, professional institutions and national academies and find this scheme is good and well organised. In the end, the success of a specific mentoring relationship comes down to personalities and individual approaches. I think the mentees get a lot from being able to get together informally to exchange experiences and views, so it helps if the Academy organising events that they can come to but that have lots of un-timetabled time for getting together during the day (not at the end of the day when quite often people have to

get away to return home).

Strong messages I have carried forward: peer support, peer to peer pairing and meeting as a group were very valuable. Where before in other programmes, the emphasis was on mentoring, SUSTAIN had the added dimension across mentees. That was one of the most striking aspects of the programme.

Observers also highlighted what they saw among participants at the launch events, for example: *enthusiasm, a sense of connectedness and sharing of positive experiences.*

Suggestions on mentoring

Some suggestions on mentoring specifically were made by mentors, including the possibility of not only online mentoring but also online training/connectivity for mentors.

This is one area where online working has been successful. It lowers the activation energy for conversations to take place.

I found the Mentor Support Workshop that was carried out by Zoom very helpful. ... I mention this because the future is likely to see much more remote interaction, and offering easy remote contact and remote learning opportunities is helpful.

It would be helpful for the Academy to get its mentors together, via Zoom, periodically (no more than once per year) to share experiences.

I think it was well organised; the training for the mentors was good.

Interestingly, the point was raised that, as the research landscape changes, future-proofing could include helping mentors stay current with early career researcher issues.

The potential career choices might change as the landscape of research changes and mentors might not be always familiar with the challenges faced by upcoming generations, even while sympathising with the job insecurity that so many face. Perhaps ensuring that mentors can manage this aspect of mentoring sessions will become more important.

Perhaps not unrelated to the need for keeping abreast of an evolving research context were suggestions that SUSTAIN alumnae could be valuable mentors.

I think in turn the SUSTAIN mentees could be mentors of ECRs at earlier stages of their careers.

Undoubtedly this is a talented cohort and their own increasing role in mentorship of others, being seen as female role models, will be important as the programme matures.

Some mentors suggested increasing the numbers of participants in the programme while taking into account the need for mentors, with some advocating more female mentors and others recommending involvement of more male mentors.

It's important to have male mentors too, so that they can learn from the experience—a sort of inverse mentoring.

'Matching' of mentees and mentors occupied the minds of a fair number of mentor respondents. Some observed that a good match between personalities was more important than between specific fields – and indeed gaining an inside view into another discipline could be interesting.

Don't worry too much about trying to match the field of work between the mentor and mentee. I was worried that this needed to be aligned, but it turns out it makes no difference and the biggest issues are the ones that span disciplines and fields.

It requires a time commitment and also trust between the participants - It is easier if personalities of mentor and mentee are aligned e.g. outgoing vs reflective/reserved.

Some mentor respondents, however, would have felt more comfortable with a discipline-oriented match, particularly for understanding a clinical career path.

Personally, I would have the career paths / areas more closely matched. I had no

understanding or experience of the unusual pathways for career medics - which are so different to academics – and I felt that made me a lesser mentor than I could have been.

A few operational suggestions were raised by mentor respondents. Regular check-ins could be helpful, as could provision of shared guidance, for instance in suggesting timelines for encouraging mentees to contact and build relationship with mentors in their first six months.

Once the connections are made, it is up to the mentee to contact the mentor to get things going. ... It may be worth generating a 'crib sheet' for, say, the first 6 months, laying out when the first 3 to 4 meetings should be held. This would put pressure on both parties to make sure that the early phase 'get to know each other' period is successful (this could be done remotely) to remove social barriers to further interactions. Also, it would be good if it was known that the Academy would be contacting both parties after 6 months for a catch up on how it is going (say a brief phone conversation).

Thoughtful, sound advice for any mentor was offered by mentor respondents:

- *Listen -Talk a lot less than your mentee*
- *Ask questions more than give advice- why do you think you see it that way? What could make it different/ where are you getting stuck?*
- *Agree ground rules and stick to them- I mentor around career transitions rather than fixed academic years for example.*
- *The mentee holds the answers as well as the questions.*

'Big picture' comments

To future-proof requires ability to evolve. Individuals noted the importance of ongoing evaluation to ensure this in the long-term, while also praising SUSTAIN staff for responsiveness in the short-term. One senior interviewee highlighted evaluation and evolution for the SUSTAIN programme - the importance of continuing, well-founded change that is responsive to needs as they emerge.

