



Leadership at the science policy interface: *A case study of the Policy Challenges collaboration between Cambridgeshire County Council and Cambridge University Science & Policy Exchange*

COMMUNICATION | EDITORIAL | INVITED CONTRIBUTION | PERSPECTIVE | **REPORT** | REVIEW

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ABSTRACT

The Cambridgeshire County Council Policy Challenges Programme provides a unique model by which evidence-informed policy is developed as a collaboration between policy makers and early career researchers. Volunteer researchers from the University of Cambridge gain experience working with councillors and council officers on six month research projects on issues challenging the council and make policy recommendations. Past challenges have included questions around educational inequalities, government structure, and climate change. This paper is written in the hopes that insights can be shared with other councils looking for successful models of exchange with their local research communities. Here we outline the context, give two case studies of past programmes and highlight the key ingredients and lessons learnt from three successful years of this partnership, thought to be unique within the UK.

Introduction

The Cambridgeshire County Council Policy Challenges were launched in 2016 by Councillor Ian Manning, member of the Cambridgeshire County Council, and James Dolan, then president of Cambridge University Science and Policy Exchange

(CUSPE), the science policy society of the University of Cambridge. This paper details the first three years' experience of a unique flagship collaboration between the two organisations.

The CUSPE committee provides the continuity, support, and university links to advertise the opportunity and maintain the relationship, despite naturally high turnover of individual students.

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These efforts are led by the Policy Challenges Coordinator who is elected to this committee every year- drawing preferentially from the pool of individuals who undertook the project the year before. The Cambridgeshire County Council provides the policy challenge questions, and these are addressed by policy challenge teams, made up of two to six university early-career researchers. During their work, the teams are supported by the council's 'Transformation Team', the team working to drive reform within the council to maximise impact across communities, and have contact with senior council officers throughout the project. Each team investigates a research challenge over six months, writes a report, and presents findings and/or recommendations at a county council committee meeting. As councils run under the committee system, committees set policy in their area, with accepted recommendations becoming council policy.

The programme runs between March, when teams are selected, and September, when reports and policy recommendations are presented. Since its inception, the programme has grown in size every year – from nine participants in the first year working on three projects, growing to twenty five participants involved in five projects in 2019. For the 2020 round, 42 participants were initially allocated to nine projects, however due to the COVID-19 crisis only 4 were carried on, redistributing the participants. Table 1 gives an overview of all the challenges accepted so far.

Project stages

Over the three years that the programme has been running, the model for how Policy Challenges progress has been refined. While this will continue to evolve, this section captures the current ideal case for the different stages of the programme.

In the first stage, questions are developed internally within the council. Councillors and council officers are invited to propose questions, which then are workshopped internally to produce a shortlist to be presented to researchers. It is important at this stage that ownership of the questions is established and champions for projects are identified. However, it is equally key that

expectations are managed, as not all the projects will be taken forward by researchers.

In the second stage, the questions are presented to researchers at an open event where the councillors pitch their project, and network with interested researchers. This is promoted to researchers by CUSPE, utilising its networks within the university. These researchers then submit preferences for projects and are allocated to teams. Projects which do not receive a quorum of interested researchers are not taken forward.

In the third stage, projects are initiated, and teams meet with their counterparts within the County Council. Early work often involves refining the project question and identifying the preferred strategy for answering it, with researchers conducting desk-based research and council teams giving background and co-ordinating data access where appropriate. Each team investigates their research challenge over six months. This culminates in writing a report, with the inputs being novel data analysis, translation of research into the local context, or the insights gained from primary research conducted by teams such as surveys or focus groups.

In the fourth stage, the reports are presented to the council. Most are planned at the outset to be presented to the relevant county council committee meeting (e.g. Health, Economy and Environment, Children and Young People, etc). Teams present findings and/or recommendations, giving councillors the opportunity to ask questions. Recommendations accepted by council committees form the basis for shaping council policy. Following the committee presentations, the reports are circulated to relevant parties and made available online. There are also opportunities to influence working outside of the designated committee and this is usually guided by councillors and officers.

