



## 2020 in retrospect

The year 2020 has been a very successful year, in research terms, for the Epidemiology Group. Yes, we have had to cope like everyone else with other demands on our time as a result of the COVID19 pandemic, get used to working from home (which initially might have seemed exciting but has long since lost its attraction!), and paused temporarily or indefinitely some of our research studies. However, when we went into lockdown we decided to have a focus on producing research outputs from our ongoing and completed research, and this is reflected in our list of publications from the year. We have also taken the opportunity to work on grant applications and we have already had successful outcomes. Versus Arthritis and the British Society for Rheumatology (BSR) supported a small grant to examine the experiences of people with a variety of musculoskeletal conditions during the restrictions imposed by the pandemic, BSR are funding an extension to follow-up of the Psoriatic Arthritis Register, while the Medical Research Council (MRC) Methodology Research Programme have supported a grant developing a new instrument to measure the impact of chronic pain on work (taking account of modern ways of working), which will be conducted within the MRC/Versus Arthritis Centre for Musculoskeletal Health and Work. One casualty of the restrictions has been the ability to attend conferences to develop new ideas and network, so let's hope that we can in some form resume that at least by the end of 2021.



Finally a big thank you to all our research support colleagues at the University of Aberdeen and to our collaborators local, national and international without whom it would not be possible to conduct the research we do.

*Gary J Macfarlane*

*Professor of Epidemiology and Head of the Epidemiology Group*

## The Epi Group in lockdown

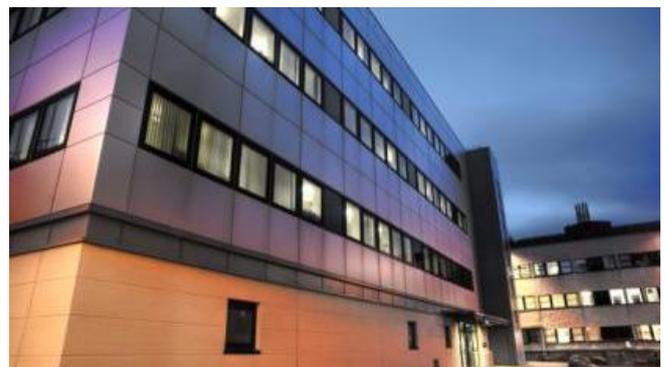
2020 began much like any other year in the Epidemiology group, as we continued to work hard on ongoing research, submitting results for publication and getting new projects underway. Even as epidemiologists we could hardly have expected that what was just around the corner would bring massive changes not only for our group, but for the entire world, forcing us all to find new and creative ways of working and collaborating during a global pandemic.



As the news broke, first in China, then Iran, then Italy, the advice changed rapidly; first we were urged to exercise more care and wash our hands more thoroughly, then self isolation was advised for those who had been in affected countries. By mid-March, we were in lockdown. For the group, this meant gathering up supplies, leaving our office and preparing for the challenges of working from home. We quickly began to get to grips with the quirks and foibles of Microsoft Teams, webcams and remote access, enabling the team to come together to figure out the best ways of working in this new environment.

Some of the group were initially put on furlough, either full or part time, while a few group members remained working to try to keep our research programme moving forward. Some studies had to be put on hold as it was no longer possible to gather data face-to-face. For others we had to seek creative solutions to enable research to continue in the remote environment. We were even able to use this opportunity to develop and begin a new study, the CONTAIN study, using online surveys to investigate the impact of lockdown on musculoskeletal health.

As the nationwide lockdown began to lift, in late July staff members began to come back from furlough, and we started to look at moving back on-campus in temporary offices in the Polwarth Building. By now we were all settled in to remote working, resuming our regularly scheduled weekly staff meetings, and collaborating on and off site to get studies back up and running and to continue with our research programme. At the time we would never have guessed that we still would not be back in our old offices by the end of the year, but we have made a happy little home in our temporary accommodation, and it has served us well.



While we are still not yet back in the Health Sciences Building we look forward to getting back to normal in 2021 and continuing some of our important research, emboldened by what we have learned about new ways of working, investigating and collaborating.

*Stuart Anderson*

## PhD Congratulations

---

A hearty congratulations are in order to two of our Epidemiology family, who successfully completed their PhD in 2020.

### **Dr LaKrista Morton**

LaKrista has been with the group since 2015, undertaking work investigating how individuals perceive back pain and how these perceptions ultimately shape how individuals respond to their pain.