Always have in mind 'What are we trying to achieve by running the programme' and identify the sub-aims within that. And figure out what data or information you need to measure the programme. Use that to monitor and refresh the programme.... Realise there are quite long-term impacts, so don't over-interpret short-term impacts. (For instance, mentorship will have long-term impacts). Also, look at alumnae. If there hadn't been SUSTAIN, what would the difference have been? Keep tabs on how are things going – what important/urgent needs are there for the people SUSTAIN is dealing with. How do you remain responsive? ... Ask the ECRs themselves. ... What are the key elements that people benefit from and how can we improve the environment? How will applicants influence the research environment (in the future)? ... In the long-term, it will be interesting to see how this programme fits. Is it one of the best programmes, not just in the UK but globally? (It probably is one of the really good ones.) How does it sit with others? Maybe shout about it more.

Participant interviewees praised SUSTAIN staff for this sort of behaviour in the short-term:

The good thing is they are very flexible and learned from year to year on how to change the programme; they always collected feedback and changed workshops accordingly.

A mentor interviewee encouraged the approach of this evaluation, rather than expecting detailed quantification:

I think SUSTAIN is such an obviously good thing to do that trying to quantify it is a waste of time, but what is good is what this evaluation is doing now, finding out what worked, or not, or could be improved in future – as a dynamic and iterative process.

An overview interviewee suggested that the ethos and model of SUSTAIN, including its mentorship element, has already had an impact on the context for female researchers:

A lot of places are now providing mentorship for young females - We can't claim all of it but I do think a narrative has been put out into community that has been adopted and we can claim part of that ... It has landed well in the medical science community.

Some mentor respondents offered 'big picture' suggestions for 'future-proofing' the SUSTAIN programme within the likely future context for female researchers. Inherent problems within universities were noted; change cannot be left solely to the SUSTAIN programme and its relatively few award holders. The issue of a problematic research culture was often raised in conjunction with broadening the remit of SUSTAIN-like efforts, discussed further in the following section.

Sadly the problems I met as a young researcher are still present a generation later- except that women have been seduced into thinking they can have it all- and they can if a partner wishes to look after the 3-4 children which is not always the case. So the programme is still needed, offering a listening ear - from the position of disinterested commitment to their success; a realisation of their importance as academics to the effort, and that their adverse experiences and challenges are not unique - they are very definitely not alone. I suggest mentoring across genders- partner mentoring between men and women for example- interdisciplinary mentoring.

Not sure how well the program delineated the challenges for pure researchers with growing and heavy teaching/admin responsibilities and researchers with clinical loads (but no teaching/admin) - Often we focus on the latter as having extra burdens to grapple with on top of research, but we forget that non-clinical researchers often have crippling teaching and examining loads that can take more time away from research. So, making sure we are balanced in all these pressures on our researchers is necessary.

Needs to be seen as a joint responsibility of funders and employers alike - supporting the career development and future leadership qualities of tomorrow's researchers.

The programme is very important to preserve but it only touches a few high fliers. Part of the programme is about sexual inequality and providing a peer group. This should be standard in institutions but widened to everyone who feels they need the support be it through sex, protected characteristics or class origin. Many of the issues faced are found in both sexes and relate to the structure of university research and what is a university's responsibility to those it will ultimately discard. These issues also need to be addressed through skills training, tenure track, performance appraisal, structure and management of expectations.

I feel very strongly that mentoring programmes should not be about women and "confidence building". This is a very narrow view of what needs improving in academia. ... Everyone needs mentoring and 'lack of confidence' is not something that women need to 'improve'. ... I would broaden the remit to mentor everyone, raise awareness that underrepresentation of women and other minorities in science result in part from our current, very narrow definition of what makes a good leader, and actively consider steps to rectify this.

Broadening SUSTAIN's impact on the wider community

In considering the future, some participant respondents suggested ways to broaden or increase the impact of the programme: across more women, including gender minorities, emphasising under-represented groups of women, and so on.

It would be good for more women to be exposed to the programme - not just those with prestigious fellowships.

It should certainly be increased and, arguably, all female researchers should have access to a similar (especially tailored) programme and from an earlier stage in their career. Sessions such as negotiation and presentation are particularly valuable in helping to counteract the systemic biases that exist at the moment.

Make it a programme for gender minorities, not simply women. Non-binary individuals are hugely discriminated against within academia in ways that female academics don't have to tolerate, so this makes helping them the sensible next step. Plus then the Academy will make it clear that transwomen are accepted too - the whole environment is made obviously open and friendly to all marginalised genders.

An explicit focus on diversity of under-represented women may also be good.

Other participants suggested mechanisms for broadening impact such as SUSTAIN sharing good practices with other programmes or SUSTAIN alumnae acting as mentors to others.

I think the best way to impact a wider community is to share information about good practice with other programmes, which the SUSTAIN team might already be doing.

