

## HSMA 4 Application Form (Student Version)

### Consent to process your data

Welcome to the Studentship Application Form for Round 4 of the Health Service Modelling Associates Programme (HSMA 4). The programme is run by the [Peninsula Collaboration for Health Operational Research and Development \(PenCHORD\)](#) and funded/supported by the [National Institute for Health Research \(NIHR\) Applied Research Collaboration South West Peninsula \(PenARC\)](#).

We are using [Jisc online surveys](#) as the data collection tool to apply for the programme. You can view the data protection information for online surveys here: <https://www.onlinesurveys.ac.uk/gdpr/>. We will delete your data from online surveys following completion of the HSMA 4 programme at the end of September 2022. We will store the information you provide during the HSMA application process on a secure cloud-based server controlled by the University of Exeter. By completing the application form, you agree that identifiable data from your application will be retained in this storage system until completion of our funder reporting requirements for the financial year 2022-23. You may request that we delete it before this time by emailing [penchord@exeter.ac.uk](mailto:penchord@exeter.ac.uk). Following deletion of your identifiable data, we will retain a non-identifiable record of your application in perpetuity for any future reporting requirements.

Should your application for HSMA 4 be successful, we will use the contact details you provide during the application process for yourself and your Workplace Supervisor for communications related to topics including, but not limited to: delivery of the HSMA programme; publicity for the HSMA programme; requests for data necessary for reporting to our funder, the National Institute for Health Research; general information on Operational Research/Data Science which we believe will be useful to your career development, both as an HSMA and following completion of the programme.

All applicants who registered for the HSMA 4 mailing list will be contacted regarding the launch of any subsequent rounds of the HSMA programme. If you also opted into the main PenCHORD mailing list at the time of registering your interest in HSMA 4, you will receive occasional communications relating to the wider PenCHORD work programme, and other information relating to Operational Research/Data Science that we believe will be of interest. You may contact [penchord@exeter.ac.uk](mailto:penchord@exeter.ac.uk) at any time if you wish to be removed from either distribution list.

We will not add your details to any other distribution lists unless you ask us to do so separately. We will not pass your details on to anyone outside the HSMA Programme/NIHR PenARC. We will not use your details to send you communications that are not directly relevant either to the HSMA Programme or to the wider work of PenCHORD, PenARC or NIHR.

☐ I consent to the storage and use of my data and, on their behalf, that of my prospective Workplace Supervisor, as outlined above, and wish to proceed with my application to the HSMA 4 Programme

☐ I do not wish to proceed with my HSMA 4 application

## Applicant Details

Please note that you should only complete this application form if you are applying for the HSMA 4 Programme **to be a student**. We anticipate most applicants will be applying in this manner. If you are applying for the programme **to be a mentor**, you should complete the separate Trainee Mentor Scheme application form instead.

A number of the free-text entry sections of this form have a recommended word count and a maximum character-entry limit (indicated in brackets at the end of the question). For ease of completion, you may wish to draft your answers first in a word-processing application with a word/character count function. You can preview the questions here *[link to current document included on online form]*.

You may save your application and return to it later by clicking on **"Finish later"** at the bottom of the page and either bookmarking the "Finish later" URL in your browser, or asking for the URL to be emailed to you. **Please note that the form will not save automatically and the data you have entered will not be recoverable unless you click "Finish later"**. We cannot access incomplete/unsubmitted forms, so it is your responsibility to enter your email address accurately, or bookmark the "Finish later" link, to be able to resume your application. Please also remember to return to complete and submit your application if you choose to use this option.

**PLEASE COMPLETE THE FOLLOWING INFORMATION, ENSURING IN PARTICULAR THAT YOUR EMAIL ADDRESS IS ENTERED ACCURATELY:**

Name: \_\_\_\_\_

Job Title: \_\_\_\_\_

Organisation: \_\_\_\_\_

Email Address: \_\_\_\_\_

## Eligibility

I confirm that:

☐ I am currently based (or partly based) in: a health, social care or policing organisation; or a related organisation, such as Public Health; or a third sector health, social care or policing organisation, in England:

☐ I have the support of my organisation to undertake this programme, including being released from my usual role for the necessary time commitments as outlined in the Information for Applicants and Key Dates documents of the Application Pack

☐ I have not undertaken any previous rounds of the HSMA Programme

If you do not meet the eligibility criteria above, but believe you may still be eligible for the programme, you should contact the HSMA Programme Lead Dr Daniel Chalk at [d.chalk@exeter.ac.uk](mailto:d.chalk@exeter.ac.uk) to discuss your circumstances and gain approval to submit your application before proceeding any further.

