**Section 1: Project Summary**

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| **Project Title: HealthTeachR** |
| **Project Applicants: James Fern, Sean Williams** |
| **Total Amount of Funding Requested:** £3000  **Actual Expenditure (please provide a breakdown of expenditure):**     |  |  |  |  | | --- | --- | --- | --- | | Account(T) | Amount | Project | Project(T) | | Education & Research - Casual teaching assistants | 1,629.73 | KB-FH1TJF | HEALTH PGA-TDF AWARD 2023/24 - James Ferm | | Travel - Staff | 248.10 | KB-FH1TJF | HEALTH PGA-TDF AWARD 2023/24 - James Ferm | | Subsistence & expenses - Staff | 106.00 | KB-FH1TJF | HEALTH PGA-TDF AWARD 2023/24 - James Ferm | | Visiting Lecturers (Not Paye) | 300.00 | KB-FH1TJF | HEALTH PGA-TDF AWARD 2023/24 - James Ferm | | Hospitality - Internal trading | 535.55 | KB-FH1TJF | HEALTH PGA-TDF AWARD 2023/24 - James Ferm | | CRCO - card charges costs | 6.99 | KB-FH1TJF | HEALTH PGA-TDF AWARD 2023/24 - James Ferm |   Total expenditure: £2826.37 |
| **Short Summary of the Project and Aims** *(~200 words: this is an updated version of the summary in your original proposal and gives the reader an overview of what the project was about)*  The aim of the project was to support staff and students in moving to using the open-source software R and RStudio, when teaching and learning research methods and statistics. R and RStudio provide a wide range of statistical and graphical tools that can be used to analyse and visualize data. Traditionally in higher education, ‘point and click’ software such as SPSS has been the default software package for this purpose. However, in the age of ‘big data’ employers are increasingly requiring graduates to be familiar with data analysis and visualisation using programming language in an integrated development environment. In addition, the costs associated with SPSS prohibit most graduates from using the software after leaving University. By making R and RStudio the platform upon which we teach research methods and statistics, students can learn how to apply statistical techniques to real-world data, gain experience working with data in an environment employers value, and can continue to utilise these skills after graduation and throughout their future careers. |

**Audience for report:** this report will be used for several purposes to help share your project outputs and experiences. It will be sent to Education, Quality and Standards Committee (which oversees the TDF) for noting; it will act as a case study on your project to be published on the TDF website so that other people can find out about what you did and / or use your outputs; and your notes about your experiences of running the project will be collated with others and shared with new project holders to help them in thinking about their project plan. Hence, the report needs to be concise and understandable to a professional (e.g. other academics and colleagues in higher education), lay (i.e. not necessarily in your discipline or field of expertise) audience. Bullet points are acceptable (e.g. in listing project outputs). Please include any references, if appropriate.

For further advice and guidance on writing your report please contact Steph Kamffer, Project Officer, [szk22@bath.ac.uk](mailto:s.b.watts@bath.ac.uk)