I think it might be a good idea for SUSTAIN participants to themselves become mentors to yet more junior colleagues throughout the process. ... This would complement peer and senior mentoring, give us experience in 'downward' mentoring, and have a trickle down benefit of the program.

When asked specifically about increasing the impact on the wider community, some participant interviewees were cautious about any plan to significantly increase numbers within a SUSTAIN cohort. One captured this concern, while also seeing a value in university replicas, albeit with a consequent loss of anonymity and multiple objective perspectives. Another differentiated between the ease of spread for training versus the important cohort retreat dimension.

One of the absolute key things about SUSTAIN is that you know you are being treated as an individual and it is quite a special thing. ... If SUSTAIN became much bigger, by definition there would probably be no residential and it would not be as 'in person'; that would take away something special. ... If there were groups in different universities that gave you the same feel that SUSTAIN does centrally, that would be good. Whether or not SUSTAIN oversaw and rolled it out, if that model could be made to work, it would be fabulous. It would reach more people and they could get that feeling of belonging. The only drawback would be that one of the lovely things about SUSTAIN is that you are working with people from lots of places; it is a real strength to learn how things are done differently.

I don't have a solution, but it would be great if it could be broadened out. ... (training) webinars could be opened out... what is harder to replicate or broaden out is the cohort dimension; that to me really made a difference.

When mentors considered the future breadth of SUSTAIN, some would retain the focus on female researchers; some would include males; some would widen eligibility to all groups that might suffer from bias; others emphasise that everyone would benefit from mentoring.

The challenges that female researchers face are not going away. There is still a need for a female only programme. It might be appropriate to think specifically how issues of intersectionality (eg female and BAME) are addressed.

To broaden the influence of the scheme perhaps extend the offer to any females holding personal research fellowships.

I think it could be rolled out for men as well. From my experience many good male ECRs have the same uncertainties and lack of confidence as the women.

Equality issues for women are not overcome. On the other hand, there is an unfortunate message of only focussing on women; there are other groups in need of support.

I would offer mentorship to all groups subject to apparent bias in career progression.

Mentoring should be available to all trainees irrespective of gender.

In terms of mechanisms for broadening SUSTAIN's impact, several mentor respondents expressed the hope that the programme could be rolled out further or replicated locally, within institutions.

This is such an excellent opportunity for those who are lucky enough to become SUSTAIN mentees: the challenge is securing the resource to retain the programme and ideally share the best practice with others to inform local mentorship programmes.

Some senior interviewees offered thoughtful input on the potential for increasing impact on the wider community. One pointed to a model for spreading impact that the Academy had implemented in the past regarding mentoring.

The mentoring programme did this really well: it provided support to institutions that wanted to replicate or build something similar to SUSTAIN locally, seven to eight years ago, mentoring (was) just established. The Academy did great workshops at medical schools wanting to do something; that was a great driver for mentoring in our medical school.

Spreading the impact is seen by some as the next, necessary step.

I think SUSTAIN absolutely must think about dissemination. It can only ever take a tiny minority of the group of ECRs who could really benefit from the opportunity. That has to be the goal - either by inviting institutions to go down the route of doing their own SUSTAIN programme and be supported to do that, or by offering SUSTAIN activities as part of a programme people have going. That is the most important challenge for them. Obviously SUSTAIN is really really good and could keep running, as there would always be people who want to take part. I am not saying to shut down the programme but to think about its wider reach.

Considering possibilities for spreading the impact of SUSTAIN, one recommended the development of a guidance document with wide distribution enabled by SUSTAIN funders.

If the Academy made clear what it is doing, they could arguably create a document that would mean other organisations don't have to reinvent the wheel. You could use the messages and data to inform design of other programmes, not just within the Academy but outside. That is the way to increase the impact. ... There needs to be a way to capitalise on this as a catalyst. ... If a manual were developed, there would be a series of constituents to which the manual could be cascaded.

Another way to broaden impact would be for other institutions to adopt at least aspects of the SUSTAIN programme.

It is complex. ... SUSTAIN is selecting an already successful group, but there are other groups. Spreading through different institutions would be a good way to spread the impact of SUSTAIN and it could help change institutional cultures. Also (to spread the impact), people who have gone through the programme can pass along what they have learned.

Spreading the word would help to broaden the impact on a significantly larger scale – but the actual amplification of impact may well still be down to universities, as one overview interviewee reflected:

I think they could do a number of things. ... There is using alumni of SUSTAIN and their mentors to advocate for taking up these approaches. There are many ways of doing that. We certainly shouldn't expect everything to look like SUSTAIN. They could possibly disseminate the programme more widely. Although medical in origin, the lessons from the programme are true across academia and beyond. Possibly they could highlight bits that are a bit more novel, like the peer to peer mentoring which is not always a feature of other programmes. And I think it is only through dissemination that they are going to be able to open to other groups, genders and other diversity and inclusion issues. I think the way to do that is to say 'everyone is welcome'. The Academy couldn't do things at that scale so therefore I think working with institutions is the way to go.