Her thesis, titled “Illness Perceptions and Their Association with Illness Behaviours in Lower Back Pain” found that the different ways that people perceive back pain (for example, perceptions about how long their pain will last or what types of treatments are likely to be effective) likely influence how they respond to pain (for example, whether they consult a GP or self-manage). However, simple messages about back pain can influence these perceptions and can also influence what people say they would do in response to an episode of back pain.

LaKrista officially gained her doctorate in January 2020.



### **Dr Giles O'Donovan**

Giles first worked with the group as a Project Assistant from before returning to take up the role of Group Secretary from 2015-2019 while undertaking his PhD study.



Giles' thesis was “Understanding the social construction of resilience: A case study of UK Fruit and vegetable producers' response to Brexit”, which aimed to see how UK fruit and vegetable producers understand the idea of resilience (i.e. bouncing back from shocks) during a time of disturbance, with a focus on Brexit. His research had two main findings. Firstly, producers' resilience during a time of disturbance was underpinned by pragmatism, with Brexit being treated as one of many challenges they will respond to. Secondly, despite their pragmatic attitude, ongoing pressures facing producers, such as low sale price of fruit and vegetables, alongside the perceived increased frequency of adverse weather events due to climate change, were major concerns. These findings highlight the need for future resilience research to move away from mainly considering singular shock events.

## Staff ins and outs

---

Jane Brady returned from maternity leave at the end of December and re-joins the BSR-PsA team. We said goodbye to our administrative assistant Lisa Shearer just before lockdown started, Jill Barber wrapped her excellent work on LIFT at the end of November before going on to a new administrative post in the University and Jonny Lock left the BSR-PsA team and took up a position at Queen's University Belfast.

We thank our interns Renke Biallas and Taalke Sitter who both returned to Germany at the beginning of the year. They made a great contribution during their short stay with us and both published papers from their work.

## Daniel returns from Michigan

---

In August this year I returned from working in the Department of Physical Medicine and Rehabilitation and the Chronic Pain and Fatigue Research Centre at the University of Michigan. This has been a period of accelerated learning as I've attempted to master and apply new research methods and analytic approaches and deepen my understanding of the intersection between pain science and sleep medicine.



Image: Seasonal differences in Ann Arbor, Michigan

Highlights from 2020 include conducting focus groups (in January and February, so pre-pandemic) with people living with chronic pain and sleep problems (watch this space for a paper reporting findings from this work) and participating (remotely) in the VERITY/Brigham Course in Rheumatology Clinical Research. This was a great week-

long development opportunity that I'd recommend to early career researchers focused on rheumatology and musculoskeletal conditions. Check out: <http://www.verityresearch.org/>

Like most of us, I spent the majority of 2020 working at home, getting to grips with Teams and Zoom. During this time I was grateful to have a prime view of, and access to, the Nichols Arboretum in Ann Arbor. This provided a front row seat to the change of the seasons in the Mid-West and the opportunity to practice what I preach by keeping physically active during lockdown.

I returned to a much-changed working environment Aberdeen in August this year. Although it's been challenging for everyone, the increasing normality of remote working and online conference calling is making me feel optimistic about maintaining a transatlantic research practice... hopefully some positives will emerge from the disruption of 2020.



## Some words from our departing interns

---

### **Taalke Maria Sitter (University of Bremen, Germany)**

*September 2019 to February 2020*

I am a Public Health undergraduate student at the University of Bremen and came to Aberdeen to do an internship with the Epidemiology group, and I am very glad that I was able to spend it here.

During my time in Aberdeen I got the opportunity to learn the processes and methodologies of epidemiological research outside of a lecture theatre. I was involved in a systematic review about persistent postoperative opioid-use in Europe, and in the data analysis of perioperative pain in breast cancer surgery patients. Additionally, I supported the team in preparing two new studies about perioperative opioid use and was involved in a grant application. I also participated in the regular weekly activities of the Epidemiology group at journal clubs and literature review meetings, which I always loved to attend. I always felt very welcome in the group and nearly every day I had a lot of fun.

Outside of work, I had a great time in Aberdeen as well. I enjoyed taking walks on the beach or along the river Don and discovering the coastline and the nature around the city. I met many Scottish and international people and found close friends.