Project results

Over the course of the programme, 11 reports have been completed involving 32 researchers. Out of these reports, the following outcomes were achieved: eight were presented to Cambridgeshire County Council committees, one successfully influenced a team's working outside the committee, and another resulted in changes to a specific fund

Table 1: Policy challenge questions taken forward by researchers from the University of Cambridge for Cambridgeshire County Council since its inception in 2017.

Year	No. of projects	Project titles
2017	3	1: Investigating the educational achievement gap [1] 2: How can we improve outcomes in areas of high deprivation? A focus on early years interventions [2] 3: What are the next generation of models to transform organisations, and how could they benefit Cambridgeshire County Council? [3]
2018	4	1: What factors influence parental preference of schools, and what are the outcomes of those preferences (and for whom)? [4] 2: What impact does rurality have on the life chances of young people? [5] 3: What measures of outcomes are possible beyond simple financial calculations that will make different investments comparable, particularly where budgets are shared with other organisations? [6] 4: How effective has the implementation of the First Response Service been for those who experience mental health crises? [7]
2019	5	1: What actions must Cambridgeshire County Council take to reach net zero carbon emissions by 2050? [8] 2: Reducing air pollution, congestion and CO2 emissions from transport across Cambridgeshire [9] 3: What is the most appropriate evaluation method for the healthy fenland fund? [10] 4: How can we design the future of local government today? [11] 5: How does pupil mobility impact academic outcomes, and how can we improve the outcomes of pupils who move between schools? [could not be completed]
2020	4	1: What does the evidence tell us about the type of support that would have most impact on ensuring our care leavers can make a successful transition from being a supported young person into an independent adult, including the transition from education to work? 2: What are the impacts and opportunities of growth on the ability of local community groups to develop community-led solutions and interventions? 3: How can we use community-based networks and resources to jointly tackle the climate emergency with our communities? 4: How can Cambridgeshire businesses that have set, or are interested in setting, carbon neutral and carbon negative targets invest to reduce carbon emissions and also reduce fuel poverty both for oil dependent communities and the wider public? <i>Note on disruption due to Covid-19: This year the number of projects going ahead has been reduced to ensure every project can be fully supported by the council during the COVID-19 pandemic. The initial stages of the programme will take place virtually and the programme may be extended longer than six months if needed.</i>

analysis without going via committee. Only one report was not able to address the question that was asked, and therefore was not presented to the committee. One team failed to complete a report, due to a lack of data available. All others have been followed up by the council post-committee stage.

The impact of the most recent reports has not yet had time to manifest, but considering the remaining seven, three have had definable real-world impacts, and the other four have changed council policy and had indirect real-world impacts. The three with definable real-world impacts are:

- **The measures of outcome policy challenge** [6]. Members of the team assisted in the strategic restructuring of the council's Innovate & Cultivate Fund. The fund helps voluntary, community and social enterprise sector organisations deliver projects that assist the needs of local residents. The fund aims to redirect council funding from high cost front-line services, towards support and services that are delivered within, and by, local communities.
- **The deprivation policy challenge** [2]. The council's Best Start in Life programme used policy recommendations set out in this report to inform the development of an overarching early years' strategy. The strategy proposes how public and community health, early year's education and early help services can work together to support outcomes for children pre-birth to five.
- **The educational achievement gap policy challenge** [1]. The council's Schools Intervention Service Team implemented a range of strategies across schools following the recommendations from this policy challenge, in order to give a clear focus on 'narrowing the achievement gap'. There has since been a 5% improvement in outcomes for pupils in receipt of pupil premium grant across Cambridgeshire, a faster rate than in any of the other 101 Local Authorities.

Below are two examples from the most recent program in 2019 shown in greater detail to demonstrate the variety of projects available.

A team of seven researchers undertook a project titled 'Net Zero Cambridgeshire: What actions must Cambridgeshire County Council take to reach net zero carbon emissions by 2050?' [8]. This challenge gave rise to two reports, one focusing on sources of carbon emissions in Cambridgeshire, and the other on transport options to reduce carbon emissions. The former went to the central committee of the council, General Purposes Committee, and the other to the Greater Cambridge Partnership (a partnership between three councils and central Government).