Another senior individual offered comments on 'franchising'.

One way to spread it is to franchise it - but my concern would be not to (just) give a badge ... that might dilute it. A franchise has to be equally robust. ... An online resource is very useful, people can tap in and out but you have to get people to connect to them. The biggest thing would be if funders would set up their own SUSTAIN-type programmes.

An overview interviewee emphasised the importance of helping others take up the gauntlet.

In one sense, pandemic aside, SUSTAIN has a good formula ... At the same time there are limitations to what it can do. ... It would be really good if SUSTAIN could catalyse and work with universities and other funders to set up something like this of their own. That is one way SUSTAIN can have an impact because a lot has been learned about

what does or doesn't work, that could cascade down. That would be one of the more meaningful impacts SUSTAIN could have.

Vignette 7. Imitation is the sincerest form of flattery: Spreading SUSTAIN's impact

As SUSTAIN has developed, experience has been gained and lessons have been learned. However, only around twenty or so female researchers per round have been fortunate enough to benefit from the programme. One mechanism for spreading the impact of SUSTAIN more widely has been the emergence of similar programmes at the University of Edinburgh and the University of Birmingham. AMS SUSTAIN staff have been generous with advice as these programmes have been developed so that there can be concentration on adapting SUSTAIN to suit individual needs.

Edinburgh

The ECAT SUSTAIN programme was established in 2016 at the University of Edinburgh's College of Medicine and Veterinary Medicine. ECAT (Edinburgh Clinical Academic Track) is a Wellcome PhD programme 'for medical and veterinary clinicians who have demonstrated the potential to pursue a career as an academic clinician'.

(www.ecat.ed.ac.uk) The programme was developed with the encouragement of Professor Moira Whyte, Vice-Principal and Head of College, who was one of the original supporters of the AMS SUSTAIN programme and who has maintained a close involvement with it. As it developed, ECAT SUSTAIN has drawn upon the original SUSTAIN programme in what could be considered a 'direct spinout model'. It is, however, deliberately not an exact replica. Whyte observed:

I wanted to offer the same opportunities to our own trainees, after seeing SUSTAIN. ... With the cooperation and support of the Academy, we have adapted the programme to our own needs.

In the early days, AMS SUSTAIN provided help with designing the programme, recommending elements, speakers and topics, and sometimes sending a representative to meetings. Those in the last year of their ECAT PhD or in the early stages of their ECAT or SCREDS (Scottish Clinical Research Excellence Development Scheme) postdoctoral clinical lectureship were invited to the first ECAT SUSTAIN event in October 2017. The twenty participants spent two days on topics such as 'personal impact, pitching ideas, developing resilience, co-coaching, networking and planning'. The event was repeated in March 2019 with 30 participants and, it is hoped, will run again in 2021, after being delayed by COVID-19.

The most striking difference with the mother programme is that, after some debate, ECAT SUSTAIN was set up to include both women and men within the 'integrated cohort' of a Wellcome Trust PhD scheme, partnered with a clinical education scheme. Typically, about seven new people join each year, with cohorts staying together as long as the participants remain postdocs, typically three to five years, thus building relationships within and across cohorts.

In considering the UK research context, Whyte notes the importance of thinking about a wider reach for SUSTAIN, suggesting that:

It is timely to think about dissemination of the successful SUSTAIN programme. SUSTAIN can only ever take a tiny minority of the wider group of ECRs who could benefit from the opportunity, so I think working with institutions is one way to achieve this. Wider dissemination would also make it possible to open to incorporate other aspects of diversity and inclusion.

Birmingham

The impact of SUSTAIN is also being felt in the University of Birmingham, through an institutional SUSTAIN programme initiated within the College of Medical and Dental Sciences, which has provided support for the first year, with ongoing support dependent

on evaluation of its success. The establishment of this innovative programme has benefited from the support of two Fellows of the Academy of Medical Sciences, both of whom have acted as mentors within the SUSTAIN programme and know it well: Professor Wiebke Arlt (also the college's lead for Equality and Diversity) and Professor David Adams. When asked if the Birmingham programme could be seen as an impact of the AMS SUSTAIN programme, the latter stated enthusiastically:

There has definitely been a ripple effect - even a tsunami - from SUSTAIN into the college and the university!