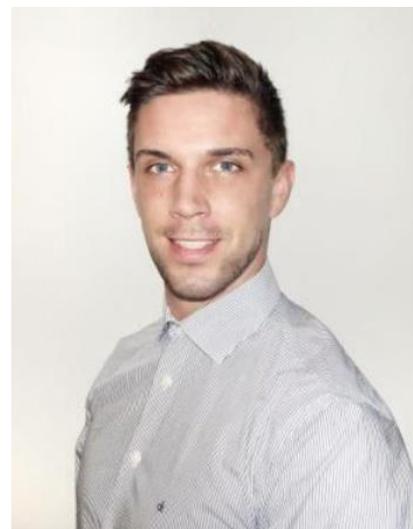
## **Renke Biallas (Ludwig Maximilian University of Munich, Germany)**

*September 2019 to February 2020*

During my postgraduate Public Health degree at LMU Munich, I had to complete an internship at an institute or company working in the public health sector, which I decided to do with the Epidemiology Group of the University of Aberdeen.

I was involved in two projects with different scientific methods; a systematic review and meta-analysis investigating the risk of new-onset inflammatory bowel disease in patients with axial spondyloarthritis (axSpA), and a data analysis with a stepwise forward model approach to identify demographic, self-reported and clinical factors predicting the Bath Ankylosing Spondylitis Metrology Index (BASMI). I had already studied these methods at university but never actually applied them to conduct research. I also gained knowledge in rheumatology, especially the care of patients living with axSpA. I participated in the regular meetings of the group, such as literature review meetings, journal club and presentation meetings. These were always a good chance to discuss recent developments in research as well as to get to know my colleagues. The team is very welcoming and I enjoyed working with them as well as having very joyful lunch breaks with them.

I learned a lot, saw many beautiful sights and met incredible people. I am certain that I will use the skills and experience I gained here to develop my future career in Public Health.



## Study Updates

---

### **BSR-PsA**

Up until March of this year study recruitment and site enrolment was going well; we had recruited nearly 600 participants to the register with an overall target of 1500 which we were on track to achieve by the end of 2020. However, since the onset of the pandemic the vast majority of our sites needed to pause recruitment and redeploy their staff. In addition, three out of four members of our central office team were furloughed leaving one member of staff to “hold the ropes” whilst working from home!



Psoriatic Arthritis Register

In spite of this, we were able to add the CONTAIN study to the register as a sub-study, inviting all participants to complete one additional questionnaire in order to explore the impact of the pandemic on people with various musculoskeletal conditions, including patients with psoriatic arthritis (PsA). A small number of respondents were also asked to undertake a qualitative interview to discuss their experiences of lockdown in more depth. The results from this sub-study have started to be analysed and, in the first instance, will be presented at the BSR conference in April.

Thankfully, now all of our central team are now back working full-time. In addition, the majority of our hospital sites have re-started recruitment or have been in contact to ask about re-starting, as staff resume their previous roles. We are aware, however, that this is not possible for some sites due to resources being deployed solely for COVID work, and overall study recruitment is low.

In addition, we face the challenge of how best to capture patient information now that consultations are increasingly moving to remote sessions. In response to this we recently organised two training sessions in order to learn about the self-assessment tool used in Bradford (where the PI is Professor Philip Helliwell) and facilitate discussion about ways to collect data via the phone or in the community. It is hoped the tool will give sites confidence in continuing to collect the same data as stated in the protocol, even though the method of data collection may be different e.g. via patient self-reports.

We hope that 2021 will be a year of recovery. Our main aim is to help our hospital sites re-start recruitment and to continue with some of the plans we had made last year, for example, setting up a biobank to collect additional blood and urine samples at selected sites. We are in the final stage of testing the procedures for this, and will be enrolling sites who meet the criteria to take part in this sub-study soon.

*Karen Keenan and Maureen Heddle from the BSR-PsA administration team*

## Vasculitis Outcomes In relation to Care Experiences (VOICES)



VOICES ( Vasculitis Outcomes in relation to Care Experiences) is a research study funded by Versus Arthritis and led by Dr Rosemary Hollick (University of Aberdeen), in collaboration with Prof Corri Black (Aberdeen Centre for Health Science Data), Prof Louise Locock (Health Services Unit, University of Aberdeen), Dr Neil Basu ( University of Glasgow) Prof Mark Little (Trinity College, Dublin) and the University of Oxford Healthtalk team ([www.healthtalk.org](http://www.healthtalk.org))

VOICES aims to develop, with patients, healthcare professionals and decision makers, a set of recommendations that will help improve healthcare for patients with vasculitis.

## **How will this research benefit patients?**

This study is especially timely as the current COVID-19 pandemic has resulted in significant disruption to usual health and social care and is impacting differentially on different subgroups of the population and different parts of the country. The impact of the healthcare system changes that have happened as a result of the pandemic on the ability to meet the care needs of this group of patients is unclear.

