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| **Name & email supervisor(s):**  **Dr Claire Burton** [c.burton@keele.ac.uk](mailto:c.burton@keele.ac.uk)  **Dr Victoria Welsh** [v.welsh@keele.ac.uk](mailto:v.welsh@keele.ac.uk)  **Dr Kayleigh Mason** [k.mason@keele.ac.uk](mailto:k.mason@keele.ac.uk) |
| **Proposed length of internship and when it could take place:**  The internship will take place over 6 weeks and a proposed time when this could take place is:  w/c 8th August 2022 – w/c 12th September 2022  We are happy to negotiate alternative options. |
| **Host department:**  School of Medicine, Keele University |
| **How will the internship be conducted:**  In person at the university  Virtual/ from home  Both are possible, depending on preference student |
| **Title internship project:**  Summarising emerging evidence of potential associations of COVID-19 with a future diagnosis of inflammatory arthropathies: a rapid review |
| **Summary of the internship project:** *(max 250 words, can include hyperlinks to further information)*  **Background**  Around 10% of people who have had COVID-19 experience symptoms more than 4 weeks. Termed 'Long COVID'[1], these multisystemic symptoms and pathophysiological effects involve complex immunological mechanisms.[2]  People living with rheumatoid arthritis (RA) may be at increased risk of severe COVID-19, and some anti-rheumatic drugs are associated with severe COVID-19.[3] COVID-19 may lead to a flare of existing RA[4] and case reports suggest that COVID-19 may trigger de novo immune-mediated inflammatory conditions, including arthritis.[5–7] The immunological mechanisms of auto-immune activation and ‘cross-talk’ between RA and COVID-19 is being explored.[2–4,8]  The wider study aims to provide longitudinal cohort data to describe the epidemiology of incident rheumatic manifestations in post-COVID-19 patients. This internship aims to summarise reported rheumatic disease as a post-COVID manifestation.  **Methods**  A rapid review will be conducted[9] (for which a protocol will be registered with PROSPERO). The intern will be supported to perform a systematic search of multiple databases, download references into an appropriate platform, undertake a brief quality appraisal of identified studies, and extract and synthesise data using a narrative synthesis approach.  **Outputs**  The intern will be supported to write an article for publication in a peer reviewed journal and present their findings at a regional/national conference. Their findings will also inform future observational research.  **PPIE**  The research question has arisen following clinical observations made by the study team. A PPIE meeting for the proposed programme of work has been arranged for March 2022. |
| **Learning objectives:**  1.To understand and carry out the process of a systematic / rapid review  2. To develop an understanding of the proposed pathophysiological mechanisms of post-COVID syndromes  3. To produce a high quality, publishable piece of work, also of benefit upstream to linked observational research  **Week 1**   * Learn about the process of a systematic / rapid review   + Refine the study question and design a systematic search strategy to identify literature describing post-COVID rheumatic manifestations   **Week 2**   * Run the search and download titles * Perform a rapid screen of titles, abstracts and full text   **Week 3**   * Begin to describe the findings (likely using the principles of a narrative synthesis)   **Week 4 &5**   * Complete the rapid review   **Week 6**   * Write up and consider outputs (poster / presentation / paper) |
| **Any further information:**  The intern will have the opportunity to attend Study Management Group meetings for related work programmes during their 6 week attachment where they will meet other members of our multi-disciplinary research team and experience the wider aspects of primary care research. |
| **How to apply:**  For information about each project, applicants should contact the named project supervisors.  For information about the School of Medicine at Keele University, or the award, applicants should contact Mel Holden ([m.holden@keele.ac.uk](mailto:m.holden@keele.ac.uk)).  Applicants should email their application to Philippa Bailey ([p.bailey2@keele.ac.uk](mailto:p.bailey2@keele.ac.uk)) by the **3rd May 2022**  The application should include:   1. A copy of the applicants up to date CV (including 2 nominated referees) 2. A supporting statement (no more than 1 side of A4 in length) providing information about:  * The applicants background and experience to date * Why they want to gain experience in primary care-based research * Which project they would like to undertake and why   Selection of candidates will be based on the written application only (no interview will be required) using a standardised scoring sheet. |

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2. Zamani B, Moeini Taba S-M, Shayestehpour M. Systemic lupus erythematosus manifestation following COVID-19: a case report. 2021;15:29. Available from: https://doi.org/10.1186/s13256-020-02582-8

3. Tricco AC, Antony J, Zarin W, Strifler L, Ghassemi M, Ivory J, et al. A scoping review of rapid review methods. 2015;13:224. Available from: https://doi.org/10.1186/s12916-015-0465-6

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6. Dewanjee S, Kandimalla R, Kalra RS, Valupadas C, Vallamkondu J, Kolli V, et al. COVID-19 and Rheumatoid Arthritis Crosstalk: Emerging Association, Therapeutic Options and Challenges. 2021.

7. Lakota K, Perdan-Pirkmajer K, Hočevar A, Sodin-Semrl S, Rotar Ž, Čučnik S, et al. COVID-19 in Association With Development, Course, and Treatment of Systemic Autoimmune Rheumatic Diseases. 2021;11. Available from: https://www.frontiersin.org/article/10.3389/fimmu.2020.611318

8. Marques CDL. COVID-19 and Rheumatic Diseases: It Is Time to Better Understand This Association. 2021;48:318–20. Available from: http://www.jrheum.org/content/48/3/318.abstract

9. Gasparotto M, Framba V, Piovella C, Doria A, Iaccarino L. Post-COVID-19 arthritis: a case report and literature review. 2021;40:3357–62. Available from: https://doi.org/10.1007/s10067-020-05550-1

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