Although SUSTAIN is a very successful *programme*, it was clear that many more individuals could benefit from it; even within their own university perhaps ten to twenty times the number awarded places on SUSTAIN were eligible and could benefit from it. Arlt described the motivation for, and design of, the programme:

I know how disappointed people were when they were not chosen. ... So it is really important that the university now mirrors the Academy's programme. ... People at this career stage face an extremely difficult situation in academia, but we need their brains and their energy.

Therefore, a programme has been developed that includes mentoring, visiting speakers, workshops, career development and other support.

We created a programme very similar to the national programme, with similar elements. We asked the staff to tell us which elements had the most positive feedback. We selected several of the facilitators accordingly and other elements we deliver with our own expertise. Regarding the mentoring element, rather than Fellows of the Academy, we ask graduates of the national SUSTAIN programme to volunteer as mentors. Their advantage is that they have undergone a similar programme and are now one to five years more advanced in their careers, but still relatively close to the experience of the mentees.

If the model of an institution-level SUSTAIN programme were adopted more widely, an interesting 'wrinkle' on this mentorship element would be its potential for replication across UK universities.

With only one hundred graduates of the national programme, this could not be sustainable forever, so the idea is that we will present our approach to the AMS Council and hopefully motivate other universities to set up similar programmes. In this way, people who have gone through those programmes could then cross-mentor at other universities. It is important that the mentor is completely independent, unbiased, and from another university; ... we hope our programme's graduates will in future be willing to be mentors at other universities. ... It is critical that other universities commit to this, to make it sustainable.

The Birmingham SUSTAIN programme is aimed at the same level as national SUSTAIN – people who have recently received funding to start their own research programme.

This is a very critical career stage; that is why I was very interested in serving as a mentor for the national programme. ... The tone of your future leadership is set at this stage, when you are developing your first team.

However, a distinctive step was taken at Birmingham to widen the university's SUSTAIN programme to include multiple types of diversity.

Obviously, women are held back as academic leaders, but there are all kinds of other minorities that have been held back from leadership by such factors as ethnicity, first generation at university, LGBTQ, socio-economic deprivation or other reasons that we had previously overlooked,

The rationale for widening diversity has been borne out by the diversity of those who have applied for places on the programme. The personal statements required on career aspirations and why applicants would particularly benefit from a programme that explicitly encouraged diversity were compelling reasons for the widening. In what could be seen as

a long-term investment in changing research cultures, members of each year's cohort in the Birmingham programme will get to know colleagues who are diverse in various ways, and the programme is likely to include sessions reflecting on diversity.

If they learn now about the impact of diversity on people's experiences, they will consider that as they go forward in their careers and this is likely to promote a change in overall research culture.

Messages for potential similar programmes targeted at other groups

A question explored in this evaluation was the potential for learning from SUSTAIN to inform other programmes that might be similarly targeted at helping different groups of researchers to thrive in independent careers.

Messages from participants

Participant respondents were asked for learning from the SUSTAIN programme that could 'be most useful in planning similarly oriented programmes for other groups of under-represented researchers'. Participants' messages tended to fall into three main clusters: the importance of forming **supportive groups**; the value of **key elements** such as mentoring and particular 'skills' that lead in particular to confidence; and the **need to tailor offerings** to the under-represented 'category'.

One participant's response covered the whole gamut, placing special emphasis on the value of a supportive cohort.

SUSTAIN harnessed the resource of Fellows from the AMS to impart valuable life experience that helped early career academics to thrive. These cherry-picked individuals were clearly passionate about developing others, and we have learned to carry on their legacy in this respect. The scheme also brought us into contact with funders, and we achieved a better understanding of the funding process. The training courses were hands-on and useful. The most impactful part of SUSTAIN in my opinion was the generation of a cohort of participants and mentors that have been valuable over the years.

What appeared to be the most strongly felt advice from participants had to do with the benefits of belonging to a **supportive group**.

A SUSTAIN programme could be open to other minorities, for the cohort itself it is a way to change our perception as to the place of females in academia. It has probably doubled the number of women I know in academia. It is really hard to pinpoint that has happened, how it has changed my perception - but I am sure it has.

A commonality between researchers, whether they are well represented or not, is the need for specific skills in leadership, career planning etc. This is provided by SUSTAIN and is important. However, for under-represented researchers a big challenge can be a sense of loneliness or isolation. The camaraderie of being in a group of people who are facing similar issues is a huge benefit of the SUSTAIN programme, particularly as cohorts are relatively small groups. I think that providing that kind of focused support could be transported to other under-represented groups and may be similarly beneficial.

In my opinion, the real strength of SUSTAIN was the fact that it is a cohort programme, delivered over a longer period of time. ... Beyond the end of the programme, the cohort continue to be a support and useful resource!