Findings from this study will be immediately relevant and support vital service planning and decision-making to meet immediate and ongoing future health and care demands through our close partnership with The UK and Ireland Vasculitis Society ((UKIVAS, <http://rarerenal.org/rare-disease-groups/vasculitis-rdg/>) and the newly established Scottish Systemic Vasculitis Managed Clinical Network <https://www.ssvn.scot.nhs.uk/>).

## **Progress to date**

All parts of the study are now well underway. We are analysing the routinely collected health data from Scotland and our survey has already been completed by over 20 services. Twenty-three people with vasculitis have been interviewed about their experiences. Next on the agenda is getting the permissions in place to start our case studies, and we look forward to engaging with sites across the UK next year who provide vasculitis services.

Patient and Public Involvement (PPI) is an important part of the VOICES study, and we would like to thank all our current patient partners for all their help. More information about the study or how you can get involved can be found here: <https://www.abdn.ac.uk/iahs/research/epidemiology/vasculitis-1616.php>

*Rosemary Hollick and Laura Moir*

## **The epidemiology of perioperative pain**

This year has been very productive and an interesting journey in research in clinical pharmacology and epidemiology of perioperative pain. Among other publications in other fields and using different approaches, we have explored the effects of various pharmacological strategies. We have also contributed to a better understanding of the actual evolution of perioperative pain over time. Finally, we investigated the amount of opioids prescribed long-term after surgery, paving the way for future studies.

Next year, we will involve a consortium of participants to identify the best way to improve policies and practices in this area. This should be done by building consensus, but also by exploring the characteristics of pain and documenting how pain is managed after surgery.

*Patrice Forget*

## Social Activities

---

Even though we haven't been able to see each other face-to-face, 2020 has still been a year filled with social activity for the Epidemiology group.

First port of call after lockdown was to create a social channel in Microsoft Teams! Since March our feed has been full of activity, including gardening updates (from pot plants to polytunnels); the joys (and perils) of trying to work alongside our pets; the latest cooking and baking successes (we were spared any disasters); and, of course, Ovidiu's fishing updates!

Our weekly coffee and cake was, of course, put on hold, but we did still manage a catchup every Tuesday. We used those opportunities to stay in touch with each other and check in and, although cake was optional, it's fair to say that the tradition was maintained throughout lockdown. We also made sure to keep up with regular 'coffee and cake' sessions, where group members were encouraged to 'bring their own' to a virtual catchup session on an ad hoc basis.

In Easter the group took part in an Easter egg painting contest, where we were challenged to decorate an egg in whatever manner we chose. Laura won the contest with her 'COV-egg', which featured a hand knitted egg-cosy in the shape of a COVID-19 virion!



A number of group members managed to keep fit during lockdown motivated by the Stepcount Spring and Autumn Step Challenges. Friends and family joined in and the group clocked up a total of over 3 million steps from the two challenges, running over 12 weeks in total. Jonny and Stuart even managed to boost the total by walking over 100,000 steps each in one day (that's almost 50 miles!).

We celebrated Halloween by having a workspace decorating competition, with carved pumpkins and turnips, spooky skeletons and all manner of ghouls and ghosts adorning our working environments. Rosemary and her

daughters took home the prize with their elaborately carved Harry Potter and cat-themed pumpkins!

We rounded off the year wishing each other a Merry Christmas with an interactive quiz, covering Christmas adverts, movies, toys and trivia. Our runaway winners (after a late charge from the competition) were the Blueberry Buns team, featuring LaKrista, Barry, Daniel and Maureen.

In spite of the challenges 2020 was still a year full of activity, but we are certainly looking forward to 2021 when we hope to be able to get back together in person (and perhaps share a cake or two!).

*The Social Team*



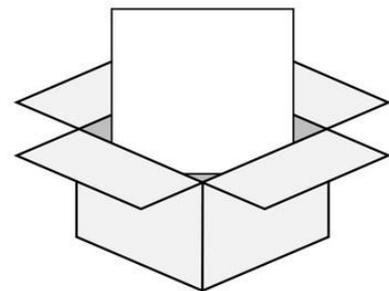
## Research summary

Despite COVID interruptions, 2020 was a good year for research output, with 24 papers published, and a further ten accepted and in press. It was also a good year for research grant success, with awarded grants of over £600,000 coming to Aberdeen, and, in addition, more than £2million of outline grant applications which have been invited to full application in the coming months.

