In 2018 we added, within our research programme, a focus on Musculoskeletal Health Services Research and were successful with our first two major grant applications in this area – the first a 5 year programme grant designing optimal health services for people with fibromyalgia and the second using systemic vasculitis as an exemplar of a rare rheumatic disease. You can read about the latter project in this newsletter. Both these studies will commence in 2019 and these grants now bring our live grants total to £11.1 million

This year will also see the publication of much anticipated results from the MAmMOTH study – the first study aimed at preventing the onset of chronic widespread pain. On our national registers front, while the British Society for Rheumatology Biologics Register in ankylosing spondylitis (BSRBR-AS) enters the phase of analysis and publication, the equivalent register in Psoriatic Arthritis (BSR-PsA) is in the set-up phase and we hope to be adding many more recruiting sites during the coming year.

Working with our colleagues across the Aberdeen Centre for Arthritis and Musculoskeletal Health we will be undertaking our first pan-collaboration study when we will be determining the feasibility of setting up a cohort of patients across Scotland with early knee osteoarthritis in order to undertake mechanistic studies, trials of management and health service research.

This newsletter provides a taste of our activities during the past year – and looking forward to our adventure in 2019!

Professor Gary J Macfarlane, Head of the Epidemiology Group and Dean of Research and Knowledge Exchange (Life Sciences and Medicine)
During 2018 we welcomed the following to our team ...

**Jill Barber**

Jill joined the group in May 2018 as a Data Co-Ordinator for the LIFT study. She also works as a School Support Assistant in the School of Social Science at the University of Aberdeen.

**Jane Brady**

Jane joined the Epidemiology Group in January 2018 as an Assistant Study Coordinator for the British Society for Rheumatology Biologics Register in Psoriatic Arthritis. Jane graduated from the University of Liverpool in 2013 with a BSc in Anatomy and Human Biology. Following this, she worked as a Research Assistant at the University of Cambridge. In 2017, she completed an MRes degree in Drug Discovery at the University of Aberdeen.

**Svenja Kleiser**

Svenja joined the Epidemiology Group in October 2018 as a visiting student from Germany. She is doing a research internship with the group as part of her Master’s program in Biology at the University of Freiburg.
Laura Moir

Laura joined us in May 2018 as the study coordinator on the DyNAMISM Study investigating if non-steroidal anti-inflammatory drugs (NSAIDs) reduce the appearance of sacroiliac joint bone marrow oedema on MRI, in spondyloarthritis.

Laura graduated from the Robert Gordons University with a BSc (Hons) in Biosciences and Chemistry, then spent nine years working for the University of Aberdeen on various research projects. After many years in the lab, she then moved into lab management first as a lab manager, then as a facility manager with Wyeth Pharmaceuticals and then Pfizer, before having a career change and working for five years in the oil and gas sector as a project coordinator on the Total Laggan Tormore, Premier Oil Catcher and Total Culzean Projects with Subsea7. Laura returned to science as a lab and quality manager with Scotia Biologics before her return to Aberdeen University.

Ioana Stanciu

Ioana joined the Epidemiology Group in May 2018 after having completed a MSc in Health Psychology in 2017 and a MA (Hons) in Psychology in 2016. She works as a project assistant on the MAMMOTH study in the mornings and provides administrative support for other studies in the afternoon.

Kevin Stelfox

After a varied career in community and social work, Dr Kevin Stelfox moved into the field of educational research. He was responsible for research, policy and planning in Children’s Services in a local authority in Scotland from 2004 to 2017. During this period he was a Research Fellow for Scottish Teachers for a New Era, University of Aberdeen and an Honorary Research Fellow for the Applied Educational Research Scheme (AERS) Project’s Schools and Social Capital Network.

Kevin’s PhD focused on young people’s social relationships within a school context and explored how social relationships within that context contribute to the production and reproduction of inequalities. He continues to be interested in the (re-)production of social inequality from a Bourdiesian perspective. In 2018 Kevin joined the Epidemiology Group and is working on the Walk With Ease Project and from March 2019 he will be working on the Reducing Workplace Disability from Musculoskeletal Disorders project.
but also said goodbye to ....

Gillian Smith, who moved to Glasgow to take up a Research Assistant post; Zoe Henderson, who finished her role as Study Co-ordinator for the WWE study; Santosh Ghaire who has taken up a new research role in Northern Ireland, Claudia Zabke who took up a role in NHS Grampian R&D, Nafeesa Nazlee who has gone on to further academic study, Adam Fletcher who moved to Australia, and Neil Basu who is now Clinical Senior Lecturer at the University of Glasgow.

