Investigating the role of senescence in musculoskeletal ageing

Supervisory team:
Main supervisor: Dr Chrissy Hammond (University of Bristol)
Second supervisor: Dr Bernadette Carroll (University of Bristol)

Collaborators: Prof Jon Tobias (University of Bristol), Prof Lorna Harries (University of Exeter)

Host institution: University of Bristol

Project description:

The accumulation of senescent, 'zombie' cells occurs in many tissues with age, including bone, causing damage and dysfunction. This PhD project will use in vitro cell culture models, biochemistry and cell biology, as well as in vivo zebrafish models to investigate how growth, metabolism and survival pathways are different in healthy and senescent cells. Alongside, we will investigate how senescence contributes to age-related changes in the ability of bone to properly repair and regenerate in response to assaults. We will use this knowledge to develop novel interventions to 'kill' senescent cells and test whether this improves or rejuvenates ageing bones. Overall we are working to understand and improve healthy ageing.

Our aim as the SWBio DTP is to support students from a range of backgrounds and circumstances. Where needed, we will work with you to take into consideration reasonable project adaptations (for example to support caring responsibilities, disabilities, other significant personal circumstances) as well as flexible working and part-time study requests, to enable greater access to a PhD. All our supervisors support us with this aim, so please feel comfortable in discussing further with the listed PhD project supervisor to see what is feasible.