Obviously, the COVID pandemic had a negative impact on recruitment to all research studies, and indeed the group went several months without the full complement of study coordination staff, as the university put various personnel on furlough. The LIFT trial (Lessening the Impact of FaTigue in inflammatory rheumatic disease) is nearing completion; DyNAMISM (examining the role of non-steroidal anti-inflammatory drugs in the assessment of inflammation in spondyloarthritis) ceased participant recruitment and we are moving into the data analysis phase. But not all work closed down, and many studies continued, albeit with the challenges of working remotely, home schooling, etc. However, of particular note, we received an award of £51,000 from Versus Arthritis / British Society for Rheumatology for a specific COVID-related follow-up of three study cohorts:

- British Society for Rheumatology Psoriatic Arthritis Register
- British Society for Rheumatology Biologics Register for Ankylosing Spondylitis; and
- The MAmMOTH trial.

This focused on the negative impact of COVID, and the lockdown restrictions that followed, on the musculoskeletal health of individuals with inflammatory arthritis and general musculoskeletal symptoms. This important work has already been selected for presentation at the British Society for Rheumatology's annual scientific meeting 2021.



## The CONTAIN Study

## Papers – Published

1. Brahe *et al.* Retention and response rates in 14 261 PsA patients starting TNF inhibitor treatment-results from 12 countries in EuroSpA. *Rheumatology (Oxford)* 2020; 59(7): 1640-50. <https://doi.org/10.1093/rheumatology/kez427>.
2. Derakhshan *et al.* Predictors of extra-articular manifestations in axial spondyloarthritis and their influence on TNF-inhibitor prescribing patterns: results from the British Society for Rheumatology Biologics Register in Ankylosing Spondylitis. *RMD Open* 2020; 6(2): e001206. <https://doi.org/10.1136/rmdopen-2020-001206>.
3. De Coster *et al.* Identification of the cerebral effects of paracetamol in healthy subjects: an fMRI study. *British Journal of Pain* 2020; 14(1): 23-30. <https://doi.org/10.1177/2049463719854483>.
4. Di Credico *et al.* Alcohol drinking and head and neck cancer risk: the joint effect of intensity and duration. *British Journal of Cancer* 2020; 123(9): 1456-63. <https://doi.org/10.1038/s41416-020-01031-z>.
5. Doebl *et al.* "No one wants to look after the fibro patient". Understanding models, and patient perspectives, of care for fibromyalgia: reviews of current evidence. *Pain* 2020; 161(8): 1716-25. <https://doi.org/10.1097/j.pain.0000000000001870>.
6. Forget *et al.* Characterization of preoperative, postsurgical, acute and chronic pain in high risk breast cancer patients. *Journal of Clinical Medicine* 2020; 9(12): 3831. <https://doi.org/10.3390/jcm9123831>.
7. Goudman *et al.* Determining the minimal clinically important difference for medication quantification scale III and morphine milligram equivalents in patients with failed back surgery syndrome. *Journal of Clinical Medicine* 2020; 9(11): 3747. <https://doi.org/10.3390/jcm9113747>.
8. Hall *et al.* Laryngeal Cancer Risks in Workers Exposed to Lung Carcinogens: Exposure-Effect Analyses Using a Quantitative Job Exposure Matrix. *Epidemiology* 2020; 31(1): 145-54. <https://doi.org/10.1097/EDE.0000000000001120>.
9. Hamilton *et al.* Targeting rehabilitation to improve outcomes after total knee arthroplasty in patients at risk of poor outcomes: randomised controlled trial. *British Medical Journal* 2020; 371: m3576. <https://doi.org/10.1136/bmj.m3576>.
10. Hollick *et al.* Introducing mobile fracture prevention services with DXA in Northern Scotland: a comparative study of three rural communities. *Osteoporosis International* 2020; 31(7): 1305-14. <https://doi.org/10.1007/s00198-020-05316-0>.
11. Hollick *et al.* Outcomes and treatment responses, including work productivity, among people with axial spondyloarthritis living in urban and rural areas: a mixed-methods study within a national register. *Annals of the Rheumatic Diseases* 2020; 79(8): 1055-62. <https://doi.org/10.1136/annrheumdis-2020-216988>.
12. Huang *et al.* Genomewide association study of acute anterior uveitis identifies new susceptibility loci. *Investigative Ophthalmology and Visual Science* 2020; 61(6): 3. <https://doi.org/10.1167/iovs.61.6.3>.
13. Jones *et al.* Real-world evidence of TNF inhibition in axial spondyloarthritis: can we generalise the results from clinical trials? *Annals of the Rheumatic Diseases* 2020; 79(7): 914-19. <https://doi.org/10.1136/annrheumdis-2019-216841>.
14. Jones *et al.* The prevalence of fibromyalgia in axial spondyloarthritis. *Rheumatology International* 2020; 40(10): 1581-91. <https://doi.org/10.1007/s00296-020-04621-5>.
15. Karabayas *et al.* Evaluation of adjunctive mycophenolate for large vessel giant cell arteritis. *Rheumatology Advances in Practice* 2020; 4(2): rkaa069. <https://doi.org/10.1093/rap/rkaa069>.