Update on Studies

In 2018 we were successful in our applications to Versus Arthritis’ Health Sub-Committee with two applications – one, a 5 year programme grant (PACFiND) to design optimal health services for people with fibromyalgia, a common and complex condition, often presenting to rheumatology secondary services and at the other end of the spectrum, a project grant focussed on systemic vasculitis, an exemplar of a rare rheumatic disease.

Effective healthcare delivery in rare rheumatic disease: evaluating models of care for systemic vasculitis

(Funded by Versus Arthritis, £309,166; Chief Investigator: Rosemary Hollick; Co-applicants: Corri Black, Louise Black, Mark Little and Neil Basu)

Why is this research important?

Individuals with rare rheumatic diseases report an uphill struggle to navigate healthcare systems not designed to manage complex diseases. Whilst delays in receiving a diagnosis, inconsistent access to relevant expertise and uncoordinated care are not unique to rare rheumatic disease, the consequences in this group of individuals can be devastating. A good example is systemic vasculitis, a group of devastating but treatable multi-organ illnesses caused by inflammation of the blood vessels. Across the UK there is significant differences in how these conditions are looked after. Our own pilot data from a selection of specialist centres also reveals clinically important differences in outcomes such as heart disease, stroke and infections. There is increasing momentum within the UK to implement commitments made in the UK Rare Disease Strategy, and within Europe to improve services for patients with rare diseases. However, there are currently no robust studies to help us decide how best to organise and deliver services for those with adult onset rare rheumatic disease.

What are the aims of this research?

This study aims to understand which key elements of care delivery are associated with health outcomes of prime importance to patients with vasculitis. Information will be used to help us better design services and ensure equal access to effective, coordinated care and support for all patients.

We will gather information from patients with vasculitis and their healthcare records to examine differences in healthcare outcomes across different services in Scotland. Working with healthcare professionals and patients we
will understand how vasculitis services are currently organised and how this relates to outcomes of prime importance to patients. We will also explore what aspects of care patients and staff value most and how they feel care could be improved.

How will this study benefit patients?

By the end of this study, we will have developed in conjunction with patients, healthcare professionals and decision makers, a timely set of recommendations that will directly inform policy decisions on how to improve services for patients with rare diseases. Study findings will also be used to produce a Healthtalk online website on systemic vasculitis for patients and staff.

Research Update

2018 was a busy year for the Epidemiology Group. With 19 papers published, and a further 9 in press, we nearly doubled our published output compared to 2017. We had presence at all the major national and international meetings, including oral presentations at the American College of Rheumatology Annual Scientific Meeting; World Pain Congress; and a highlight ‘Jewels in the Crown’ presentation at the British Society for Rheumatology Annual Scientific Meeting.

We also were awarded nearly £1.5 million in research funding, ranging from small funding to support research collaborations, to large programme grants, and over £800,000 is still pending as submitted grant applications.

Following the end of recruitment in 2017, the British Society for Rheumatology Biologics Register for Ankylosing Spondylitis ceased follow-up in June, and the study moves into an analysis phase, and has already produced a number of conference abstracts and papers. Only several months after the ankylosing spondylitis register closed, we started recruitment to the British Society for Rheumatology Psoriatic Arthritis Register — a similar register which will run for five years, although funding is already being sought to extend it further. DyNAMISM is still recruiting, and looking for more recruitment centres, and the LIFT study is still going up, crossing the 200-patient mark in October. Daniel Whibley began his Versus Arthritis Foundation Fellowship in first half of the year, although has been absent for much of the second, on sabbatical at the University of Michigan.

Finally, congratulations are due to (Dr) Shifa Sarica who not only submitted and successfully defended her PhD, but also won best 3rd year talk in the School of Medicine, Medical Science and Nutrition Postgraduate Research Conference. Congratulations also to Stefanie Doebl who won best 1st year talk at the same meeting; and LaKrista Morton was awarded 2nd prize for best oral presentation at Scottish Pain Research Community Annual Scientific Meeting.

“When you go, will you send back a letter from America .....

Dr Daniel Whibley reports back from the University of Michigan
Three months into a year-long placement at the University of Michigan, I’ve had the opportunity to experience my first all-American Halloween and Thanksgiving and am currently enjoying the countdown to Christmas. As the holidays approach I’m reflecting on working in research environments in the USA and the UK.