The small cohort, social as well as more formal events, and the sense of 'togetherness' that I have experienced since joining SUSTAIN, would be, in my opinion, the most useful aspects to retain.

In imagining similar programmes for other groups, many participant respondents noted particular **elements** of SUSTAIN, including skills/training foci (e.g. leadership style) or mentors.

I think just applying the same concept to other minority groups would be good.

Media training, leadership and presentation skills would definitely develop confidence and strengthen the voice/messages coming from under-represented researchers.

Enhancing your profile, establishing collaborations, negotiating with host institutions

Some less traditional components of the program were particularly ... such as the confidence building, networking exercises.

The mentorship aspect is excellent ... and I am sure would be transferable to other groups. Co-coaching also, and the forming of a cohort.

Participants appreciated the value a programme like SUSTAIN could provide to others, beyond women.

Women are not the only ones underrepresented in positions of power; it would be fantastic to have a SUSTAIN-like programme for others who don't see people like themselves and wonder why. ... SUSTAIN is well-targeted to make you believe in yourself.

One participant interviewee noted that her husband had asked if a similar scheme were available for men who are not 'big alpha male types', leading her to reflect on culture change:

SUSTAIN is fantastic but it implies that it is the women who need to change. Maybe men need an opportunity to engage with how the culture might change, how to adapt without being accused of being condescending; some men are afraid to get involved, even when they want balance.

However, as generally relevant as the essence of SUSTAIN was seen to be, some participant respondents underscored the need to **understand the issues facing a particular under-represented group and tailor a programme accordingly**, within what one described as the difficult reality of making one's way as a 'minority' member in the current research culture.

Creating a feeling of community makes people keep engaged and would be helpful to other under-represented groups. Empowering people and tailoring the workshops and training to their specific needs like SUSTAIN does for women in science. The message was never 'be more like a man', so that would be helpful in tailoring a programme oriented to other under-represented groups (that the message is not 'be more like the mainstream').

So, for example, a participant interviewee reflected on inherent challenges regarding a BAME counterpart and emphasised the need for careful design:

The danger is segregation even though it would be meant to be positive. ... There needs to be some sort of nurturing that is appropriate and welcomed by the communities. This would probably need more consultation.

Messages from mentors

Mentors and other senior individuals were asked to suggest what learning from the SUSTAIN programme could be most useful in planning similarly oriented programmes for other groups of under-represented researchers. Responses were generally very **positive**. For instance, some mentor respondents praised the programme as worthy of replicating.

I think the winning recipe can be applied to other groups as well.

I would just clone SUSTAIN and then make small adaptations as appropriate.

The programme is very successful in helping researchers develop their careers in a realistic manner and thus would potentially be of major benefit to other under-represented researchers and their mentors.

Some mentor respondents highlighted particular **elements** of SUSTAIN that could inform other programmes, in particular cohort-building and mentorship.

- *The value of improving people's networks and of near peer support - often overlooked by people who are used to thinking those around them are competitors...*
- *The peer support - a shared experience is invaluable for breaking down feelings of isolation.*
- *The 'speed dating' type events that the Academy used to introduce mentees to the possible mentors works really well and would be transferable across both areas, disciplines, ages and organisations.*

Mentor respondents sometimes spoke specifically about the **value** of creating a similar programme for BAME researchers, yet offered some thoughtful caveats about overburdening the sadly few potential mentors who are themselves BAME.

This is an excellent idea, though it will be tough to find sufficient 'lived experience' mentors as it has been in the past for female leaders. Nevertheless it is essential that SUSTAIN is broadened to BAME scientists. The key is to make this lighter touch, less time consuming for mentors who are themselves in the minority and for this reason (amongst others) have a heavy workload but good intentions with regard to mentorship.

Some mentors expressed **a broader need** and/or highlighted other potential groups.

Run the same scheme but open to more diverse groups. But there the issues are more complex, as many mentors won't have any remotest idea of the challenges facing under-represented groups. ... The challenges there won't simply rest with the mentee finding the best in themselves with the help of the mentor, they may require fundamental changes in organisations, attitudes and policies. Furthermore, there is much published work on how under-represented minorities feel in academia, so you need specialist training for these courses...unleashing well-meaning academics, laden with their own preconceptions, could be damaging here without support.

As someone from a very deprived UK background, the first (and so far still the only) person to go to university from my family, I feel many under-represented people need support much earlier in their lives.

It's only available to rather elite groups at present, and I wonder whether there is a need for further specific approaches (whilst bearing in mind many other mentoring programmes) for promising but not yet UKRI-type funded researchers who have had less traditional routes to a mid-career academic/research role.