16. Keat *et al.* BRITSpA at five. *Rheumatology (Oxford)* 2020; 59(4): 699-701. <https://doi.org/10.1093/rheumatology/kez523>.
17. Macfarlane *et al.* The epidemiology of regular opioid use and its association with mortality: Prospective cohort study of 466 486 UK biobank participants. *EClinicalMedicine* 2020; 21: 100321. <https://doi.org/10.1016/j.eclinm.2020.100321>.
18. Macfarlane *et al.* Predicting response to anti-TNF $\alpha$  therapy among patients with axial spondyloarthritis (axSpA): results from BSRBR-AS. *Rheumatology (Oxford)* 2020; 59(9): 2481-90. <https://doi.org/10.1093/rheumatology/kez657>.
19. Macfarlane *et al.* Determining factors related to poor quality of life in patients with axial spondyloarthritis: results from the British Society for Rheumatology Biologics Register (BSRBR-AS). *Annals of the Rheumatic Diseases* 2020; 79(2): 202-8. <https://doi.org/10.1136/annrheumdis-2019-216143>.
20. McCall *et al.* Spontaneous very preterm birth in relation to social class, and smoking: a temporal-spatial analysis of routinely collected data in Aberdeen, Scotland (1985-2010). *Journal of Public Health* 2020; 42(3): 534-41. <https://doi.org/10.1093/pubmed/fdz042>.
21. Michelsen *et al.* Impact of discordance between patient's and evaluator's global on TNFi retention and remission in 14868 spondyloarthritis patients. *Rheumatology (Oxford)* 2020; 59(9): 2455-61. <https://doi.org/10.1093/rheumatology/kez656>
22. Rolls *et al.* What is the incidence of complex regional pain syndrome (CRPS) Type I within four months of a wrist fracture in the adult population? A systematic review. *Hand Therapy* 2020; 25(2): 45-55. <https://doi.org/10.1177/1758998320910179>
23. Shim *et al.* Quantifying and predicting the effect of anti-TNF therapy on axSpA-related fatigue: results from the BSRBR-AS registry and meta-analysis. *Rheumatology (Oxford)* 2020; 59(11): 3408-14. <https://doi.org/10.1093/rheumatology/keaa132>.
24. Kratz *et al.* Characterizing chronic pain phenotypes in multiple sclerosis, *PAIN* 2020, <https://doi.org/10.1093/rheumatology/keaa132>
25. Murphy *et al.* Fatigue predicts future reduced social participation, not reduced physical function or quality of life in people with systemic sclerosis, *Journal of Scleroderma and Related Disorders*, October 2020, <https://doi.org/10.1177%2F2397198320965383>
26. Braley *et al.* Cannabinoid use among Americans with MS: Current trends and gaps in knowledge, *Multiple Sclerosis Journal – Experimental, Translational and Clinical* 2020, 22; 6(3) :2055217320959816, <https://doi.org/10.1177%2F2055217320959816>
27. Whitney, Kannikeswaran, Whibley, Risk for respiratory and cardiovascular disease and mortality after non-trauma fracture and the mediating effects of respiratory and cardiovascular disease on mortality risk among adults with epilepsy, *Epilepsy Research* 2020, 166, 106411, <https://doi.org/10.1016/j.eplepsyres.2020.106411>
28. Whibley *et al.* Sleep disturbance as a moderator of the association between physical activity and later pain onset among American adults aged 50 and over: evidence from the Health and Retirement Study, *BMJ Open* 2020, 10: e036219, <http://dx.doi.org/10.1136/bmjopen-2019-036219>
29. Hassett *et al.* Measures for the Assessment of Pain in Adults, *Arthritis Care & Research* 2020, 72: 342-357, <https://doi.org/10.1002/acr.24222>