What’s shared is a global and determined vision to produce high quality research to improve the lives of people with chronic pain. The standards of excellence and the collaborative, multidisciplinary approach here in the USA resonate with my training and the culture of the Epidemiology Group in Aberdeen. The pervasiveness of acronyms also remains a constant! In the USA I work in the NCRC, within IHPI and PM&R, and am affiliated with the CPRFC. Other familiar features include a regular lecture and seminar series—called MiCHAMP here—a similar structure and type of content to the Institute of Applied Health Sciences seminar series, with accompanying, obligatory treats (no Walkers shortbread biscuits though!). The application of machine learning techniques has been a particularly hot topic at these meetings.

While there are many similarities, I have also observed differences in the way research is organized and conducted. From the top, the funding structures are very different (for example, the USA’s National Institutes of Health offer K grants, R grants, T, F and P series… I’m still working out how these funding streams might be navigated). Of course, there’s no mention of REF or TEF! Different models of writing research are also practiced, including ‘paper sprints’—a focused and concentrated effort where all authors attend a small number of working meetings with the shared aim of expedient manuscript completion and submission.

Outside of the stimulating work environment there is an abundant selection of fun to be had. I’ve managed to participate in Halloween trick-or-treating in a Kayak down the Huron river (pictured here in a University baseball cap—#GoBlue!), attend OcTUBAfest (a musical celebration of all things brassy at the School of Music, Theatre and Dance), and explore the awe-inspiring natural environment—highlights so far have included seeing my first free-living black squirrel, skunk, and raccoon!

I’m excited to continue my research endeavours here in Michigan over the next nine months and also look forward to exploring more of the American mid-west. These experiences are, though, reminding me of bonny Scotland and I’m already making a wish list for my return (…setting up a paper sprint mechanism…. visiting the Cairngorms…). Thinking of UoAEpi and looking forward to seeing you all (relatively) soon!
Manuscripts Published in 2018

Published papers

- Abrahão et al. The influence of smoking, age and stage at diagnosis on the survival after larynx, hypopharynx and oral cavity cancers in Europe: The ARCAGE study. *International Journal of Cancer* 2018; 143: 32-44.
- Basu et al. Neurobiological features of fibromyalgia are also present among rheumatoid arthritis patients. *Arthritis and Rheumatology* 2018; 70: 1000-7.
- Shim et al. Impact of biological therapy on work outcomes in patients with axial spondyloarthritis: results from the British Society for Rheumatology Biologics Register (BSRBR-AS) and meta-analysis. *Annals of the Rheumatic Diseases* 2018; 77: 1578-84


**Papers in press**


• Martin et al. Protocol for a multi-centre randomised controlled parallel-group trial to compare the effectiveness of remotely delivered cognitive behavioural and graded exercise interventions with usual care alone to lessen the impact of fatigue in inflammatory rheumatic diseases (LIFT). *BMJ open*; in press.

• Neilson et al. Cost-utility of maintained physical activity and physiotherapy in the management of distal arm pain: an economic evaluation of data from a randomized controlled trial. *Family Practice*; in press.


• Zhao et al. Associations between smoking and extra-axial manifestations and disease severity in axial spondyloarthritis: results from the BSRBR-AS. *Rheumatology* 2019; in press.

**RESEARCH GRANTS**

**Awarded**

• Basu et al. *Versus Arthritis*; £209k. Characterising the centralised pain phenotype in chronic rheumatic disease – a stride towards personalised analgesia.

• Hollick. *NHS Grampian Endowment Fund*; £24k. What is the impact of integrating specialised physiotherapy into a rheumatology new patient clinic?

• Hollick et al. *Versus Arthritis* £309k. Effective healthcare delivery in rare rheumatic disease: evaluating models of care for systemic vasculitis

• Macfarlane et al. *Chief Scientist’s Office*; £30k. Feasibility of Recruiting an Early Scottish Knee osteoarthritis cOhort (FRESKO).

• Macfarlane et al. *Versus Arthritis*; £1.2m. PAatient-centred Care for Fibromyalgia: New pathway Design (PACFIND).