The Leader of the Cambridgeshire County Council wrote to the councillors, chief executives, leaders of district councils, and the Cambridgeshire and Peterborough Combined Authority to highlight the report:

The report provides an emissions baseline against which we can measure our performance in meeting our carbon requirements across Cambridgeshire and Peterborough. The report also sets out the shape of the challenge faced by Cambridgeshire and Peterborough in reducing emissions from the current 6.1 million tonnes (Mt) of carbon dioxide equivalent (CO₂E) per year to net zero emissions by 2050. At General Purposes Committee it was resolved unanimously to accept the CUSPE research report and use it as part of the evidence base to inform the development of the Council's Climate Change and Environment Strategy and Action Plan (CCES).

The Cambridgeshire County Council Draft Climate Change and Environment Strategy is in the consultation phase at the time of writing.

The second example comes from the Evaluating the Healthy Fenland Fund study [10]. The aim of this research was to understand which evaluation methods would be most appropriate

for the stakeholders involved in the Healthy Fenland Fund. Researchers in this group conducted primary research in the form of surveys and focus groups, underpinned by literature review on current theories for evaluating asset-based community development projects. Thirty individuals took part in four focus groups in two regions of Fenland, March and Wisbech. The individuals involved were both group leaders and participants from groups supported by the Healthy Fenland Fund. The final report was presented to the Health Committee at Cambridgeshire County Council who recognised the need to evaluate the Healthy Fenland Fund urgently and discussed allocating funds towards outsourcing this evaluation as recommended by the researchers.

Findings

Many of the successful programmes have shared features that allowed them to work effectively as a collaboration between researchers and policy makers and optimise the chances for success in achieving real world impacts. To this end, we have identified some of the key ingredients for a successful Policy Challenge Programme and lessons learnt on both sides in the following three sections.

Key ingredients required to establish the Policy Challenges relationship

1. A champion within the council. For these Policy Challenges, this has been Cllr Ian Manning, who established the relationship with CUSPE in 2016 and the pilot scheme in 2017. He has provided oversight for the entire initiative and acts as a link between officers, councillors and participants. While Cllr Manning's role in championing this scheme within the council has proved invaluable, the importance of generating shared and distributed ownership within council has also become increasingly important as the relationship has matured.

2. Officer leadership/support at a senior level within Council. For these Policy Challenges, the Council Chief Executive, Gillian

Beasley, immediately championed the idea with the then transformation manager, Amanda Ascham, pushing it forward. Senior leadership gives visibility to the programme and empowers managers and teams within the council to contribute.

3. Cross party buy-in. Within a committee-based council system, this cannot be something driven and accepted only by one political group, but requires bipartisan acceptance.

4. A local university-linked group. Within these Policy Challenges, this has been CUSPE, a science-policy society comprised of early-to-mid-career researchers, graduate students, and postgraduate researchers. Despite naturally high turnover of students, the continuity is provided by the committee structure, with a Policy Challenges Coordinator sitting on this committee and leading the universities' efforts. The co-location of the university and county council has facilitated the collaboration.

Lessons learnt from the council perspective

The lessons learnt by the council around how to effectively utilise the skills of researchers include creating equal partnerships, investing in question design, limiting scope and giving early feedback.

1. This is a partnership of equals

- The challenges must be of interest to the council. The process of question design for the research projects is led by the county council, with strong input from CUPSE coordinators. Council collects proposals for questions that have been identified by elected Cllrs and senior council officers.
- However, both sides must be interested. To ensure researchers have the opportunity to work on a question of interest, more challenges are offered than the number expected to go ahead. For the Policy Challenges, CUSPE leads an annual launch event where councillors and officers present the different projects available and prospective participants have opportunities to ask questions. This also

facilitates early networking, increasing visibility, and breaking down barriers. Researchers then submit preferences for projects, which ensures that they complete projects of interest and of value to their personal growth.

2. Question design is key.

- Make it attractive to the researchers. Questions have to be specific enough to be identifiable to a particular part of the council, but broad enough to allow researchers to own how to answer them. It's a challenge – not a question.
- Make sure you can access the data. Some projects have run into difficulties in answering questions due to lack of access to the data that was held by third parties. Good accessibility is necessary for the project to proceed.

