

*Coordinator: Professor Iain McInnes, Division of Immunology, Infection & Inflammation, University of Glasgow, Faculty of Medicine, Glasgow Royal Infirmary, 8-16 Alexandra Parade, Glasgow G31 2ER, SCOTLAND Tel: 0141 211 4688 ibmi1w@clinmed.gla.ac.uk
Elucidating immune mechanisms in inflammatory arthritis*

MAJOR GLASGOW TRAINING INVESTMENT IN TOMORROW'S EXPERTS IN BONE AND JOINT DISORDERS

Specialists in bone and joint disorders at the University of Glasgow have been awarded more than £500,000, creating an outstanding opportunity for five highly talented young students to receive advanced scientific training in rheumatic disease research.

Glasgow University is one of just five UK centres to receive this prestigious award from the Oliver Bird rheumatism programme, which supports research into the prevention and treatment of rheumatism. The money will enable Professor Iain McInnes, consultant rheumatologist at the Glasgow Royal Infirmary, to implement a comprehensive four-year training programme that will give his students wide-ranging experience in tissue analysis, state-of-the-art imaging technology as well as the care of patients with arthritis.

"Glasgow University has already invested heavily in the study of rheumatic diseases," said Professor McInnes. "The Oliver Bird rheumatism programme is an ideal opportunity to develop this further with the addition of five students who will apply the formidable scientific technologies now available to the challenges posed by chronic inflammatory arthritis." The students will study with scientists leading the field in inflammation research based in Glasgow: Professors Eddy Liew, Gerry Graham, Bill Ferrell and Paul Garside, and Drs Rob Nibbs, Maggie Harnett and Jim Brewer.

The research programme for the students will focus on understanding the inflammatory processes that lead to arthritis and how the white blood cells that enter the joint become activated and destroy bone and cartilage. By doing so, it is possible to alter the behaviour of cells and, therefore, the progression of the disease. Understanding these processes will lead to better drug treatment with fewer side effects.

Students will learn to exploit new technology at the university that allows them to track cells through their lifespan. They can watch the inflammation happen under the microscope and see cells change in response to a particular stimulus. This means that much more detailed information about the fundamental processes leading to joint destruction can be learned than has been possible in the past.

In the UK today, rheumatic disorders, which cover over 200 different diseases, are extremely common and affect over eight million people of all ages and the numbers are rising each year. Over three million adults are physically disabled and one in every thousand children suffers from arthritis. At a personal level, arthritis is devastating, particularly for young people in their 20s and 30s. Around 50% of people of working age who are diagnosed with rheumatoid arthritis cannot work after five years due to chronic pain and fatigue, depriving them of their independence and self-esteem.

An essential part of the Oliver Bird rheumatism programme, therefore, is for the students to spend time with patients. "This will be the first time that patients will regularly see the scientists being trained to cure their disease," said Professor McInnes. "Mostly our patients enjoy meeting the researchers and it increases their enthusiasm to contribute to the research projects. And this is our chance to infect young scientists with the passion we have for treating our patients."

The newly formed Oliver Bird Collaborative Centre will give students the chance to work at the cutting edge of science and at the same time gain first hand exposure to the problems faced by people living with severe disabilities. "We are peddling fast," concluded Professor McInnes. "It's a great time to be a rheumatologist."

LIVING WITH ARTHRITIS

Sandra McCall, Renfrewshire

It was many years before Sandra McCall was diagnosed with psoriatic arthritis in 1994. By that time, she had had a hip replacement and long periods of illness, which prevented her from working.

Psoriatic arthritis causes pain and swelling in joints and skin and is related to the skin disorder, psoriasis.

Sandra's problems with her hips first started in 1981 when she was a community education worker. The first attempt to replace her hip was unsuccessful as the pain and the limp were worse than before the operation – to say nothing of the mental anguish. In 1994, surgeons replaced the hip again and within a week she could walk. "I felt reborn," says Sandra. She returned to work and was able to drive again.

Sadly, this is not the end of the story. The disease progressed and one morning Sandra woke up to find her hand four times its usual size. Then her knees, wrist and feet flared up. The skin condition was unusual for psoriasis, but eventually she was given the diagnosis she badly needed.

"The following year I had to acknowledge that my working days were over, it was so bad," she says. But determined not to be beaten, Sandra, then 48 years old, studied law part-time. This, too, produced a major social hurdle. She saw herself as a feisty and courageous social worker – but realised to her dismay that the other students, younger students perceived her to be a middle-aged woman who walked badly and was often ill. As she became more disabled, Sandra felt isolated. Her friends, too, often did not understand what she was going through.

Sandra had further surgery on her knee and last year had her wrist fused. Despite this, she put her knowledge of law to good use and was chairman of the Children's Panel Advisory Committee in Renfrewshire that advises on the Scottish juvenile system of justice. She is also chairman of a patient support group, Psoriatic Arthritis Liaison Scotland – or PALS. Sandra is a passionate advocate, especially for young people in their early 30s with psoriatic arthritis, whose condition affects their personal and professional lives so profoundly.

"This year my life has been transformed," says Sandra who is now on powerful drugs known as anti-TNF that reduce the damage to the joints. "My friends tell me my eyes sparkle again. The pain and swelling has gone and the skin condition is under control."

Sandra, now 56 years old, keeps pushing herself, determined not to become a victim. "I am very positive now. I have had to cope with big changes in my life and have been in despair at times," she admits. But with the new treatment, life is better. A year ago, it would have been almost impossible for her to visit her family in Newcastle or even to hold her new grand-daughter, Aela. Now she can - "And it is absolutely wonderful," she says.