• Whibley. *SULSA exchange grant*; £4k. The relationship between sleep, fatigue, cognitive dysfunction and chronic pain: identifying temporal relationships and targets for treatment.
Top ten “most cited” publications

Ordered by average citations per year.


and our publications with the highest Altmetric scores

<table>
<thead>
<tr>
<th>Publication Title</th>
<th>Journal Details</th>
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<tr>
<td>Prevalence of chronic pain in the UK: a systematic review and meta-analysis of...</td>
<td>Article in <em>Bjul Open</em>, January 2016</td>
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<td>Chronic widespread bodily pain is increased among individuals with history of...</td>
<td>Article in <em>Archives of Osteoporosis</em>, December 2015</td>
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<td>Low back pain in schoolchildren: the role of mechanical and psychosocial factors</td>
<td>Article in <em>Archives of Disease in Childhood</em>, January 2013</td>
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<td>Neurobiologic Features of Fibromyalgia Are Also Present Among Rheumatoid...</td>
<td>Article in <em>Arthritis &amp; Rheumatology</em>, May 2018</td>
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<tr>
<td>Beliefs about back pain and pain management behaviours, and their associations...</td>
<td>Article in <em>European Journal of Pain</em>, August 2018</td>
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<td>Global prevalence of ankylosing spondylitis</td>
<td>Article in <em>Rheumatology</em>, December 2013</td>
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<td>Risk of recurrent stillbirth: systematic review and meta-analysis</td>
<td>Article in <em>British Medical Journal</em>, January 2015</td>
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<td>Genome-wide association analyses identify new susceptibility loci for oral...</td>
<td>Article in <em>Nature Genetics</em>, October 2016</td>
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<td>Moderate alcohol consumption is associated with lower risk (and severity) of...</td>
<td>Article in <em>Arthritis Care &amp; Research</em> (21514640), July 2015</td>
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<td>Impact of biological therapy on work outcomes in patients with axial...</td>
<td>Article in <em>Annals of the Rheumatic Diseases</em>, August 2018</td>
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<tr>
<td>Oral health, dental care and mouthwash associated with upper aerodigestive...</td>
<td>Article in <em>Oral Oncology</em>, June 2014</td>
</tr>
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<td>A multi-modal MRI study of the central response to inflammation in rheumatoid...</td>
<td>Article in <em>Nature Communications</em>, June 2018</td>
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<td>Persons with chronic widespread pain experience excess mortality: longitudinal...</td>
<td>Article in <em>Annals of the Rheumatic Diseases</em>, July 2017</td>
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<tr>
<td>Chromosome conformation signatures define predictive markers of inadequate...</td>
<td>Article in <em>Journal of Translational Medicine</em>, January 2018</td>
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and finally, 2018 through the lens ...

- It's all Chinese to me! - Gary giving a lecture in Tianjin
- Relaxing after a hard conference week in Boston
- "...and now for something completely different"
- Still relaxing after a hard conference in Boston
- Delegates at the short course in Epidemiology in Bucharest in January
- "...a task to save the planet on the away day"
Staff and Students 2019

Academic Staff

Professor Gary J Macfarlane Chair (Clinical) in Epidemiology and Head of Group
Dr Gareth T Jones Reader of Epidemiology and Deputy Head of Group
Dr Rosemary Hollick Clinical Senior Lecturer in Rheumatology
Dr Kathryn R Martin Lecturer in Epidemiology

Research Staff

Dr Joanna Shim Research Fellow (maternity leave)
Dr Kevin Stelfox Research Fellow
Dr Daniel Whibley, Research Fellow (currently at University of Michigan)
Dr Linda Dean, Research Assistant
Dr Ovidiu Rotariu Research Assistant (from 1/2/19)

Academic-related staff

Dr Eva-Maria Bachmair, Study Co-ordinator (LIFT study)
Ms Jill Barber, Data Co-ordinator (LIFT study)
Ms Jane Brady, Assistant Study Co-ordinator (BSR-PsA)
Mr Marcus Beasley Study Co-ordinator (MAmMOTH study)†
Dr Elizabeth A Jones Study Co-ordinator (FOMaXS)
Dr Karen Forrest Keenan Study Co-ordinator (BSR-PsA Study)
Ms. Maureen Heddie Assistant Study Co-ordinator (BSRBR-AS)
Ms Laura Moir Study Co-ordinator (DyNAMISM study)
Mr Barry Morris Project Assistant
Mr Giles O'Donovan Group Secretary
Ms Ioana Stanciu Project Assistant/Group Assistant Secretary

Post-graduate research students

Ms Stefanie Döbl, PhD student
Ms Kinga Janik-Koncewicz PhD student
Mr Ross MacDonald, PhD student
Ms LaKrista Morton PhD student

Visiting staff and students: Ms Svenja Kleiser Visiting Student (Karlsruhe University)

Honorary Staff: Dr Neil Basu - Honorary Clinical Senior Lecturer; Dr Tatiana Macfarlane Honorary Reader; Dr Gabriele Simonini Honorary Senior Research Fellow

† Registered for the degree of PhD