3. Scope it. A limited project scope is necessary to ensure a clear direction from the researchers and a valuable end product for the council. In some instances, it is preferable to leave methods or report specifics open to the researchers. A first meeting between researchers and a council lead early in the project should clarify which methods the researchers intend to use and what they intend to focus the report on, based on preliminary desk research by the Policy Challenge team and material provided by the council lead.

4. Invest in early feedback. Even when initial question scope is narrow, early input from council and question disambiguation is key. Time made available for this and discussion with teams early in the project saves time and improves the usefulness of the final product tenfold.

Lessons learnt from researcher's perspective

The lessons learnt by the researchers centre around how to work together effectively to clearly answer the challenge by starting early, utilising good communication between the team and the council, and having good time management.

²The low nature of this response rate was likely due to defunct contact details.

1. Start early, start on the same page. Establishing the scope and approach clearly at the very start of the project is invaluable. This often involves a clarification meeting within the first month with the senior council officer, and a team kick-off meeting to ensure that the approach is consistent with the question they are looking to explore. It is also useful to receive material from the officers during this initial stage of scoping work, to ensure everyone has access to the same information.

2. Keep talking to each other. It is important to set up face-to-face meetings among researchers on a regular basis (fortnightly if possible). This avoids duplication of work and miscommunication. For example, the team on the Net Zero project found that they had to re-work their climate models when they individually used different assumptions or underlying projections.

3. Schedule time for revisions. Create a timeline to allow enough time for corrections and changes to the report, and accommodate unpredictable obstacles. Be flexible, but respect the schedule as much as possible.

Feedback from previous participants

Previous participants were contacted to understand their thoughts on the projects, how useful the projects were to their studies or careers, and what they thought were strengths and weaknesses. Of the 28 contacted, 11 responded via survey².

Reasons for applying to the programme fell into five categories:

Scoping out career choices – Understanding if they were interested in going into a policy-related career after their studies.

CV-building – Broadening experiences in policy-making to enhance their skillset. Personal interest in the field or question.

Local government – Interest in learning about and being involved in local decision making.



Improving evidence-informed policy –

Making a real difference in and for the community.

Participants reported that the aspects of the Policy Challenges Programme they most valued were the opportunity to work with the council, and having recommendations heard, valued and, in some cases, implemented by the council.

At this stage, it is too early to evaluate the potential impact of the Policy Challenges Programme on future career, as 82% of respondents were still completing their studies, though this would be worth exploring in future evaluations. However, having completed the programme, 64% of respondents were interested in policy-related roles, with the majority of others interested in research and consulting. 78% reported that they had included their involvement with Policy Challenges on their CV, with three of those that have applied for jobs stating that the programme enabled them to gain their current or upcoming roles.

Possible Programme Improvements

The council and CUSPE are continually seeking potential improvements to the scheme on a trial-and-error basis. Some improvements being considered for future projects include accommodation of master's student timeframes, publication of outputs, and expansion of the model to other local authorities across the UK.

Master's student timeframes. Currently, the project timeframes stretch over the summer holidays, which often do not suit Master's students who may complete their studies halfway through the project timelines. This reduces the number of potential candidates for research projects. The possibility of running 3-month projects, or to shift project timeframes is being explored.

Publication of outputs. All reports are published on data.gov.uk [12] and Cambridgeshire Insight [13], and they are often anywhere between 40-80 pages. Few clear mechanisms exist for publishing this sort of cross-disciplinary research. To address this, in 2020 CUSPE is launching the

Cambridge Journal of Science & Policy (CJSP) [14] – a diamond open access journal (free to submit, free to publish, free to access) targeted at early career researchers. The ability to publish in this journal supports the development and CVs of these early career researchers, and the peer-review process promotes rigour. The challenge in synthesising key findings of a report for an intelligent non-expert—from 40 pages down to 2,000 words—exercises a key skill for those wishing to further their career in policy. Not only is this a previously unavailable platform for the dissemination of translatable findings of this programme (which other councils may then apply), it is also an open opportunity for dissemination of any evidence-based policy activities happening at any level across the UK.