The point that I feel most strongly about: the need to make the scheme available to men too. While, on average, women perhaps benefit from mentoring more than do men, there are many men who need it. I realize that this would change the flavour of the scheme and detract from the sharing of experiences of the group of female mentees but I do feel that men would also benefit.

A mentor interviewee ruminated on needs and challenges, with regard to addressing groups beyond women.

One idea ... would be to run SUSTAIN for people from ethnic or other disadvantaged groups. ... There are people who are obvious: women or people with different skin or ethnic background and there are people who are disadvantaged but are not visibly different, including those from very disadvantaged backgrounds or neuro-diverse. ... There is something to be said for having twenty to thirty groups, (sharing) coping strategies then rolling out to others online. ... One of the great things about SUSTAIN is how much learning we did from individuals on SUSTAIN. We could learn from other groups and then spread that learning widely. ... There is an unfortunate message of only focussing on women; there are other groups in need of support, when we look at individuals failing to reach their own potential. ... We should start thinking about visible and invisible barriers. ... I cannot understand at the most visceral level the challenges they face, but it is clear to me they need to be addressed, for example with peer support.

An interviewee with an informed overview perspective underscored complexities of incorporating other groups into similar initiatives.

It is complex. Ethnicity is not like for like. ... Should there be a SUSTAIN programme for underrepresented groups? You have to ask, would it make a difference? Some elements in SUSTAIN do make a difference.... A mentor for a black researcher does not have to be black. It is about equity of information and that it is okay to pursue a career in science and think 'I can do that. I have the potential'.

There would doubtless be challenges, as another senior interviewee observed.

There is an issue around (assuming) homogeneity; different groups have different challenges. ... We need knowledge. ... I doubt it would just work in very straightforward way to just do the same for other groups. Not to say SUSTAIN shouldn't do that, but it would be challenging. ... There is something around cascading the learning so there is a broader impact – although there are a huge amount of unknowns and challenges around that.

Another senior interviewee highlighted a basic choice between picking particular groups and aiming for broad inclusivity in providing SUSTAIN-like help.

I am grappling with what inclusion really looks like. You can pick out groups. ... Would you carry on picking out groups or say it is open to everyone? That is the real decision.

Addressing changes occurring in **the broader research landscape** will be key to any programme.

The research landscape is especially tough at the moment with pressure on funding, research strategy (biological sciences are moving down the priority list behind climate change and big science for example, biomedical funding is being squeezed toward key fields (neuroscience, mental health, infectious disease) to the detriment of others), and the demands of universities for more teaching (because of funding problems). Clinical scientists have additional service demands from the NHS. I feel these problems are increasing and an important aspect now for mentorship programmes is to incorporate honest discussion of the realities of a career in academic science. There is a particular need for careful career planning with development of contingency plans if career paths become difficult. I think any programme should include discussion of these points in detail.

Indeed, some spoke about the need for broader contextual changes, beyond what any programme could achieve – and the responsibility to guide people within that context.

If we are to benefit the many rather than the few we need to work with the Wellcome Trust to change university culture and obligations. However, not everyone can survive in the system but we should define our obligations to those who will not and meet those obligations.

CONCLUSIONS

Striking Success

The SUSTAIN programme is strikingly successful. It does indeed enhance the ability of participating women to thrive in independent research careers. In spite of their initial high level of accomplishment, as indicated by the selection criterion of holding prestigious research fellowships, the confidence-building and supportive networking provided by the programme have benefitted participants significantly. They have developed increased self-confidence, enhanced focus on strategic approaches to career decisions and resilience in the face of difficult situations. Although intangible, the early impacts of the programme indicate an increased likelihood of later more tangible career advancement and indeed some SUSTAIN participants have already achieved such success. SUSTAIN is clearly targeted appropriately at the critical inflection point at which participants advance towards independent status as researchers and leaders.

A Portfolio of Assets

The strength of the SUSTAIN programme is created by a set of key elements.

The mentorship element is central and is indeed much-appreciated by participants. For the most part the mentoring dimension has led to increased confidence and multiple career insights for mentees, also showing them how they in turn could become effective mentors. Significantly, mentors have also benefited from the experience, with some of them taking that learning into their own groups, departments or universities.

Co-coaching has also provided valuable support and an opportunity to discuss problems, ambitions and successes with external peers.

A significant development has been the rise of supportive networks within cohorts, initiated informally during the residential experience. The value of this is seen in the willingness of participants to trust other members of their cohort with both professional and personal issues even after their year together has finished.

Finally, high-quality professional development training workshops have had a considerable impact, with the benefits to individual participants varying according to the different topics. Across the board, however, participants find the topics appropriate and the targeting to their needs helpful.