**Section 2: Evaluative Case Study**

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| **The Solution: Approach** *(max 300 words: this describes what you actually did to achieve the outcomes / outputs)*   * Initial conversations between James Fern and Sean Williams to identify opportunities for improving research methods and statistics provision, emphasizing open and reproducible science principles. * Invited Emily Nordmann from the University of Glasgow, who gave a faculty-wide talk on using R to embed general principles of open science within learning and teaching. * Organized detailed discussions between Emily and departmental staff to explore potential challenges and opportunities from the experiences at Glasgow, particularly insights from their 'psyTeachR' project. * Developed and delivered 'Intro to R' workshops for staff, facilitated by recruiting a PhD student, Olivia Malkowski, who assisted with developing and delivering the workshops. * Gathered feedback from staff to continuously refine workshop content and ensure it addressed varying levels of expertise within the department. * Concurrently recruited Olivia Malkowski to lead the development of our department-specific 10-chapter online book, [HealthTeachR](https://healthteachr.github.io/), designed to serve as the primary teaching tool and resource for research methods and statistics. * Implemented the newly developed materials into our courses starting from Semester 1 of this academic year. HealthTeachR is now fully operational and serves as the foundation for teaching research methods and statistics across the department. |
| **Outcomes** *(max 300 words: this is a brief description of the specific resources, research findings, events or other activities / results arising from your project)*   * Emily Nordmann from University of Glasgow visited to give a talk to the Faculty (wider University staff were invited) about using R as a tool to help embed general principles of open science within learning and teaching. * Emily Nordmann met with staff from the Department of Health to discuss in detail the steps taken at Glasgow and any lessons learned around design and implementation of [‘psyTeachR’](https://psyteachr.github.io/) * Development and Delivery of 3 ‘Intro to R’ training workshops for staff. * Development of the Department for Health [HealthTeachR](https://healthteachr.github.io/) resource, which is now used to support the delivery of research methods and statistics units with the department. * Delivery of 2 RStudio Workshops for the Doctoral College. |
| **Evaluation:** *(max 300 words: this gives an overview of the effectiveness of and lessons learnt from the process of running the project AND the quality / value of the outputs: this is important to enable the reader to learn from your experiences)*  The process of transitioning the department to teaching research methods and statistics using R and RStudio has been highly effective. An initial meeting and presentation by Emily Nordmann significantly influenced our approach, highlighting the importance of securing staff buy-in. Staff adoption was identified as essential, as students generally demonstrated greater openness to new tools and methods. A critical factor in this successful transition was the provision of multiple, well-structured introductory training workshops for staff. Ensuring good attendance was enhanced by allocating project funds for lunch vouchers and refreshments, contributing to higher levels of staff engagement and participation. Employing a dedicated PhD student, Olivia Malkowski, was pivotal. Olivia’s involvement in developing and supporting the delivery of the workshops substantially enriched the quality and effectiveness of the training sessions.  The development of our HealthTeachR resource, led by Olivia, represented a significant investment of time and resources, a commitment only feasible through dedicated project funding. This comprehensive online resource features high-quality content with extensive use of discipline-specific examples, ensuring relevance and practical applicability for both staff and students. Additionally, HealthTeachR incorporates numerous formative assessment opportunities, allowing continuous checking and reinforcement of understanding, which staff and students alike have found highly beneficial. Feedback from staff regarding the workshops and resources has been overwhelmingly positive, reinforcing the project's effectiveness. Following the workshop there was a significant mean improvement of 2.03 [95% CI: 1.29-2.74] units on a 1-10 scale rating the participants’ overall knowledge and skills related to using R. Furthermore, 84% of participants reported themselves as ‘likely’ or ‘very likely’ to continue to learn and use R in the future. The structured, funded approach adopted here provides a model that clearly demonstrates the necessity of targeted financial and human resources in achieving meaningful change. Overall, the quality and value of the project's outputs, particularly HealthTeachR and the enhanced staff training, have significantly advanced our department's educational capabilities in alignment with contemporary open science practices. |
| **Dissemination:** *(max 300 words: this gives an overview of the wider impact of your project beyond the main team)*  The dissemination and wider impact of this project has extended beyond the immediate project team, influencing educational practice and promoting the principles of open and reproducible science across the institution. Central to our dissemination strategy was the engagement with Emily Nordmann from the University of Glasgow, whose presentation and consultation sessions were open to staff across the wider faculty and university. This facilitated the sharing of good practice, practical insights, and valuable lessons learned from the successful implementation of R and RStudio at another institution. The development of our HealthTeachR resource represents a lasting and accessible output. Being openly available online, this high-quality, discipline-specific resource has the potential to support not only students and staff within our department but also colleagues in other faculties considering similar transitions.  The introductory R workshops developed as part of the project, and delivered to over 115 staff and postgraduate students, have been designed with the flexibility for adaptation and adoption across other departments. By upskilling staff beyond our immediate team, we have laid the groundwork for broader institutional adoption of open science methodologies.  Outcomes have been actively discussed and shared at DLTQC and FLTQC, providing opportunities for feedback and collaboration at multiple institutional levels. Additionally, we shared details of our project, its aims and intended outcomes via a presentation for the 2024/25 TDF launch event, further extending the project's visibility and impact across the educational community. Most recently, training sessions based on our project's outputs have been provided for the Doctoral College, ensuring postgraduate research students also benefit from enhanced methodological training.  The structured evaluation and reporting processes, including student and staff feedback, have allowed us to systematically document the project's successes and challenges. Upon the conclusion of this academic year and the summary reporting on units (i.e., online unit evaluations), these reports will be shared with institutional committees and teaching quality assurance groups, ensuring ongoing dialogue and encouraging others to explore and implement similar educational innovations. Ultimately, the project has contributed positively to the wider university community by demonstrating the feasibility and substantial benefits of integrating open science tools and methods into teaching and learning practices.  Finally, an abstract has been submitted for the ‘EARL Tech Conference 2025’ to present our processes and experiences of transitioning to ‘R’ for our undergraduate research methods and statistics teaching. Successful applicants will be notified by the end of March 2025. |
| **Future Use** (A brief statement of how the project outcomes will be used in the future or further developed)  Following the success of this TDF, we hope our next project can support the creation of an additional resource, focused specifically on learning and teaching statistical analysis in R. This is the logical next step in ensuring the Department is equipped to deliver all research methods and statistics teaching, within the R environment. The resource will support staff and students alike from the Department for Health, and the wider University community. As with this TDF, these resources can be utilised across the Faculty and wider institution where relevant. Traditionally in higher education, ‘point and click’ software such as SPSS has been the default software package for teaching statistics. However, employers are increasingly requiring graduates to be familiar with data analysis and visualisation using programming language in an integrated development environment. The costs associated with SPSS prohibit most graduates from using the software after leaving University. By making R the platform upon which we teach statistics, students can learn how to apply statistical techniques to real-world data, gain experience working with data in an environment employers value, and can continue to utilise these skills after graduation and throughout their careers. The new ‘Analysis’ online book, as part of the existing HealthTeachR resource, will further support the transition to teaching open and reproducible science using R and RStudio, across all our undergraduate and postgraduate courses. |
| **Other Information**: *(this section is optional and is for anything else you might want to say about the project that has not already been discussed)* |