Broaden the collaboration. In part, the purpose of writing this article is to promote the Policy Challenges model to other councils and university groups across the UK. Other efforts include branching out to other councils via the New Local Government Network, and explicitly inviting our district councils to be involved in the challenges. The authors would also be happy to be contacted by those interested in exploring this model in their local area.

Conclusions

The Cambridgeshire County Council Policy Challenges Programme provides useful evidence to local councils and excellent experience to early career researchers at the University of Cambridge through the collaboration with the Cambridge University Science Policy Exchange.

This partnership of equals is seen as a unique model within the UK, where the collaboration between policy-makers and researchers promotes evidence-informed policy. The key ingredients to establishing a successful programme include a champion within council, a local university-linked group, and a few years to really get going. When designing projects being mindful of equal partnership question design, limited scope and early feedback are key for councillors and council officers to ensure targeted projects, while project teams benefit from clear scopes set-out at the be-

ginning and good, constant communication and time-management throughout.

The impact of the Policy Challenges on council policy and decision-making is difficult to assess at such an early-stage. Some examples, such as the use of a policy-challenge report as an evidence base to inform the development of the Council's Climate Change and Environment Strategy and Action Plan (CCES), demonstrate how the challenges are assisting council policy-making.

Previous participants identified their main reasons for applying were to scope out career choices, build their CV, make a difference in the community and for personal interest. They most valued working with the council, and having recommendations heard and accepted. Though it is too early to evaluate the potential impact of the policy challenge programme on future career, most participants had used the program to enhance their CV and most were considering policy-related roles.

Any scheme such as this is constantly improving, and some such aspects under consideration include how the programs may be made more inclusive to master's students on one year programmes, and publication of outputs. The success of the first three years has encouraged the collaboration to promote the model, with the broadening of this collaboration to other councils and universities. The goal is that this mutually beneficial partnership can provide a model to support the development of early-career researchers and the quality of research underpinning council policy across the UK.

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About the Authors

Conflict of interest The Authors declare no conflict of interest.

Before starting her PhD, Liz worked for the UK Government Office for Science. She has also worked for the Australian Government as a nuclear medicine



chemist after graduating first in her class in her undergraduate in chemical engineering. She has completed an MSc in Science Communication at Imperial College London and is now undertaking a policy-focussed PhD in Education at the University of Cambridge. She maintains her connections between policy and science by continuing to work with UK Government Office for Science during her studies. She was the President of CUSPE in 2019-2020.

Orla is a second year PhD student at the Institute of Metabolic Science researching the gut-brain axis in the control of appetite and feeding behaviour. Orla previously completed an undergraduate degree



in Biological Sciences at Durham University and an MRes in the Biology of Ageing at UCL. An interest in science policy drove Orla to get involved with CUSPE in 2018 to help coordinate the annual Science and Policy Forum. In 2019, Orla took on the role of Policy Challenges Coordinator to help build relationships between Cambridge academics and Cambridgeshire County Council, and enable early-career researchers to gain experience working on real-world policy issues.

Ian Manning graduated from York with an MPHYS in Physics, and although he then pursued a career in IT, he took with him the sense of needing to solve challenging problems



and the desire to critically analyse evidence. When he moved to a new-build estate in Cambridge he became involved in politics, eventually getting elected (for the Liberal Democrats) to Cambridgeshire County Council 2010. He was re-elected in 2013 and again in 2017 to the new Chesterton Division. Ian became frustrated at the number of decisions that Councillors made without robust evidence, and the lack of interaction with the City's Universities. After taking part in a CSaP policy fellowship, and negotiated and set up a successful pilot 'Policy Challenges' programme - seeing researchers from CUSPE working directly on problems raised by elected Councillors and senior offices. This programme, now in its fourth year, led to him being appointed the Council champion for evidence-informed policy. With this new role, Ian now has an apolitical remit to build further links with the academic community and welcomes input from Cambridge's academic community to achieve that goal.

After her degree and PhD in Chemistry, Cecilia joined the Department of Biochemistry as research associate. There she applies metabolomics to a range of topics, including bio-



production of chemicals, drugs and viral-host interaction. She participated in the 2019 Cambridgeshire County Council Policy Challenge, interested in helping her community through her research skills, and in 2020 she coordinated the initiative with Orla.