30. Whitney *et al.* Effect of pain on mood affective disorders in adults with cerebral palsy, *Developmental Medicine & Child Neurology* 2020, 62(8), 926-932. <https://doi.org/10.1111/dmcn.14559>
31. Kratz *et al.* The role of environmental distractions in the experience of fibrofog in real-world settings, *ACR Open Rheumatology* 2020, 2: 21-221, <https://doi.org/10.1002/acr2.11130>
32. Alschuler *et al.* The Physical and Psychological Experience of Rowing the North Atlantic Solo and Unassisted', *Wilderness & Environmental Medicine* 2020, <https://doi.org/10.1016/j.wem.2019.12.008>
33. Murphy *et al.* Fatigue and its association with social participation, functioning and quality of life in systemic sclerosis', *Arthritis Care & Research* 2020, <https://doi.org/10.1002/acr.24122>
34. Zhao *et al.* Impact of smoking in response to tumor necrosis factor inhibitors in axial spondyloarthritis: methodologic considerations for longitudinal observational studies. *Arthritis Care and Research* 2020; 72(4): 591-9. <https://doi.org/10.1002/acr.23851>.

## *Papers – In press*

35. Biallas *et al.* The role of metrology in axSpA: does it provide unique information in assessing patients and predicting outcome? Results from the BSRBR-AS registry. *Arthritis Care and Research*.
36. Forget *et al.* Is intraoperative opioids avoidance a utopia? A matched case-control study in laparoscopic hysterectomy. *Current Clinical Pharmacology*.
37. Forget *et al.* To what extent are we confident that tapentadol induces less constipation and other side effects than the other opioids in chronic pain patients? A confidence evaluation in network meta-analysis. *British Journal of Pain*.
38. Hollick and Macfarlane. Do patients with rheumatic diseases living in rural settings have poorer outcomes? Results from a systematic review of the literature. *Arthritis Care and Research*.
39. Macfarlane *et al.* Maintaining Musculoskeletal Health using a behavioural therapy approach: a population-based randomised controlled trial (The MAMMOTH study). *Annals of the Rheumatic Diseases*.
40. Michelena *et al.* Similar biologic drug response regardless of radiographic status in axial spondyloarthritis: data from the BSRBR-AS registry. *Rheumatology (Oxford)*.
41. Provan *et al.* The changing states of fibromyalgia in patients with axial spondyloarthritis: results from BSRBR-AS. *Rheumatology (Oxford)*.
42. Sitter and Forget. Persistent postoperative opioid use in Europe: a systematic review. *European Journal of Anaesthesiology*.
43. Zhao *et al.* Association between comorbidities and disease activity in axial spondyloarthritis: results from the BSRBR-AS. *Rheumatology (Oxford)*.
44. Zhao *et al.* Comorbidity and response to TNF inhibitors in axial spondyloarthritis: longitudinal analysis of the BSRBR-AS. *Rheumatology (Oxford)*.

## *Research grants – Awarded*

1. EULAR recommendations for cardiovascular risk management in rheumatic and musculoskeletal diseases including SLE and antiphospholipid syndrome. €50,000. *European League Against Rheumatism*.
2. QUantifying the Impact of Chronic pain on engagement in paid work (QUICK). £477,634. *Medical Research Council*.
3. Development and evaluation of the Digital-My Arm Pain Programme (DMAPP) for improving painful distal upper limb musculoskeletal disorders. £2,487,412 (£46,000 to Aberdeen). *National Institute of Health Research*.
4. COVID-19 and musculoskeletal health during lockdown (CONTAIN). £51,000. *Versus Arthritis and British Society for Rheumatology*.

## Top ten most cited publications

---

Papers published since 2009, ordered by average citations per year.

