

## A year in review 2015/16

Leeds Musculoskeletal Biomedical Research Unit (LMBRU) has had another successful year continuing to address its overarching aims of:

- Preventing disease and disability in immune mediated inflammatory diseases (inflammatory arthritis and connective tissue diseases)
- Improving the treatment of osteoarthritis, enabling “50 active years after 50”

### LMBRU 2015/16 Performance



137

- Research studies supported by LMBRU



2919

- Participants recruited into LMBRU studies



198

- Research publications from LMBRU researchers



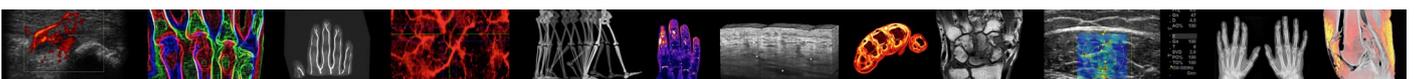
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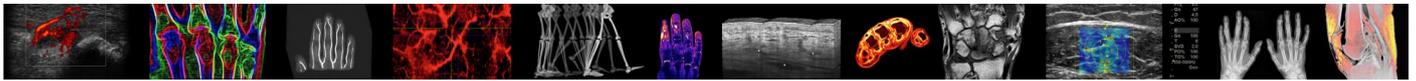
- Research trainees affiliated with LMBRU



£9.9

- Million in additional research funding





## LMBRU Key Progress During 2015/16

### Research

**Recruitment** - We have recruited 2919 participants across 137 studies. This includes 668 participants recruited to the CCP study (coordinated programme to prevent inflammatory arthritis). We have completed recruitment of the target 120 patients to the VEDERA trial (very early versus delayed etanercept in patients with rheumatoid arthritis) and carried out the first clinical trial of acellular biological scaffold for anterior cruciate ligament repair in 20 patients.

**Grant income** - LMBRU researchers have brought in £9.9 million of grant income. This includes major awards from EPSRC, HEFCE, NIHR and MRC, such as TARGET (treatment according to response in giant cell arteritis).

**Publications** - LMBRU has produced 198 research publications. A key publication has shown that perturbation of T cell subsets can predict progression to inflammatory arthritis (Hunt et al, Ann Rheum Dis 2016, 75, 1884-9).

### Patient and Public Involvement and Engagement (PPI/E)

PPI/E is successfully embedded throughout LMBRU, including a newly formalised steering group, review of funding proposals, study design and patient literature, membership of study management groups, and an active programme of engagement activities, both at LMBRU and outreach into schools and public events.

### Training

We have 98 LMBRU affiliated trainees including three new EPSRC case studentships with industry and two new NIHR doctoral fellowships. Fourteen higher degrees have been awarded to trainees supported across the LMBRU. Trainees are supported through combined research meetings, placements, mentorship and formal training.

### Industry

LMBRU has developed strong links with industry partners. This includes 51 clinical trials with Pharma collaborators ongoing in 2015/16, and biomarker analysis in collaboration with Biotech. We work in close partnership with Medtech for the development and testing of joint replacements and regenerative interventions, and we are also developing diagnostic tests in collaboration with industry, see examples below.

### Translation and Impact

**New diagnostics** - We have developed new responsive imaging biomarkers of bone for osteoarthritis structure modification trials, unblocking a major step in new drug development (Bowes et al, Ann Rheum Dis 2015, 74, 519-25). Resulting from the STRIKE study (stratification for risk of progression in scleroderma), we are developing novel diagnostic and prognostic tests for scleroderma based on serum and imaging biomarkers.

**Bioengineering** - We have developed new hip and knee joint simulators which are now sold commercially. A number of technologies have progressed to clinical trial (all polymer knee, acellular grafts for several tissues, synovial device to aid cartilage repair) or clinical use (bone void filler, ceramic bearing materials).

**Guidelines** - LMBRU researchers led two EULAR (European League Against Rheumatism) recommendation groups on use of imaging in juvenile idiopathic arthritis and osteoarthritis. Our work on enhanced preclinical test methods for hip prostheses has resulted in a new draft international hip standard progressed to vote for adoption.

For more information visit our website: <http://lmbu.leeds.ac.uk/>