## Technical Skills

Being a HSMA requires you to be skilled in analytics, advanced computing and/or mathematics. Previous experience in programming is useful, but by no means essential, and we expect most applicants will be new to programming. Please indicate which of the following skills you have, and provide specific examples for each option ticked.

Please **answer all questions** below.

☐ Statistical analysis skills

Please provide details (50 words/300 characters): [ ]

☐ Experience using statistical and / or data analysis software

Please provide details (50 words/300 characters): [ ]

☐ Experience using non-query based programming languages

Please provide details (50 words/300 characters): [ ]

☐ Experience using query based programming languages

Please provide details (50 words/300 characters): [ ]

☐ Mathematical skills

Please provide details (50 words/300 characters): [ ]

## Problem Response Assessment

In this section, you will be asked to respond to three different scenarios with your thoughts. We are not expecting you to come up with the “correct” solution, and indeed there may not even be a “correct” solution. Instead, we’re interested in finding out how you might approach a problem, and getting a better sense of your natural flair for analytics, modelling, data science and programming, as well as your understanding of how models and data science might translate to the real world.

### *Scenario 1*

You have been asked to develop a simulation model of a vaccination centre which offers COVID-19 vaccinations for all ages. The centre is concerned about the risk of overcrowding in the observation area in which patients must be observed for 15 minutes post-vaccination if they have received a mRNA vaccine.

You have been offered a meeting with the coordinators of the vaccination centre to help you design the model. What are the sorts of questions you think you might need to ask to develop this model? (200 words/1200 characters max)

[ ]

### *Scenario 2*

You work for a local police force. A local academic group has developed a piece of cutting-edge facial recognition software, which is 90% accurate in automatically identifying patients turning up to a GP surgery, to save them signing in at reception. They have tweaked the algorithm, and run some extensive tests on the new software, which has been shown to be 99% accurate at identifying sexual offenders.

Your area has experienced a number of late night sexual assaults taking place around a local train station. Your force is considering installing the software at the train station, such that any people flagged up as a sexual offender who are entering the station area after 8pm trigger a number of officers attending to question the suspect's presence at the station. Typically the station sees around 200 people attending between 8pm and midnight.

What are your thoughts on the implementation of this system? (200 words/1200 characters max)

[ ]

### *Scenario 3*

Pseudocode is a way of writing the logic of a computer program using plain English, rather than the specific syntax of a programming language.

Study the following pseudocode:

set counter to 0

for each number in list of numbers:

    if number divided by 2 is a whole number:

        display "YES"

        add 1 to counter

    otherwise:

        display "NO"

display counter

What do you think this program is doing? Can you think of a scenario where this might be useful? (200 words/1200 characters max)

[ ]

### **Applicant Statement**

In this section, you should explain why you are applying to the HSMA Programme. What is it specifically about the HSMA programme that attracts you? How are you/your organisation planning on using the skills you would develop in the programme? And why do you think you are a good fit for the programme?

(300 words/1800 characters max)

[ ]

## Organisational Support

It is an imperative requirement that all HSMAs are fully supported by their organisations to undertake the programme. Your Line Manager, or another senior member of your organisation who has responsibility for your work time, must agree to support you undertaking the programme and, if your application is successful, they will become your **Workplace Supervisor**. As your workplace supervisor, they will:

- ensure that your time is protected to undertake the programme
- ensure that your organisation's IT department install the software necessary to undertake the programme
- promote your work across the organisation
- help to ensure that the skills you develop are transferred within the organisation
- help to facilitate the progression and implementation of your project if undertaking a project in Phase 2 (including helping to set up meetings with key stakeholders, and ensuring the results of your project are used to inform decision making)

In this section you will provide the details of this individual. It is important that you have obtained their permission to include their details on this form, as this will be considered a declaration from them that they will support your involvement in the programme as described above if your application is successful.

Workplace Supervisor Name:

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Workplace Supervisor Job Title:

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Workplace Supervisor Organisation:

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Workplace Supervisor Email Address:

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[ ] I confirm that the individual named above is my line manager or another senior member of my organisation who has responsibility for my work time. I confirm they fully support my application to the HSMA Programme, and, if my application is successful, they will become my **Workplace Supervisor** and will support my involvement in the programme in the manner described above. They have explicitly consented to the processing of their data as outlined on page 1 of the application form, and my declaration of consent covers theirs also.