1. Macfarlane et al. EULAR revised recommendations for the management of fibromyalgia (2017) *Annals of the Rheumatic Diseases*, 76 (2), pp. 318-328. **Cited 277 times (92 average citations per year)**
2. Fayaz et al. Prevalence of chronic pain in the UK: A systematic review and meta-analysis of population studies (2016) *BMJ Open*, 6 (6), art. no. e010364 **Cited 263 times (66 average citations per year)**
3. Dean et al. Global prevalence of ankylosing spondylitis (2014) *Rheumatology*, 53 (4), art. no. ket387, pp. 650-657. **Cited 249 times (42 average citations per year)**
4. Jones et al. The prevalence of fibromyalgia in the general population: A comparison of the American College of Rheumatology 1990, 2010, and modified 2010 classification criteria (2015) *Arthritis and Rheumatology*, 67 (2), pp. 568-575. **Cited 184 times (37 average citations per year)**
5. Steingrimsdóttir et al. Defining chronic pain in epidemiological studies: a systematic review and meta-analysis. *Pain*. 2017;158(11):2092-2107. **Cited 63 times (21 average citations per year)**
6. Lamont K et al . Risk of recurrent stillbirth: systematic review and meta-analysis. *BMJ*. 2015;350:h3080. **Cited 72 times (14 average citations per year)**
7. Jones et al.. Adverse events in childhood and chronic widespread pain in adult life: Results from the 1958 British Birth Cohort Study. *Pain*. 2009 May;143(1-2):92-6. **Cited 149 times (14 average citations per year)**
8. Creed FH et al. The epidemiology of multiple somatic symptoms. *J Psychosom Res*. 2012;72(4):311-7 **Cited 104 times (13 average citations per year)**
9. Macfarlane GJ et al. Evaluation of work-related psychosocial factors and regional musculoskeletal pain: results from a EULAR Task Force. *Ann Rheum Dis*. 2009;68(6):885-91. **Cited 121 times (11 average citations per year)**
10. Macfarlane et al. The prevalence and management of low back pain across adulthood: Results from a population-based cross-sectional study (the MUSICIAN study) (2012) *Pain*, 153 (1), pp. 27-32. **Cited 89 times (11 average citations per year)**

## Top ten publications by Altmetric score

-  1. Maternal and neonatal outcomes after caesarean delivery in the African Surgical Outcomes Study: a 7-day prospective observational cohort study  
**The Lancet Global Health**, April 2019
-  2. Global prevalence of ankylosing spondylitis  
**Rheumatology**, December 2013
-  3. Prevalence of chronic pain in the UK: a systematic review and meta-analysis of population studies  
**BMJ Open**, June 2016
-  4. Perioperative patient outcomes in the African Surgical Outcomes Study: a 7-day prospective observational cohort study  
**The Lancet**, April 2018
-  5. EULAR revised recommendations for the management of fibromyalgia  
**Annals of the Rheumatic Diseases**, July 2016
-  6. Aspirin in patients undergoing noncardiac surgery  
**New England Journal of Medicine**, April 2014
-  7. Mortality after surgery in Europe: a 7 day cohort study  
**The Lancet**, September 2012
-  8. Chronic widespread bodily pain is increased among individuals with history of fracture: findings from UK Biobank  
**Archives of Osteoporosis**, December 2015
-  9. Global patients outcomes after elective surgery: prospective cohort study in 27 low-, middle- and high-income countries  
**The British Journal of Anaesthesia**, November 2016
-  10. The surgical safety checklist and patients outcomes after surgery: a prospective observational cohort study, systematic review and meta-analysis  
**The British Journal of Anaesthesia**, January 2016

## Staff and Students 2021

---

### Academic Staff

Professor Gary J Macfarlane *Chair (Clinical) in Epidemiology and Head of Group*  
Professor Patrice Forget, *Clinical Chair in Anaesthesia*  
Dr Gareth T Jones *Reader of Epidemiology and Deputy Head of Group*  
Dr Rosemary Hollick *Clinical Senior Lecturer in Rheumatology*

### Research Staff

Dr Linda Dean, *Research Associate*  
Dr LaKrista Morton, *Research Fellow*  
Dr Ovidiu Rotariu, *Research Assistant*  
Dr Kevin Stelfox, *Research Fellow*  
Dr Daniel Whibley, *Research Fellow*

### Academic-related staff

Mr Stuart Anderson, *Project Assistant*  
Dr Eva-Maria Bachmair, *Study Co-ordinator (LIFT study)*  
Ms Jane Brady, *Assistant Study Co-ordinator (BSR PsA study)*  
Mr Marcus Beasley, *Study Co-ordinator (MAMMOTH study)<sup>1</sup>*  
Dr Karen Forrest Keenan, *Study Co-ordinator (BSR-PsA study)*  
Ms Maureen Heddle *Assistant Study Co-ordinator (BSR PsA study)*  
Mrs Laura Moir *Study Co-ordinator (PACFiND, FRESKO and DyNAMISM studies)*  
Mr Barry Morris *Project Assistant*

### Post-graduate research students

Mrs Stefanie Döbl, *PhD student*  
Mr Ross MacDonald, *PhD student*

**Honorary Staff:** Dr Neil Basu - *Honorary Clinical Senior Lecturer*; Dr Tatiana Macfarlane *Honorary Reader*; Dr. Ilaria Maccora *Honorary Research Fellow*

---

<sup>1</sup> Registered for the degree of PhD