Together, these four elements make for a resilient, multi-faceted programme.

Effective Organisation

The success of SUSTAIN as a programme is not accidental. It has been thoughtfully planned and well-organised. It is carefully monitored; for example, trainers are vetted and feedback from participants taken seriously. The overall programme is flexible and adaptable; staff are approachable and have put concerted effort into being responsive to participants' needs, as individuals and more generally. Innovations have been tested and adopted, such as the widely-praised 'speed-matching' of mentors and mentees and triads in co-coaching. Furthermore, the SUSTAIN staff have rallied rapidly during the pandemic, providing thoughtful virtual substitutes for as many of the programme elements as possible and offering individual help and support.

EVALUATORS' RECOMMENDATIONS FOR CONSIDERATION

Current SUSTAIN

For the SUSTAIN programme as it is, there are only a few, relatively minor, suggestions for possible enhancements, with the principal recommendation being to continue the programme.

- Continue the SUSTAIN programme, including its key elements of: cohort-

- building/networking; co-coaching; training and mentoring.
- When it is safe to do so, re-instate the residential experience to launch the SUSTAIN year, being sure to provide significant time for informal cohort-bonding interactions and thoughtful reflection, as well as explicit training.
- Learn from the inventions of the pandemic year to develop hybrid delivery models for training, to offset issues of geography and time.
- Continue the mentor-mentee speed-matching, and training, making clear to both parties what mentoring is (and is not), while recognising that pairs will develop their own forms of the relationship.
- Continue to bring individuals together across disciplines and geography, as participants find diversity of perspectives to be helpful across a cohort. When it comes to mentor/mentee matching, recognise that some participants will want a mentor who is somewhat closely related to their experiences (e.g. physician scientist) – and *vice versa* – but that most will find the relationship rewarding even if or especially when there is ‘distance’.
- Continue to seek participant and alumnae input as to helpful topics for training sessions, as needs will evolve over time. Recognise that theory and practical tips may be of more or less relevance to participants at different stages, but all will benefit from discussing the mix.
- Offer alumnae opportunities to convene in a social/networking sense; this could include interacting with current cohorts.
- Offer alumnae a further ‘mini-SUSTAIN’ opportunity to explore effective ways to move into the next stage of their careers, including broader leadership roles.
- Consider improving the SUSTAIN website, with an easily accessible special area for participants/alumnae with training materials, opportunities for catching up and for sharing success stories.
- Without over-burdening participants/alumnae with detailed monitoring/feedback, use a light-touch evaluation approach to track longer-term impacts as they unfold from the typically intangible early influences of SUSTAIN.
- Continue to be responsive to emerging participant needs and be prepared to allow the programme to evolve over time.

Increasing the impact of SUSTAIN

Given the positive influences of SUSTAIN on a small number of very fortunate award holders, it is timely to consider the bigger picture and the ways in which the impact of SUSTAIN could be enhanced in terms of addressing the needs of a greater number of individuals and indeed larger challenges, including but not limited to culture change in universities.

- On an individual level, make more use of alumnae to spread the influence of SUSTAIN; for example, they could be given training in being mentors themselves
- Consolidate prior investment and help SUSTAIN alumnae develop broader leadership roles (e.g. in their institutions or professional societies/networks) so that, in the longer-term, they can help create culture change. Targeting alumnae with this sort of support could inform development of programmes for mid-career women more generally.
- At programme level, help others replicate and spread the impact of SUSTAIN – by developing a handbook for developers of similar programmes.
- At programme level, help others replicate and spread the impact of SUSTAIN through ‘spin-outs’ – by advising institutions as they develop similar programmes.
- Consider taking on a ‘convening’ role to bring together champions who are developing SUSTAIN-like programmes so that they can share issues, insights and good practice.
- Consider opportunities to involve alumnae in this ‘bigger picture’, for example acting

- as external mentors for other institutions' SUSTAIN programmes
- While the number of places in the current SUSTAIN programme is small, nonetheless efforts could be made to encourage applications by women at the 'intersection' of other under-represented groups.
 - The co-funders of SUSTAIN might consider the development of a parallel programme for perhaps one other under-represented group, but only after significant consultation with the group to be involved.
 - More broadly, SUSTAIN staff, co-funders and champions could share learning as to 'what works' in ways that inform others' development of programmes for: diversity and inclusion generally; certain under-represented groups specifically; and/or all early career researchers who are beginning independent career stages and leading groups.
 - By such means, and by contributing to current dialogues such as that highlighted by Wellcome Trust strategies, the co-funders of SUSTAIN could contribute towards long-term change in the UK's research culture.